

Local People and Resources Community Food Waste Compost Project: Thailand and Japan Online Collaboration

地域の人と資源のコミュニティ食品ロス堆肥化プロジェクト・
タイと日本のオンライン連携

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Abstract

In our collaborative efforts with a school in Bangkok to make compost with food waste from our respective schools' cafeteria, we found that people seem to cross social boundaries and connect with each other while making compost. From these observations, we suppose that social boundaries make it difficult for us to see the natural flow of energies in the ecosystem, resulting in social issues like food waste in the food supply against our environmental and economic desire not to waste food. We would like to suggest that creative collaboration working with the biological processes of microbes making compost can help blur these boundaries, see potentials that we don't normally see, and reorganize ourselves more in line within the natural flow of the ecosystem we're part of.

Current Food Waste Problem

Food loss and waste is an economic and environmental issue. According to Japan's Ministry of the Environment and Ministry of Agriculture, Forestry and Fisheries(1,2), in 2018 Japan generated approximately 25.31 million tons of food loss and waste, 6.00 million tons of which was edible. Households accounted for 2.76 million tons of edible food loss and waste.

Why is so much food wasted? Due to the barriers of efficiency we create, a lot of the waste is hidden from the other parts of the supply and consumer chain. The general modern supply chain for something like tomatoes being produced on a farm to being consumed in a school cafeteria makes for a good example. Producing a large amount of tomatoes, separating and shipping the good tomatoes, transportation to a food supplier, transportation to the school cafeteria, preparation and consumption is a simplified version of the flow for most modern supply chains. Each new group that takes charge of the tomatoes in the chain introduces a new boundary. For example, the cafeteria and the consumer. The cafeteria's role is to use the tomatoes in consumer's meals before they go

bad, but also to never run out of food for the consumers. This is because the consumer's role is to buy a meal from the cafeteria, so they must be provided a meal. Therefore, to remain efficient the cafeteria will produce an excess of meals ahead of time, and almost always have leftovers which will likely be tossed. The cafeteria workers are committed to the efficiency of their role, but the waste this creates is hidden by the boundary between the two groups. Even if the cafeteria workers want to tackle the issue of food waste, they may feel like their first priority is the fulfillment of their work. Individual wants like reducing food waste usually don't have anything to do with that priority.

The part of the supply chain where food loss and waste is more likely to become something better is on the farm or in some factories. Here, imperfect and damaged tomatoes can be turned into something else in factories, used as animal fodder, or returned to the soil of the fields(3). Here, there is no boundary because the food is valued even if it's food waste as a part of an ecosystem. To reclaim some of the waste in the other parts of the supply chain and make this major problem more visible to groups that are otherwise not directly connected, making food waste and loss into compost through collective collaboration(4) may be the answer.

Thailand and Japan Online Collaboration

Composting food waste significantly decreases the amount of emissions caused by food waste, and the produced compost can greatly improve soil health(5). In 2020, a fourth year student of Yoshiro Miyata's seminar decided to give compost a try since they felt uneasy throwing away food(6). When third year students were deciding on a project for the SDG themed 2021 World Youth Meeting (WYM), the compost system became a main focus of their presentation. A student at Darunsikkhalai School for Innovative Learning (DSIL) in Thailand had also started a compost project utilizing food waste thrown out by students in their local cafeteria, so the focus on compost fit for both schools.

In the WYM, Chukyo and Thai students could understand each other across language, cultural, and online boundaries, because they were both using microbes to ferment organic materials, which is a part of the universal cycle of the ecosystem anywhere on earth(7). Since the fundamental environmental system is the same, students could easily collaborate on compost and community designs. For example, during preparation for WYM 2021 when the Thai students mentioned the problem of excess odor in their plastic compost container, students in Japan realized this problem was most likely due to an excess of moisture. The Japanese students had collaborated with the local timber industry, so they had experience working with wood and saw the possibility

of solving excess moisture by designing a wooden container. The Japanese students shared their findings with the Thai students, and made the wood container for WYM 2022. Thai students didn't have the same access to wood, so they decided to redesign their compost system to drain excess liquid into the soil. Both designs created a better living environment for microbes by absorbing excess water in the compost. The shared base conditions for composting allow compost to be made in many ways, while also allowing students to collectively create their projects. Without this commonality, collaboration on this compost project could not be as easily achieved.

Students could also understand each other because they shared a common value for food and thus could empathize with each other. For example, the Japanese students had been unaware of what exactly happened to the leftover food in their school cafeteria. This was due to the social boundary created between the students as customers, and the cafeteria as a business who shows only the food the customer pays for. However, this changed when the Japanese students saw the Thai students tackling the food waste problem in their school cafeteria. The Japanese students became more aware of the potential problem in their own school, and saw the potential in their compost system to remedy it. The Thai students shared their issues with the separation of food waste thrown away by students. Therefore, when the Japanese students approached their cafeteria with a proposal to collect food waste, how the food would be separated and collected was central in their minds. Sharing difficulties such as this made growth of the project much more achievable by eliminating certain issues already experienced by the other group.

Chukyo University Cafeteria

Without the interest of members in the school cafeteria to tackle the problem of food waste, it would have been much more difficult for students to start collaborating with the cafeteria. We found interesting changes in the staff of Chukyo's school cafeteria and shop when the students proposed the plan to compost their food waste. Although their initial reaction was that sorting out food waste would make their work schedule more difficult, they discussed and came up with a new workflow integrating sorting with minimal work. Interestingly, after a month or two the cafeteria on the 2nd floor and the shop on the 1st floor which had been working separately started cooperating with each other in the new workflow. Some of them mentioned that they had been feeling stressed to have to keep throwing away the food that they prepared and were happy that the students could make use of it. This indicates that they had a dilemma that they had to suppress their wish not to waste food because of the pressure to do their job efficiently. Then, when they found a potential solution in the students' proposal, they became

motivated to realize it by changing their workflow. While their first priority is still the fulfillment of their work, the cafeteria workers pushed to fulfill their individual want to tackle food waste through collaboration with the students.

Conclusion

Based on these observations, we would like to argue that the social boundaries which created the problem of food waste can be crossed with the help of microbes working at the biological level independent from the level of social and artificial boundaries. Even though food waste is socially considered a bad thing, barriers of efficiency make it difficult for many to do something about it while in their given role. However, a compost project nurturing engagement and collective creativity can dissolve boundaries, bringing individuals to view even their roles as part of a greater ecosystem.

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