Consumers, in their ideal world, would like to purchase food that is nutritious, very fresh, locally harvested, free from chemicals and preferably certified organic, and that is grown in a way that has not harmed the environment or exploited the farmers growing the food.

However there is a major problem: Even if such ideal food could be found, it would be prohibitively expensive to grow. Only a very small percentage of the market is willing or able to regularly purchase this type of ideal food.

Over the past several decades an enormous gap or disconnect, has emerged in the fresh produce market globally. The strong consumer trends towards demanding food that is genuinely fresh, local, very healthy, and planet-friendly – could simply not be provided by the agricultural sector. At least, it could not be provided at price points within reach of the average consumer.

This ever-growing gap - now a chasm - is extremely frustrating for consumers. The situation is equally frustrating for the large retailers such as supermarket chains, who are unable to source

large and consistent volumes of such produce at price points accessible to the majority of their customers.

The world-first, patented and revolutionary Blue Farms technology solves this problem.

One of UESL's licensee's, Green Camel, operates this 3 Ha facility at Cobbitty, Sydney.

For the first time, supermarket chains can access such produce at large and consistent volumes 365 days per year, yielding vegetables that are locally produced in and around major cities, harvested fresh and delivered directly into supermarkets. This produce is certified organic, highly nutritious, and looks and tastes perfect, using farming methods that are extremely planet-friendly and that use every drop of water and nutrient at an unheard-of efficiency, with no effluents or waste-streams leaving the farm, grown by farmers working in a safe and healthy environment.

Importantly, Blue Farms can grow this revolutionary fresh produce at price points similar to conventional production.

Finally, major supermarket chains can source the type of food their customers have been crying out for, but that has simply not been previously available.

The Blue Farms technology does not only produce certified organic vegetables. Consumers have become acutely aware of the health benefits of eating more fish, particularly those species with high levels of omega oils. But fish are being over-harvested in the world's oceans, filled with heavy metals and nano-plastics, and regular farmed fish produce copious effluents that damage ecosystems when released to the environment.

BLUE

HOW IT WORKS

Blue Farms are a unique combination of best practice horticulture and aquaculture techniques brought together using patented technology that converts fish waste into plant nutrients. Blue Farms are inspired by nature and made possible by numerous technological innovations.

1. POLYCULTURE

Plants, fish, worms, insects and micro-organisms thriving in a symbiotic micro ecosystem.

2. WASTE STREAM TO REVENUE STREAM

Worms and bacteria convert fish waste into plant available nutrients. As a rule of thumb, the waste from producing $1m worth of fish provides nutrients for $10m worth of plants.

3. BIOLOGICAL PEST CONTROL

Integrated biological pest management negates the need for petrochemical based pesticides.

4. ACTIVE RHIZOSPHERE

Plants are grown in a proprietary soil like medium that maintains optimal plant health.

5. COMPUTERIZED NUTRIENT AND CLIMATE CONTROL

Remote nutrient and environment monitoring and control maintains optimal growing conditions for both plants and fish.

6. HIGH PRODUCTIVITY

Best practice 'off the shelf' horticulture and aquaculture systems vertically stacked within the same space.

7. CLOSED LOOP

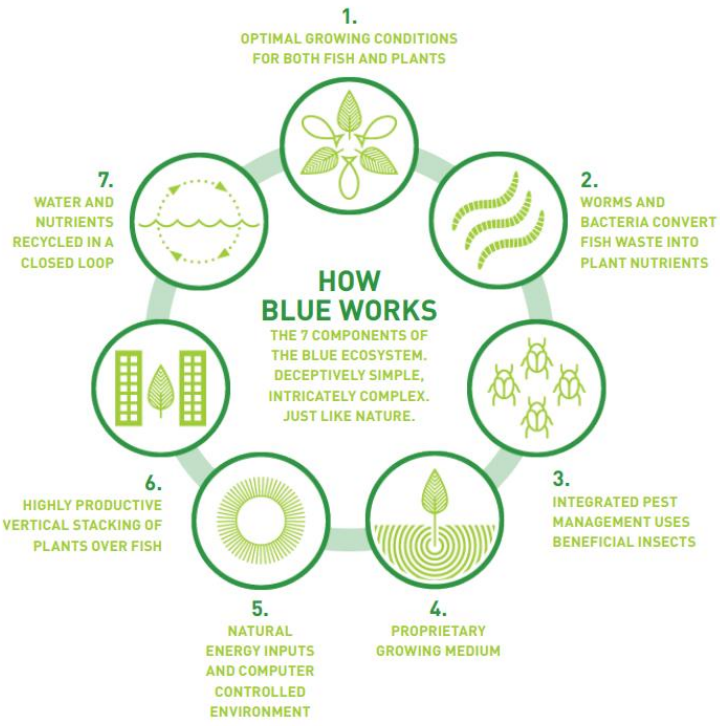
Cyclical flow of water, air, energy and nutrients within a contained and controlled environment. Reduced inputs, minimal effluents.

Blue Farms ingeniously integrate the production of clean fresh fish with organic vegetable production. All of the excess nutrients and water generated by the fish production is biologically transformed into an ideal organic nutrient stream that is used to grow the vegetables.

BLUE

INSPIRED BY NATURE

Blue Farms are a closed ecosystem within a greenhouse environment. Fish, plants, worms, beneficial insects and microbes live together symbiotically just like in nature. Blue Farm technology finely balances the flow of nutrients and the greenhouse environment to create optimal growing conditions for the fish and plants.



Previous technologies known as 'aquaponics', integrated the production of fish and vegetables. However, aquaponic technologies can generally only produce low-quality and low-value fish such as Tilapia, due to the poor water quality achieved in aquaponic systems. In contrast, the Blue Farms technology can produce high quality and high value fish species such as Barramundi (Sea Bass).

Furthermore, aquaponic technologies have rarely succeeded at commercial scale, due to inconsistent nutrient levels delivered to plant production, resulting in inconsistent quality of production that does not meet the stringent quality requirements of major supermarket chains. As with aquaponics, Blue Farms also integrates fish and vegetable production. However, its genius patented system achieves this integration by mimicking nature in a manner that allows highly consistent delivery of nutrients to the plant crops, while also achieving compatibility with organic certification standards.

BLUE

BLUE FARM ECOSYSTEM

A Blue Farm greenhouse allows everything in the ecosystem to be finely controlled. The air, temperature, soil and water. The plants, fish, insects, worms and microbes. Everything is interdependent just like in nature.

The Blue Farms technology enables consumers globally to finally source the ideal food they have been increasingly demanding over the past several decades. Large supermarket chains have already demonstrated their high level of willingness to provide long-term off-take agreements to secure this previously unavailable produce at price-points that are attractive to the consumer, while delivering a strong margin to the producer.

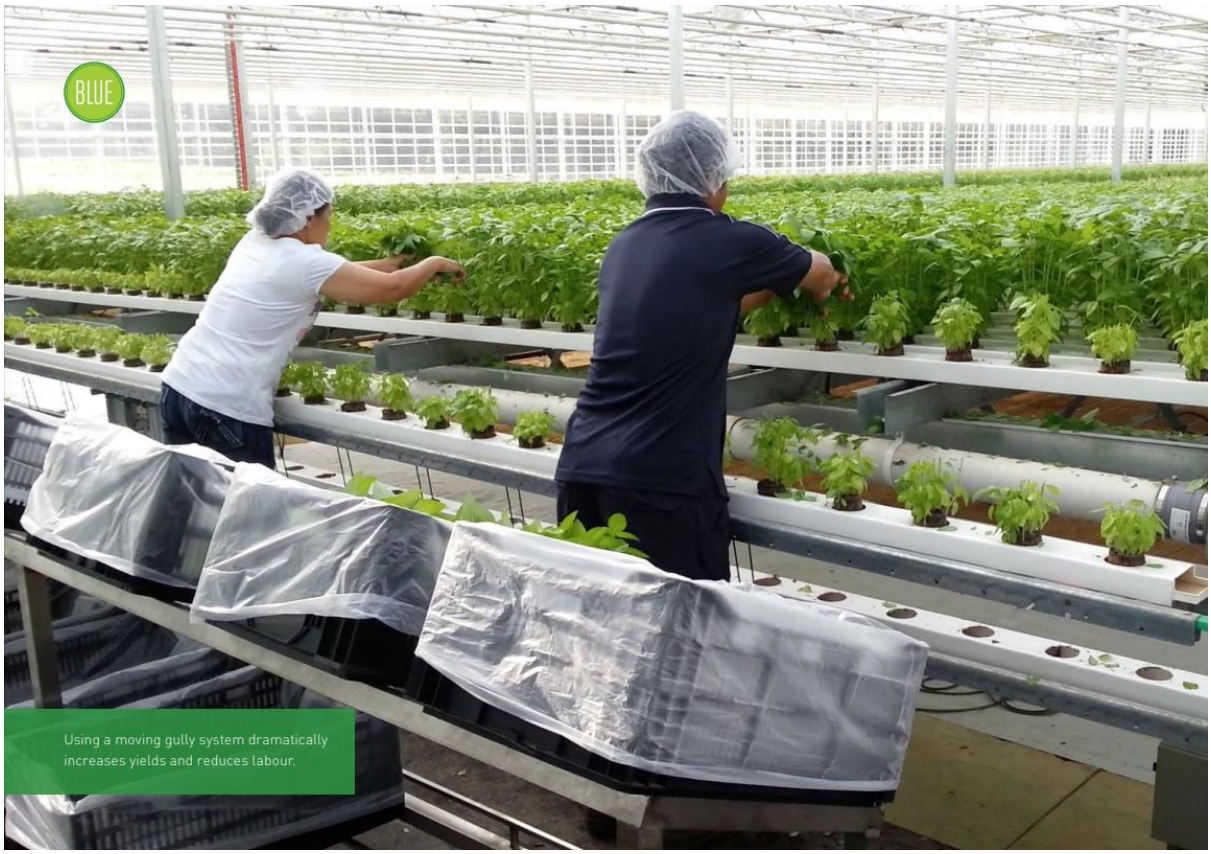
The Blue Farms technology allows people, profit, and planet to all win.

"Most farmers grow their crop then do their best to sell it. However, the most successful farmers pre-sell their crop, then grow it"

Blue Farms Compelling Commercial Advantages:

• First truly commercially-scalable, patented technology integrating fish and vegetables to be Certified Organic in the world.

• Able to produce Certified Organic produce at price points similar to non-organic, due to very high labour efficiency, intensive production, and high level of control within a glasshouse environment.



• Aquaponic systems can only grow hardy fish species due to poor control over water quality. Blue Farms can grow premium high value fish such as Barramundi (Sea Bass).

• Blue Farms achieve the highest possible level of food safety auditing and certification, as required by the supermarket chains and major professional produce buyers. This level of food safety certification is difficult to achieve in aquaponic systems in which vegetables and fish are grown in close proximity and there is a risk of untreated fish waste coming in contact with vegetable products.

• Most aquaponic systems experience irregular and inconsistent quality of vegetables produced, due to fluctuations in nutrient levels in the fish effluent. Blue Farms provides nutrients to plant crops from three independent and controllable sources, ensuring uniform plant quality regardless of fish nutrient levels.

• Control over nutrient levels allow Blue Farms to meet the strict product specifications, and the consistency and volumes required by large supermarket chains.

• Blue farms can operate to produce high quality certified organic vegetables regardless of level of fish production. In market niches where fish demand or prices are low, the system can operate independently of fish. In markets where fish demand is high and prices allow profitable margins, fish production can be ramped up.

- Highly intensive production combined with climate control, allow Blue Farms to be located close to key markets, greatly reducing food miles, transport costs, and carbon footprint.

- Blue Farms meets customer expectations by achieving strong positive impact environmentally (no effluents, minimal water consumption); socially (local employment, increased food security); and for human health (fresher local food, no toxic chemicals).

- Blue Farms tick all the boxes to meet the criteria of 'Preferred Supplier' to major supermarket chains - with the ability to deliver large volumes of consistently high quality certified organic produce and fresh fish at competitive price points and within strict food safety requirements.

- The Blue Farm Technology in Australia was able to achieve a rare exclusive long-term supply agreement with the second largest national supermarket chain, Coles. This enabled all produce grown to be pre-sold at agreed above-market prices before each crop was even planted, allowing the business to focus on continually improving production, rather than being concerned about how to sell the next harvest.

• Organic farming can be challenging in climates lacking cold winter seasons to break pest cycles. Blue Farms can overcome this issue by maintaining a balanced insect eco-system throughout the year within a climate-controlled glasshouse.

• The Blue Farms technology has the capability to be taken to very large commercial scale – there are no inherent limitations to scale for the technology, unlike other aquaponic technologies. UESL licensee, Green Camel Pty Ltd currently operate a 3Ha facility at Cobbitty, NSW, available to visit by qualified investors and industry professionals.

• UESL is also developing smaller commercial and domestic aquaponic solutions for the urban rooftop or backyard. We have inhouse designers and draftsmen ready to engage with developers and mixed-use housing projects of any size in any zoning.

Low-yielding rooftop farms can be repurposed to become high-yielding Blue Farms

- By its nature, protective cropping is more resilient when it comes to floods; unusual temperature variations and other environmental factors. In addition, UESL is developing emergency and disaster relief fast-track systems, and systems that can withstand extreme weather events. We strive for continuous supply of high-quality produce in all circumstances.

How Blue Farms was Developed

Work on the first Blue Farms prototype was commenced in 2003 by agricultural industry innovators Hogan Gleeson and Andrew Bodlovich. The prototype evolved out of a Master's Thesis written by Bodlovich in collaboration by Gleeson, submitted to the University of Sydney in the late 1990's, based on the extensive experience of Gleeson and Bodlovich in the fields of organic farming and permaculture.

In 2007, Gleeson and Bodlovich show-cased the prototype on the ABC-TV's 'New Inventors' program. After winning the episode, much interest was received from within Australia and globally. Off the back of this interest, a semi-commercial scale prototype was developed at an R&D greenhouse in Nimbin, New South Wales, Australia.

The semi-commercial R&D facility was certified organic in 2007, becoming the first integrated vegetable and aquaculture facility in the world to achieve Organic Certification. The R&D facility produced a range of crops including lettuce, Asian greens, tomatoes, and cucumbers, which were sold into specialist organic stores and to supermarkets via organic wholesalers. The facility also produced high quality fish – Barramundi, or Australian Sea Bass.

In 2008 international patents were applied for.

By 2009, the R&D facility was receiving substantial interest within Australia and from international investors and agriculturalists, and in 2010 the technology was licenced in the territories of Australia and Europe to a commercialisation joint venture, Green Camel Pty Ltd.

In 2012-2013 a commercial scale prototype was constructed by Green Camel and commissioned at Cobbitty on the outskirts of Sydney, Australia. Government Grants totalling more than $4 million were secured towards developing the commercial prototype.

During 2015 and 2016 Green Camel continued to develop the facility at Cobbitty.

In 2016 Gleeson and Bodlovich were invited to travel to China, and from 2017 to 2019 a Blue Farm was designed and constructed in the city of Hefei in China. A joint venture was established as the licensee for the Blue Farms technology in China.

The COVID-19 pandemic from 2020 to 2022, while limiting international development of Blue Farms, also further highlighted the urgent need for local, reliable production of healthy food in and around major cities and urban and regional centres. The accelerating pace of climate change has also further fuelled the trends towards protected cropping and reliable and local production of healthy and ecologically sustainable food.

In 2023, with most international borders now reopened, and supply chains beginning to normalise, we plan to expand and develop Blue Farms projects internationally.

Please contact UESL about building your Blue Farm; becoming a project partner; seeking strategic partnership; or investment in the company.

Meet the Team

Board of Directors -

- **Hogan Gleeson:** Hogan is the co-inventor of the Blue Farm technology with 23 years of experience in planning,

designing and running organic farming operations. Hogan holds high level qualifications in Climate Controlled Horticulture, Integrated Pest Management and Certified Organic Production.

'I started Blue Farms because I could see an increasing need for food production close to cities. Blue Farms can enable people and their food production to reconnect, creating a great opportunity for urban communities to sustain themselves with a minimal ecological footprint.'

- **Andrew Bodlovich:** The co-inventor of the Blue Farms technology, Andrew holds a Masters Degree in Sustainable

Agriculture and an Advanced Certificate in Freshwater Aquaculture. His experience includes commercial organic farming and a role as the Director of Permaculture International Limited, a not for

profit organization promoting sustainable agriculture.

- **Dale Nott:** Dale has high level business and project management experience and brings many years of experience in design and implementation of technology installations.

- **Greg McGarity:** Graduate of UNE and Sydney University, Greg's love of soil and what grows in it has been with Greg since birth, the son of an eminent Soil Science Professor. Greg has lived and worked in various fields in many countries. He is known for excellent negotiation skills and for being able to always find a way of getting a deal over the line.

Company Advisors –

- **Greg Legg-Bagg:** Founder and Executive Director of the Sydney Office of Momentum Worldwide, a multi award winning integrated marketing agency of 70+ people. Greg has a 25 year career in marketing which he started after two degrees in Agriculture (BSc Hons, MSc) and two years as a volunteer in Papua New Guinea where he helped remote communities market their produce.

- **Simon Winfield:** Simon has 25 years experience in major investment banks in the USA and UK, marketing investment opportunities and new issues to leading institutional asset managers. He holds postgraduate qualifications in Business and Carbon Management.

- **Mitra Ardron:** Mitra is a serial social entrepreneur and innovator, working in the fields of technology for good, especially IT and renewable energy. In 1989 Mitra co-founded the Association for Progressive Communications, the peak body for internet human rights, with organizational members in 60 countries, and was involved in the early days of the Internet in San Francisco. After moving to Australia in the late 90's, he started Beyond Building Energy which was at one time the fastest growing solar company in Australia.

- **Christa Avery:** Christa is an ESG Advisor, an Australian Institute of Company Directors qualified practising Director with a Master in Environmental Management, and has over 20 years experience within Asia Pacific and Australia. Christa has assisted companies from a range of sectors to mobilise, build teams and establish successful operations in emerging markets. Christa has delivered successful projects across Asia in many sectors for multi-national corporations, SME's, family office and start-ups.

Technical Advisors -

- **Graham Smith:** Graeme has been involved in greenhouse design, production and project

management for many years. He is credited with a long list of published works on the subject and is considered Australia's leading greenhouse consultant.

- **Future Fisheries Veterinary Service:** Dr Matt Landos is the Founding Director of Future Fisheries Veterinary Service. He is an honorary lecturer in aquatic animal health and associate researcher at the University of Sydney, Faculty of Veterinary Science and was the 2011 president of the Aquatic Animal Health Chapter of the Australian College of Veterinary Scientists. Dr Landos commenced his consultancy practice in aquatic animals in 2005 after a 5 year stint with the NSW DPI as the Veterinary Officer in Aquatic Animal Health. Dr Landos has been an advisor to Blue Farms since the early research and development work undertaken from 2005.

Strategic Partners –

- **Wiley Engineering:** Wiley has been building things for people to work, manufacture, grow, learn and play in since 1918. They are the brand behind the brand, partnering with some of the world's largest companies to bring their vision to life. Over the past 100 years, Wiley has evolved into an energetic and diverse project delivery partner with end-to-end service. From feasibility studies to specialist design and engineering, all the way through to greenfield and turnkey projects… Wiley assisted with engineering the specialised technology for the first Chinese Blue Farm in Hefei, China.

- **Apex Glasshouses:** Apex Greenhouses design, manufacture and build turnkey greenhouse projects, providing a full service to customers to suit a wide range of requirements. They also provide a full range of greenhouse equipment including heating, irrigation and computer systems as well as greenhouse machinery.

- **Impacts Solar:** Impacts is a renewable energy company, developing sustainable technology and products for agriculture, industry and communities.

Our proprietary, patented Concentrating Solar Thermal (CST) technologies capture and concentrate the heat of the sun to provide medium and high temperature heat for large scale agricultural and industrial processes including: process heat and steam; water pumping; water supply; irrigation; mine dewatering; desalination; chilling; solar enhanced biomass waste to energy.

• **Grow Systems Australia:** innovative Australian manufacturer supplying high-tech growing equipment to the protected cropping industry. GSA provided Moving Gully Systems to projects in Cobbitty and Hefei China.