



Sensei Ag

Improving Human Nutrition and
Preserving the Environment by Growing
Food Indoors.



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About this report

Based on interviews with Vishal Patel MD, Ph.D., V.P. of Wellness Science at Sensei Retreats, and Jonathan Lee, Director of Marketing at sister company, Sensei Ag, this brief report introduces [Sensei Ag](#), one of a growing number of highly innovative companies supported by the [Oracle for Startups](#) program.

The two companies were founded in 2018 with the joint mission to help people live longer, healthier lives. Sensei Ag takes an evidence-led approach to wellness supported by a multidisciplinary team of highly trained individuals covering the entire gamut of health and wellness to help people live healthier lives through the practices of Move, Nourish and Rest – 'The Sensei Way.'

The theme for this month is health and wellness, with a focus on startups trying to solve some of the most pressing challenges across the wellness continuum, from food production to early disease detection, to prevent sickness and deaths and promote healthier outcomes for the long term.

This report explores Sensei Ag, which is focused on sustainable, and nutritious food production

CX-Create is an independent I.T. industry analyst and advisory firm, and this report is sponsored by the Oracle for Startups program team.

Highlights

- The Sensei brand consists of two independent companies, Sensei Ag and Sensei Retreats
- Sensei Ag is at the start of an ambitious global mission supported by an experienced leadership team
- Technology and diverse partnerships will contribute to global expansion
- Oracle Cloud Infrastructure and the Oracle for Startups program prove their value to Sensei

The business context and key drivers for Sensei Ag

Food security allied to sustainability in challenging environments

Good health and wellness start with nutrition. Zero hunger by 2030 is the second of the United Nations' sustainable development goals, agreed in 2015. Despite the optimism that year, the prevalence of undernourishment (PoU) climbed to around 9.9% in 2020, from 8.4% the previous year (source: Food and Agriculture Organization of the U.N.). The Covid-19 pandemic had a negative impact along with war and famine. Looking ahead, the invasion by Russia of Ukraine will also reduce the supply of wheat, especially to countries in the Far East and Africa that lack

the climate or land quality to produce their own. Around a quarter of the world's wheat supply comes from Russia and Ukraine, the former with the largest share.

Along with these issues, feeding the world's growing population is beset with challenges such as soil pollution and degradation from intensive farming, industrial-scale pesticide and fertilizer use, water shortages, and climate change.

Farming methods need to change to deliver sustainable food production at scale

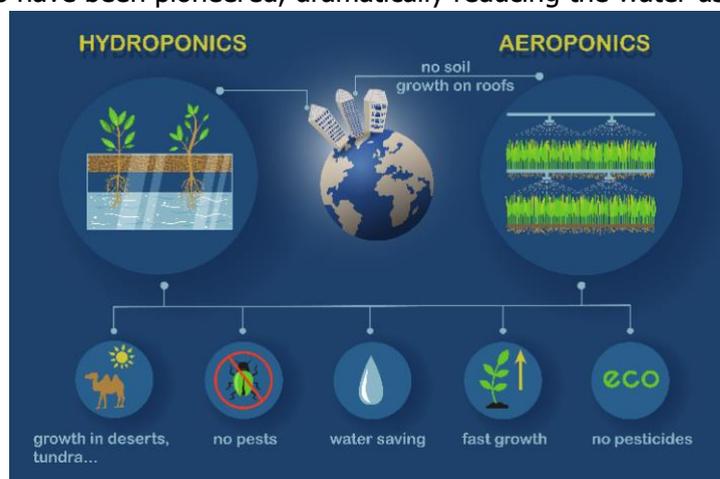
Modern monoculture farming, prevalent in the U.S. and Europe, while highly efficient and profitable, has disastrous consequences. In the European Commission's Horizon Research and Innovation magazine, December 2021: [*The rise and fall of monoculture farming*](#), this farming method degrades the soil and relies on polluting chemicals to offset the lack of plant variety that otherwise would lead to disease. It also leads to river pollution, degrading river ecosystems, and contaminating water supplies - so, what are the alternatives?

Organic farming offers some hope

Organic farming is the antithesis of monoculture farming – no pesticides or potentially damaging chemicals, healthier soil, a sustainable approach to land use, protection of animals, and often tastier food. The downside is that it represents less than 10% of farming and lacks the scale required to offset demand for cheap food, and it's typically more expensive. Sweden was an outlier in Europe, producing 17.8% of its vegetables organically, and Greece had the highest percentage of organic bovine production at 30.3% (source: Eurostat 2020). A key challenge for organic farming is keeping costs down to compete with intensive monoculture.

Soilless, vertical farming techniques offer promise in cities and challenging climates

Soilless, vertical farming techniques have been pioneered, dramatically reducing the water used by upwards of 90%. Aeroponics is one such soilless approach, where plants are suspended in the air like the hanging gardens of Babylon with their dangling roots fed by a fine water-based mist containing essential nutrients.



NASA started experimenting with aeroponics in the 1990s to grow food for astronauts. Singapore is famous for its urban agriculture

and what is claimed as a world-first low-carbon, water-driven, rotating, vertical farm" for growing tropical vegetables in an urban environment.

Perhaps, better known, hydroponics is another form of soilless farming, where plants feed on a reservoir of nutrient-rich water. Singapore's Sky Greens produces over 800 kilograms/1,764 pounds of green vegetables daily. Their automated farms control the environment, including light, nutrients, and minimal energy use. Only 40 watts of energy are needed to power each 9m tall tower. The company claims a ten times higher yield per unit of land area. According to

[Vertical Farming Planet](#), Japan has over 200 vertical farms that use LEDs for indoor growing. The U.S. has around 2,000 vertical farms, but 60% are small, serving local communities. Europe also has its aeroponic and hydroponic pioneers, but this represents a small fraction of food produced.

These efficient, sustainable forms of farming offer hope for the future but face many challenges before they can scale sufficiently to replace traditional farming practices and consequent environmental damage.

Growing demand and desire to live longer, healthier, and happier lives

According to Statista's latest market research released in December 2022, the global wellness market is expected to grow from just under \$4.5 trillion in 2019 and reach just over the staggering figure of \$6 trillion by the end of 2025.

This covers a wide range of products and services, including nutrition, food supplements, meditation, mindfulness, Tai chi, yoga, and a vast array of new devices, like wearables with health monitoring apps, up to exercise bikes, rowing machines, gym equipment, etc.

While there are some regulations on the use of associated medicines and food supplements, the field for fads, quackery, and misinformation is not only wide open but through the medium of social media and celebrity influencers, is thriving more than ever.

On the positive side, growing interest in wellness and mental health has spurred people to be proactive with their health and wellbeing. Many of us now have wearables that encourage us to do more exercise and positively reinforce new and healthier habits. The personal challenge is determining which combination of activities, nutrition, and rest works best. The relatively unregulated wellness market and the need for a genuinely personalized and risk-free approach to suit everyone makes this problematic.

Sensei cuts through the noise with a scientific and integrated approach to wellness

Sensei has taken an evidence-based approach to wellness and is on a scientific discovery journey before it expands its reach to bring the benefits of its knowledge and capabilities to the wider world. It is driven by data and supported by technology and some of the best minds across multiple disciplines that collectively contribute to proactive wellness. The company is in the early stages of development but has a unique testbed to further its shared purpose: to help people live longer, healthier lives.

Sensei - the story so far

Sensei was founded with two companies, Ag and Sensei Retreats

Sensei was founded in 2018 by Larry Ellison, co-founder, CTO, and chairman of Oracle Corporation, and Dr. David Agus, a world-leading physician, scientist, and founding director and CEO of the Lawrence J. Ellison Institute for Transformative Medicine. The death of a mutual friend inspired the idea behind Sensei. Agus and Ellison were convinced that a combination of leading wellness science, healthy lifestyle practices, and advanced technologies could revolutionize preventative healthcare and ultimately improve the length and quality of life. The first goal was the development of a multidisciplinary evidence and knowledge base. This covered everything from food, its production, and nutritious value to developing an environment where customers led by guides and expert practitioners could learn and experience various wellness

practices, leaving refreshed and rejuvenated. Sensei split into two sister companies in 2020 – Sensei Ag, focused on sustainable food production, and Sensei Retreats, providing the direct and highly personalized customer experience. Ellison had bought the secluded Hawaiian island of Lānaʻi in 2012, which would serve as a base and laboratory for both Sensei companies.

A driving vision and patience, and support to take the long view

Although independently run since the bifurcation in 2020, allowing each company to chart its own growth trajectory, both Sensei Ag and Sensei Retreats share the same vision - to inspire the world to live longer, healthier lives. This global ambition is tempered by Sensei's firm evidence-based values consistent in both companies. Expanding through collaboration with partners, licensing of I.P., franchising, and even acquisition won't happen until both companies have a solid foundation of proven methods, technologies, and practices.

Sensei Ag – overview

Sensei Ag, the food production arm, has started with six 20,000 sq ft hydroponic greenhouses on Lānaʻi partially powered by Tesla solar panels. The farm fresh produce is also consumed at the nearby Sensei retreat. Sensei Ag has long-term global ambitions to make controlled environment agriculture affordable worldwide so that eventually everyone can benefit from a secure, sustainable, and nutritious food supply.

'Our mission at Sensei Ag is to improve human nutrition and preserve the environment by growing food indoors'

Sensei Ag

Current position – Sensei Ag is at the start of an ambitious global mission supported by an experienced leadership team

Sensei Ag has a vision: improve Human Nutrition and Preserve the Environment by Growing Food Indoors. It is a new kind of AgTech and farming company aiming to grow highly nutritious and delicious food that will ultimately be accessible and affordable to all.

Sensei is at the start of its journey to deliver its mission, to solve the global gaps and inconsistencies in nutrition, food safety and food security through the transformative power of data.

Sensei Ag faces multiple challenges, including energy supply, cultivation, harvesting, refrigeration, packing, and distribution. However, its holistic approach to the food value chain, outlined in Figure 1., is proving successful.

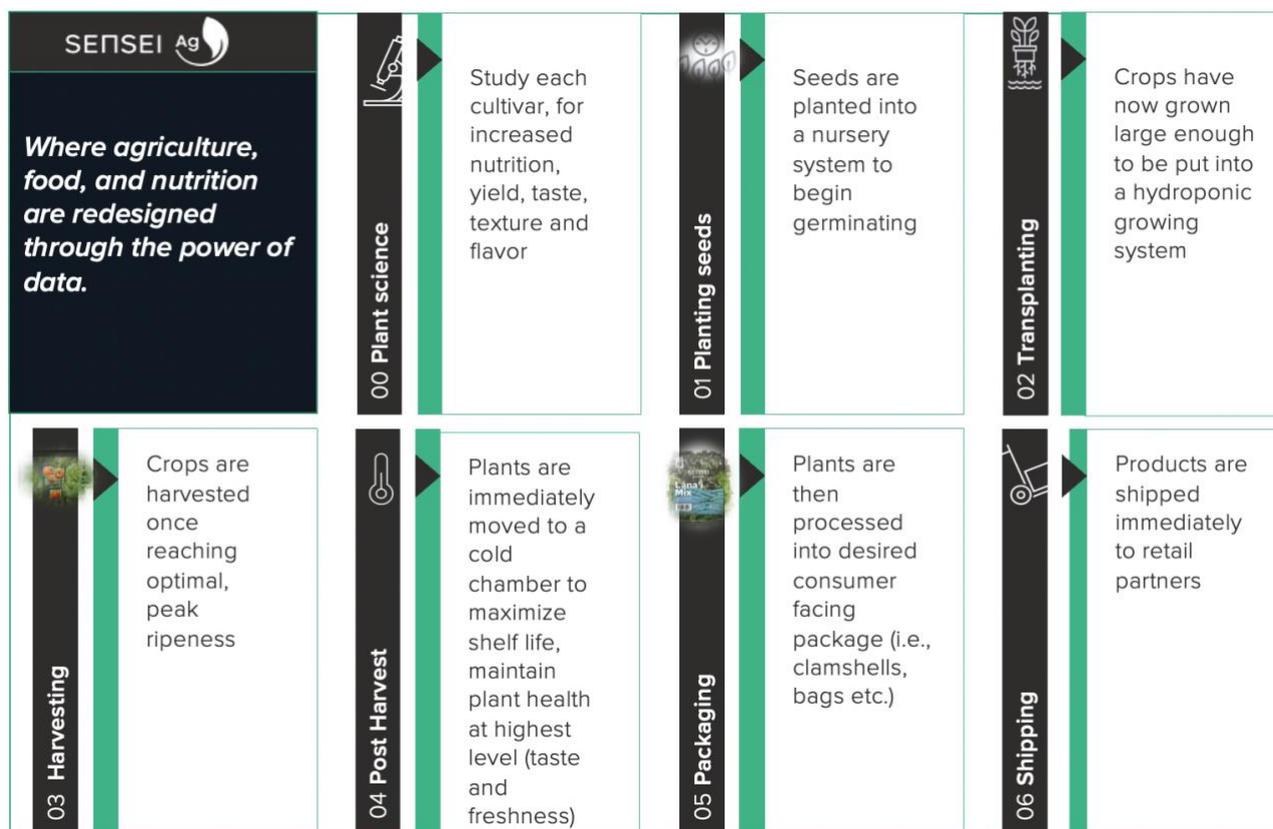


Figure 1: Sensei AG's integrated value chain

The company combines plant and data science, A.I., vision computing and robotic automation to create the optimal environment to enhance crop development, improve production yield and reduce the costs and resources associated with indoor farming.

The leadership team brings highly relevant experience and insight to Sensei Ag Under guidance from Dr. Agus, its leadership team is well-positioned to take the company forward.

Adrian Almeida, COO at Sensei Ag, has a deep background in operations, human capital, sustainability, innovation, and automation. He was at NatureSweet for 13 years, the single source solution for organic and conventional greenhouse grown vegetables in North America. During his 13 years at NatureSweet, Adrian held roles as Vice President of Human Resources and Lean Manufacturing, Vice President of Operations and ultimately Chief Innovation Officer, where he transformed NatureSweet's production processes by leveraging machine learning and artificial intelligence techniques. As Chief Transformation, Innovation and Business Development Officer at Azura Group, a leading food company in Europe that operates 2,400 acres of greenhouses for tomatoes, edible flowers, and citrus, amongst other produce as well as a state-of-the-art seafood facility. His digital business transformation experience, and deep understanding of the many challenges with indoor farming, have proved their value at Sensei Ag.

Dr. Jenna Bell, SVP of Nutritional Science, was a former professor of medical dietetics at Ohio State University before moving into nutrition and wellness-related companies including the PR company Pollock Communications, focused on food, nutrition, and wellness. During her 13 years with Pollock, Bell partnered with some of the world's top wellness and commodities brands ranging from Unilever and Danone North America to Quaker Oats, Abbott Labs and PepsiCo Global Nutrition. These included the role of SVP of Nutritional Science at Crop One Holdings Inc., a vertical farming company that owns FreshBox Farms in Millis, MA, and a joint venture with Emirates Flight Catering.

Christian Boullon, Chief People Officer, joined Sensei in 2019. In his first year at Sensei, he focused on developing the foundation of People Operations for both Sensei Retreats and Sensei Farms. and With Sensei Farms becoming its own entity, Culture plays a critical role in the success of a business, especially one aiming to go global and drawing on expertise from employees with diverse backgrounds. Boullon focuses on creating a world-class culture and brand that will help attract and retain the right talent for Sensei Ag. His track record of fostering unified and purpose-driven cultures at previous companies will help Sensei Ag achieve the similar outcomes. One of the companies, Swell Investing LLC, (an impact investing fund that follows the guidelines of the UN High-level Political Forum on Sustainable Development), achieved a 100% employee retention rate, the year after he introduced several initiatives to forge unity among a diverse group of employees.

Successes to date

Sensei Ag initially built two hydroponic greenhouses to serve the local population on Lānaʻi, which previously imported all its food. This proved successful, and Sensei now has six greenhouses and sends much of its produce to the Hawaiian capital island of Oʻahu, home to the state capital, Honolulu. Before Sensei Ag, all food apart from home-grown pineapples had to be imported from the U.S. mainland, compromising freshness and nutritional value.

Current go-to-market

Sensei Ag currently sells its produce through local retailers and distributors throughout the Hawaiian Islands. Its first harvest was in August 2020. By the end of the year, it was selling its produce on every Hawaiian island. It also provides much of the fresh produce consumed by Sensei Retreats in Lānaʻi.

Future direction

The lessons learned in this initial development phase at Lānaʻi will be harvested by Sensei, enabling other growers to license or franchise its technologies and techniques in other parts of the world. Sensei Ag may also establish its farms in other countries. Its leading investor, Larry Ellison, has long-term ambitions to establish controlled environment agriculture throughout world.

Oracle Cloud Infrastructure and the Oracle for Startups program prove their value to Sensei

Despite Ellison being a co-founder, Sensei's leadership team has had complete freedom to select technology. Sensei only joined the Oracle for Startups program in late 2021. The two-year discount rate of 70% on Oracle Cloud Infrastructure (OCI) and applications were attractive.

However, its previous experience on Google Cloud technology provisioning was a little easier based on a few clicks. However, as well as having some technological advantages, notably speed and security, Oracle's enterprise applications and market access to enterprises proved compelling. Currently, Oracle NetSuite is used by Sensei for its day-to-day operations. The Oracle Content Management and Knowledge Management systems are also used to codify and store the growing scientific knowledge base. The Oracle for Startups team has also proved to be responsive and helpful.

The Oracle technologies and global market access will provide additional benefits as Sensei Ag, and Sensei Retreats expands physically, in partnership with others, and digitally as its partnership ecosystem develops. The foundations for that are in place.

CX-Create's viewpoint

Sensei Ag and Sensei Retreats offer a unique combination to deliver wellbeing
 Although Sensei Ag and Sensei Retreats are run as separate companies, the combination of nutritious and sustainable food production (Sensei Ag) and the science of wellness practices (Sensei Retreats) offers a unique combination to foster wellbeing. Sensei Ag is more obviously a technology-led company, while Sensei Retreats today is heavily person-to-person in its value delivery. That, however, may change as knowledge and best practices are codified and shared.

The franchising and licensing model could serve both companies well and accelerate growth and geographical presence.

There is no doubt the world needs reliable sources of nutritious food and significant lifestyle changes to live healthier and longer lives. Under guidance from Dr. Agus and with Ellison's backing and desire, their shared vision, hopefully, will come to fruition.

Summary details

Table 1: Fact sheet

Sensei Ag		Solution category	AgTech
Key industries	Controlled environment farming	Geographies	Hawaii currently
Deployment model	N/A	Licensing basis	N/A
Size of organizations served	Local	Go-to-market model	Direct and retail distribution of produce
Number of employees	65	Key partnerships	Oracle for Startups
URL	https://www.sensei.ag/	HQ	Santa Monica, CA, USA

Appendix

Further reading

- [Aindra Systems - democratizes healthcare in India](#)
- [HEARTio. – smarter cardiac triage](#)
- [PRORADIS - shortens distance and time improving patient care in Latin America through innovation](#)
- [Skin Analytics - helping more people survive skin cancer](#)
- [Sensei Ag - improving human nutrition](#)
- [Sensei Retreats – takes a science-led approach to health and wellbeing.](#)

To explore more startups supported by the Oracle for Startups program, follow this [link](#), and under categories select Startups and Scaleups for innovation, sub-category: Oracle for Startups.

About CX-Create

Jeremy Cox founded CX-Create Limited in January 2021, a former principal analyst at Omdia (formerly Ovum) focused on customer engagement strategies and platforms.

He is recognized by major CX vendors, clients, and former colleagues as a leading thinker in customer experience and engagement. Formative experiences in the 1990s at IBM convinced him of the critical importance of understanding the business world from the outside in. These insights were put to practical use in his former roles as a principal CRM consultant at KPMG Consulting and as an independent consultant supporting public and private sector organizations.

Our mission

CX-Create's mission is to help enterprises and the vendors and startups that serve them remain relevant. The company's primary focus is to track and understand the constantly evolving customer experience world and share those insights with clients. Continuous innovation is also an essential component of persistent customer relevance, directly and indirectly, which is why we are enthusiastic about startups and the Oracle for Startups program.

CONTACT US

Jeremy.cox@cxcreate.io

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