

Singapore's SGP Foods advocates sustainability and carbon crediting for food production

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In January 2023, researchers from the Centre for Climate Research Singapore warned that warming temperatures could rise by up to 5°C over the next century, resulting in scorching heat, severe storms, harsh dry spells, and suffocating pollution. As polar ice caps melt, deforestation increases, and sea levels rise, the whole world will also face health problems due to contaminated water, according to the National Collaborating Centre for Environmental Health (British Columbia).

Pek Yun Ning, Chairman, CEO, and Founder of SGP Foods, Singapore's best-performing technology company, understands that change is imperative. "Our survival as a species depends on protecting our natural environment." With its innovative technologies, SGP Foods is a global leader in agriculture sustainability, CO₂ emissions reduction, and carbon credit utilisation.

Jonah Crawford, later SGP Foods' CTO and Co-Founder, shared views on food security and the water, energy, and food nexus. The ideator, strategist, and manager immediately identified ways to improve Singapore's food security. "We tested our ideas for achieving sustainability in Singapore and with our regional partners."

Tracking emissions from commodities, processing, and logistics, SGP Foods was incorporated in Singapore in April 2020 to combat the effects of climate change and ensure food security – two of humanity's greatest challenges. Its green logistics digital infrastructural approach incorporates plant-based protein additives, deforestation-free cooking oils, low-emission eggs, and high-intensity vegetable production. To track emissions, it uses proprietary agriculture and resource optimisation technologies.

Multipurpose, sustainable Allied Fibre Crops

As agri-food increasingly focuses on sustainability, Pek is particularly proud of the Allied Fibre crops SGP Foods is now growing in Thailand and Mexico using seeds from America. "In the context of the Allied Fibres Programme, our intervention has increased productivity. Using sustainable development and lowering food production emissions, the company aims to be the world leader in allied fibre products."

Besides providing food, fibre, and fuel, the Allied Fibre crops also ensure Singapore's food security and effectively reduce greenhouse gas emissions (GHGs) through sequestering carbon in the soil, decreasing erosion, and increasing organic matter.

"Food waste is a problem at both production and consumption levels," says Pek. "Our product contains 20% protein, which converts into tofu (a cheaper meat substitute), helps reduce malnutrition, and generates less agricultural waste. These vastly benefit the soil and the greater ecosystem."

Product quality and efficiency are enhanced by technology

To increase efficiency of the Allied Fibre crops' primary products, SGP Foods provides seed meal to bakeries and noodle makers. Seed oils have polyunsaturated fats, antioxidants, and phenolic compounds that make them suitable replacements for soya, cottonseed, and olive oils for cooking.

In addition, with little waste when processed, these plant-based products are cost-effective. Besides replacing synthetic fibres, Pek says they can be used for cosmetics, soaps, chocolates, livestock feed, building materials, furniture, gardening, and textiles.

Collaboration improves innovation

To boost technology, attract new investments, and expand markets, Pek emphasises the need for policies, funding, and partnerships. "We can reduce GHGs, feed growing populations, and create circular economies through collaborations across the food system," Pek says.

Reducing carbon emissions generates carbon credits

"As commercial and industrial activities also contribute to the crisis, businesses, including carbon markets like Singapore's Climate Impact X (CIX) and regulators, must work together to create a sustainable net-zero economy. Especially since the Carbon Pricing (Amendment) Act 2022 took effect in March 2023, a new market for carbon credits is ripe for disruption, with many ready to reap the benefits of carbon reduction and pay lower taxes."

SGP Foods has helped establish Singapore as a carbon hub in this regard. "By combining technology, research, education, and decarbonisation recommendations, our carbon offset scheme can increase return on investment for all stakeholders. Innovation is driven by data and blockchain technologies that can be enhanced with AI, which automates processes in various ways. These cutting-edge technologies ensure data integrity, accuracy, and value-added insights for success."

SGP Foods' carbon project in Mexico involves farming Allied Fibre crops on 50 hectares of land acquired from a food technology company. It minimises climatic impact and generates carbon credits by increasing carbon absorption. Using AI, drones, efficiency and productivity technologies, sensors, and data consolidation, it helps farmers, landowners, corporations, and governments generate revenue through the sale of carbon credits.

Reducing emissions by incentivising industries

Emissions can be offset by the increased possession of carbon credits. It aligns with the Paris Agreement, a global climate change treaty signed in December 2015, which aims to limit global warming to well below 2°C to avoid causing more frequent and severe droughts, heatwaves, and rainfall.

"Carbon credits reduce GHGs and incentivise emission reductions. Discovering hidden opportunities opens up a new world of possibilities," says Pek, whose company also offers carbon monitoring, climate risk analyses, and decarbonisation recommendations.

Using SGP Foods software, real estate, manufacturing, marine, shipping, and logistics companies can also create robust ESG sustainability programmes that resolve efficiency issues, produce sustainability reports, and generate carbon credits.

As a result, SGP Foods has attracted the attention of policymakers and scientists. "Integrity and trust are essential to any industry as we move forward. Our technology and software enable carbon accounting and crediting to be tracked and reported precisely, resulting in reliable prices." SGP Foods is developing a platform that facilitates carbon trading as well as

more cost-saving, sustainable agri-tech innovations.