

# CSR = Striving to Solve Social Issues Through Innovation

The researchers at Sony Computer Science Laboratories, Inc. (Sony CSL) pour their hearts and souls into their work, conducting “research for the future of humankind.” One of those researchers, Masatoshi Funabashi, is investigating “Synecoculture,” a new type of sustainable farming that achieves both increased productivity and a reduced environmental footprint. We asked Funabashi-san to give us an overview of the current state and future developments of Synecoculture, which has been receiving worldwide attention for results achieved in farming experiments.

## Bringing Back Bountiful Ecosystems

“Modern agricultural methods, which mass-produce single varieties of crop, have been incredibly effective at reducing hunger and allowed humanity to thrive. At the same time, when looked at on a global scale, many ecosystems and their biodiversity have been threatened by these methods, which have led to environmental destruction. At the rate we’re going, I find it difficult to picture any kind of sustainable future,” warns Funabashi-san.

“I do buy food from stores and eat out at restaurants. But the Earth’s resources are limited, and environmental destruction continues to spread. As long as the kind of single-crop mass production farming that we’re all used to continues on any scale being a factor in destroying environments, it’s our responsibility as human beings to rethink the way we farm and bring these ecosystems back from the brink.”

“We took a 500-square meter plot of completely dried out land and packed in nearly 150 types of plants with the help of local farmers. In doing so, we turned an area that was suffering from desertification into a rich orchard, teeming with life, and the harvest exceeded our wildest expectations. Converted into cash, that harvest was worth nearly twenty times the average income (GNI per capita) for someone living in Burkina Faso. It also had nearly ten times the cost effectiveness of other farming methods, including conventional farming and organic farming. We saw that it was more than feasible for people to live a comfortable life by working to produce locally grown food through



**Masatoshi Funabashi**  
Sony Computer Science Laboratories, Inc.

Synecoculture.”

The response to this experiment was large and immediate, and the First African Forum on Synecoculture, funded and hosted by Sony CSL in fall 2016, had 17 participating countries from all around the world. Participants from various African nations agreed to help

## What is Synecoculture?

Synecoculture is a method of farming that carefully controls ecosystems by exploiting the natural characteristics of plants to create an ecosystem that naturally cultivates edible produce. With traditional farming methods, a plot of land is tilled, fertilizer is added, and pesticides are spread in order to mass-produce a single type of crop. This leads to problems such as the destruction of ecosystems and environmental pollution. With Synecoculture, a huge variety of species are planted closely together in the same plot of land, much more diversely than what would be seen naturally. This has a restorative effect on an ecosystem, allowing the various plants, insects, and animals that coexist within to grow and thrive. Through this complex symbiotic relationship, natural cycles are reinforced, such as fallen leaves rotting and increasing soil organisms and insect populations, which are in turn kept in check by birds. This eliminates the need for fertilizers, pesticides, and plowing methods that can have such an adverse effect on the environment. An experimental trial in Burkina Faso resulted in high productivity of various crops and areas undergoing desertification becoming fertile at an unprecedented scale within just a year. In Sub-Saharan Africa, public and private sectors are beginning to introduce and support the dissemination of Synecoculture.

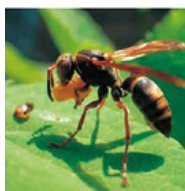


An example of Synecoculture at work (left: picture, right: illustrated image)





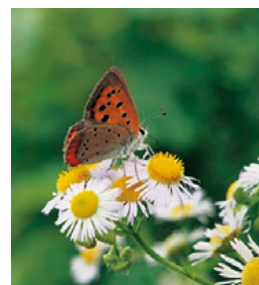
Examples of butterfly species found in Synecoculture farms. Over 1,000 varieties of insects and plants were observed in the Synecoculture farms and its surrounding environment in Japan.



Because Synecoculture farms are pesticide-free and rife with biodiversity, it promotes resilient ecosystems where natural predators are allowed to coexist with their prey and form a healthy food chain.



Different varieties of flowers are also important edible products in Synecoculture farms. They also play a role in attracting beneficial insects.



promote the implementation of Synecoculture, and adoption is currently spreading.

"My goal wasn't simply to collect useful data from this experiment, but to help build communities around Synecoculture. Because it allows communities to become self-sufficient and recover local biodiversity, I was convinced that Synecoculture could prove beneficial to regions that suffer from environmental degradation, unstable social conditions, poverty, and the like. Moreover, I hope it will help people living in wealthier nations rethink the way they view their food.

Currently, Funabashi-san is working on constructing Synecoculture management systems that utilize Sony technology to help implement Synecoculture globally.

"Synecoculture research doesn't look to cause innovation through any specific underlying technology. The important thing is to discover and cultivate crops that are well-suited to a given region's natural features and climate, so we find it most effective to use big data analytical technology to break down the large amounts of information we collect about each region. Sony's vaunted compact high-definition sensor technology will also play a big role in agricultural management, and there are a lot of

other ways we use Sony's cutting-edge tech. For example, we can use AR (augmented reality) technology to manage farms in remote areas and VR (virtual reality) to simulate the kinds of crops we want to grow.

"The idea behind Synecoculture is to focus not only on humans, but on the "beauty" of pursuing the evolution of entire ecosystems, including plants and wildlife. At first glance, agricultural research looks like a far cry from Sony's usual business areas, but it's not a matter of simply beating out the competition or pursuing the most rational course of business. It's about the expectations people have of the Sony brand, and always promoting accountability in whatever business we pursue. In that sense, it's very much in keeping with Sony's ideals as a company.

Mass farming occurs in about 20% of the world's arable land. The other 80% is cultivated by family-owned, small-scale farmers. Synecoculture is very effective for this latter group. It's also perfect for household vegetable gardens, which means it's doable at all Sony Group locations and by any individual employees who would like to pursue it. I hope that Synecoculture will continue to spread as an accessible farming method, and that it will pave the way to an even better future."

Funabashi-san and local farmers at a trial farm in Burkina Faso. Other locals were so interested in what was happening on the farm that over 1,000 of them came to take a look at the area together.

