

# Integration of Agricultural Education and Biodiversity: Introducing Synecoculture into elementary school in Taiwan

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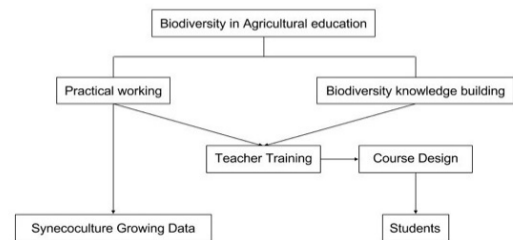
## Abstract

As food safety incidents happen continually, people put more concern on food, therefore "Food and agricultural education" become a trend. Food and agricultural education are divided into two parts, one is food education that combines nutrition, safety and culture, the other is agriculture education that focuses on food source, farming and environment. Currently, teachers teach the nutrition, biology which are written on the textbook, but without the practical and in-field experience, the agriculture education is insufficient in Taiwan. Our project combines agriculture education and Synecoculture, in collaboration with Sony CSL in Japan. Synecoculture is an open-field crop cultivation method, which eliminates the use of tillage, fertilizer, pesticide, herbicide and totally relies on the productivity based on biodiversity. There are three reasons to introduce Synecoculture to the elementary school:

1. Less field labor which makes easier access for elementary school students to experience and understand.
2. It includes both knowledge and practice: Learning on biodiversity and the training of farming skills.
3. Elementary school is the primary education that makes an important influence in one's life.

Our primary object of introducing this system into elementary school is to raise future educators and students' confidence and familiarity to farming. Inspire their concern about biodiversity, and rethinking the origin of food. The first step is to build teachers' know-how and skill of Synecoculture. After teachers would become more familiar with field working and acquire farming skill, the next step is to realize and fuse the agriculture education into the courses and work with students. This research proposes method and design of biodiversity knowledge building in agricultural education, step by step overcoming the difficulty, and design a series of courses for students in a practical way. In addition, within the agriculture education, the data on plant growth will be collected and analyzed with statistical tools.

## Image



## Recent Publications

1. Funabashi, Masatoshi. "Synecological farming: Theoretical foundation on biodiversity responses of plant communities" *Plant Biotechnology* 33, 4(2016), 213-234
2. Funabashi, Masatoshi. Citizen Science and Topology of Mind: Complexity, Computation and Criticality in Data-Driven Exploitation of Open Complex Systems", *Entropy* 2017, 19, 181.
3. Funabashi, Masatoshi. "Synecological Farming for Mainstreaming Biodiversity in Smallholding Farms and Foods: Implication for Agriculture in India", *Indian Journal of Plant Genetic Resources* 30, 2017, 99-114.
4. Funabashi, Masatoshi, Peter Hanappe, Takashi Isozaki, AnneMarie Maes, Takahiro Sasaki, Luc Steels, and Kaoru Yoshida. "Foundation of CS-DC e-laboratory: Open systems exploration for ecosystems leveraging." *First Complex Systems Digital Campus World E-Conference 2015, 2017, 351-74.*
5. Funabashi, Masatoshi. "Open Systems Exploration: An Example with Ecosystems Management." *First Complex Systems Digital Campus World E-Conference 2015, 2017, 223-243.*



## Biography

Kai Yuan Lin has his expertise in industrial design as well as system design and passion in improving the Food Safety and Agricultural education. He had education experience in Imperial College, London and Pratt Institute, NewYork which made him able to integrate the advantage of Europe and US in agriculture field. He is an engineer and designer which focus on complex system toward the important social issue. He collaborates with Masatoshi Funabashi in SonyCSL on the Synecoculture project in Taiwan. The biodiversity education is the first step to introduce Synecoculture to Taiwan.

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## Notes/Comments