



CASE STUDY

Green Growth in Singapore: Edible Garden City

Background Information

Bjorn Low is the co-founder of Edible Garden City (EGC), a social enterprise that runs urban farms in the densely-packed city of Singapore. The organization aims to improve the sustainability of local food systems by increasing local food production.

When Bjorn started the social enterprise, he used SGP\$12,000 to design and maintain vegetable and herb gardens at restaurants in Singapore. From there, EGC started finding underutilized spaces in the city and working out agreements to use those spaces for urban farming. The team has since built gardens for schools, where they run organic farming training programs for the students, and rooftop farms on top of multiple buildings throughout the city.

In 2015, representatives of Singapore's Employability & Employment Centre (E2C) reached out to Bjorn about using his organization to help autistic members of his community. The E2C is an organization that works to help autistic adults find work by giving them training on useful skills and providing them with enabling support to help make them successful in their endeavors.

When they reached out to Bjorn, the E2C team wanted to launch an urban farming training program for the autistic people with whom they worked. This led to EGC's first training centre, where they trained Job Coaches at E2C how to plant, nurture and harvest microgreens. The coaches teach students to grow a variety of microgreens and herbs for restaurant and hotel kitchens. Siang Yu, one of EGC's urban farmers, said the program has worked out well and that the Job Coaches had managed to improve on some of the processes that they learned from the EGC team.

Approach, Delivery, & Challenges

Edible Garden City got its break in 2012 with a small project that worked with a few restaurants, including one owned by TV chef Jamie Oliver. From there, they eventually found a key partner in Cynthia Chua, the CEO of Spa Esprit Group (SEG), a conglomerate that produces beauty products and runs a farm-to-table restaurant. SEG invested SGP\$250,000 to help it expand its operations in return for a stream of inputs for their beauty products. In late 2016, Bjorn estimated the collaboration had resulted in forty per cent of EGC's business.



EGC also received a SGP\$200,000 grant from the Singapore Centre For Social Enterprise to hire twenty people from vulnerable groups to become part of their team. Along with providing employment to people with autism, EGC also provides employment to ex-offenders.

In 2016, Edible Garden City moved into an abandoned prison in Jalan Penjara, where it used an 8,000-square-meter plot of land to launch Citizen Farm, a farming collective that pairs natural systems and modern technology in a closed-loop urban farming system. The project's goal is to develop and promote a "robust and sustainable urban farming model for the world." The site is also home to EGC's headquarters, as well as composting, indoor growing rooms, and an aquaponics system. All of this allows them to grow a wide variety of products.

Citizen Farm employs sustainable farming practices, like using black soldier flies, horned beetle larvae, and earthworms to transform food waste into compost and nutrients for their aquaponic farming system. Darren Ho, the project's leader, shared its purpose: "We import food waste, which then powers our agricultural output. This is what we believe is the future of urban farming."

Later, EGC opened Nóng, EGC's garden supply and training center. Through Nóng, the organization is promoting urban homesteading as it runs exhibitions, workshops, and activities for families to help them learn related practices.

EGC continues to share their ideas for a decentralized, urban farming model, while working to build "a sustainable urban farming industry in Singapore."

Benefits & Lessons Learned

When EGC was launched, Singapore was far from being an agricultural society, so access to farming supplies and related knowledge was in short supply. Farming practices had to be adapted to the local circumstances, but prior to doing that, Bjorn had to rethink what a farm was. "To buy ten acres of land (about the size of ten football fields) in the middle of Wales with a river running through, with a farmhouse, cost less than a HDB (Housing & Development Board) flat in Singapore then." So, to have any chance of success, they had to reconceive what a farm was. Had he tried to purchase land to set up a conventional farm, it would not have been financially sustainable.

One of the key lessons for the team has been the need to understand the environments in which they are working. Given their circumstances, much of this knowledge came through trial and error, like how to deal with Singapore's rainy season and the local soils that are loaded with clay. They also learned that leafy greens could end up bitter thanks to the city's high humidity.

Changing consumer habits have been another important lesson for the team. As people were exposed to urban farming and came to understand the time and resources it takes to grow vegetables, most of them immediately become more concerned with the problem of food waste. Most of the island's food still comes from other countries, but as their organization grows, the goal is to help foster responsible food consumption broadly. Doing so could have a significant impact in terms of the resources lost in food waste, as well as from reduced transport. And the spaces they're creating are also helping bring communities together as they build bonds in the garden. As Bjorn put it, "It's interesting to see that once you have the space, the community will come together. They will help one another, and they didn't want to leave."

As urban farming expands in Singapore, it plays an increasingly important role. Food supplies from external sources are subject to variable pricing and can be unreliable, both concerns of which are beyond Singapore's control. With a growing, relatively stable local supply of food, the negative impacts from those variables can be reduced. As a representative of the Agri-Food & Veterinary Authority of Singapore (AVA) noted, local production has an important role to play in helping ensure the resilience of the nation's food supply.

A final lesson for Bjorn came in the form of understanding the importance of respecting natural resources and local circumstances, as doing so will help provide Singapore with food systems that are more resilient, rather than being dependent on specific conditions.



Opportunities & Next Steps

Bjorn Low continues to look for new and interesting ways to spread the benefits of his organization throughout Singapore. One project under consideration would provide training and work for adults with Down Syndrome in which they would use spent coffee grounds and food waste to grow mushrooms. Programs like that circulate waste back into the food system, rather than sending it to the landfill in a country with severely limited space for disposal. This is a model he would like to scale, and he's also hoping to see it spread to other sites including beyond Singapore.

Bjorn is also looking to spread the core EGC model into other parts of Singapore. The goal is to replicate their model in local communities and help members of the community see that it is possible to grow food sustainably in urban areas, even when arable land is limited. This can foster community resilience and sustainability, while also taking pressure off the region's farms in the context of growing populations and changing diets. Bjorn believes Singaporeans can nudge the region's agricultural systems in a more sustainable direction through the choices they make, and he's trying to help raise awareness for such choices through EGC's work.

Back on the ground, EGC is working to continue providing employment for marginalized groups, who might risk being left behind in the conventional labor market. EGC will also keep pushing to reduce food waste in the city, using waste as inputs to their farm, and finding underutilized space to produce food for their communities.

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