

WORLD PARADISE FARM PTE LTD



The Global Urban Farming Market revenue is \$210 billion in 2017 and forecasted to grow at a CAGR of more than 1.99% during 2018 to 2023 to reach \$236.4 billion. Urban farming is an indoor and outdoor plant cultivation for serving local inhabitants by processing them and distributing food in and around cities. Rising urbanization around the world results in relevant demand for urban gardening. Urban farming is gaining importance owing to lower transportation cost and supply of fresh nutritious products at competitive prices. Urban Agriculture produces 20% of the world's food keeping engaged everyone in urban farming globally.

The indoor farming market is projected to register a CAGR of 7.2% during the forecast period of 2021~2026. With the force and isolation of COVID-19, many countries around the world have realized that strengthening food production and distribution systems is key to fighting hunger and tackle the double burden of malnutrition and the development of indoor farming can aid in embracing all dimensions of various food security.

Global Aquaculture Market is valued approximately at USD 31.94 billion in 2019 and is anticipated to grow with a healthy growth rate of more than 7.1% over the forecast period 2020-2027.

An increase in health consciousness and consumption of residue-free food has paved the way for the usage of advanced techniques, like indoor farming. People are growing the necessary crops in their own houses on a small scale, to have food that is free from pests, and this has resulted in a higher yield.

In Singapore, nation-wide efforts to achieve food security and sustainability while lowering food waste and loss have been pushing for significant progress in food sourcing and procurement for some time. Covid-19 global pandemic in 2020 had heightened this need further. There is a pressing need for food origin transparency, fulfilment reliability and operations efficiency as the food industry intensifies efforts to innovate and find solutions to tackle the myriad of challenges.

World Paradise Farm Pte Ltd (WPF) is a jointed-venture company between Paradise Eco-Smart Farm Pte Ltd and World Food Chain Pte Ltd. We are smart farm factory technology development, whose core business is Direct Growth Supply Chain (DGSC), employing blockchain-enabled farming protocols (BaaF) to build and operate urban indoor farming for food fish, vegetables, herbs, and fruits with proprietary and proven technology and technique to supply at the freshest and best price for Singapore and for the regional market.

OUR GOALS

We develop, educate, and build global farm end to end business to implement precision and predictive farming, expand SKU's with higher yield and nutritional value agrifood and supply directly to the segmented market effectively. With Smart Recirculating Aquaculture Aquaponics System (**RAAS**) farming technique, secure and climate controls system and smart operating software, we track growth with immutable technology to record, track and analyse any produce from farms that adopt our patented Agri-Tech.

With easy access to real-time demand with big data, it helps to better plan production to optimize yield and profit, as well as distribute any exceptionally large harvests efficiently through group buy function. With higher profitability, growers can increase their farms' productivity through adoption of better technology and best practices, yielding quality food at lower cost and carbon footprint, reimagine feeding the world in a sustainable way.

SUSTAINABLE URBAN INDOOR DECOUPLED RAS AQUAPONICS SYSTEM (RAAS)

Paradise Eco-Smart Group, the co-founding partner of World Paradise Farm helm all the urban farming technology and infrastructure design and build of the proprietary RAAS.

TECHNOLOGY THAT HELPS TO

Mitigate climate change & global warming through building massive urban farm

1. To address agrifood demand by the explosive population growth in the cities
2. To reduce carbon footprint created by agrifood importation and transportation
3. To improve on the dietary needs through improved food sources with mineral such as potassium for heart health of the city dwellers
4. With innovative farm design it farm can also become carbon sink
5. Integrated solar farm design on the rooftop or open yard at elevated height that will generate carbon credit and to reduce the dependence of grid power
6. A farming system that produces both high quality food fish and leafy vegetables.

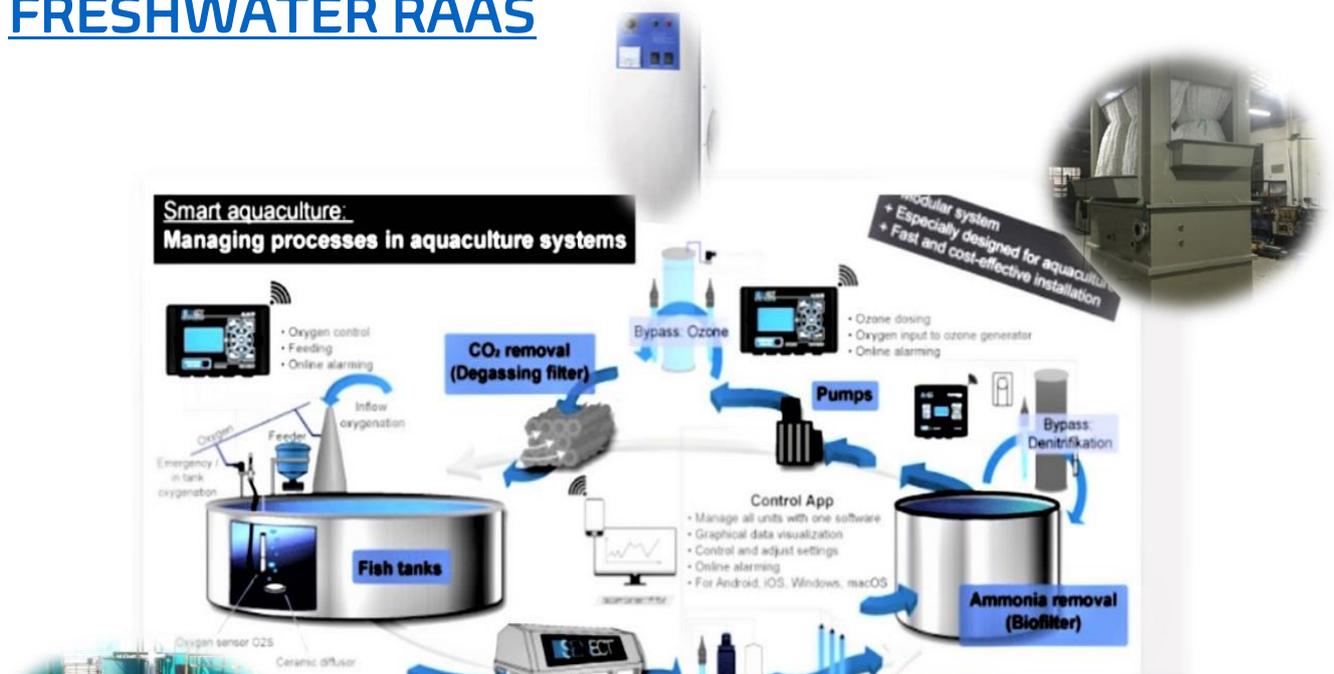
THE FARM IS DESIGNED TO

1. Optimize farm fresh production per unit area of space
 - a. With vertically stacked hybrid of hydroponic NFT-DWC propagation technique
 - b. Optimized harvested growth weight (typically for larger vegetables 300gm ~ 500gm per head) and density against harvesting cycle
 - c. Optimized dual growth zoning to accommodate flexible farming of diversified leafy greens
 - d. Optimized assisted growth LED light and fixtures selection design and configuration according to plant types, actual floor space and ceiling height constraints
2. Optimised against energy demand per kg of farmed fresh production
 - a. Optimized LED light spectra intensity through intelligent algorithm that correlates IOT generated data using data analytics to provide the optimal PPF (Photosynthetic Photon Flux Density) and DLI (Daily Light Integral) or photoperiod at the two growth zones, i.e., the seedling and the harvesting zones
 - b. Optimized climate control to provide the best quality and physiology (morphology) of the leafy crops. With climate control, WPF can produce many crops that are not feasible to be produced in the traditional farms in tropical countries.

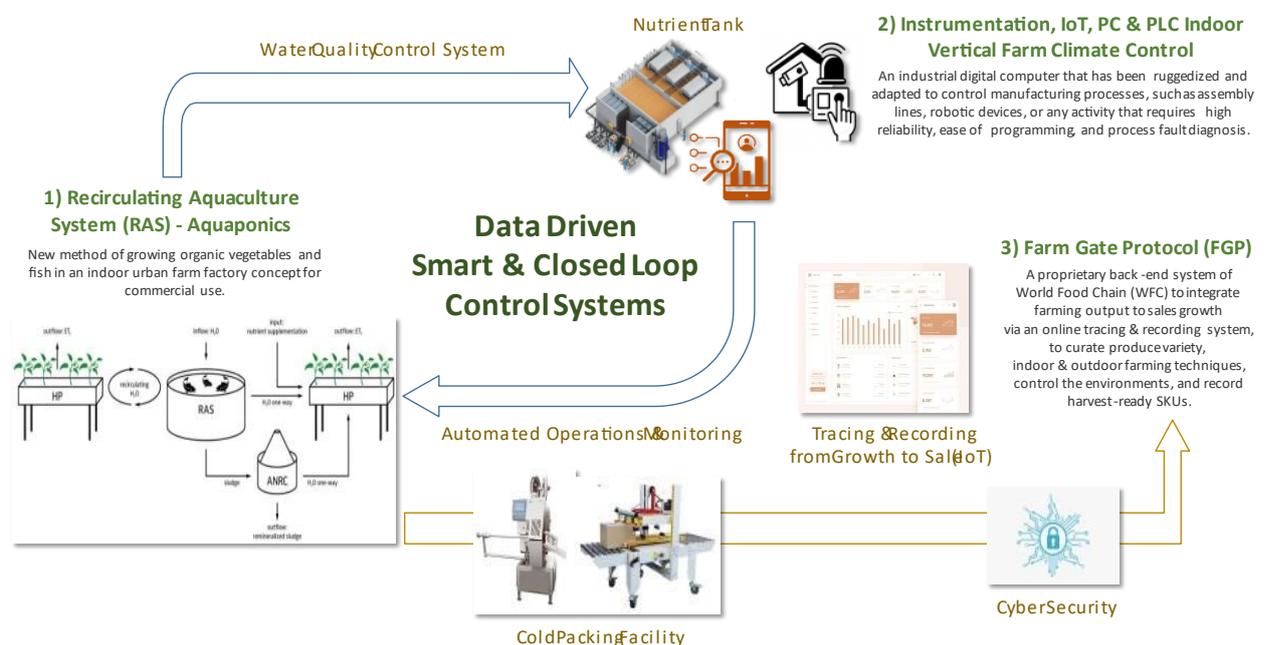
3. Minimize water loss through
 - a. Smart fertigation system
 - b. Use of nutrient rich wastewater extracted from aquaculture RAS system to enhance plant growth while saving water use for plant growth
 - c. Evaporation loss is control by enclosed growth environment where relative humidity is regulated to optimise cultivars growth condition

4. To absorb CO₂ from the external environment to maintain the concentration required in enclosed growth space during the photosynthetic process of the plant growing cycle. The farm is design to absorb carbon dioxide to optimise the yield and quality of the cash crops or leafy vegetables.

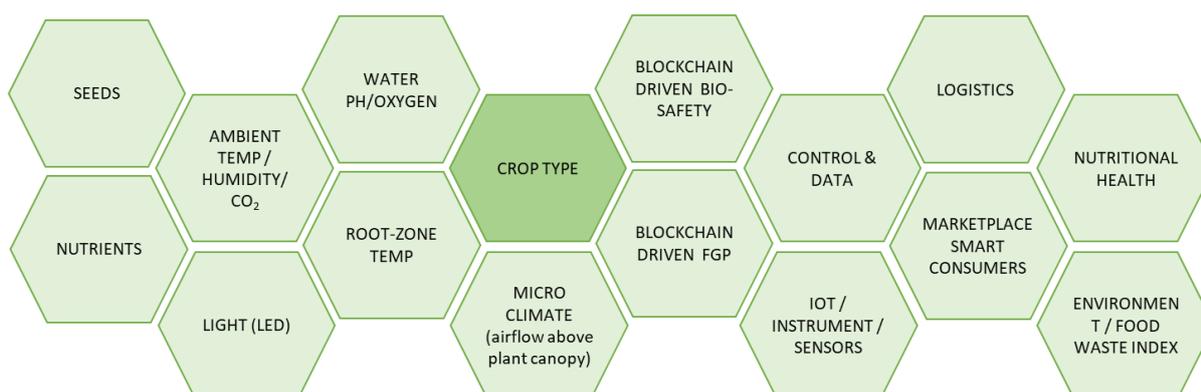
FRESHWATER RAAS



SMART DECOUPLED RAS AQUAPONIC FARMING SYSTEM



BLOCKCHAIN DRIVEN FARM OPERATION



FARMGATE PROTOCOL

Built on Blockchain technology and powered by our proprietary Farm Gate Protocol (FGP), developed in-house by World Food Chain, the 50% shareholder of World Paradise Farm Pte Ltd, it aims to facilitate secure, reliable, efficient, and seamless food harvesting and advance procurement, on a single touchpoint interface with a great user experience.

Our solution has the potential to contribute to Singapore's '30 by 30' vision and food reliant strategy, especially during and post Covid-19 world. One key functionality is food traceability, collected from sources of origin, in collaboration with our WPF growers, local and foreign food manufacturers. Riding on emerging technologies of Internet of Things (IoT) and Blockchain, this functionality will significantly improve on food consumption and production, enhance food safety, boost fulfilment efficiency, and reduce food loss.

Our founding team has a combined experience of more than 40 years in the food and supply chain industries. Our diverse expertise covers App development, blockchain integration, marketing and branding, retail development, logistics and industry partnerships, as well as corporate management and governance, positioning us well to develop our technology and grow the business.

With the global food and grocery retail market valued at USD 11.7 trillion in 2019, it is set to grow at a compound annual growth rate (CAGR) of 5.0% from 2020 to 2027. We are optimistic that WPF will contribute significantly toward improving the food sourcing and procurement processes in tandem with the industry's progress, contributing to United Nations' 2030 Sustainable Development Goals (SDG) agenda.

WPF Protocol solution aims to address the ongoing challenges in reliable food sourcing and procurement, optimistically contributing to reduced food loss and wastage worldwide. We hope for this same solution, with the capability to trace food origins, to benefit Singapore's food diversity and food security as well. When adopted, WPF Protocol can make available additional food sources, reduce purchase error margin and overbuying, enabling better forecasting of procurement needs and aiding food procurers to make better decisions. These in turn will aid in establishing food security as well as reduce overall food wastage in the Republic. In line with the nation's strategy to build self-reliance on food, we also hope to make available innovative farming

technologies and best practices to Singapore's farms through our network, in hope to contribute to these farms' higher productivity, efficiency and lower carbon footprint, supporting the 30 by 30 vision and sustainable farming rejuvenation efforts especially in the North-western part of Singapore. As our network and ecosystem grow further, we hope this would spur collaborative research and production efforts among various industry players, culminating in novel and ground-breaking discoveries for practical implementation. We believe these would further benefit the food industry, ultimately bolstering Singapore's food security strategy.

Our Protocol is also designed to integrate a comprehensive payment, e-invoicing and third-party logistics modules to ease the procurement and logistical processes for both food procurers and suppliers worldwide. We are delighted that our efforts seem to be aligned to the economic digitalization initiatives by Singapore's Ministry Trade and Industry (MTI).

We hope with more Digital Economy Agreements (DEAs) being signed, more Singapore food suppliers can gain access to new overseas buyers through our Protocol, opening new markets and increasing business growth, ultimately contributing to Singapore's economic growth.

As much as is plausible, we aim to hire, train, and grow together with local talents, in the ongoing development, maintenance and progress of our Protocol. We hope this would contribute to more skilled labour count, giving mid-career professionals a chance to upskill and pivot too, especially since food is an established industry and existing talents with industry and contextual knowledge are invaluable. Together, we hope to work on futureproofing the industry as well as its related ones, building resilience through talent development and technology adoption.

Singapore is intended to be the home base for all WPF's Intellectual Properties (IP), before we register them in other relevant countries for protection measures. In so doing, we hope to contribute to Singapore's international standing of IP count.

Focusing on the B2B2C food market after the strategic pivot, WPF came across a few gaps and pain points within the industry that appeared ripe to be addressed. This, coupled with parallel advances in technology, propelled the team to explore and design our proprietary technology Protocol solution.

With this, we finalized the overarching framework of our proprietary technology – the Farm Gate Protocol (FGP), to power WPF's Farm2Fridge B2B2C App (Mobile and Web). On technological front, our FGP mainly uses React-Native on its front-end, Golang on its backend, and NoSQL as well as Relational for our databases. The following are our FGP's proprietary technical functionalities, most of which are novel:

I. FGP Algorithm

This main algorithm will allow for a seamless, systemized, holistic and secured integration of our proprietary algorithms with any complementary existing third-party API systems and protocols. FGP's novel and transformational approach, not seen in the market yet, will enable significant improvement to FARM FRESH GROW and procurement processes, making it more resource efficient, optimising output, digital payment and logistics efficacy, and increasing transparency within enterprises for greater compliance and accountability. This should also improve food procurers' overall bottom line, as cost-revenue gap widens.

II. Speed-to-Market Algorithm

This set of algorithm allows suppliers to provide real-time update of food stock availability and their corresponding selling price, facilitating quicker sale of food, reduce overall food loss and improve food suppliers' profitability. The current system does not allow food suppliers to put their food products on the global market as soon as they are ready for sale, due to intermediaries-rife procurement channels and lack of access to our fish food and vegetable produce procurers. Our algorithm will also notify potential food procurers of this timely set of information, and help them secure and procure fresher food sooner, prolonging shelf life, and all being well, reducing overall food loss.

III. Machine Learning (ML) Algorithm

This set of algorithms will improve food matching needs and supplies and offer food procurers an enhanced 'shopping' experience, potentially increasing their buy order likelihood through the Protocol. Our integrated machine learning (ML) capabilities will grow sharper and more accurate through progressive use and accumulated data exposure over time.

There are three (3) specific features within this ML algorithm:

- a. Spot Price: Given procurers' prior buying patterns (item, price, preferences), ML bots will populate buyers' interfaces with potential suppliers' matches, reducing search time, improving food matching, and enhancing overall buyers' experience.
- b. Group Buy: ML bots will repeat the algorithmic process for Spot Price, incorporating an additional parameter of SKUs' minimum & maximum production order quantity. ML bots will then identify other potential food procurers and 'suggest' these items for their allocation and advance purchase consideration. This function will be especially helpful to food procurers with lower buying capacity and food suppliers with unexpected large harvests.
- c. Bid Price: Food procurers are invited to submit bid on limited, seasonal, and/or exclusive food items on sale. ML bots constantly update the highest bid price displayed, while ascertaining and matching that the stock of food item being bid on is still available, having been set aside by the suppliers, and finally match these with procurers to complete the transactions and fulfil the orders.

IV. Market Price Optimization

On the Protocol, food items' pricing is made accessible timely and openly to all subscribed buyers, as opposed to the current practice of setting varied pricing with numerous and considerable intermediaries' costs, primarily benefiting the intermediaries. This would empower suppliers to price their food SKUs more competitively. Buyers are also able to procure items at potentially lower prices, since they are now able to compare pricing across various suppliers and in so doing, our FGP removes significant layering costs. Collectively, demand expectation will be adjusted, and transactions facilitated speedier, benefiting all B2B2C procurers and suppliers and creating a more efficient 'food market' overall.

V. Report Access

With a consolidated order report accessible on a single Protocol, food suppliers can now have overview to data that can empower them to better predict future demand and implement plans for their food production to better optimize yield, harvest, handling and storage, improving their farm/factory yield and business profitability, and eventually reducing food loss. While current practices may also allow for such access, the analysis process may present itself to be rather cumbersome and tedious, as most suppliers may have varying degrees of digital literacy and adoption. Being an onboarded supplier on WPF Food Trader may catapult many to the digital forefront, positioning them well to the changing buyers' preference toward online sourcing.

VI. Blockchain Technology Application

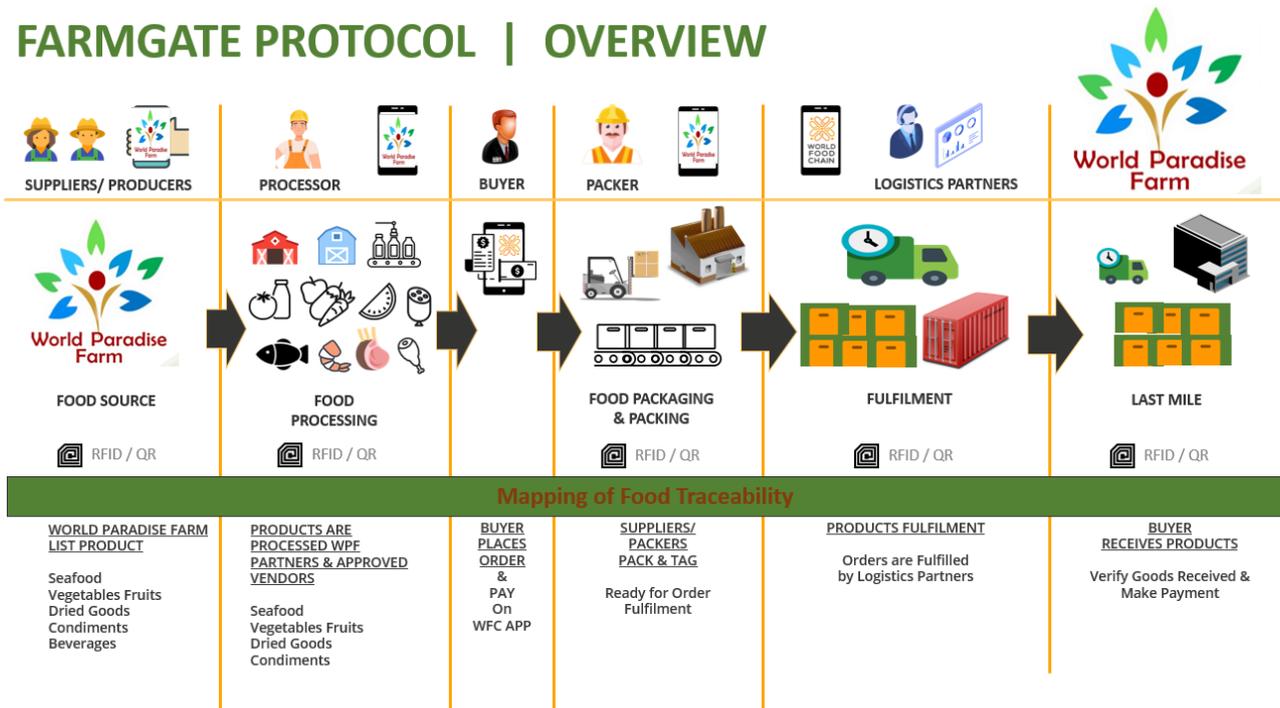
Blockchain technology will be utilised in the immutability of food provenance, elimination of reconciliation challenges across multiple records, provision of real-time visibility to perform track-and-trace analysis, assess risks and accelerate movement in the physical supply chain as well as financial value chain.

The three (3) blockchain ledgers embedded within FGP's base layer are:

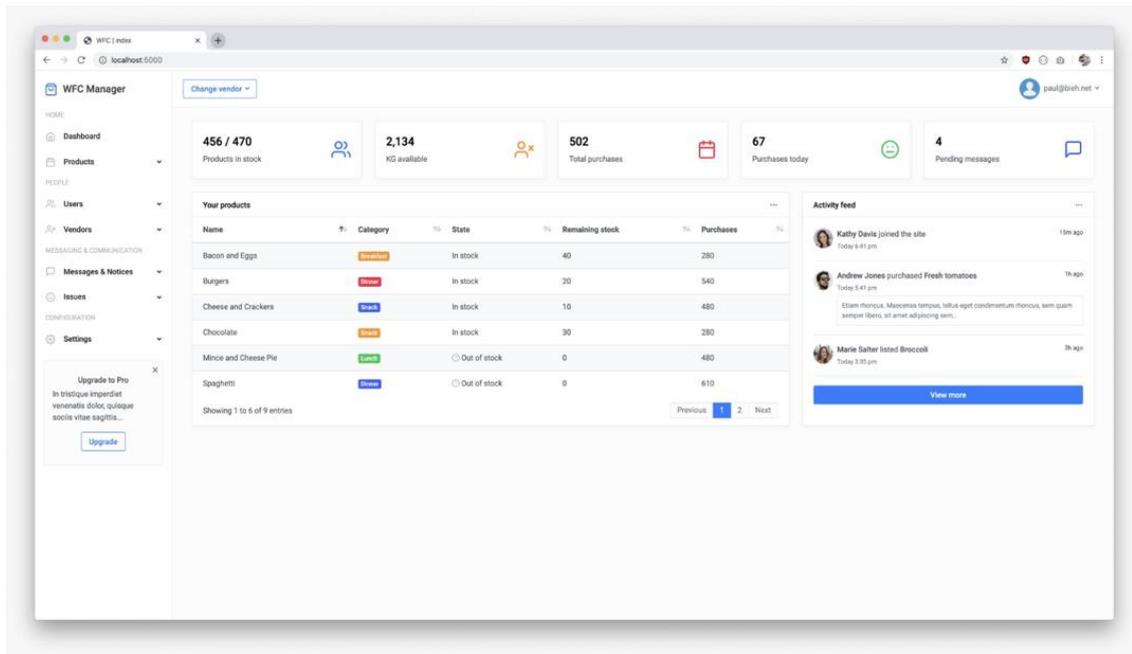
- a. FGP Smart Contracts (FGPSC): These digitalized contracts are known as 'Smart Contracts', providing a single source of 'data truth' for records, all of which are verifiable by all stakeholders, allowing for transparency to all parties.
- b. Payment Transactions: FGP seamless integration with swift network and other third-party digital payment providers makes it inexpensive, secured and easy for onboarded users to transfer any currency to anywhere in the world, facilitating secured payments and credible transactions on the FGP.
- c. Last Mile Fulfilment (via IoT): Through data captured via the IoT devices, any party can verify the origin, quantity, movement, location, and transfer of all food items. Knowing the geographical movement and flow of food items, from production to delivery, helps food procurers plan better and optimise their businesses. This also ensures reliable reporting

system and better record-keeping and safe keep of timely relevant cross-border trade documentations, for e.g., manifests, delivery orders, certifications, etc.

FARMGATE PROTOCOL | OVERVIEW



WPF PLATFORMS DASHBOARD



WORLD PARADISE FARM PTE LTD`
(UEN 202115592C)

Level 30 Six Battery Road, Singapore 049909

|;+65 6610 6800 | inquiry@paradisefarm.com | www.worldparadisefarm.com |