AGRIFINTECH
FİNANSAL TEKNOLOJİLER A.Ş.

CROPTO WHITEPAPER

25 NOVEMBER 2025

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CHAPTER 01

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

Today, the production, consumption, and trading of agricultural commodities are more important than ever in the global crisis we are facing. The upcoming potential food crisis is driving up agricultural commodity prices and bringing investment opportunities with it. The word “meta” in Turkish means “commercial goods,” and its plural is “emtia.” The Commodity Tokens discussed in this White Paper are poised to become a major category that we will see more frequently among blockchain applications.

In the Cropto project, our aim is to create a new financial asset class with commodity tokens based on agricultural commodities, starting with wheat. Blockchain tokens have many use cases.



These can be utility tokens that grant usage rights to a project, security tokens that confer ownership or voting rights on a project, and private tokens claiming ownership of digital content, such as NFTs.

Asset-backed tokens are tokens representing physical assets in the real world. They are generated by transferring certain attribute information of the physical asset to the blockchain, i.e., by creating a record in the distributed ledger. Therefore, transactions such as usage, sale, and consumption of the tokenized physical asset are frozen and prevented by a custodian as long as the tokens are in circulation in the trading market. Only after the asset-backed tokens generated against the asset are redeemed (burned), the corresponding physical asset or commodity can be made available for physical use again. Otherwise, the concept of asset-backed tokens is violated.

Through tokenization, these assets can have various advantages (high liquidity, democratization, fractional ownership). Since blockchain digital records in the physical world are “immutable,” keeping asset-backed tokens on public blockchains is preferred for transparency and trust. Thus, the entry and exit of supervised physical assets can be more easily monitored and transparently viewed by everyone.



Asset-backed tokens can be stablecoins (such as USDT-Tether, USDC), real estate tokens, tokens based on physical artworks, and commodity tokens produced against commodities. The Cropto Tokens produced by the AGROS (Agriculture Operating System) software are asset-backed tokens representing main agricultural products such as wheat, barley, corn, and hazelnuts, and belong to the “commodity token” class. Additionally, Cropto Tokens, along with the main agricultural products, wheat, barley, corn, and hazelnuts, constitute an Agriculture Token family consisting of 21 tokens, including tokenization of 16 more agricultural products, together with a Governance Token.

Developed by AgriFintech Financial Technologies Inc., our goal with the AGROS (Agriculture Operating System) protocol is to bring agricultural commodity-based assets to the blockchain to create “commodity tokens,” thereby creating a new global market and adapting the transparent and decentralized value transfer enabled by blockchain technology to the agricultural industry. Agricultural commodities are not only the most essential food consumption items for people but also a vital product group with significant strategic importance, where their trade or prevention of trade between countries can be considered a cause for war.

EXECUTIVE SUMMARY

In the first stage, the tokenization of agricultural assets, i.e., transferring the physical commodity's record to a digital environment and writing it onto the blockchain, is aimed for.

In doing so, partnerships will be formed with widely used Safe, Auditable, Reliable Warehousing Systems worldwide to first ensure the physical supply of the agricultural commodity in warehouses before tokenization. The commodity stored in trusted warehouses and recorded in central databases is liberated by being brought into the decentralized blockchain environment.

Agricultural commodities stored in trusted warehouses and proven with Warehouse Reserve Certificates are transformed into "commodity tokens" on the blockchain using the AGROS protocol with multisignatures. Therefore, these tokens can be exchanged and traded on DeFi (Decentralized Finance) systems and DEX (Decentralized Exchange) or CEX (Centralized Exchange) platforms, both in decentralized and traditional centralized exchanges.

The use of "commodity tokens" based on real physical assets will not only contribute to creating new and better opportunities in the agricultural trading world but will also generally enhance the blockchain ecosystem and decentralized finance (DeFi).

Common Abbreviations

AGROS
Abbreviation for Agriculture Operating System, representing the software where Cropto Tokens are produced.

CROW
Cropto Wheat Token
1 CROW tokenized in the AGROS System represents 1 kg of wheat.

CROB
Cropto Barley Token
1 CROB tokenized in the AGROS System represents 1 kg of barley.

CROC
Cropto Corn Token
1 CROC tokenized in the AGROS System represents 1 kg of corn.

CROF
Cropto Hazelnut Token
1 CROF tokenized in the AGROS System represents 1 kg of hazelnuts.

CHAPTER 02

ASSET-BACKED TOKENS

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ASSET-BACKED TOKENS

Asseet-Backed Token

The concept of asset-backed tokens differs from the values offered by existing blockchain products and projects. Currently available blockchain tokens only symbolize a value or usage right recorded on blockchains. However, asset-backed tokens represent assets that have a real-world value traded in established markets for years, hence they are not subject to the volatile effects experienced by over-the-chain assets like Bitcoin and Ether.

Various types of stablecoins use different collateralization mechanisms to maintain price stability in the trading of coins or tokens perceived as highly volatile on blockchains. Some are pegged to fiat currencies like the dollar and euro, while others are indexed to commodities, primarily precious metals like gold or silver. However, the counterparts of stablecoins based on precious metals are questioned by markets due to the susceptibility of national fiat currencies, greatly affected by financial crises, and highly manipulated by major banks.

In contrast, commodity-backed tokens, which we will discuss the production and exchange of in this Whitepaper, are assets truly backed by physical commodities or the collateral behind them. Therefore, they offer a stronger value proposition compared to fiat currencies in the market.

The term “asset-backed token” is commonly used in English. Stablecoins, known as “stabil coins” in Turkish and pegged to national currencies like the dollar, euro, and lira, can also be considered as asset-backed tokens. However, these stablecoins lack a physical asset backing, relying instead on reputation. Hence, they steadily lose value over time and are affected by crises and the worthlessness of the paper currencies they are pegged to.

We can create a similar impact on crypto exchanges with commodity-backed tokens as with stablecoins. Therefore, with the AGROS protocol, we expect commodity-backed tokens, which will be produced for the first time in a wide region ranging from Turkey and Europe to Asia, to exist alongside stablecoins. Just as stablecoins like USDT (Tether) and USDC can be used as a pair in the trading of cryptocurrencies (coins or tokens) (e.g., BTC/USDT, Ether/USDC), commodity-based tokens (such as Cropto Wheat Token, Cropto Barley Token, Cropto Corn Token, Cropto Hazelnut Token) also have the potential to be used as pairs.

Additionally, just as stablecoins are seen by investors as a safe haven against the volatile market prices of cryptocurrencies (coins or tokens) (like USDT, USDC), commodity-backed tokens also have the potential to serve as a safe haven for price stability due to the products and commodities they store or hold.

Comparison of Commodity Tokens and Stablecoins

Let's compare fiat-backed stablecoins with commodity-backed commodity tokens such as wheat, corn, barley, and hazelnuts:

1. Fiat-backed stablecoins are easier to understand. These are not actually "coins" but are typically tokens registered in the ERC-20 token standard on Layer-1 blockchains like Ethereum. They maintain a direct relationship with fiat currencies (such as the dollar, euro, etc.) and are theoretically backed 1:1 by fiat currencies.

Commodity tokens, on the other hand, are usually fungible tokens issued in the ERC-20 standard on Layer-1 blockchains like Ethereum, and they are backed by physical commodity records (e.g., Warehouse Reserve Certificates, etc.), representing physical agricultural assets.

2. Stablecoins, even if they have zero volatility, are collateralized by deposits in bank accounts, which brings a high level of centralization. However, trusting centralized entities that safeguard these deposits is necessary. While some stablecoins like USDT are partially backed by the USD fiat currency, a significant portion of their reserves is backed by financial papers, government bonds, corporate bonds, and even some commodities. This sometimes makes it difficult to perceive these stablecoins as safe havens. For example, the USDC stablecoin experienced a significant loss in value when some of its collateral assets were held in a bankrupt bank, causing the direct peg to USD to be severed.

   In summary, while fiat-backed stablecoins offer easier understanding and immediate liquidity, commodity-backed commodity tokens provide a more tangible backing with physical assets. However, both types of tokens have their own risks and challenges, including issues related to centralization and collateralization.

   Commodity-based commodity tokens, excluding special circumstances like war, do not exhibit similar volatile movements as fiat-backed stablecoins. Additionally, as with fiat currencies, situations where central banks of governments print money without backing during crises are not possible for agricultural products. Agricultural products typically have established markets and trends over the years. Prices often fluctuate based on seasonal factors such as rainfall or drought. The AGROS protocol ensures that issuing commodity tokens without corresponding physical assets, such as wheat, is out of the question. This is because auditing this process is quite straightforward.

3. Despite the drawbacks and difficulties in perception of decentralization described in the first two points, one positive aspect of stablecoins is their recognition by the general public and their indexing to fiat currencies commonly used in economic life. This makes it easier to

explain stablecoins to citizens. However, commodities, especially agricultural commodities, are often perceived as exotic assets by the general public and are not seen as investment instruments or mediums of exchange. This situation, namely the lack of democratization in the market, is not a cause but a consequence. Cropto Agriculture Tokens produced by AGROS aim to address these issues by tokenizing agricultural products, thereby transforming agricultural products into a digital investment vehicle for ordinary citizens.

4. Asset-backed tokens require mandatory audits to confirm blockchain records and the corresponding supervised assets. While stablecoins are asset tokens produced against fiat (fiat) currencies, verifying their counterparts is quite challenging. External audits only monitor a specific moment in time, and it is impossible to check what happens between the reporting of such audits.

   Auditing Cropto Agriculture Tokens produced in AGROS is straightforward. The unique Warehouse Reserve Certificate corresponding to all minted or burned tokens, the production or burning moment, the number and identity of the employees permitted for production or burning, etc., are all clearly defined and easily auditable. Information on which product's Warehouse Reserve Certificate was used for token minting or which tokens correspond to the redemption of which Warehouse Reserve Certificate can be easily checked in real-time on the AGROS system. Additionally, records of tokens produced or redeemed using the AGROS protocol are easily observable on the blockchain.

5. Finally, fiat-backed stablecoins are subject to external factors dependent on global geopolitics and regulations of every country and government. In contrast, reliance on political external factors is lower in Cropto Agriculture Tokens. Although the Ukrainian-Russian war in February 2022 had an impact on grain prices, especially wheat, which is a rare geopolitical event, price fluctuations in wheat and other agricultural products quickly returned to their traditional balance.

Based on all these points, we can conclude the following regarding fiat-backed stablecoins: The positive and negative features listed above have already integrated stable cryptocurrencies into our lives. Currently, stablecoins are heavily traded on both CEX, centralized, and DEX, decentralized, exchanges.

For example, as of the writing of this Whitepaper, the 24-hour trading volume of USDT (Tether) is approximately 66 billion USD*. The second-ranked stablecoin, USDC, has circulated around 45 billion USD* within the same time frame.

*The amounts mentioned here do not reflect the total volume traded daily, as the same USDT may change hands multiple times, even 3-4 times or more within a single day.

ASSET-BACKED TOKENS

Commodity-backed tokens can be structurally defined as asset-backed tokens like stablecoins, but instead of fiat assets, they are backed by physical assets and commodities. Therefore, commodity-backed tokens have the potential to offer additional advantages.

The next section will delve into the potential use cases of commodity-backed tokens.



CHAPTER 03

WHY ARE COMMODITY BASED TOKENS NECESSARY?

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WHY ARE COMMODITY-BASED TOKENS NECESSARY?

In Turkey and around the world, specialized commodity exchanges are generally used by large investors for agricultural product trading, and they are either not open to or require a significant application process for ordinary citizens to invest in and use. For example, in the United States (US) and the Americas, financial derivatives exchanges operated primarily by CME Group Inc. in Chicago, such as the Chicago Mercantile Exchange, Chicago Board of Trade, New York Mercantile Exchange, and The Commodity Exchange, are used for trading agricultural products grown in the Americas. Additionally, the Commodity Futures Trading Commission (CFTC), established in 1974 as an independent federal agency of the US government, stands out as an agency regulating and overseeing grain trading and related investment instruments in the US. Many laws have been enacted, especially concerning the regulation and oversight of grain trading, leading up to the establishment of the CFTC dating back to 1922. Similarly, in advanced countries of the European Union (EU) such as the United Kingdom, Germany, and France, similar authorities exist, and similar centralized agricultural commodity exchanges are operational.

In Turkey, for agricultural product trading, major commodities such as wheat, corn, barley, hazelnut, rice, rye, lentil, dried grapes, olives, and cotton are stored in government-controlled and licensed warehouses according to certain quality standards. These agricultural products are stored in these specialized warehouses under government supervision and insurance, and trading is made possible on a centralized commodity exchange. Similar structures and processes have counterparts in the US and some EU countries. Thus, the storage of agricultural products in specialized warehouses after harvest and trading during this period is facilitated. Commodity exchanges, designed with centralized technologies before blockchain technology, are not very accessible to ordinary citizens for investing in agricultural products, or they require a challenging application process. Especially licensed brokers can conduct transactions on such commodity exchanges. Investors or institutions in these centralized exchanges facilitating agricultural product trading are mostly high financially powerful large firms, banks and securities firms owned by banks, or government-owned offices or regulatory authorities regulating market prices. Therefore, the democratization of agricultural product trading through decentralized structures, opportunities, and self-governing organizations brought about by blockchain technology, spreading to all sectors of society at the micro level, and allowing agricultural product prices to be determined by the ultimate consumer, the citizens, is an important paradigm shift for our planet. It is inevitable that a disruptive alternative in a decentralized structure, similar to what cryptocurrency markets have done to fiat currencies and traditional centralized exchanges, will emerge against the old and outdated centralized structures and approaches as a system and paradigm.

Centralized commodity exchanges, which currently have a limited number of investors and fail to attract capital from a wide enough audience, lead to the absence of real, fair, and equitable prices for agricultural products reaching our tables due to their structure open to

a limited number of investors. As market conditions become more challenging, the existing structure allows a limited number of banks and capital owners to purchase products cheaply in high volumes with cash and profit significantly from the price difference, leaving farmers and other producers struggling to find money. However, increasing the number of investors and spreading access to capital to the base through democratization will enable farmers and producers to access a wider portfolio.

Especially Turkey and neighboring countries (Russia, Egypt, Kazakhstan, Ukraine, etc.) are somewhat the grain (wheat, corn, barley, etc.) farmers and warehouses of the world. Being the place where humanity began its agricultural activities and the homeland of wheat, especially redesigning the trade of agricultural products grown in Anatolia with decentralized structures and methods through blockchain technology and reaching a point where agricultural product trading can be done through Cropto Agricultural Tokens produced by the AGROS protocol, even by any person on the street, is an important point in human history. This decentralized structure also has the potential to provide significant services to regional countries in particular.

Since 2016, unlike various coins and tokens witnessed in crypto asset platforms and markets, commodity tokens backed by real physical products, starting from 2023, have become a crypto asset category poised to become widespread worldwide. The asset-backed physical token market has a rapidly growing potential in the coming years with the widespread tokenization of physical assets. This is because assets or products can have many more advantages after being tokenized than they did before.

Individuals can store some or all of these tokens in their blockchain wallets depending on their needs and preferences and can trade them for another asset or token whenever they want. All of these transactions can be done outside of banks and traditional centralized exchanges under blockchain technology structures.

Cropto Agricultural Tokens, through the AGROS protocol, are a pioneering initiative in Turkey and globally for the production and issuance of crypto tokens based on agricultural assets such as wheat, barley, corn, and hazelnuts. The purpose of this Whitepaper is to explain the processes of producing, issuing, and offering tokens for agricultural products based on physical commodities recorded in reliable storage facilities under the Cropto umbrella and brand by AGROS through a dedicated crypto asset platform for this category. Wheat, barley, corn, hazelnuts, and subsequently other significant agricultural commodities or products (sunflower seeds, rye, rice, beans, flaxseed, shelled pistachios, dried apricots, lentils, chickpeas, cotton, soybeans, soybean meal, soybean oil, triticale, oats, olives) are already tokenized and available for trading within the AGROS system platform. For example, the Cropto Wheat Token (CROW) symbolizes a token representing 1 kg of wheat, while the Cropto Hazelnut Token (CROF) represents 1 kg of physical hazelnuts stored in the warehouses.

WHY ARE COMMODITY-BASED TOKENS NECESSARY?

With the AGROS platform we have developed, not only in Turkey but also in our region and even worldwide, an ERC-20 token can be issued for each kilogram of agricultural products such as wheat, barley, and corn stored in trusted warehouses, and recorded on the blockchain in an irreversible/immutable manner. Cropto Agricultural Tokens produced by AGROS are reliable and auditable because they are generated in a transparent and continuously auditable system.

Expanding beyond Turkey, the Cropto Agricultural Tokens produced and issued by the AGROS system, based on the agricultural products and Warehouse Receipts in affiliated trusted warehouses, meet with those who want to accumulate and invest in agricultural commodities through centralized and decentralized reliable cryptocurrency exchanges that operate 24/7. To prevent human error and individual malice in the AGROS system, all transactions are approved and sealed with the multiple signatures of authorized users.

The fundamental problems solved by AGROS-produced Cropto Agricultural Tokens and their solutions are outlined in the table below:

SECTORAL PROBLEM	CROPTO SOLUTION PROPOSAL
Limited Trading Hours 24/7	Open trading platform and trading pairs
Limited Commodity Diversity	Cropto Agriculture Token Standard
High Entry Costs	Democratization of trading with Commodity Tokens
Inability to Trade Futures	Ability to trade futures with Commodity Tokens
Low Liquidity	Opportunity to find high liquidity from end-users

24/7 Open Trading Platform and Trading Pairs
With the convenience brought by tokenization, tokens indexed to various commodities such as wheat, barley, corn, and hazelnuts will be tradable 24/7 on both centralized and decentralized cryptocurrency exchanges. These commodity tokens can easily be bought and sold using price stable coins like USDT, USDC, TRYC, etc., as well as cryptocurrencies like BTC and ETH.

Trading pairs such as CROW (Cropto Wheat Token)/USDT and CROW/TRY will enable round-the-clock trading for each agricultural commodity token. Additionally, trading pairs like BTC/CROW and ETH/CROW will allow commodities tokens to be traded similarly to stablecoins with Bitcoin and Ether.

WHY ARE COMMODITY-BASED TOKENS NECESSARY?

Cropto Agricultural Token Standard
AgriFintech Financial Technologies Inc., through its AGROS platform, establishes a standardized framework for each type and class of agricultural product with its Cropto Agricultural Tokens. This ensures that instead of different types and classes of agricultural products, trading is conducted with a single standard for each agricultural product. For example, a user purchasing Cropto Wheat Token (CROW) represents a single standard for wheat tokens, simplifying trading. AgriFintech ensures that the agricultural products supplied as underlying assets for Cropto Agricultural Tokens and stored in affiliated secure warehouses meet a certain quality standard. Commodities falling below this standard cannot enter the system or be tokenized.

Democratization of Commodity Trading
Users who open accounts on decentralized (DEX) and centralized (CEX) exchanges can buy any amount of tokens they desire. Users do not need to have any knowledge about the wheat and its subtypes stored in the warehouses. Investors and customers do not need to physically see the products, go to the warehouse, or purchase products from the warehouse. Users can choose not to buy large amounts but instead invest in modest quantities permitted by the platform. Thus, anyone from any region of the world can easily invest in agricultural products through cryptocurrency exchanges where commodity tokens are listed and traded 24/7.

Futures transactions will be possible through commodity tokens
Over time, a special “Wheat Token” spot price will emerge on cryptocurrency exchanges where commodity tokens are bought and sold, focusing on trade routes in the Black Sea and Eastern Mediterranean regions. In addition, special “Futures” contracts for wheat and agricultural commodities specific to the region can be traded on these exchanges for the trade of physical wheat to more distant countries. Through smart contracts programmed for these futures contracts, the formation of future prices for tokens will also be facilitated. In other words, smart contracts can now be designed on the blockchain for futures contracts that were traditionally only on paper. These smart contracts will bring along other opportunities as well.

Opportunity to find high liquidity
In addition to being easily accessible on cryptocurrency exchanges, high liquidity can be achieved by consolidating various products, such as wheat, barley, or corn, into a single parity. As a result, with a sufficient circulation of agricultural commodity tokens, these tokens will be available for use in both domestic and international trade.

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ADDITIONAL BENEFITS

Democratization of agricultural product investment
In the near future, agricultural commodity tokens will accelerate and facilitate the increasing trade of agricultural products among regional countries and globally. Cryptocurrency exchanges generally allow token trading for every user who undergoes identity verification checks (KYC - Know Your Customer). Some decentralized cryptocurrency exchanges (DEX) and some centralized cryptocurrency exchanges (CEX) may allow token trading for users anonymously without the need for KYC procedures. Therefore, through commodity tokens listed on cryptocurrency exchanges, the participation of a wide range of participants in agricultural product trade and investment can be facilitated regionally and globally.

Agricultural Product Trading Agreements
Agricultural product trading agreements can be made using commodity tokens. DEX and CEX exchanges can be used as third-party escrows, and conditional smart contracts can be written between companies. Following this, companies will soon be able to write “futures” contracts using commodity tokens as well. Futures contracts are forward trading agreements. These contracts are also crucial for monitoring price changes during the transportation process, especially in the grain trade where travel and shipping can sometimes take months. Therefore, the development of futures contracts is necessary and critical in grain trade. Due to the benefits provided by commodity tokens, users can prioritize access to the desired agricultural products by owning the corresponding tokens or exercise preemptive rights compared to other buyers.

Facilitating Domestic and International Trade
Currently, wheat produced in Edirne may not be compatible in terms of commercial trade with that produced in Diyarbakır, and they cannot be exchanged with each other. The same situation applies to a variety of wheat produced in Russia and a variety produced in any region of Turkey. By using Cropto Agricultural Tokens, such incompatibility can be eliminated, for example, by using the Cropto Wheat Standard. Additionally, when commodity tokens are traded on cryptocurrency exchanges, domestic trade will be opened up to widespread user access, similar to international trade.

Usable as Collateral
Once both wheat and other agricultural commodity tokens are tokenized and traded on cryptocurrency exchanges, they can be used as collateral between parties. A trader can use CROW (Cropto Wheat Token), CROB (Cropto Barley Token), CROC (Cropto Corn Token), or CROF (Cropto Hazelnut Token) tokens as collateral for another commodity or product they wish to purchase. Similarly, investors can provide various benefits to farmers, for example, by using commodity tokens and can individually extend credit.

CHAPTER 04

SYSTEM WORKFLOW AND STEPS

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OPERATING STEPS OF THE AGROS SYSTEM

The AGROS System consists of three main modules or panels:

Management Panel
The admin module where user roles and users are defined, token transfers between panels are approved, white/blacklists and approved/banned wallet addresses are defined, and critical reports can be generated.

Mill Panel
The mill panel acts as a kind of “Flour Mill” in the physical world, producing Cropto Tokens for the respective agricultural products based on certain product information from the “Deposit Reserve Documents” of the agricultural products stored in secure warehouses, “1 Token per kg”.

Market Panel
A module that serves as a bridge between the AGROS system and the outside world, where Cropto commodity token transfers are made to DEX and CEX cryptocurrency exchanges, and where necessary, commodity tokens are withdrawn from cryptocurrency exchanges back into the AGROS system.

Preparation steps before the Mill Panel where Cropto Commodity tokens are produced:

1. The process begins with the initial agricultural products (such as wheat, barley, corn, and hazelnuts) being purchased by AgriFintech Financial Technologies Inc. against an invoice and delivered to an independently contracted secure warehouse.

2. In the second step, quality tests of the received agricultural products are conducted within the warehouse premises by an independent laboratory or quality unit. Depending on the quality of the product, it is categorized into an appropriate quality category and stored under suitable conditions in the relevant section of the warehouse.

3. AgriFintech generates a “Warehouse Reserve Certificate’’ for the respective agricultural product, along with a unique ID and its specifications. This record establishes a digital entry in the AGROS database for the respective agricultural product.

4. At this point, the agricultural product (such as wheat, barley, corn, and hazelnuts) that will be converted into Cropto Tokens by AGROS is in the warehouse and has a digital identity with the “Warehouse Reserve Certificate’’

SYSTEM WORKFLOW AND STEPS

In addition to sourcing the relevant agricultural product from reliable markets, AgriFintech Financial Technologies Inc. can also purchase the agricultural products from global or local centralized exchanges where agricultural product trading is possible.

Now let's see the steps involved when the AGROS System comes into play:

1. AgriFintech Financial Technologies Inc., the owner and operator of the AGROS system, can purchase the relevant agricultural product registered in the contracted secure warehouse or buy products from the market and deliver them to contracted secure warehouses for storage on its behalf. Subsequently, AgriFintech creates the "Depo Rezerv Belgesi" (Warehouse Reserve Certificate) for the relevant agricultural product, which serves as its digital identity. The AGROS system retrieves the digital "Depo Rezerv Belgesi" of the respective agricultural product.

2. The obtained file is processed, and the data in the document is digitally scanned using OCR (Optical Character Recognition) technology.

3. The essential information from the scanned "Depo Rezerv Belgesi" file, converted into PDF format, is summarized and written into the blockchain in a digest form.

   For example, the "Product Code" field in the Depo Rezerv Belgesi such as W-B-001-100.000 acts as a summary of the Depo Rezerv Belgesi and is embedded into the smart contract in a readable format. In this example, this entry summarizes that the Wheat (W) product, based on the 1st Invoice (001), has been tokenized with a Depo Rezerv Belgesi for 100,000 kg (100 Tons) of product. This makes it easy for auditors to verify which Depo Rezerv Belgesi was tokenized at what time. Now, 100,000 CROW (Cropto Wheat Token), minted as tokens, have been created, with one token per kilogram, totaling exactly 100,000 tokens.

4. As the fourth step, when a CROW (Cropto Wheat Token) token that has been traded needs to be removed from the system, for example, if the product is to be sold to a customer abroad or if it needs to be withdrawn from the warehouse, the corresponding number of tokens must first be burned. This process, referred to as "burning" in technical terminology or "redemption" in old terminology, is carried out through the Mill Panel.

5. At the end of this process, after the sale and redemption of tokens, the corresponding amount of agricultural product (such as wheat, barley, corn, and hazelnuts) can be physically removed from the warehouse.

PHYSICAL PRODUCT DELIVERY

In the AGROS system, a user or a crypto asset investor who purchases Cropto Tokens through DEX or CEX cannot directly request physical product delivery by going to the relevant warehouse. Ownership of Cropto Tokens does not grant the right to directly receive physical products from warehouses. This is not allowed in the system.

On the other hand, a user residing anywhere in Turkey or the world can sell their Cropto Tokens to other users through DEX or CEX, or a crypto asset investor with 25 tons (25,000 kg) or more of agricultural products corresponding to 25,000 or more Cropto Tokens can apply to AgriFintech Financial Technologies Inc. (individual investors with identity information, and institutional investors with relevant documents containing company information) to request the relevant agricultural product against their Cropto Tokens. Subsequently, AgriFintech Financial Technologies Inc. delivers the “physical agricultural product represented by the relevant Cropto Tokens” from the relevant warehouses to the Cropto asset investor “in the presence of authorized representatives” and the Cropto Tokens are deposited into the AgriFintech crypto asset wallets by the Cropto investor requesting this transaction. AgriFintech may redeem (burn) the relevant Cropto Tokens deposited in the crypto asset wallets or may replenish the relevant amount of the agricultural product taken out of the warehouse and re-enter it into the warehouse; in this case, there is no need for the redemption (burn) process of the relevant Cropto Tokens. For the delivery of the physical agricultural product represented by the Cropto Tokens, AgriFintech requests the deposit of Cropto Tokens equivalent to 5% of the Cropto Tokens as the “transaction fee” from the Cropto investor. The delivery of the relevant agricultural product represented by the Cropto Tokens to the Cropto investor and the related transactions can be carried out from the contracted warehouses storing Cropto Agricultural products within the borders of Turkey. AgriFintech has the right to reject applications and requests for physical product delivery in exchange for Cropto Tokens from individual or institutional investors subject to legal sanctions.

AgriFintech carried out the “Physical Product Delivery in Exchange for Cropto Token” transaction to a Cropto Investor for the first time on March 5, 2024. The relevant “Physical Product Delivery Report in Exchange for Cropto Token” can be accessed from the “Reports” and “Transparency” sections on our website https://www.cropto.io/en/cropto and all process steps of the relevant transaction can be examined in detail.

The redemption and physical product delivery processes for agricultural products (such as wheat, barley, corn, and hazelnuts) corresponding to the Tokens registered in the system are currently under the management and supervision of AgriFintech Financial Technologies Inc. After the widespread adoption of the system, such transactions may be conducted by other stakeholders in the future.

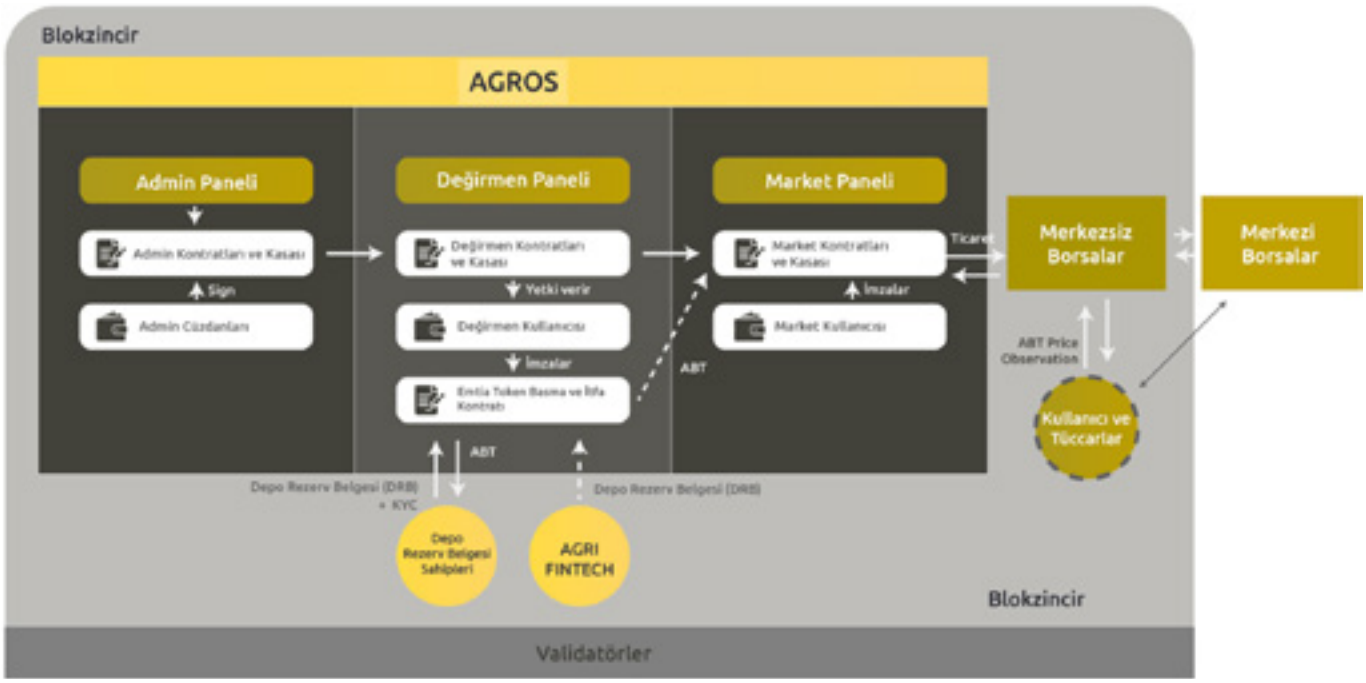
CHAPTER 05

AGROS TECHNOLOGY PLATFORM

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OVERVIEW OF THE AGROS TECHNOLOGY PLATFORM

AGROS, developed and operated by AgriFintech Financial Technologies Inc., is the name of the system where Cropto Tokens indexed to agricultural commodities are defined, produced, and managed. It is a platform name created by adding the suffix “OS,” which stands for “Operating System,” to the first three letters of the word “Agriculture,” forming “AGR.” Additionally, the agricultural commodity tokens produced through the AGROS platform are registered under the trademark name Cropto. This name is derived from the combination of the English word “CROP,” meaning “product” or “yield,” and the first two letters of the word “TOKEN.” In the AGROS platform, Crop Tokens for wheat have the short code CROW, for barley CROB, for corn CROC, and for hazelnut CROF are traded in the markets. This section describes the screens used by the authorized personnel running AGROS operations.



As seen in the diagram above, AGROS consists of three main panels/modules to be used by users with three types of user roles: “Administrator Panel,” “Mill Panel,” and “Market Panel.”

Commodity tokens generated by authorized users within the AGROS system and to be transferred to cryptocurrency exchanges can be bought and sold by all users registered with the cryptocurrency exchanges where the tokens are listed and traded. Transactions for Crop Wheat Token (CROW), Crop Barley Token (CROB), Crop Corn Token (CROC), Crop Hazelnut Token (CROF), and other Crop Tokens made by investors on DEX and CEX cryptocurrency exchanges are conducted on the blockchain network where the tokens are generated.

AGROS TECHNOLOGY PLATFORM

In the future, AGROS system is structured as an alternative agricultural market operating on the blockchain. The technological infrastructure provided by AGROS will offer users access to the agricultural market through web3 technology. The main difference from a centralized agricultural market is that individuals and institutions using the system will be able to start trading all commodity tokens without the need for an intermediary bank account in addition to having a blockchain wallet compatible with the AGROS system. These individuals will be able to start processing and trading within seconds through stablecoins and compatible crypto coins/ tokens in their digital wallets.

Management Panel

The admin panel of the AGROS system can only be used by users authorized by AgriFintech Financial Technologies Inc. These authorized users have the right to define all blockchain wallets that have the authority to make transactions in the system.



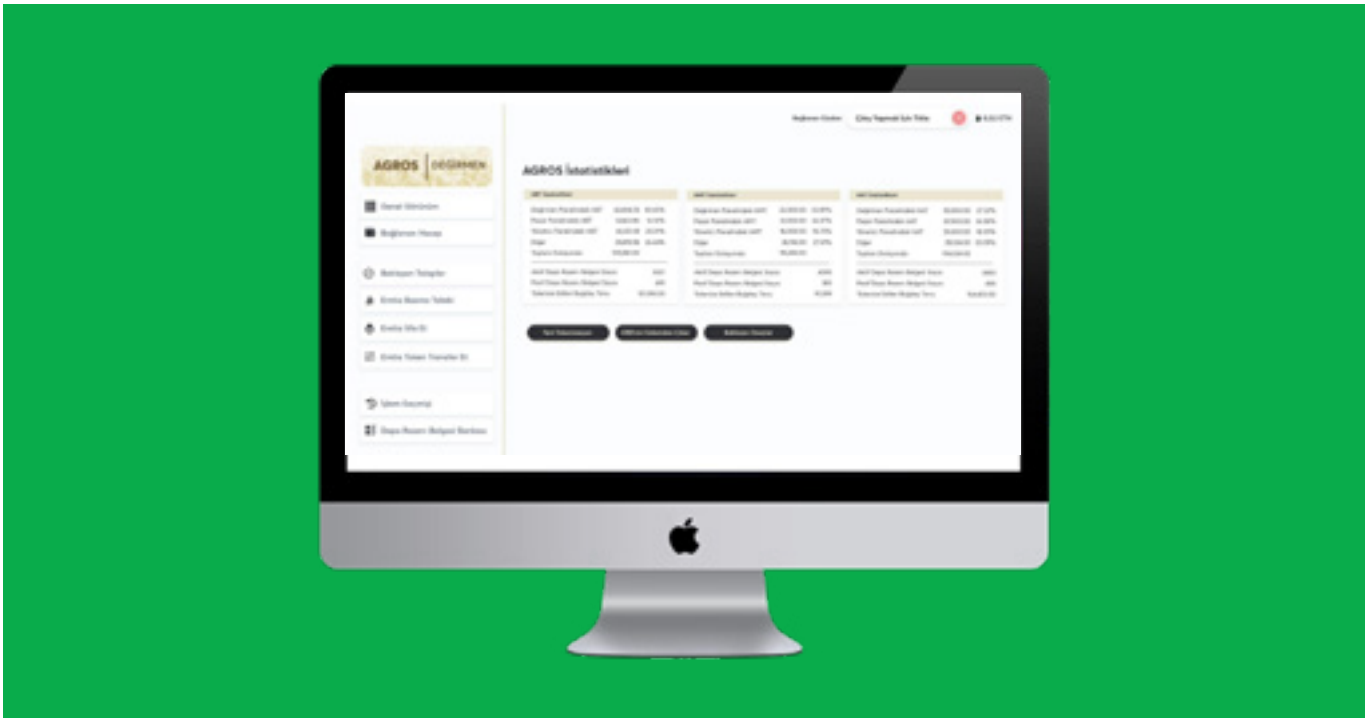
Mill Panel

In this panel, tokens that are based on physical commodities are minted, i.e., issued by users authorized by the management panel. Each minted token is directly linked to a “Warehouse Reserve Document” that it represents.

The general appearance of the AGROS milling panel is shown below. The system, installed on the servers of AgriFintech Financial Technologies Inc., allows milling users who have been granted the right by the admin to enter data into the system, to perform minting and burning operations with Cropto Tokens such as CROW (Cropto Wheat Token), CROB (Cropto Barley Token), CROC (Cropto Corn Token), CROF (Cropto Hazelnut Token), and other Cropto Tokens. Smart contracts defined in the system are utilized by Authorized Wallet owners managed through the Admin Panel. Transactions related to these smart contracts are conducted by the blockchain wallet, the beginning of whose address is shown in the “Connected Wallet” section in the figure.

As explained in the previous section, in response to scanned digital “Warehouse Reserve Documents,” Cropto Wheat Token (CROW) is produced for wheat, Cropto Barley Token (CROB) for barley, Cropto Corn Token (CROC) for corn, Cropto Hazelnut Token (CROF) for hazelnuts, and other Cropto Tokens for other products.

From the panel screen shown below, AGROS statistics can be monitored, and at any given moment, all tokens minted within the system can be collectively reported and viewed.



Market Panel

In this panel, commodity-indexed tokens can be transferred by users authorized by the management panel to DEX (Decentralized Exchange) or CEX (Centralized Exchange) markets for trading, or tokens can be withdrawn from cryptocurrency exchanges.

Decentralized exchanges are referred to as DEX and operate according to DeFi (Decentralized Finance) standards. The trading of tokens can also be done on CEXs, i.e., centralized cryptocurrency exchanges. There is no structure within the system to prevent this. Once commodity-based tokens such as CROW, CROB, CROC, and CROF, etc., are introduced to the market through the “Market Panel,” they begin their own lifecycle. The source of these tokens will remain as the blockchain, but they can be transferred to different users’ blockchain wallets daily. The total number of tokens will increase as long as they are not redeemed, and as the supply of the underlying asset, i.e., the agricultural product, increases, due to their asset-backed nature. They can continuously be monitored through smart contracts. When a token is redeemed (burned), it means it is no longer available for trading. For example, the redemption of tokens corresponding to a ton of wheat occurs within the system flow if it is decided to remove the wheat from the warehouse and, for instance, convert it into flour for food. For tokens to be redeemed (burned), a “Market Panel” user withdraws the relevant amount of tokens from the cryptocurrency exchanges where they are listed back to the “AGROS Market Panel Wallet,” and then transfers the tokens to the “Mill Panel” wallet, where the redemption process is carried out by the “Mill Panel User.”



While designing the AGROS platform, a design in line with the philosophy of blockchain has been made. Although the immutable nature of the blockchain offers a striking advantage in terms of auditability and transparency, protocols have been established for potential human-caused or machine-caused errors.

The audit of the blockchain software, i.e., the security audit, will be regularly conducted by CertiK Security Assessment. The initial audit report can be accessed through our website https://www.cropto.io/en/cropto, from the “Reports” section at the top panel and the “Transparency” section at the bottom.

Moreover, in this structure where all transactions are secured through multi-blockchain signatures, wallet owners who approve or reject transactions can be viewed. Signature authorities with different authorization levels determined for all transactions are found on the blockchain. This minimizes human-caused errors. A transaction cannot be reversed or deleted, but a reverse transaction can be made for cancellation. For example, excess produced CROW can be destroyed in a subsequent transaction. All these transactions are indelible and visible to everyone due to the nature of the blockchain software.

*This example is hypothetical because precautions against such production errors have been taken in the AGROS protocol. Before commodity token production, checks are made, and Warehouse Reserve Document data is verified digitally and analogously. Moreover, the production of multiple commodity tokens against the same Warehouse Reserve Document is programmatically prevented.

CHAPTER 06

CROPTO FOUNDATION GOALS

cropto

CROPTO FOUNDATION GOALS

The goals of the Cropto foundation are summarized in the table below. Firstly, the primary aim is the operation of a democratic network and the accessibility of the Cropto commodity tokens marketplace by everyone 24/7. The target is open and transparent blockchain-based networks instead of centralized and closed structures that currently serve only a limited number of customers.

As a second goal, trade among trusted partners is desired. To achieve this, we ensure that every stakeholder, from trusted warehouses in the commodity storage business to our end users, is either familiar or referenced. We will ensure that the final users, i.e., commodity token investors, have gone through the process we call KYC, or we will adhere to the rules of the exchanges we have agreements with.

It is important that the token records to be listed on open and transparent networks as a result of the commodity tokenization process are made accessible in a democratic manner by all parties. One of our main goals is for Cropto Tokens to be accessible and sellable in decentralized markets operating on the blockchain, instead of centralized systems that serve only specific institutions and individuals.

An Open and Transparent Network
Avoiding private networks, closed exchanges, and centralized structures.

Trusted Partners
Trade occurring among partners we know and trust.

Commodity Tokenization
Ensuring that tokens representing commodities are accessible to all parties.

DeFi Standarts
Eliminating market manipulation and other operational risks.

Elimination of market manipulation and operational risks, including security, can be achieved as a result of the international asset token and the same DeFi standards being valid worldwide. Truly global marketplaces can be operated with the recognition of these standards by all stakeholder institutions.

What are Cropto Agricultural Tokens?

Cropto Agricultural Tokens consist of the main four tokens created through the tokenization of Wheat, Barley, Corn, which constitute more than 90% of the world's grain trade, and Hazelnut, one of Turkey's most important agricultural products, accounting for approximately 70% of the world's hazelnut production, as indicated in the initial phase below. Supplies for these four main Cropto Tokens can be accessed through our website https://https://www.cropto.io/en/cropto, and due to their asset-backed nature, their maximum supply is unlimited. Contract addresses can be queried on the Polygon blockchain network (https://polygonscan.com) for all their details. Additionally, the Cropto "Proof of Reserve Audit Report" can also be accessed from the "Reports" and "Transparency" sections on our website.

The tokens listed below are members of the Cropto Agriculture Tokens family, and their supplies have been initially created symbolically at 1 (one) each, and smart contracts have been deployed on the blockchain network, verified, and contract addresses can be queried on the Polygon blockchain network (https://polygonscan.com) to access all information. Cropto Tokens listed 5-20 rows below are asset-backed Agricultural commodity Tokens, while AgriFintech reserves the right for the relevant Cropto Tokens listed 5-20 rows below to display the assets in its bank and crypto asset accounts as the underlying asset for the relevant Cropto Tokens in the amount equivalent to the monetary value of the relevant supply against the risk that the relevant agricultural product may not be supplied from the markets on favorable terms and in a timely manner. Max. supplies of those Cropto Tokens are unlimited as well. The Cropto Utility + Governance Token, listed in the 21st row, is designed as the utility and governance Token of the Cropto project and brand.

CROPTO TOKENS	CODE	SMART CONTRACT ADRESS
1. Cropto Wheat Token	CROW	0x0Da0BD2f57A27A70665D53db4eA71E1f26F77a46
2. Cropto Barley Token	CROB	0xC3211F7Eb806E916d54A2a166Fc36188cffDe25B
3. Cropto Corn Token	CROC	0x0735fA49eB7D9dDF3e4D9A9F01229627F67632A1
4. Cropto Hazelnut Token	CROF	0xA9C992952c2090A51506C4f3636c1320f8FA93fa
5. Cropto Sunflower Token	CROA	0x21c2b762540044f1e0b8b8c310377007cc92001e
6. Cropto Chickpeas Token	CRON	0xb6C79b4ab0A58718BeE010cDfd88Ae54C16A95e8
7. Cropto Rye Token	CROV	0x0EF04217D8144Fb7BBDF133a5f51efE06f61615E
8. Cropto Soybean Token	CROS	0x2a01d77A5b300cB0353dB4eBaf89899373E00b8E

9. Cropto Rice Token	CROR	0x283Fd1A493c8602f1AA8b36fb54B5Bd06c575629
10. Cropto Cotton Token	CROK	0x40ff40E080394612f8D4530BA3927b45b1204e40
11. Cropto Olive Token	CROO	0xBBAf9B5D36073C375ACC1f62c7b53954b11B3787
12. Cropto Lentil Token	CROL	0xbB53418fe349E285e20c2defD40Eaa0cb7ef5db3
13. Cropto Triticale Token	CROT	0xEdA72489b9CA7Ef5D59a9B0618B594C19d1ffe22
14. Cropto Oat Token	CROY	0x9E31Be2378AEFC5B7C0dF2842A67F2F38140AfA8
15. Cropto Bean Token	CROH	0xa5934978F7E78B8c9E77da11366ddabC26564E31
16. Cropto Flaxseed Token	CROX	0xA5f857A744fd4b22c97ac0917c240c71A29305a1
17. Cropto Pistachio Token	CROG	0x3a73578e2b75B906738B00E0CAF3d754079c5Cef
18. Cropto Dried Apricots Token	CROD	0x07D9fF1f953E3f2FD25A88870Ad98FB8C041C599
19. Cropto Soy Oil Token	CROZ	0x6945462EDd2760d30706340A4e07784a77DB93EC
20. Cropto Soy Meal Token	CROM	0xf1e24c88e46CF17d96FEB70103D068c7911c9bb6
21. CropToken Cropto Utility + Governance Token	CROP	The short code tokenized in the AGROS System, named CROP, stands for Cropto Utility + Governance Token, which enables some utilities for the Cropto investors and governs the Cropto project and brand. Its maximum supply is 55,555,555 tokens. Cropto investors holding more than 10% of the circulating CROP supply can make proposals related to the Cropto project and brand. These proposals are evaluated by the AgriFintech Board of Directors and can be accepted by a majority vote.

CHAPTER 07

CROPTO REVENUE MODEL

cropto

CROPTO REVENUE MODEL

The primary revenue model of the Cropto commodity token system is the commissions taken from transactions made on DEX and CEX exchanges.

In the first quarter of 2024, a decentralized agricultural products crypto exchange named Cropto DEX will be established and operated by AgriFintech company. It will perhaps be the first DeFi Agricultural Exchange in the world, where regionally and then globally, transactions of tokenized commodity-based products can be made. The exchange's revenues will be based on the commissions taken from transactions.

Additionally, as will be seen in the next section's "Roadmap," the establishment of a DAO with an international structure, Cropto DAO, is targeted for the near future, in the second quarter of 2024. A Cropto Agricultural Foundation will also be established in our country to accompany the Cropto DAO.

DAO stands for Decentralized Autonomous Organization. This term, meaning a decentralized autonomous organization, refers to a new type of cooperative and foundation structure where both the entity and its stakeholders are registered on the blockchain.

CHAPTER 08

CROPTO ROADMAP

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CROPTO ROADMAP

Q3 2022	• Start of the Cropto Project • Analysis and Conceptual Architecture Design
Q4 2022	• Development of AGROS Protocol Contracts • Development of CROW, CROB, CROC Contracts
Q1 2023	• First production of CROW, CROB, CROC and Completion of AGROS Completion of the Whitepaper Document • Receipt of the Certik Security Assessment Report
Q2 2023	• Preparation of the Cropto.io Website • Completion of Cropto Corporate Identity Work • Creation of Cropto Social Media Channels • Establishment of AgriFintech Financial Technologies Inc.
Q3 2023	• DEX Listing: On UniSwap • Expansion of Cropto Token Trading Alongside Marketing Activities
Q4 2023	• Official launch and introduction of Cropto Agricultural Tokens • CEX Listing: Listing of CROW, CROB, CROC, CROF Tokens • Completion of the Design and Development of Cropto Tokens for Other Agricultural Products (such as Rice, Soy, Olives, Cotton) • Start of the Agricultural Commodity Crypto Exchange CroptoDEX Ver.1 Project, Analysis, and Conceptual Architecture Design
Q1 2024	• New CEX Listing: Listing of CROW, CROB, CROC, CROF Tokens • DEX Listing of Other Cropto Agricultural Tokens on Uniswap
Q2-3 2024	• Completion of the Development of Agricultural Commodity Crypto Exchange CroptoDEX Ver.1 • Promotional Activities for CroptoDEX Ver.1 • Design and Development of Cropto DAO and Cropto Governance Token
Q4 2024	• Establishment of Cropto Agricultural Foundation

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