



BLOCKGRAIN



WHITEPAPER 1.3

April 2018





IMAGINE IF ALL STAKEHOLDERS
IN THE AGRICULTURAL INDUSTRY COULD
MAKE BETTER-INFORMED DECISIONS, ELIMINATE
UNNECESSARY PAPERWORK AND DOCKETS, REDUCE
SUPPLY CHAIN INEFFICIENCY AND RISK, OPEN MARKETS
AND INCREASE THE BOTTOM LINE BY CONDUCTING
BUSINESS IN ONE SIMPLE PLATFORM.

BLOCKGRAIN IS THAT PLATFORM.



INTRODUCTION **6**

INDUSTRY OVERVIEW **8****Current issues** **9**

Poor data management	9
Lack of trust and visibility	10
Inefficiency	10
Barriers to finance	11

Market size **12**

Domestic market (Australia)	12
International markets	13

THE BLOCKGRAIN SOLUTION **14****Key benefits** **16**

Supply chain tracking and automation	16
Information and data visibility	16
Smart contracting	16
Recordkeeping and proof of origin	16

Financial benefits **17**

Reducing the cost of capital	17
Improving cash flow	17
Insurance	18
P2P lending	18

Advantages of BlockGrain **19****Meeting industry needs** **20**

Network coverage	20
Managing dynamic operations	20
Technology adoption	21
Developing economies	21

BLOCKGRAIN'S ACHIEVEMENTS **23****Timeline** **24****Awards** **25**

BLOCKGRAIN TEAM **26****Team** **27****Advisors** **29**

Technology and cryptocurrency	29
Agriculture	30
Supply chains and logistics	30
Finance and markets	31

TOKEN ECONOMY **32****AGRI tokens** **34****'SEED' tokens** **37**

TECHNOLOGY LAYERS **39****Public Blockchain layer** **40****Private Blockchain layer** **40****Payment platform** **41****Applications layer** **41****System architecture** **42**

DEVELOPMENT AND MILESTONES **43****Expansion strategy** **44****Development roadmap** **45**

TOKEN DISTRIBUTION **46**

Token distribution details	47
Token allocation	48
Use of token distribution proceeds	48



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 - b. Token Sale Agreement; and
 - c. Privacy Policy.
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INTRODUCTION





BLOCKGRAIN IS A SIMPLE-TO-USE, SECURE, INDEPENDENT SOFTWARE SOLUTION THAT AUTOMATES THE SHARING OF INFORMATION ACROSS ALL MAJOR COMMODITY SUPPLY CHAIN PARTICIPANTS.

BlockGrain's vision is to be the largest industry-wide platform for managing the agricultural supply chain; connecting sellers and buyers, providing full paddock-to-plate traceability and allowing bulk logistics companies to manage and grow their operations.

Agricultural supply chains form the backbone of many societies and are essential for thriving communities. The ability to grow, distribute and purchase cereals, fruits and vegetables has helped build some of the major empires in history. With the world's population set to reach 10 billion by 2050¹, it is estimated that the planet will need to produce 70% more food than it does today, to ensure that global supply meets global demand². An increase of this magnitude has never been achieved in such a short timeframe.

Despite the development of several strategies to increase global agricultural production, underlying supply chain inefficiencies remain. It is estimated that one-third of food produced for human consumption each year (approximately 1.3 billion tonnes) does not reach the consumer³. Inefficient supply chains, large intermediaries, lack of market access, technology limitations and indirect distribution channels are cited as key contributing factors⁴. Increasing food production cannot be the only strategy to address current and future food requirements, without also addressing the issue of getting food from producers to consumers.

BlockGrain is the culmination of two years of design, development, testing and refinement. BlockGrain 1.0 has been used in the industry for two harvests, enabling users to manage and control their stock. With the upcoming release of BlockGrain 2.0, an enhanced set of product features will expand BlockGrain's presence in the Australian domestic market and provide a real-world solution to improve the agricultural supply chain. To expand the system globally, BlockGrain will leverage the power of blockchain technology to enhance supply chain tracking and automation, improve information and data, de-risk contracts and provide proof of origin information.

To manage agricultural products as they move across the globe, supply chain participants need a secure, transparent, trustworthy platform and marketplace. BlockGrain builds networks amongst key stakeholders and improves time to market, while reducing supply chain costs and inefficiencies. 🌱

1. www.un.org/en/development/desa/news/population/2015-report.html
2. www.fao.org/news/story/en/item/35571/icode/
3. www.fao.org/save-food/resources/keyfindings/en
4. www.fao.org/in-action/seeking-end-to-loss-and-waste-of-food-along-production-chain/en/



INDUSTRY OVERVIEW

CURRENT ISSUES

Agricultural supply chains across the world have evolved into a vertically integrated system of multi-layered oligopolies, with each layer stripping away more value than the next. Global commodity giants and supermarkets have pushed farmers into a series of unrelenting bottlenecks, culminating in power and value being stripped from farmers and redistributed for the benefit of multinational corporations.

Although supermarkets and commodity giants continue to proclaim their support for farmers and consumers alike, their overwhelming dominance over supply chains and distribution leaves farmers with limited power to extract value from the food they produce. To overcome these challenges, key industry issues need to be addressed.

POOR DATA MANAGEMENT

Despite the rapidly expanding adoption of agricultural technologies, post-harvest operations are impaired by systems that only manage a small part of the supply chain. No industry-wide software solution is available to support farmers and key ancillary companies on a single, independent, global platform.

Fragmentation

The lack of a common platform for key agricultural supply chain participants to create, exchange and store information and data has resulted in data fragmentation, with limited interoperability between companies. An alarming number of farmers and logistics providers continue to use basic spreadsheets, paper records and dockets to manage their production, stocks, marketing and general operations.

Information asymmetry

Although some proprietary applications have been created and distributed by single supply chain participants, data is generally siloed and inaccessible across the industry. A lack of consistent, reliable and retrievable data leads to loss of stock, food contamination, and high administrative overheads. Currently, critical business decisions are made using incomplete or inaccurate data resulting from a fundamental lack of technology solutions.



LACK OF TRUST AND VISIBILITY

Global supply chains are complex systems with high barriers to entry for smaller market participants. This complexity also means that the further agricultural products move along the supply chain, the harder it becomes to follow their path to market.

Risk

Currently, it's largely untenable for local farmers to deal directly with global consumers. Currency exchange risk, contract renegotiations, buyer payment defaults, burdensome documentation, and high administrative overheads force local farmers to rely on multinational intermediaries to export their products.

Traceability

With growing consumer affluence around the world, paddock-to-plate traceability and full disclosure of the production and supply chain is playing a greater role in consumer purchasing decisions. Increasing demand for single-origin products gives farmers new opportunities to extract maximum value from the quality of their produce. Many producers of agricultural goods (including coffee, wool and meat) are beginning to take advantage of the growing interest in single origin markets. However, consumers are still provided with limited evidence to confirm the origin of their purchases.

Transparency

Consumers currently have limited knowledge of the chemicals, pesticides and gases used in the production and transportation of food products across the entire supply chain. More consumers worldwide are demanding information as they have the right to know where their food has come from, how it was transported and what practices were used in its production.

INEFFICIENCY

IN WESTERN ECONOMIES, IT IS ESTIMATED THAT APPROXIMATELY **30% OF THE VALUE** IN BULK COMMODITIES IS LOST DUE TO INEFFICIENT SUPPLY CHAINS AND INTERMEDIARIES. THIS FIGURE INCREASES TO 50% IN THE DEVELOPING WORLD.⁵

Loss and waste

A key report by The Food and Agricultural Organization of the United Nations found that up to one-third of the food produced for human consumption (1.3 billion tonnes) is lost or wasted each year⁶. In developing economies, this is attributed to financial, managerial and technical constraints in the early stages of the value chain which affects harvesting and storage. Despite severe food shortages, more than 40% of the total food produced in developing economies is also lost⁷. The amount of food lost or wasted in Africa and Latin America could feed 600 million people every year⁸.

When food is lost before it reaches the market, farmers are unable to realise the full value of their efforts and the economic development and global competitiveness of agriculture-dependent nations suffers. Currently, lack of access to international markets and technology negatively impacts the livelihood of 470 million smallholder farmers⁹.

Global quantitative food losses and waste per year are roughly:

- 30% for cereals
- 40 to 50% for root crops, fruits and vegetables
- 20% for oil seeds, meat and dairy
- 35% for fish¹⁰.

5. www2.deloitte.com/content/dam/Deloitte/za/Documents/consumer-business/ZA_FL1_ReducingFoodLossAlongAfricanAgriculturalValueChains.pdf
6. www.fao.org/save-food/resources/keyfindings/en
7. www.fao.org/save-food/resources/keyfindings/en
8. www.fao.org/save-food/resources/keyfindings/en
9. www.rockefellerfoundation.org/blog/smallholder-farmers-food-loss-hits/
10. www.fao.org/save-food/resources/keyfindings/en/



BARRIERS TO FINANCE

Barriers to agricultural finance add additional capital costs to farmers. High fees, lengthy approval periods, redundant paperwork, poor banking policies and regulatory costs all contribute to the farmer's cost of capital.

Quantifying assets

Current processes of obtaining affordable finance against stock held on a farm are complex and ineffective for most farmers. With no system to accurately record data, potential financiers are unable to obtain an accurate, unaltered record of a farmer's stock on hand, including both the quality and current value. Ultimately, this results in conservative financing options and farmers locking up a significant amount of capital that should be leveraged as a tangible asset. Consequently, some farmers are forced into high interest-rate overdrafts and bridging loans to ensure liquidity in their businesses.

Cost of capital

Primary producers are often held captive to large financial institutions through higher fees, exorbitant interest rates and ever-increasing risk premiums. Although interest rates are at unprecedented lows (1.5% Reserve Bank Australia, February 2018)¹¹, many farmers are still paying more than 7.70%¹² for an overdraft facility and up to 13.95%¹³ for an agricultural-based consumer overdraft. By way of added fees and higher lending rates, the farmer bears the burden for any inefficiencies, which may result in higher prices for the end consumer.

Insurance

Insurance companies are reluctant to insure agricultural produce post-harvest. Without reliable and transparent data, it is difficult for insurers to understand the farmer's definitive position, including the volume and quality of stock on hand. Poor data leaves the insurer exposed to unscrupulous activities, ownership risk, data manipulation and a general lack of transparency. As a result, insurance premiums are priced to reflect the increased risk exposure.

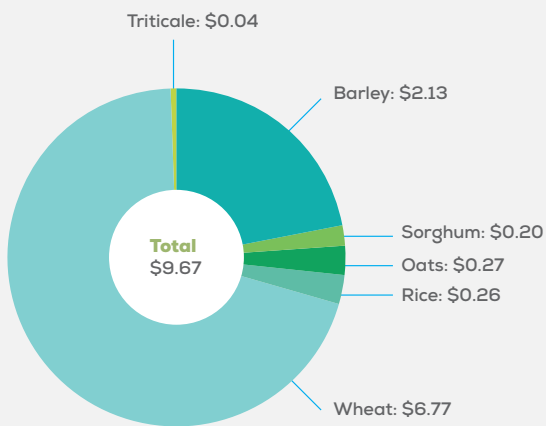
11. www.rba.gov.au/media-releases/2018/mr-18-01.html
12. www.anz.co.nz/auxiliary/rates-fees-agreements/rural/
13. www.anz.co.nz/auxiliary/rates-fees-agreements/rural/

MARKET SIZE

DOMESTIC MARKET (AUSTRALIA)

The Australian domestic market provides several key strategic advantages to expand the BlockGrain platform. In 2016/17, the total gross value for all cereal crops grown in Australia reached approximately \$13.66 billion¹⁴ (USD), with \$9.67 billion¹⁵ (USD) for grain alone.

Gross Production Value - Australian Grain Commodity (USD billion)¹⁶



In addition to grain, the Australian agricultural industry offers opportunities in other market sectors. The BlockGrain platform has been developed to scale to new commodities and expand to new markets. Planning is already underway for BlockGrain's expansion into several other agricultural commodity markets, including fruit and vegetables, wool and livestock.

Gross Production Value - Australian Agricultural Products (USD billion)¹⁷

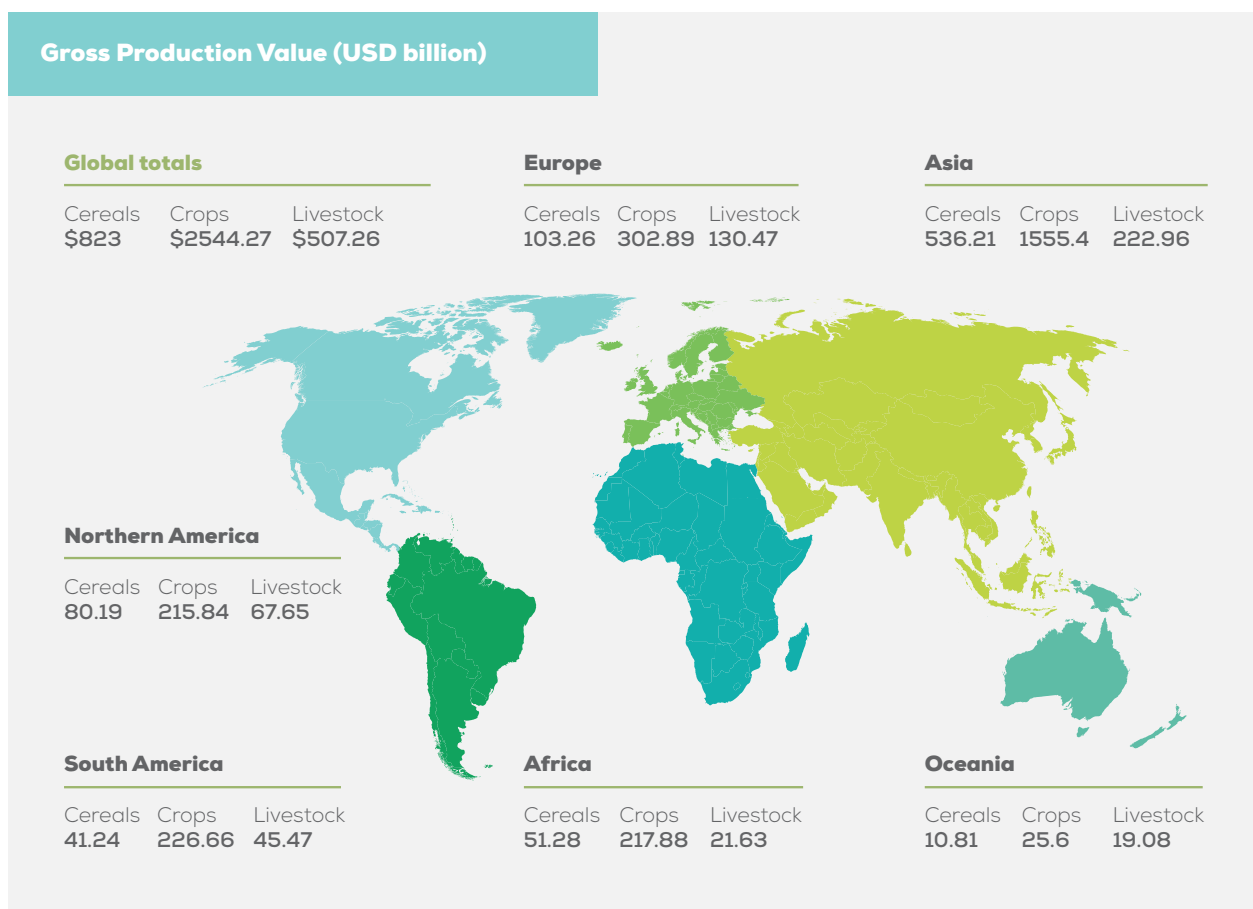
Beef	\$10.00
Fruit and Vegetables	\$9.30
Dairy	\$3.38
Wool	\$2.33
Lamb	\$2.52
Chicken	\$2.05
Cotton	\$2.05
Sugar Cane	\$1.00
Total	\$32.63

14. www.nff.org.au/farm-facts.html
15. www.nff.org.au/farm-facts.html
16. www.nff.org.au/farm-facts.html
17. www.nff.org.au/farm-facts.html

INTERNATIONAL MARKETS

The Food and Agriculture Organization of the United Nations estimates the combined global gross production of cereal, crops and livestock to be nearly \$4 trillion¹⁸ (USD). Moreover, global food exports grew by approximately 45% between 2006 and 2016¹⁹.

With an increasing demand on global supply chains, BlockGrain can link farmers directly with key international markets. BlockGrain will expand from being a primarily-Australian platform into a global end-to-end agricultural trading and logistics solution. BlockGrain intends to expand to other major grain producing regions including North America, South America and Europe, as well as global markets for other agricultural commodities.



18. www.fao.org/faostat/en/#data/QV
 19. www.data.worldbank.org

THE BLOCKGRAIN SOLUTION





AS A TRANSFORMATIVE SOFTWARE PLATFORM, BLOCKGRAIN REDUCES INEFFICIENCY AND PROVIDES VALUE TO SUPPLY CHAIN AND MARKET PARTICIPANTS.

BlockGrain supports traditional, well-established agricultural supply chains with a dynamic and seamless software solution. By enabling one-to-one global trade, BlockGrain encourages farmers and their supporting businesses to connect with buyers to develop and grow their own supply chains. BlockGrain aims to make a positive impact on the global agricultural sector and society as a whole.

With the development of blockchain technology, BlockGrain has an innovative digital approach and the required industry knowledge to distribute a greater proportion of value to the farmers and the critical businesses that support them. As more farmers move to home storage and away from bulk handlers, BlockGrain can support the needs of the industry. By harnessing blockchain technology, farmers can sell their product directly from their home storage systems to domestic or international buyers in a safe, low-risk environment.

Supported by the expansion of the global produce containerisation market, BlockGrain enables farmers to build their own global supply chains and export their commodities directly. BlockGrain helps smaller farmers build networks to form farmer-owned cooperatives, which is particularly relevant in developing economies. Coupled with BlockGrain's logistics platform and global marketplace, farmers across the world can enjoy the benefits of direct market access.

BlockGrain connects:

- Farmers
- Farmer representatives (brokers)
- Trucking and logistics companies
- Logistics brokers
- Buyers of agricultural products
- Manufacturers requiring agricultural products (dairies, flour mills, breweries, etc)
- Smaller farming cooperatives
- Suppliers of agricultural inputs (chemicals, fertilisers, etc)
- Importers and exporters of bulk commodities
- Customers and end users.

KEY BENEFITS

SUPPLY CHAIN TRACKING AND AUTOMATION

Combining user-friendly native mobile applications for farming and logistics operations with a powerful web application for business administration, BlockGrain provides end-to-end visibility of the agricultural supply chain. BlockGrain enables farmers, brokers and logistics companies to transfer data and automate the delivery process, from the paddock to end user.

As each load is picked up and delivered, data is collected and time-stamped at each point along the supply chain. All parties are updated in real-time as each transaction takes place. Through this process, BlockGrain improves productivity, increases visibility, controls stock, automates freight orders and eliminates manual paperwork.

INFORMATION AND DATA VISIBILITY

With BlockGrain, users are empowered to make decisions supported by accurate information and market data. By providing visibility of commodity stocks, users know exactly how much product they hold, where it is going, when it is getting there, and what its value is. At every stage of the supply chain, users can be confident that they have the information required to maximise their bottom-line.

As the end-to-end supply chain can be tracked and managed through a single, industry-wide system, buyers and end users also benefit from improvements to data accuracy and completeness. Should contamination or any other product safety issues occur, affected products can be quickly identified and recalled without disrupting the entire supply chain.

SMART CONTRACTING

BlockGrain provides seamless contract solutions between farmers, brokers, buyers and logistics providers. BlockGrain's aim is to provide the best automated software solution for creating commodity contracts and freight contracts.

The BlockGrain system will enable buyers, sellers and freighters of commodities to interact in a blockchain-backed environment, ensuring both sides of the sale are protected. BlockGrain will create the first global marketplace for buying and selling physical agricultural commodities using blockchain technology.

RECORDKEEPING AND PROOF OF ORIGIN

As commodities move along the supply chain, proof of origin can be established by creating an immutable blockchain record of the journey from paddock to plate. Key supply chain participants as well as supply chain nodes owned and controlled by each of these entities (such as fields, silos, trucks and delivery locations) are recorded at every stage. BlockGrain also records key commodity data including the weights, types, varieties, grades, specifications and inputs. All users get a complete picture of the products they are purchasing, as blockchain allows for a fully transparent and traceable supply chain.

FINANCIAL BENEFITS

REDUCING THE COST OF CAPITAL

Each year, farmers are financially constrained through the inability to obtain fast and affordable inventory finance on products that have been harvested and are awaiting sale. In traditional agricultural supply chains, there is a lack of visibility over stock on hand, the quality of that stock and true market value. Consequently, financiers are reluctant to provide inventory finance to farmers, and are constrained by the types of inventory finance that they are prepared to offer. Some larger, well-established businesses get access to such services, but the majority miss out. Despite record low interest rates (1.5% Reserve Bank Australia, February 2018)²⁰ an agricultural business line of credit backed by a non-residential security currently carries an interest rate of 7.81%²¹.

BlockGrain seeks to make lending against stock on hand more accessible and cheaper for farmers by providing significantly enhanced visibility over farm inventory and reducing the risk exposure of financiers. With BlockGrain, banks are able to see the real-time 'position' of the farmer, as well as a history of custody, all recorded and authenticated by the blockchain. In addition, financiers are able to see any payment guarantees (future sales backed by a smart contract) that the farmer has entered into. By obtaining previously-unavailable information about the farmers' live position, financiers are able to de-risk their lending using BlockGrain's data.

IMPROVING CASH FLOW

Poor cash flow is responsible for the failure of up to 90% of SMEs²², and agricultural supply chain businesses are no exception. In the day-to-day operations of their business, agricultural supply chain participants are affected by impeded cash flows. To ensure a predictable and reliable cash flow, businesses attempt to match receivables to payables. Unfortunately, as agricultural commodities move through the supply chain, the amount of outstanding debt accumulates. Consequently, 38.2% of businesses acknowledge that if they were to encounter a problem with cashflow, they would elect to pay transport suppliers late or miss payments altogether²³.



BlockGrain improves the cash flow of supply chain participants by enabling businesses to finance their operations by leveraging forward (blockchain backed) contracts with current customers. Using BlockGrain's SEED token, suppliers can increase liquidity by using futures contracts to finance their immediate operations (refer to the Token Economy section).

20. www.rba.gov.au/media-releases/2018/mr-18-01.html
21. www.commbank.com.au/business/rates-fees.html



INSURANCE

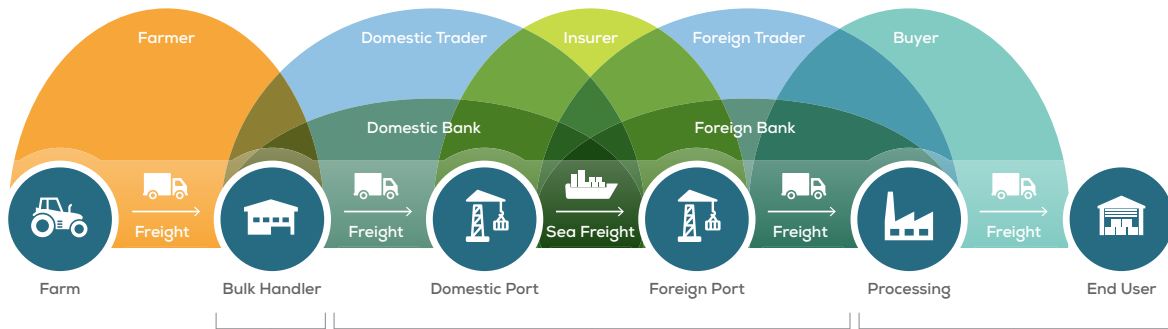
Through BlockGrain, approved insurance companies will get unprecedented visibility of the farmer's stock in field, stock on hand and stock in transport. Emerging 'Internet of Things' (IoT) solutions for heavy machinery and storage in the agricultural sector also provide additional opportunities to enhance the data recorded in BlockGrain. By gaining access to live, accurate, immutable data, insurance companies are able to effectively assess claims, offer tailored products to customers, disperse payments on claims, monitor risk, identify suspicious behaviour and improve fraud assessment. In return, farmers, buyers and logistics companies will be able to select from a wider range of insurance products with more accurate and cheaper risk premiums.

P2P LENDING

Using BlockGrain, farms of any size will be able to connect in a secure peer-to-peer (P2P) lending environment that enables businesses with a cash surplus to offer short-term loans to those needing access to short-term capital. The BlockGrain platform enables like-minded farmers to agree on lending arrangements that overcome traditional overdraft loans, driving down the cost of agricultural financial products, while ensuring that any interest paid stays within the industry.

ADVANTAGES OF BLOCKGRAIN

CURRENT PROCESS



PROBLEMS

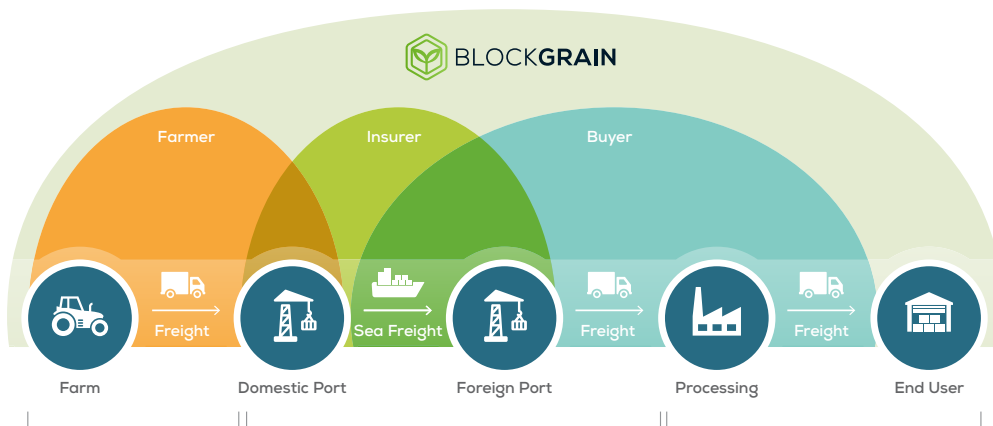
- Blending of stock
- Loss of provenance
- Double handling
- Storage and handling fees
- Multiple software systems
- Multiple cash boards

- Financing costs
- Foreign exchange risks and fees
- Non-payment risk
- Market risk
- High cost of capital

- High insurance cost
- Letters of credit
- Complex documentation
- High administrative overheads

- Limited traceability
- No proof of origin
- Uncertain product recalls
- No guarantee of supply
- Limited recourse for non-delivery

BLOCKGRAIN PROCESS



SOLUTIONS

- One software system
- Single origin stock
- Improved stock visibility
- Reduced cost of capital
- Reduced handling
- Reduced cost of storage
- Online cash boards
- Controlled by the farmer

- Supply chain tracking
- Reduced reliance on banks
- De-risked transactions
- No foreign exchange risks and fees
- Accurate insurance costs
- Less manual paperwork
- Reduced administrative overheads

- Full stock traceability
- Proof of origin
- Clearer product recalls
- Confidence of supply

MEETING INDUSTRY NEEDS

NETWORK COVERAGE

During harvest trials, BlockGrain 1.0 emphasised existing limitations with cellular data network coverage in rural areas. User feedback highlighted the importance of creating a platform which is able to operate without an active data connection. BlockGrain 2.0 overcomes this issue by caching key data on the mobile device until a data connection is re-established. This allows the BlockGrain mobile application to continue operating, regardless of network coverage.

MANAGING DYNAMIC OPERATIONS

BlockGrain offers farmers the flexibility to run and manage their own 'cooperative' environments, allowing smaller farmers to work together to link and share fields and storage. When the time comes, farmers can easily connect with logistics providers to create a seamless end-to-end supply chain solution, while at the same time controlling storage, segregation and commodity movements. BlockGrain can also be used as a stand-alone solution for logistics providers to manage their fleet by planning and scheduling freight orders and bookings.

BlockGrain does not require all supply chain participants to be system users in order to function effectively. System users can add the details of entities they transact with, allowing them to create a complete record of business operations (regardless of whether these entities are users of the BlockGrain system). However, BlockGrain will require all participants in a transaction to be system users when operating blockchain-backed features (such as smart contracts, supply chain traceability and proof of origin).





TECHNOLOGY ADOPTION

BlockGrain has been designed by farmers and agricultural supply chain participants to meet the specific needs of their industry. While this ensures system features are immediately relevant to users, BlockGrain is not relying on functionality alone to capture key markets. Brokers play a vital role in BlockGrain's broader technology adoption strategy, as they work closely with their client farmers and are relied upon as market and industry experts.

Until BlockGrain, no software solution directly connected brokers and farmers, allowing both parties to work collaboratively to manage and sell stock. Higher-capacity brokers may work with over 100 farmers, and managing this number of clients can be challenging without a common software solution. BlockGrain is working closely with key broker networks to increase technology adoption with their farmers.


Contracting, stock visibility and end-to-end supply chain tracking are significantly enhanced when BlockGrain users work together. BlockGrain promotes upstream and downstream technology adoption by encouraging entities in each stage of the supply chain to provide additional value to their partners and customers in the adjacent stages. As more users join the platform, the more valuable some features become, promoting system adoption and expansion.

DEVELOPING ECONOMIES

The team at BlockGrain believe wholeheartedly in the creation of a level playing field and access to markets for all farmers in all regions of the world. To achieve this goal, BlockGrain aims to leverage a future market presence in developed farming economies to distribute the BlockGrain platform to developing economies at no cost to the user.

The inability of smaller farmers in developing economies to manage and control their stock results in a loss of up to 50% of the value in their produce between harvest and the final point of sale²⁴. BlockGrain can transform the way farmers in developing economies do business by offering a solution that provides opportunities to network and form cooperatives, work with logistics providers, and access global markets.

24. www2.deloitte.com/content/dam/Deloitte/za/Documents/consumer-business/ZA_FL1_ReducingFoodLossAlongAfricanAgriculturalValueChains.pdf



—

“WITH BLOCKGRAIN I NOW GET FULL VISIBILITY OF OUR STOCK, WHICH ENSURES I MAKE THE BEST MARKETING DECISIONS.”

Leeton Ryan, Northern Victoria

—

“THE INDUSTRY HAS NEEDED A SOLUTION LIKE THIS FOR YEARS. BLOCKGRAIN IS SOLVING SOME OF THE BIGGEST PROBLEMS WE DEAL WITH AS GRAIN FARMERS.”

Greg Rae, Southern New South Wales

—

“I USE BLOCKGRAIN FOR MY FARM AND TO MANAGE MY LOGISTICS BUSINESS, AND IT’S HARD TO THINK OF US USING ANYTHING ELSE.”

Tyson Vivian, Southern Victoria

BLOCKGRAIN'S ACHIEVEMENTS



TIMELINE

2015

Q4: BlockGrain founded

The BlockGrain project is established at Bond University, Queensland.

2016

Q1: User requirements gathering

The BlockGrain team undertakes a four-month mission to engage and work with industry experts and business leaders.

Q2: Development begins

BlockGrain begins development of the first software iteration.

Q3: First launch

BlockGrain 1.0 is released to a core group of farmers and grain brokers across the east coast of Australia.

Q3: Best pitch (StartUp House)

BlockGrain wins StartUp House (San Francisco) Battlefield - Best Pitch.

Q4: First harvest

The BlockGrain team gathers essential feedback and insights into how growers and logistics companies use the product during harvest.

2017

Q1: System design

Leveraging the feedback and lessons learned from BlockGrain 1.0, the team begins scoping and designing BlockGrain 2.0.

Q1: First major client

Australia's largest group of independent grain brokers (Rise Agri) commit to using BlockGrain.

Q2: Support from government

BlockGrain receives an 'Ignite Ideas' funding grant from the Queensland Government.

Q3: Development

After four months of scoping and design, full-scale development begins for BlockGrain 2.0 (web and native mobile apps).

Q4: Queensland finalist (Pitch@Palace)

A panel lead by Prince Andrew (Duke of York), selects BlockGrain as a finalist at the Queensland Pitch@Palace competition.

Q4: Second harvest

Regional trial partners provide valuable feedback about the user experience throughout harvest.

2018

Q1: New collaboration partners

BlockGrain's rapidly emerging profile in the agricultural and blockchain industry leads to new opportunities with collaboration partners in Australia, Africa, Europe, and South America. These partnerships include grain exchanges, commodity pool providers, fertiliser distributors, seed treatment companies and corporate farming enterprises.

Q1: Token launch

BlockGrain launches an offering event for the AGRI token.

AWARDS

2016

StartUp House (San Francisco) Battlefield
Winner: **Best Pitch**

2017

Pitch@Palace
Queensland Finalist

Queensland Government
'Ignite Ideas' Grant Winner

Bond University Accelerator
Best Accelerator

Startup Catalyst: Mission Israel
Selected Business

2018

NEM Foundation
NEM Community Fund Winner

Proudly supported by:



**Queensland
Government**



BLOCKGRAIN TEAM



TEAM



Caile Ditterich
Chief Executive Officer

Born on the family farm near Swan Hill (Victoria), Caile has 15 years' experience in the grains industry. Planting his first crop at the age of 12, he has worked in key positions with a variety of agricultural companies, including GrainCorp (Australia's largest grain handler). With an MBA from Bond University, Caile has been the driving force behind BlockGrain since its inception. Prior to BlockGrain, Caile has run multiple businesses and worked as a strategy consultant to start-ups and IT companies.



Sam Webb
Chief Operations Officer

Sam Webb brings a wealth of business, IT and project management experience to the BlockGrain team. Drawing on over 10 years' industry experience, he has played a key role in the BlockGrain system development, as well as the implementation and expansion strategy. Having studied an MBA and MPM at Bond University, Sam has worked on large-scale, high value projects in healthcare, ICT infrastructure and software.



Martin Halford
Chief Technology Officer

Martin is an executive level technologist with extensive experience and a proven track record in scaling Agile Software Development teams. He is able to deliver complex technology products and projects across international boundaries, and has led and managed large-scale teams in excess of 300 staff. During his career, Martin has held CTO positions with the Chelsea Apps Factory and Appster (one of Australia's largest app development companies).



Professor Baden U'Ren
Chief Finance Officer

As an Assistant Professor of Entrepreneurship at Bond University, Baden is a thought leader in the Australian entrepreneurship community. Baden is also the Director of the Bond Business Commercialisation Centre. Prior to this, he was the Head of Structured Finance for Atlantic 3 Funds Management where he successfully conducted multiple capital raising activities for business acquisitions, managed pooled investment funds, and helped to launch QIC's Private Equity Program.



Ian Dalglish
Business Development Manager

Drawing on 35+ years' experience in the agricultural industry, Ian confidently builds relationships with farmers and the broader agricultural sector. Ian has championed and developed numerous successful agricultural IT projects and has held several key positions in grain supply chain management including Origination Manager for Cargill Australia, Accumulation Manager for Noble Grains and General Manager for Australian Grain Accumulation.



Megan Laws

Marketing Manager

Megan has a unique and diverse background spanning strategic marketing, product management, sales, social marketing and media. She is an enthusiastic specialist who has driven growth campaigns for a number of successful startups.



Arvind Singh

Head of Mobile

Having joined BlockGrain from a leading Australian firm, Arvind brings over 12 years' experience as a Principal Technical Architect, Project Manager and Senior Software Developer. Arvind has a proven record of delivery, working on complex software applications.



Emma Hislop

Marketing Consultant

Emma is a highly-experienced member of the BlockGrain team and has worked as an Account Manager for some of Australia and Europe's most renowned companies, including Carlton & United Breweries, Schweppes, General Mills, Fonterra, Cadbury, Kraft, Dulux, Lion, Asahi, Mattel, Carlsberg and Lindt.



Tom Plasonic

Senior Software Engineer

Having worked with BlockGrain since its inception, Tom has been instrumental in developing the BlockGrain platform. Tom is a dedicated and passionate Senior Developer who brings an abundance of real-world application experience to BlockGrain's development team.



Rahul SrivastavaGeneral Manager of
IT Development

Rahul is a respected growth leader with extensive experience in delivery management, Agile Development, transformation, and consulting. With a passion for helping customers solve complex business challenges with world-class solutions, Rahul has a proven record of building and growing high-performing delivery teams. As a former Director at one of Australia's largest app development companies, Rahul brings extensive knowledge and experience in software development to the BlockGrain team.



Vikas Gupta

Senior Software Engineer

With over 10 years' in software development, Vikas has direct experience as a technical architect and full-stack developer with one of Australia's leading software development companies. Vikas builds productive, empowered and motivated Agile Development teams, focussed on performance and delivery.

ADVISORS

TECHNOLOGY AND CRYPTOCURRENCY



Anouk Pinchetti

Blockchain and
Cryptocurrency Advisor

Anouk is a leading Education Consultant at the Blockchain Centre Melbourne and a Founder of Intraverse Blockchain Technologies. Anouk specialises in developing token economies that deliver value to real-world blockchain applications that solve global issues.



Alex Saunders

Blockchain and
Cryptocurrency Advisor

Alex Saunders has been living and breathing cryptocurrency since 2012. Alex has invested in dozens of quality projects and his portfolio has outperformed leading funds 100-fold. His ability to pick projects that will gain real world traction and explain these in easy to understand terms is second to none. He now runs Australia's largest crypto YouTube channel, has over 100k followers across social media and is fast becoming the most trusted voice in the Australian crypto community.



Martin Davidson

Blockchain and
Cryptocurrency Advisor

Martin is a passionate entrepreneur, educator and community leader in the cryptocurrency and blockchain ecosystem. He has successfully exited a Bitcoin business and helped raise \$5.9M for a blockchain mining company. Martin is the Global Director and CEO of the world's first blockchain knowledge hub and coworking space, Blockchain Centre.



Suryanata Wongtomo

Blockchain and
Cryptocurrency Advisor

With over seven years' experience in cryptocurrency and blockchain, Surya is highly-regarded as a leading Australian blockchain specialist. Surya has a deep understanding of cryptocurrency and was a key architect behind Australia's second-largest token offering to date. He was also a Co-Founder of the Brighton Peak digital currency trading platform.



Simon Spencer

Artificial Intelligence Advisor

Analyst, strategist, CTO and now host across Asia for the #1 online radio show Breaking Banks, Simon has had a diverse career as a senior executive, CIO, CTO, Founder and Co-Founder across a range of sectors including banking, telecom, digital media and internet startups. Simon draws together the best of agile, dynamic, innovative 'startup' approaches to help enterprises, large and small, deliver new capabilities and emerge as leaders in rapidly changing business landscapes.

AGRICULTURE



Gerard Toscan
Agricultural Advisor

Gerard is a fifth-generation farmer from Coleambally in the Riverina (NSW). Utilising his 35+ years' experience in agriculture, Gerard revolutionised the popcorn industry by developing a market-leading supply chain operation and marketplace for his operation to export popcorn and grain directly to end users in Australia and Asia. Gerard was also a key founder of a \$28M (USD) greenfield cotton gin that transitioned from idea to production in under 12 months.



Brendan Stewart
Agricultural Advisor

Brendan is a highly-experienced agricultural expert and former Chairman of AWB, Australia's largest agricultural company and largest grain handler/exporter. Brendan is a multifaceted, results-driven business leader with comprehensive experience in senior management within the agricultural industry.

SUPPLY CHAINS AND LOGISTICS



Don Telford
Supply Chains and
Logistics Advisor

Don currently serves as Chairman of the Australian Logistics Council and served for many years as the Chief Operating Officer of Asciano Group. Don was also the Divisional General Manager of Pacific National Intermodal. Prior to that, he served as Director of Logistics at Toll Holdings Ltd. Don's expertise in transport and supply chains is highly regarded throughout the industry, and he has held advisory management positions at both Monash University and RMIT University.



Jack Haddad
Supply Chains and
Logistics Advisor

Jack has 22 years' experience in logistics, freight forwarding, shipping and international trade across multiple industries. He has worked for some of the world's largest logistics companies, including UPS, Hellmann, EGL and OOCL. Jack is passionate about supply chain optimisation and best-practice.

FINANCE AND MARKETS



Michael Sonderegger
Financial Strategy Advisor

Michael is an entrepreneur with a strong background in capital raising and corporate acquisitions. Michael has a wealth of experience and large network in both the banking and cryptocurrency sectors. He has an MBA in Banking and Finance from the University of St. Gallen.



Christian Mischler
Market Entry and
Growth Advisor

Christian is a highly-experienced serial entrepreneur and has spent many years building high-growth tech startups. He has founded and exited numerous companies, including HotelQuickly and Foodpanda. Christian also spends much of his time helping traditional companies adapt to emerging technologies.



Jing Su
International Markets
Advisor

Jing has been managing her family business for over 10 years and is CEO and Managing Director of her own Shanghai-based clothing empire. Jing has been involved in a broad portfolio of businesses throughout Asia and the United States and provides BlockGrain with major pathways of expansion into these markets. Jing holds an MBA from Bond University, and is also a Board Member and early-stage investor of Lalabobo Clothing (which has received significant investment from Sequoia Capital China).



TOKEN ECONOMY





THROUGH THE BLOCKGRAIN PLATFORM, ALL AGRICULTURAL SUPPLY CHAIN PARTICIPANTS (FARMERS, LOGISTICS PROVIDERS, BROKERS, TRADERS, BUYERS AND CONSUMERS) WILL BE ABLE TO SEAMLESSLY TRANSACT IN AN EFFICIENT, DE-RISKED ENVIRONMENT.

As a global platform, BlockGrain delivers connectivity between participants in the agricultural supply chain, promoting transparency and traceability from paddock-to-plate. The BlockGrain ecosystem is secure, scalable and adaptable to complementary platforms that exist both internally and externally to the agricultural industry. This approach enables customers to use BlockGrain as a stand-alone system or to complement existing software.

The BlockGrain AGRI token drives the interaction between supply chain participants and the BlockGrain platform. As the 'fuel' of the BlockGrain system, AGRI are an exchange-traded, multi-purpose utility token. AGRI tokens provide access to the BlockGrain system, and enable owners to use blockchain-backed system features. AGRI also provides BlockGrain users with a single, common currency to transact with.

BlockGrain will also support a private 'SEED' token (not tradeable on public exchanges) that allows pre-approved participants to de-risk their buying and selling, provide liquidity and reduce the cost of capital. Pegged one-to-one with the fiat currency of the seller, SEED tokens are generated when a buyer and a seller enter into a commodity contract. A portion of the total contract value can be distributed to the seller in SEED tokens, which are backed by the contracted commodity and insurance. BlockGrain users issued with SEED tokens may then trade with vendors on the system to provide liquidity between the date of contract agreement and the date of settlement.

AGRI TOKENS

BlockGrain uses ERC20-standard AGRI tokens on the Ethereum (Main Network) Public Blockchain. The AGRI token is an exchange-traded utility token which can be used to pay for BlockGrain system access through a Payment Gateway.

Where a transaction fee is to be paid in AGRI tokens, users will be charged at the time of transaction. Users will be required to hold a minimum balance of AGRI tokens to ensure system transactions can be completed. AGRI tokens collected by BlockGrain as revenue may be sold to the open market to realise a profit. BlockGrain will also allocate a percentage of AGRI token revenue to grow the Commodities Fund.

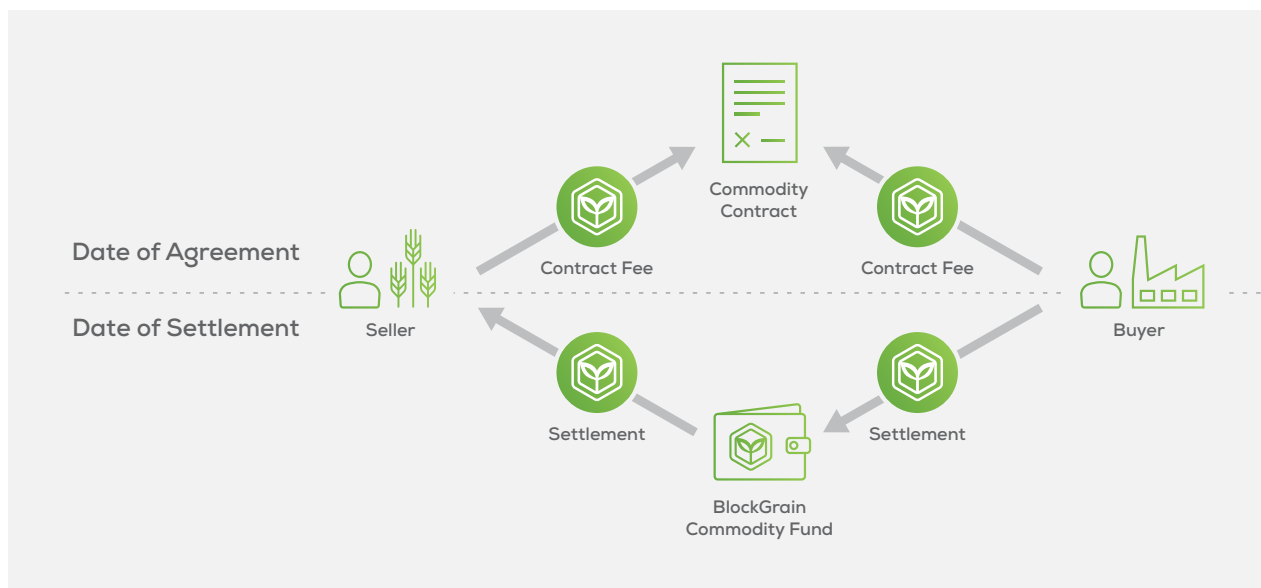
To overcome volatility with cryptocurrency markets, BlockGrain system rates (such as fees and rewards) will be calculated using fiat currency prices. However, users will be charged in AGRI tokens. This ensures rates are consistent and charges remain reasonable, regardless of cryptocurrency market volatility.



Commodity contracting

BlockGrain users will pay AGRI to create commodity contracts for the selling and buying of agricultural products. Once a commodity contract has been created, any future amendments requiring new data to be written to the Public Blockchain will also incur an AGRI transaction fee. Completing, closing or voiding contracts will also require an AGRI payment to finalise the commodity transaction between the seller and buyer.

To reduce complexity and risk on the date of settlement, the seller and buyer will be able to transact using AGRI tokens. This is particularly important for international commodity contracts and removes a number of burdensome transaction costs, such as multiple foreign exchange contracts, bank guarantees and letters of credit. BlockGrain removes the complications and reliance on financial intermediaries, enabling sellers and buyers across the globe to transact using a single, common currency.





BlockGrain marketplace

When commodity traders connect using the BlockGrain marketplace, a commission will be collected by BlockGrain for establishing the connection. Marketplace commissions will be paid in AGRI tokens.



Freight contracting

Creating and managing contracts for freight orders and movements will operate in a similar way to commodity contracts, whereby supply chain participants will pay in AGRI to write data to the Public Blockchain. Freight contracts can be established between the seller or buyer of a commodity and a freight broker or freight provider. For freight orders managed by a freight broker, AGRI will also be paid to allocate individual freight contracts to sub-providers. Supply chain participants will also have the ability to pay for freight services in AGRI tokens upon settlement of freight contracts.



Freight tendering

Traders requiring freight services will be able to use BlockGrain's freight tendering module to advertise their freight requirements. This feature promotes competitive freight costs, as prospective logistics providers can then offer their best price to secure the work. As agricultural commodities primarily move from rural areas to urban facilities and ports, returning trucks are frequently empty. The freight tendering module reduces these inefficiencies by enabling supply chain participants to 'back load' trucks returning to rural areas.

Agricultural inputs (such as fertilisers), move in the opposite direction to agricultural commodities, as they are transported from urban areas to farms. BlockGrain provides a platform for traders to secure competitive pricing on back loads by tendering freight jobs for agricultural inputs. This allows logistics companies to maximise productivity by reducing the number of empty returns. Commissions collected by BlockGrain for connecting traders and logistics companies will be paid in AGRI tokens.



Supply chain tracking

To track commodities along the supply chain and create a complete record of the paddock-to-plate journey of agricultural products, each transaction point must be recorded. Between the farm and the end user, custody and ownership may change multiple times as commodities are passed from one supply chain participant to the next. At each point of inload, outload or transfer of ownership, fees will be incurred by the user and payable in AGRI.



Commodity management

As commodities are harvested and transported along the supply chain, they are frequently inspected to ensure the product meets specified quality, grades and weight. At each inspection point, commodity data will be written to the blockchain to provide complete visibility and create an end-to-end record. In addition, treatments or gasses applied to commodities as they traverse the supply chain will also be recorded. Collection of commodity data will incur fees that will be charged in AGRI tokens.



Share-farming agreements

Share-farming agreements provide farmers with opportunities to work collaboratively and maximise the profitability of their assets. By connecting land owners with farmers looking to expand their operation, share-farming agreements enable farmers to increase their output. BlockGrain supports farmers entering into share-farming agreements, and records this information on the BlockGrain Private Blockchain. Fees for creating, amending and closing share-farming agreements will be charged in AGRI tokens.



AGRI as a reward token

Throughout the growing season agronomic and agricultural data is collected relating to the activities and conditions in the field. This information includes soil analysis, yield estimates, nutrients and fertilisers, chemicals, pesticides, and more. This information has many uses as it not only contributes to agricultural 'big data' to find trends and patterns, but also influences the buying decisions of consumers. To provide full transparency of each commodity, agronomic data will be recorded and written to the BlockGrain Private Blockchain. BlockGrain plans to incentivise users to contribute agronomic data by rewarding them with AGRI tokens sourced directly from data revenue.

'SEED' TOKENS



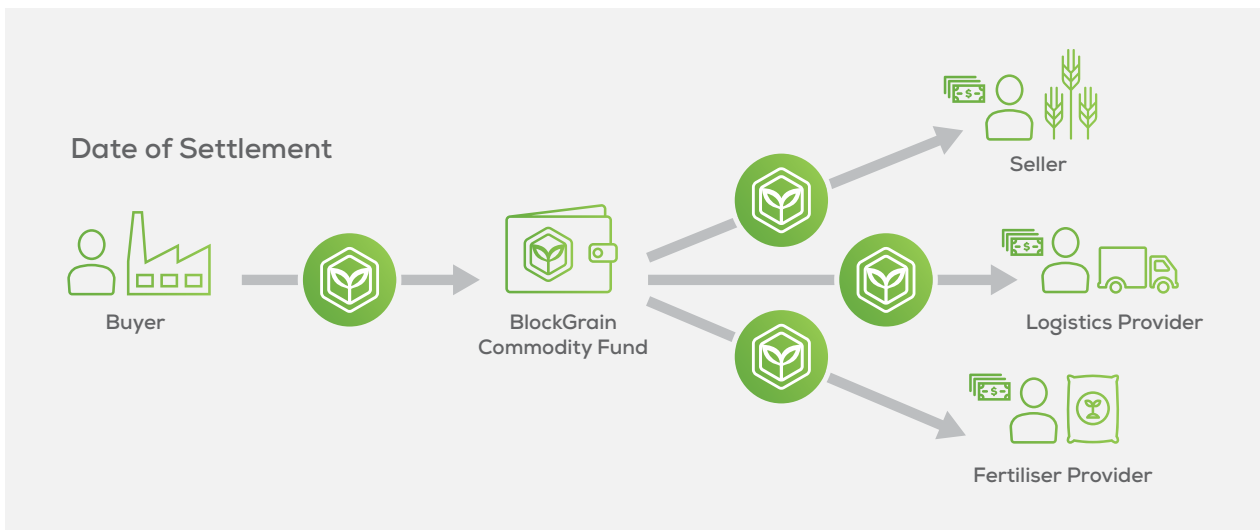
'SEED'²⁵ is a private token operating on the BlockGrain private blockchain. SEED plays a crucial role in the BlockGrain platform as it is used to provide liquidity to supply chain participants and protect users from cryptocurrency volatility. SEED tokens will only be available for transactions between pre-approved BlockGrain users. Pre-approval will be granted based on a combination of the user's BlockGrain reputation/rating, length of system use, number of successful transactions, credit rating, insurance rating and more. SEED tokens will only exist on the BlockGrain Private Blockchain and will not be traded on public token exchanges

SEED tokens are pegged one-to-one with the fiat currency of the seller, backed by a tradeable commodity and underwritten by insurance. When a commodity contract is created between pre-approved BlockGrain users, an option will be available to the seller to generate a portion of the total contract value as SEED tokens.

The seller will then be able to exchange SEED tokens with other supply chain participants and vendors in the BlockGrain system, providing them with additional liquidity prior to the date of settlement. SEED tokens will indicate the date of settlement of the underlying commodity contract.

Vendors who may be paid in SEED tokens include suppliers of agricultural products and services, as well as other supply chain participants (logistics providers, farmers, intermediaries, etc). SEED tokens can be traded on the BlockGrain Private Blockchain amongst vendors and supply chain participants that accept payment in SEED tokens. It is possible for SEED tokens to be traded multiple times before the underlying contract is settled.

25. 'SEED' is a working name and may be subject to change



Once the contract is settled and funds are transferred from the buyer to the seller, any SEED tokens that were generated against the contract will be destroyed and the equivalent value transferred to the recipient. Presently, agricultural vendors extend terms of credit to customers with limited payment guarantees.

SEED reduces the risk of non-payment by providing agricultural vendors with a protected digital token. There is no fixed amount of SEED tokens, as tokens will be generated and destroyed as required.

TECHNOLOGY LAYERS



PUBLIC BLOCKCHAIN LAYER

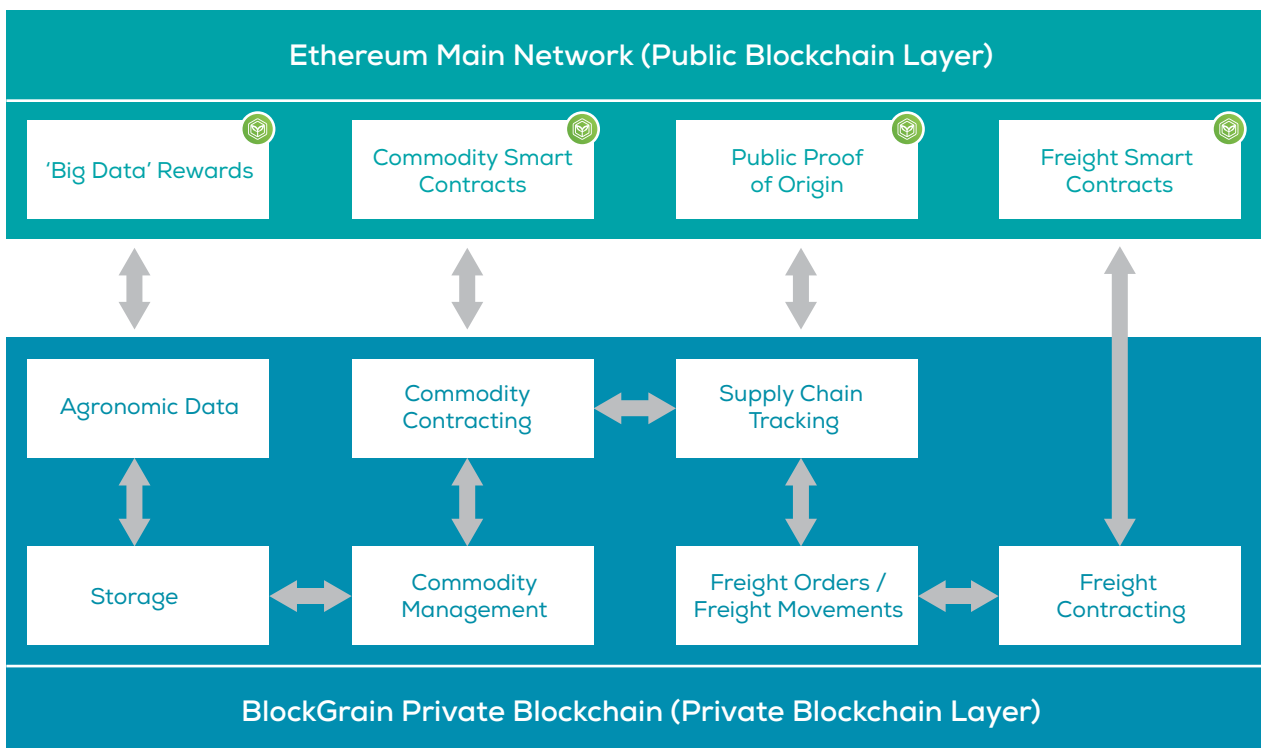
BLOCKGRAIN USES THE ETHEREUM (MAIN NETWORK) BLOCKCHAIN TO CREATE SMART CONTRACTS, RECORD PUBLIC BLOCKCHAIN DATA, TRANSACT IN AGRI TOKENS, AND ENABLE AGRI TOKENS TO BE TRADED ON THIRD-PARTY TOKEN EXCHANGES.

The Public Blockchain Layer facilitates commodity smart contracts, freight smart contracts, proof of origin data and AGRI transactions. The Ethereum Public Blockchain and third-party exchanges operate independently of BlockGrain and provide security and decentralisation for smart contracts and AGRI tokens.

PRIVATE BLOCKCHAIN LAYER

Due to the high volume and frequency of agricultural and supply chain transactions, a Private Blockchain Layer is required to better manage the volumes of data and to reduce the transaction costs and waiting times associated with a public blockchain. BlockGrain is currently working with, evaluating and testing a number of blockchain technologies to determine the best technical and commercial fit for the BlockGrain Private Blockchain. The Private Blockchain Layer will interface with the Ethereum (Main Network) Public Blockchain.

The BlockGrain Private Blockchain will be used to record private data relating to commodity contracts, freight contracts, supply chain tracking, stock management, agronomics, etc. BlockGrain is pursuing this strategy to ensure the best possible match for the underlying application and anticipated volume and load.



PAYMENT PLATFORM

The BlockGrain Payment Platform enables direct payments to be made for access to the Applications. The Payment Gateways support payments in AGRI tokens as well as fiat currency (credit card). As many people in BlockGrain's target market will be new to blockchain technology and tokens, credit card payments will be accepted as a temporary measure, lowering barriers to system adoption. Credit card payments will be used to purchase AGRI tokens from public exchanges, which will then follow the same process as a direct AGRI payment. In time, and as the BlockGrain Private Blockchain Layer is established, the Credit Card Payment Gateway will be turned off and AGRI tokens will become the sole method of payment for system access.

APPLICATIONS LAYER

The primary BlockGrain Application Modules include:

1. Commodity Contracts
2. Freight Orders
3. Freight Movements
4. Stock Management
5. Freight Tendering
6. Marketplace
7. Insurances
8. Invoicing
9. Production Estimates
10. Reporting
11. Cash Boards
12. Administration / Configuration

The BlockGrain Applications are available on the following platforms:

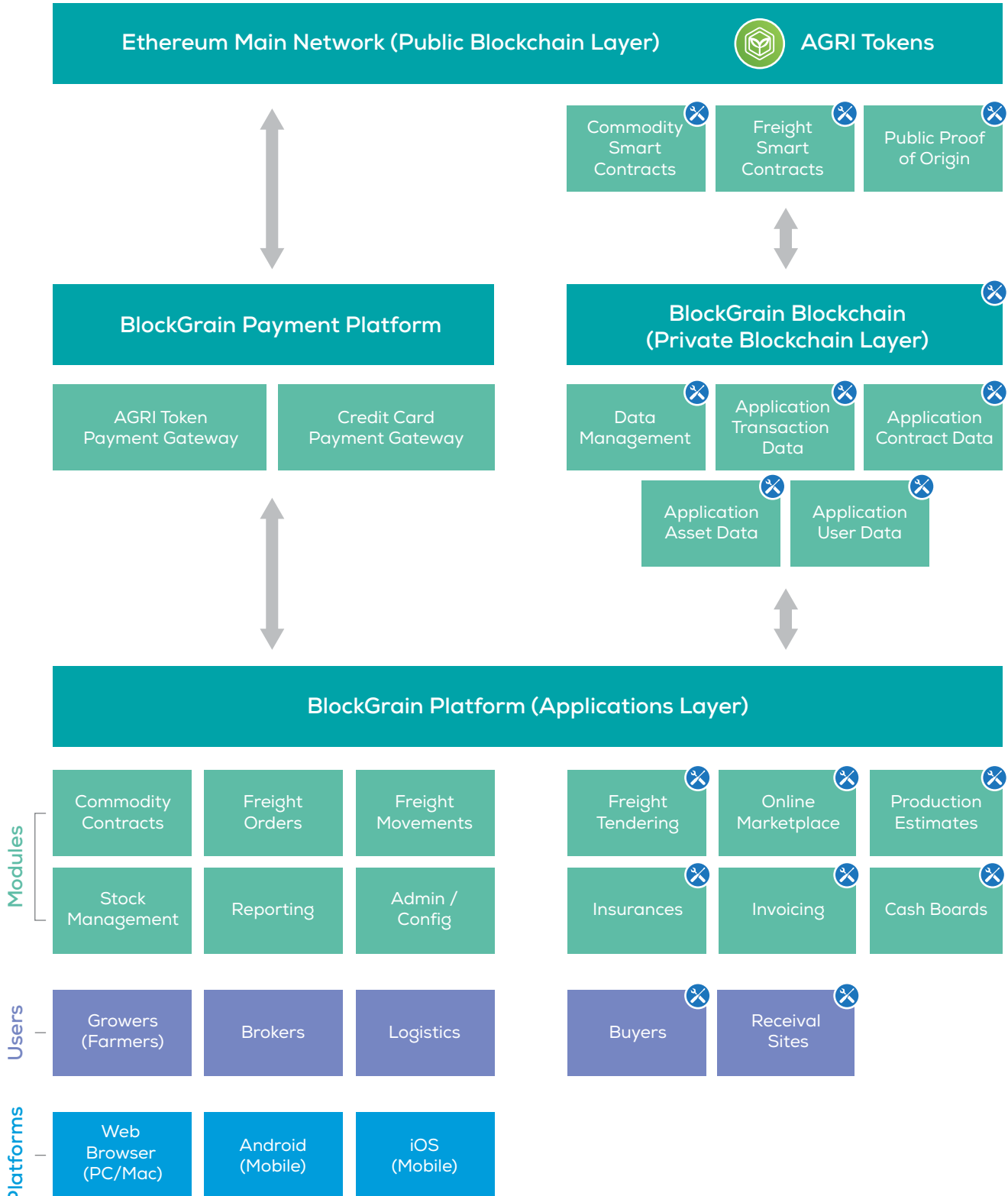
1. Web Browser (accessible via any modern browser on PC, Mac and/or mobile devices)
2. Mobile - Native iOS app
3. Mobile - Native Android app

The BlockGrain user types include:

1. Growers (i.e. Farmers)
2. Brokers
3. Logistics Providers
4. Buyers
5. Receiving Sites



SYSTEM ARCHITECTURE



In Development

DEVELOPMENT AND MILESTONES



EXPANSION STRATEGY

BlockGrain is developing a global solution for use with multiple agricultural and bulk commodities that will see BlockGrain's customer base grow as the product expands to new industries and new international markets.

BlockGrain is preparing to release an MVP (product origin) for partners in the Australian fruit industry. This will expand into a full-scale solution in 2019. Preparations have begun for expansion into the Australian wool industry (the largest wool industry in the world) over the next two years. BlockGrain is also building relationships with key market partners in the livestock industry.



CURRENT



Grain & Cereal

MVP



Fruit & Vegetables

FUTURE EXPANSION



Wool



Livestock



DEVELOPMENT ROADMAP

2018

Q2

- Soft launch - BlockGrain 2.0
- MVP trial - Fruit

Q3

- Official launch - BlockGrain 2.0

Q4

- User requirements gathering livestock/wool

2019

Q1

- Production Estimates module

Q2

- Platform expansion - Fruit

Q2/Q3

- Online Marketplace module
- Buyers interface
- MVP Trial - Wool/Livestock
- Receival Site interface and Cash Boards
- Bookings module

Q3

- Trial for international smart contracts
- Trial for on-blockchain supply chain tracking

Q4

- Product expansion - Wool
- Expansion to first international market

2020

Q1

- M2M module

Q2

- Expansion to international markets

Q3

- Product expansion - Livestock

Q4

- Rapid growth into existing and future markets

TOKEN DISTRIBUTION



BLOCKGRAIN WILL BE ISSUING A STANDARDISED ETHEREUM ERC20 TOKEN CALLED 'AGRI' (AGRI).

AGRI will be traded on independent public exchanges (not operated by BlockGrain). A total of 1 billion AGRI tokens have been generated, with 300 million (30%) available for sale during the Stage 1 and Stage 2 distribution events.

To help onboard future customers, 200 million AGRI tokens (20%) will be held in escrow for one to four years in a BlockGrain Growth Pool. As required, BlockGrain may sell, gift or discount these tokens to future customers to assist with onboarding. This will ensure a sufficient supply of AGRI tokens are available for system access. Any unsold AGRI tokens from the Stage 1 and Stage 2 distribution events will be frozen.

1.25 million tokens will be made available for a Bounty Campaign.

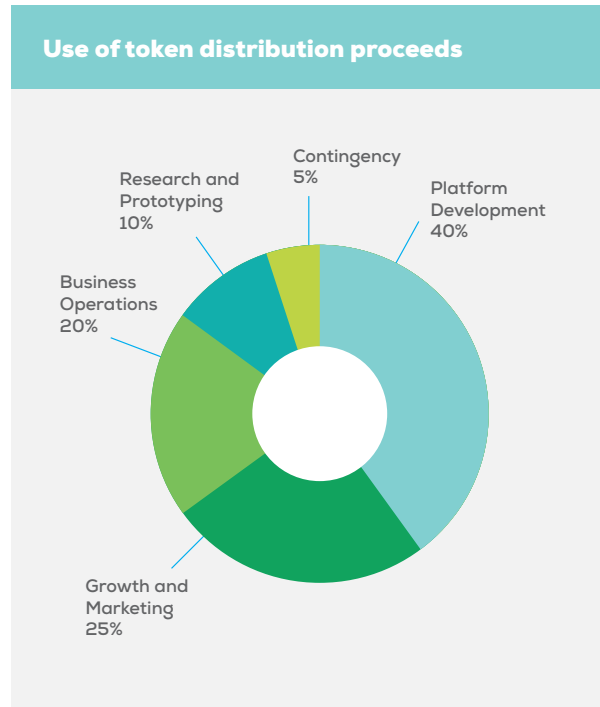
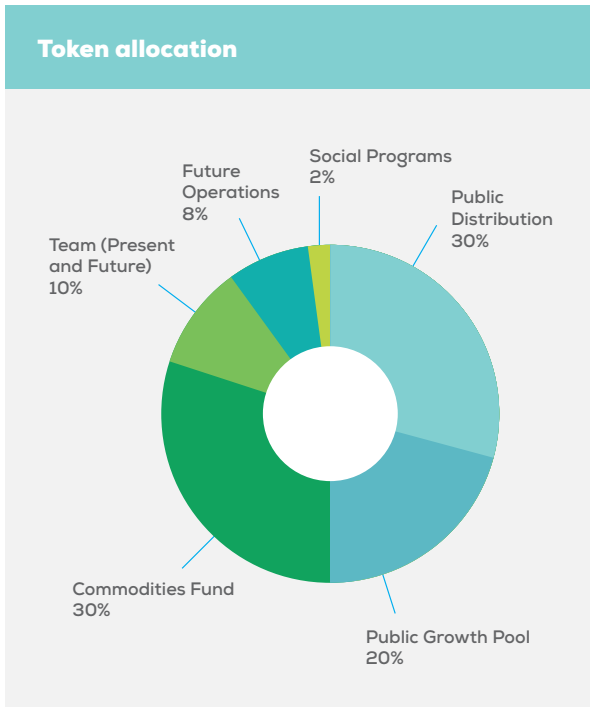
Configuration	
Accepted tokens	ETH, BTC, XEM
Total AGRI supply	1 billion
Public allocation	500 million (50%)
BlockGrain allocation	500 million (50%)
AGRI sale price	1 AGRI = \$0.075 USD (7.5 US cents)
Stages 1 and 2 distribution	300 million AGRI
Date of AGRI token issue	10 July 2018



Token distribution details					
	Date of Registration*	Date of Sale*	AGRI Allocation	Minimum Contribution	Maximum Contribution
Stage 1 Private Distribution	16 Feb 2018 to 24 Feb 2018	13 Mar 2018 to 28 Mar 2018	40 million	0.2 ETH**	500 ETH**
Stage 2 Public Distribution	5 April 2018 to 22 June 2018	26 April 2018 to 24 June 2018	260 million	0.5 ETH**	500 ETH**

*Dates may be subject to change

**or BTC/XEM equivalent



- **Public Distribution** tokens will be offered for sale through the BlockGrain token distribution.
- **Public Growth Pool** tokens will be held in escrow for one to four years. The sale of the Public Growth Pool ensures access for future system participants.
- **Commodities Fund** tokens will be held by BlockGrain to support commodity transactions.
- **Team (Present and Future)** tokens have a two-year vesting condition and will be distributed to the BlockGrain team.
- **Future Operations** tokens will be used to support future operational activities.
- **Social Programs** tokens will be used to support charitable social and community initiatives.

- **Platform Development** proceeds will be used to deliver the product roadmap.
- **Growth and Marketing** proceeds are required to advertise and market BlockGrain, as well as expand to new markets.
- **Business Operations** proceeds will be used to run day-to-day operations and governance.
- **Research and Prototyping** proceeds will be allocated to researching, prototyping and trialling new technologies and features.
- **Contingency** proceeds may be used for any of the above purposes as required.

Version history

Version No.	Date	Notes
1.0	12/03/2018	First version
1.1	21/03/2018	Updated Advisors section (pg 29 and 31) Updated Token Economy section (pg 34) Updated Token Distribution dates (pg 47) Minor formatting changes (pg 33 and 34)
1.2	04/04/2018	Updated Token Distribution section (pg 47)
1.3	26/04/2018	Updated Token Distribution section (pg 47)



BLOCKGRAIN