



# Information Memorandum

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# EXECUTIVE SUMMARY

## Our Mission

Our mission is to create an organized decentralized marketplace for farmers in developing countries, where buyers and sellers come together to trade, assured of origin, quality, quantity, payment, and delivery.

We are creating a blockchain based platform for agriculture business to facilitate efficient issuance, buying, and selling of commodities in a transparent manner. This helps improve accountability while dramatically reducing time and costs. Our goal is to provide farmers in developing countries access to wider markets and make commodities trading fast, safe, secure, and verifiable for all market actors: farmers, buyers, traders, governments, suppliers, banks, insurers and exchanges.

## The Problem

Agriculture is the dominant economic activity in rural areas, where three-fourths of the world's poor live. It accounts for about 27 percent of GDP in developing countries, a similar share of exports, and 50 percent of employment. However, only a small percentage of agricultural output produced in poorer regions even reaches the market. 870 million hungry people in the world could be fed if just one-fourth of the food currently lost or wasted could be saved. The virtual absence of necessary market institutions, such as market information, grades and standards, and reliable ways to connect buyers and sellers typically means commodity transactions happen in small circles, in narrow networks of people they know and trust.

**The world over, serious concerns have been expressed about the sustainability of agri-food supply chains with the current population explosion and consumption trends estimated at 70% growth by 2050.**

## Our Solution

There is a growing concern about social and environmental sustainability of the food industry across the value chain from sourcing, harvesting, production, trading, logistics, storage and consumption. One of the key functions that resides centrally is the trading of commodities and it is quintessential for the exchange to be fair for the participating stakeholders.

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We have built a commodity exchange on blockchain, a distributed ledger technology built on a trusted information sharing platform across enterprises (who may or may not trust each other), via a securely verified "chain" of "blocks" of transactions. This inherent nature of the technology becomes the cornerstone of a fair and distributed marketplace that is an append-only, shared ledger of digitally signed and encrypted transactions that is replicated across a network of peer nodes. Cryptographic security is used to ensure that participants can only view information on the ledger that they are authorized to see. Transactions, in this case trade settlements and statuses are committed onto the ledger only after consensus is reached, and once committed it can never be changed by any of the nodes unilaterally, i.e., participants cannot alter history or deny past transactions.

AcreCX creates a formalized process for the buying and selling of commodities and provide the following advantages: integrity, trust, efficiency, transparency and enables small farmers to manage the risks related to production and trade. The exchange is not just a platform to trade commodities securely and transparently but it provides provenance information and audit certificates of the producer to the prospective buyer. Hence the trustworthy audited data forms the basis of sustainable and responsible trade in the exchange.

AcreCX provides an efficient management of produce, wider buyer access and hence enables the producer to be solvent. It also transforms the trader community to trade responsibly on forward contracts for the commodity to be produced at a future date.

## The Strategy

AcreCX is adopting a Lean SIPOC<sup>1</sup> model to determine its strategy for market establishment.

1. **Process:** The AcreCX trade goes through a multi-stage trade process from listing an commodity offer to execution of the trade. Process wastes such as intermediaries not adding any tangible value in the trade are eliminated. However, the intermediaries that are retained include:
  - a. A decentralised and democratic marketplace as the **bridge** between buyers and sellers
  - b. Counterparties such as TruVito as provenance **certifiers** for storing audited data on the blockchain
  - c. Escrow agents and Insurers to mitigate **market risk** and **credit risk**
2. **Outputs:** All the produce traded (the output in this case) are tracked till the buyer and payments are released from the escrow to the seller on successful delivery.

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<sup>1</sup> SIPOC (suppliers, inputs, process, outputs, customers) is used to document business processes from beginning to end.

3. **Customers:** The platform is scalable for the enterprise and configurable for all commodities and stakeholders like the buyer, seller, trader, escrow and counterparties.
4. **Inputs:** AcreCX provides an intuitive interface to place offers from buyers and sellers into a P2P marketplace that can be traded fairly and based on provenance information of the seller and commodity.
5. **Suppliers:** AcreCX provides provenance information from systems like TruVito which offer third party audited data of the produce and the source from blockchain.

This multi-pronged strategy would enable ACX to remain competitive, yet fair and transparent.

# BACKGROUND

## Rationale Behind AcreCX

The productivity and sustainability of Agri-food ecosystem is one of the key concerns of policy makers across geographies. Sustainability is considered a mandatory tool to find a balance between food production and the preservation of ecological systems. In the value chain, one of the most oppressed stakeholder is the producer who is exposed multiple challenges like unfair pricing, changing climate conditions leading to erratic production and finally the ever elusive financing options. A wider market reach for producers and fair pricing through disintermediation would enable producers demand a fair price on a transparent marketplace. From a perspective of the investor like a bank or insurer, it is imperative to gain access to trusted farm provenance along with sustainable practices being followed by the producer. The concept behind a fair and transparent commodity exchange is built to address the fundamental issues that exist in our agri-food ecosystem.

The solution is envisioned to provide buyers and sellers complete transparency on provenance information of the commodities traded, tracing them till the buyer and a framework for fair trade on spot offers, forwards, futures and options. It would enable each farmer gain access to a global network of buyers and traders on a decentralized marketplace and trading platform. Following are the desirable features of such a marketplace:

1. Market access, rules and their impacts
2. The leeway for negotiation regarding agriculture, including the powers that must be reckoned with and negotiation options
3. The importance of changing paradigms and approaching the issues from a perspective of long-term development
4. Existing alliances and those to be formed, particularly among developing countries.

## Market Access Barriers

Contrary to conventional wisdom, market access barriers faced by developing country exporters are not decreasing for some of their most important export sectors. In general, industrial countries have undertaken more far-reaching commitments regarding access in their services sector than developing countries.

Exporters from developing countries face an uphill battle:

1. Widespread specific tariffs discriminate against low-cost and low-price suppliers.
2. Falling commodity prices are a double curse: not only do exporters earn less foreign exchange, but they face higher effective market access barriers.
3. Non-tariff barriers are multiplying



# AcreCX SOLUTION

AcreCX provides an organized marketplace, where buyers and sellers come together to trade, assured of quality, quantity, payment, and delivery.



## Key Benefits of AcreCX

- ★ A decentralized multi-commodity exchange that provides low-cost, secure marketplace services to benefit all agricultural market stakeholders.
- ★ Instant payment processing for both farmers and buyers.
- ★ Automated compliance and ethical sourcing audits through blockchain based registry partners such as TruVito.
- ★ Audit Certifications issued on the blockchain based on Intelligent Audit Apps provided by the TruVito platform
- ★ Track shipments in real-time as the freight moves from farmer to buyer.
- ★ Credit risk mitigation. AcreCX has policies requiring members to be verified through KYC process before they trade ensuring that they have pre-paid into their trading accounts.

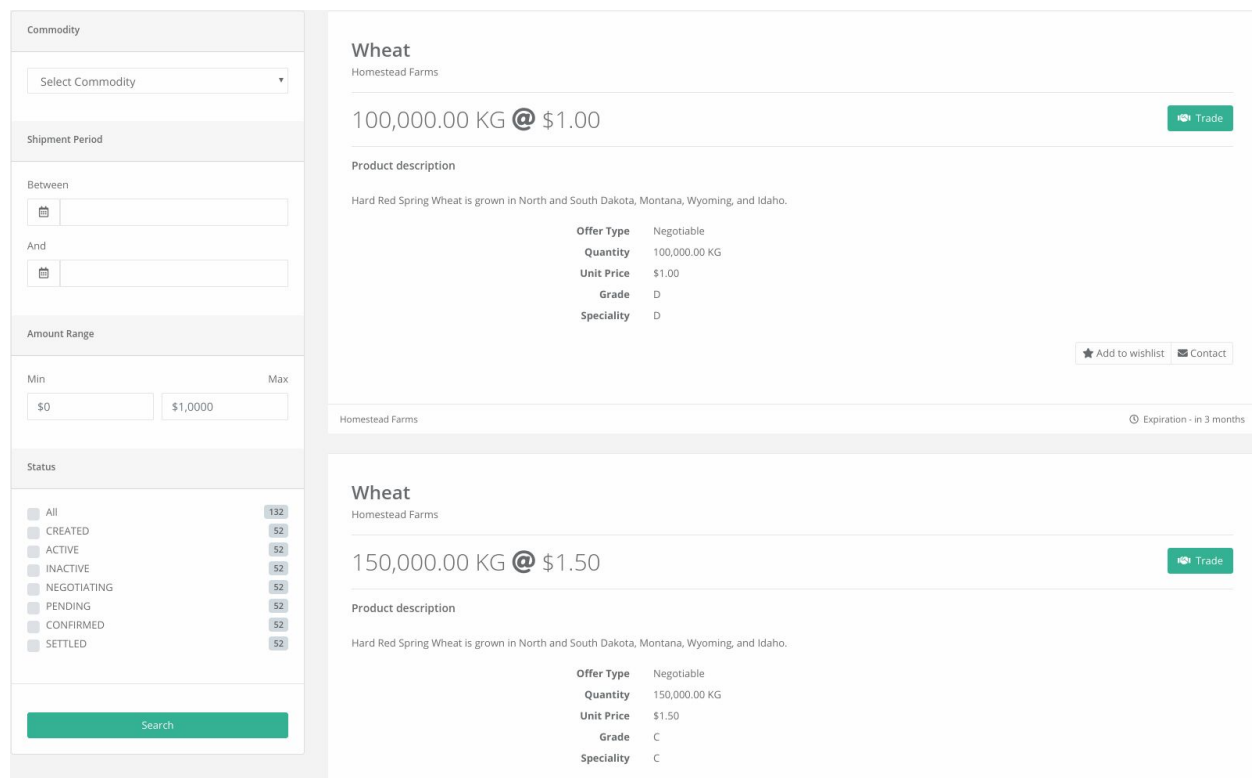


Credit risk due to shortfall in members account is mitigated by netting agreements and cash deposits in the form of settlement guarantee fund.

## Contract Market

Farmers list their produce and harvest offering to sell on a spot contract or a forward contract. Buyers can negotiate directly with the farmers over an encrypted communication channel before initiating a trade.

When a trade is initiated, a smart contract is deployed to the blockchain representing the spot contract or a forward contract. Buyer is required to complete a KYC process and contract amount is escrowed in a escrow contract to mitigate credit risk.



The screenshot displays the ACRECX Contract Market interface. On the left is a sidebar with filters for Commodity, Shipment Period, Amount Range, and Status. The main area shows two listings for 'Wheat' from 'Homestead Farms'.

**Listing 1:**

- Commodity: Wheat
- Quantity: 100,000.00 KG @ \$1.00
- Product description: Hard Red Spring Wheat is grown in North and South Dakota, Montana, Wyoming, and Idaho.
- Offer Type: Negotiable
- Quantity: 100,000.00 KG
- Unit Price: \$1.00
- Grade: D
- Speciality: D

**Listing 2:**

- Commodity: Wheat
- Quantity: 150,000.00 KG @ \$1.50
- Product description: Hard Red Spring Wheat is grown in North and South Dakota, Montana, Wyoming, and Idaho.
- Offer Type: Negotiable
- Quantity: 150,000.00 KG
- Unit Price: \$1.50
- Grade: C
- Speciality: C

Smart contracts are programs on the blockchain that execute credible transactions without depending on third parties. Smart contracts execute transactions automatically on the validation that a particular action was taken. No additional intervention is needed, eliminating costs and delay.

Spot and forward contracts are written and deployed to the blockchain in such a way that payouts to farmers are triggered for the delivery of their commodity.

So, if a smart contract says that the farmer will receive \$20,000 upon delivery of one ton of wheat, as soon as that wheat is weighed on the scales at the silo and registered as received, the funds are transferred to the farmer automatically without involving any third party such as a bank.

<b>Buyer</b>	Amber Baldwin	<b>Status</b>	Shipped
<b>Seller</b>	Pandu Varma	<b>Created</b>	July 8th 2018
<b>Commodity</b>	Wheat	<b>Contract Type</b>	Forward
	Hard Red Spring Wheat is grown in North and South Dakota, Montana, Wyoming, and Idaho.	<b>Maturation</b>	Apr 15, 2018
		<b>Payment</b>	Cash Settled
		<b>Terms</b>	Seller agrees to ship above stated quantity to the buyer
<b>Quantity</b>	150,000.00 KG		
<b>Unit Price</b>	\$0.50		
<b>Total Amount</b>	\$75,000.00		

Open

Accepted

Signed

Escrowed

Scheduled

Shipped

Released

Complete

Documents
 **Contracts**
 Counterparties
 Shipments

Agreement between buyer and seller is recorded in a smart contract. Below are contract addresses and transaction hashes.

<b>Sale Overview</b>	
Address	0x7991dd3e60e428400c173115751529cf01e2058
At Transaction	0xa2e44be977482e03dbad82ef127a5df67981de9217be3069b28f56ec12d25199
Balance	1 ETH
<b>Escrow Overview</b>	
Address	0xa8a8d059cfe81754cd8c5e40b986aaa0ef7d5fa2
At Transaction	0xca2cf7379f183a792136d86ce047f70829f146ecd906aecf813e5cbc179a301b
Balance	1 ETH

## Counterparty Risk

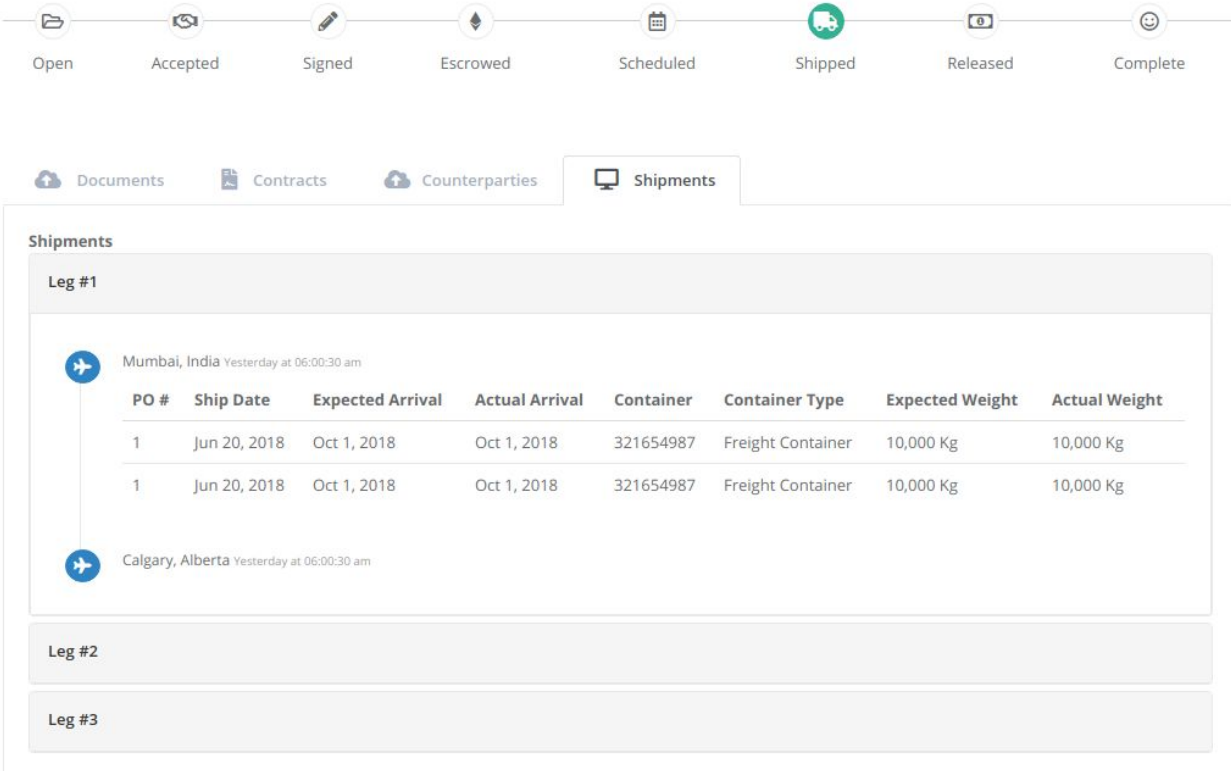
Buyers and sellers can choose a counterparty to mitigate credit risk that one party fails to meet their obligations. Because typically no money changes hands at the outset of a forward contract, the counterparty risk is limited to the profit or loss on the contract; it is not the notional value of the contract.

AcreCX takes no market risk as it has an equal and opposite position for every trade. To protect against the risk of default, AcreCX uses various risk mitigation mechanisms: collecting variation margin, collecting initial margin, and additional layers of protection such as inserting clearing members between trading participants.

Additionally, AcreCX performs weekly and monthly snapshots to measure the potential future exposure (PFE).

## Freight

AcreCX offers freight forwarding through its shipping partners in Europe, Middle East, South Pacific and Asia. Buyers and sellers can track shipments associated with each trade on AcreCX application.



Open Accepted Signed Escrowed Scheduled Shipped Released Complete

Documents Contracts Counterparties Shipments

**Shipments**

Leg #1

Mumbai, India Yesterday at 06:00:30 am

PO #	Ship Date	Expected Arrival	Actual Arrival	Container	Container Type	Expected Weight	Actual Weight
1	Jun 20, 2018	Oct 1, 2018	Oct 1, 2018	321654987	Freight Container	10,000 Kg	10,000 Kg
1	Jun 20, 2018	Oct 1, 2018	Oct 1, 2018	321654987	Freight Container	10,000 Kg	10,000 Kg

Calgary, Alberta Yesterday at 06:00:30 am

Leg #2

Leg #3

Our door-to-door program allows us to handle customized temperature sensitive cargo from the farm to anywhere in world. AcreCX ensures commodity containers are transported to destination ports by agreed upon deadlines and for agreed amounts.

We also arrange all customs formalities through our partners offering customs documentation, pre-carriage, warehousing and delivery (including cross-border) where required.

AcreCX partnered with Quiver Network to provide real-time shipment information of commodities shipped through our platform. Information tracked includes expected and actual weight at arrival ports, expected and actual delivery times, temperature and humidity conditions in the container.

We also offer limited liability coverage to protect against: (a) an act of God, (b) an act of the public enemy, (c) an act of the shipper, (d) an act of the public authority, or (e) the inherent nature or vice of the goods themselves.

## Micro-Financing

AcreCX offers micro-financing options in the following ways:

- ★ Tokenizing private assets
- ★ Secured debt backed by Smart Contracts

### Tokenizing Private Assets

Because blockchain technology enables trades to occur securely between two parties without a middleman, it creates opportunities for tokenizing private securities such as farm assets with greater efficiency. Public securities can have deep markets and high liquidity (as non controlling holders can generally resell them freely) however, they are also time and cost intensive. AcreCX provides tools to tokenize farm assets or part of harvest so that farmers can raise capital for their farms.

### Secured debt backed by Smart Contracts

AcreCX offers the ability to borrow from people who wish to lend crypto or fiat currencies to farmers, which means farmers don't need a bank account to get a loan.



# RESOURCES

## Glossary of terms

**Counterparty Risk** is the risk that the person or institution with whom you have entered a financial contract (who is a counterparty to the contract) will default on the obligation and fail to fulfill that side of the contractual agreement. In other words, counterparty risk is a type of credit risk.

**Credit risk** is the chance of loss due to a borrower's defaulting on a loan or not meeting contractual obligations.

**Delivery** Exchanges stipulate the delivery date for each contract and the method and place of delivery. Some commodity contracts are settled through financial payments rather than physical delivery.

**Forward Contract** A forward contract is a contract that involves an agreement of contract terms on the current date with the delivery and payment at a specified future date.

**Market Risk** is the possibility of an investor experiencing losses due to factors that affect the overall performance of the financial markets.

**Price** Exchanges can stipulate the minimum price increments at which a commodity can trade.

**Quantity** This is the amount of the commodity represented in the contract. This can be expressed in a metric unit, an Imperial unit or a traditional measurement unit such as a barrel or bag.

**Quality** These are the features that describe the commodity being traded in the contract. For example, the commodity may have to come from a particular region or have certain physical characteristics.

**Reefer Container** Refrigerated containers capable of controlling temperature ranging from -65 °C up to 40 °C for transporting perishable goods.

**Smart Contract** A smart contract is a series of instructions that execute autonomously based on predetermined inputs on the blockchain. Smart contracts allow the performance of credible transactions without third party intervention or any central authority.

# DISCLAIMER

## Conditions of Acceptance

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