



広島大学

TOWARDS A HOLISTIC VIEW OF ORGANIC FARMING IN HIROSHIMA PREFECTURE

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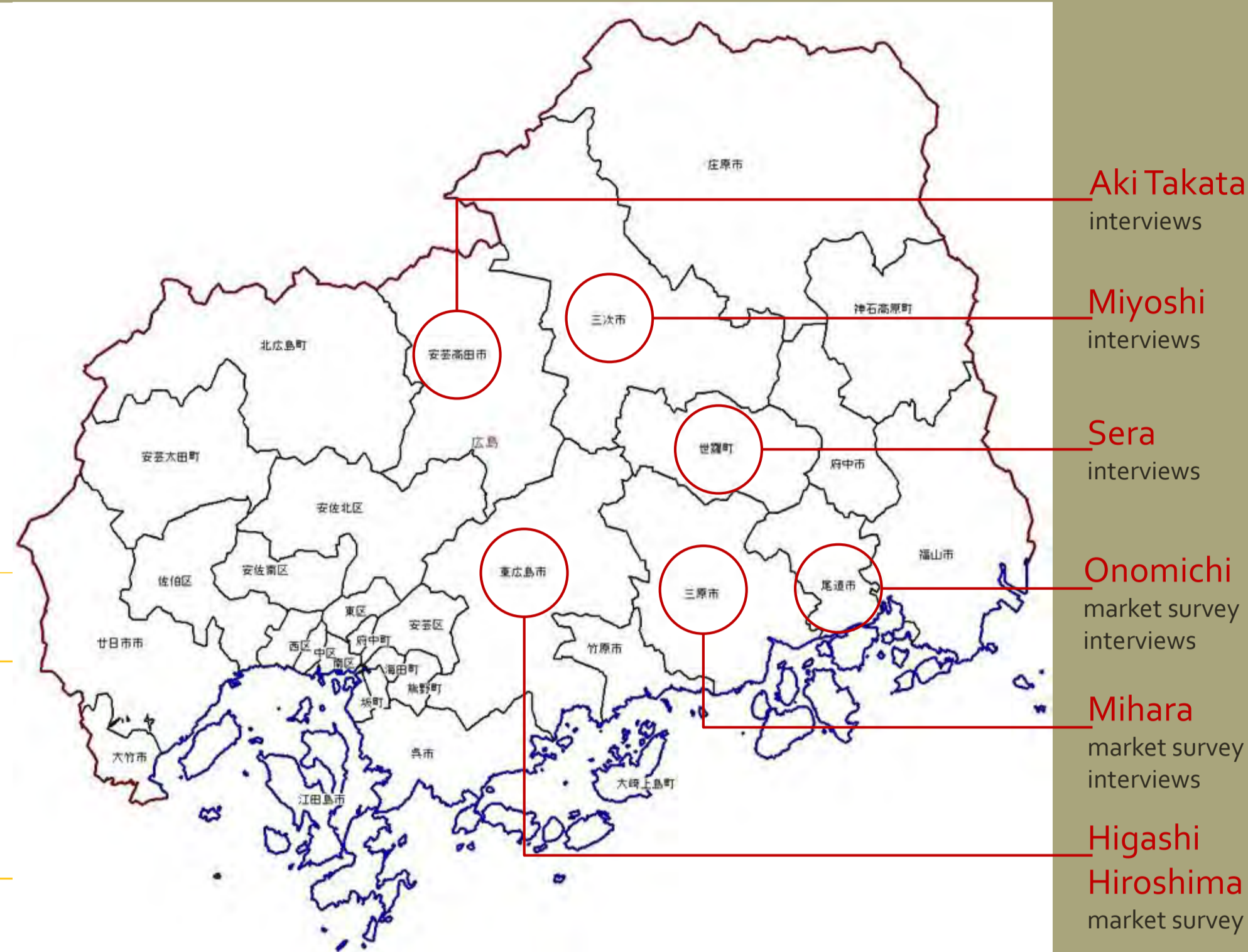
MARCHÉ (FARMER'S MARKET) FIELDWORK SURVEY



FIELDWORK: MARCHÉ SURVEYS

Visitors and sellers **questionnaire survey** at *marchés* (マルシェ) in three locations:

	Visitors (n)	Producers (n)
ONOMICHI	118	12
MIHARA	150	20
SAIJO	101	5
TOT	369	37



INTRODUCTION

In Japan, the agricultural sector has been going through a steady decline, characterized by an aging farming population, the steep decrease in the absolute number of farmers, lack of farm successors and widespread farmland abandonment.

However, a variety of new farmers may be looking into starting organic farming, which could potentially lead to rural revitalization in some neglected areas of Japan. There are also new methods and tools that can be employed to reduce some of the labor and better monitor agricultural land and the environment. Our Onsite Team Project has explored these issues in Hiroshima, Japan.

THEMES

CONNECTION WITH CONSUMERS
 consumer awareness about organic farming
 consumer support for local organic producers

APPROPRIATE TECHNOLOGY AND TOOLS
 appropriately scaled technologies for saving labor and increasing efficiency
 sustainably bottom-up projects

SEEDS AND SEED SAVING
 fundamental input for farming
 cultural, environmental and economic importance

CONCLUSIONS AND RECOMMENDATIONS

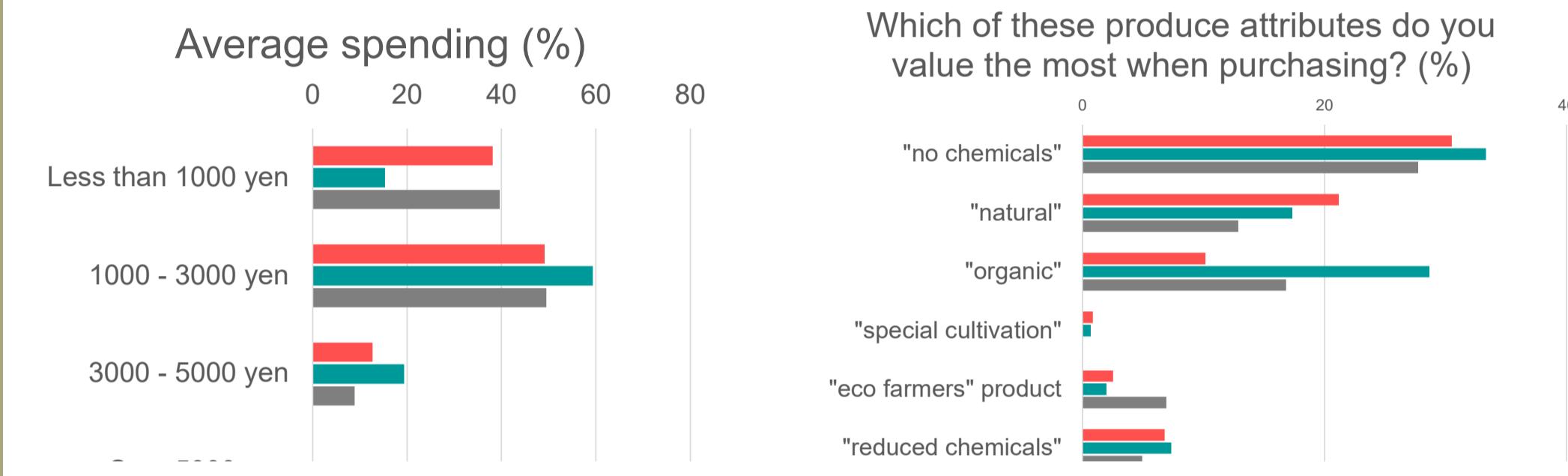
Our project gave a significant contribution to the insights crucial for young/new organic farmers, namely marketing and the linkages between producers and consumers. Helping new farmers to "understand" their market, and at the same time educating consumers about the social and environmental benefits of organic farming, is an essential step in expanding the market for organic produce in Japan.

We also established relationships with existing groups who are working to solve some of the problems in agriculture with innovative robot technology. We hope for future partnerships between regional innovators, Universities, and local farmers so that further studies and more in depth discussions can be achieved, ultimately leading to a greater expansion in the realm of organic and sustainable agriculture.

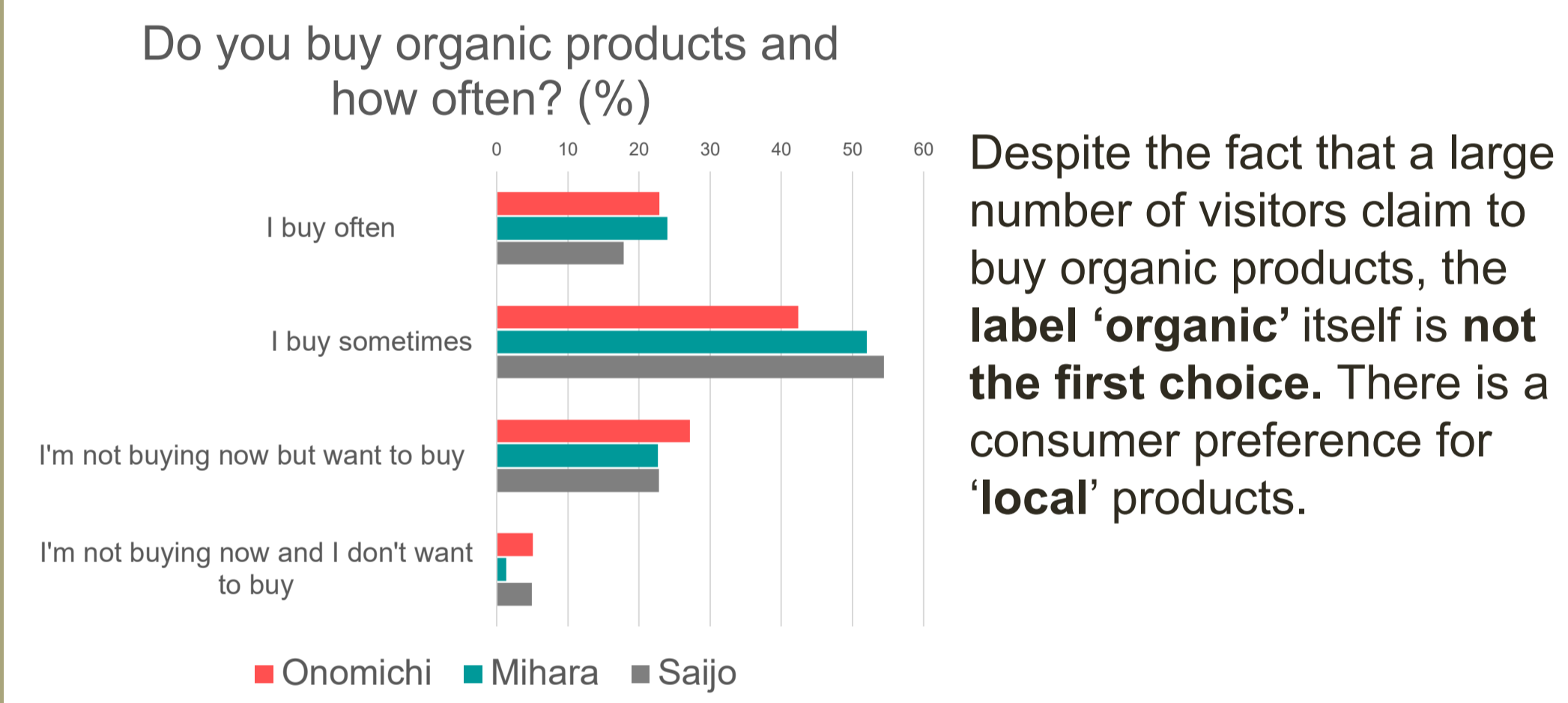
ACKNOWLEDGEMENTS

TAOYAKA Program
 広島県有機農業研究会 (Hiroshima Prefecture Organic Farming Association)
 Seeds of Life (John Moore)
 Yamashita Kai

Marché questionnaire survey for visitors



Marché questionnaire survey for visitors



THREE VISITOR PROFILES

1. People who go to marché to buy **produce**; motivated by **supporting local producers** and especially **buy organic**; **highest spending**.
2. People who use the marché as a place for **socialization**; lower propensity to buy organic products; enjoy the marché as a **leisure space**.
3. **Casual visitors** who are **attracted by the novelty** aspect of the marché and by the fact that it is perceived as a **'fashionable'** place; **lowest spending**.

CONCLUSIONS

- Marché is important for **organic farmers** to create or strengthen their **customer base**
- Necessary to involve visitors – opportunities for **education** and **interaction** with organic farmers
- Potential to become a major venue where to **purchase organic products**



INTERVIEWS

Interviews with organic farmers were conducted in different locations of Hiroshima Prefecture. Based on them we found that farmers have their own unique and interesting perspective on how they farm. Farmer innovation is very important for utilizing new tools and marketing strategies. Many young farmers find it challenging to start as full time farmers. Farmer networks are necessary for education as well as for comradery, but can be difficult to establish.

Seed Event

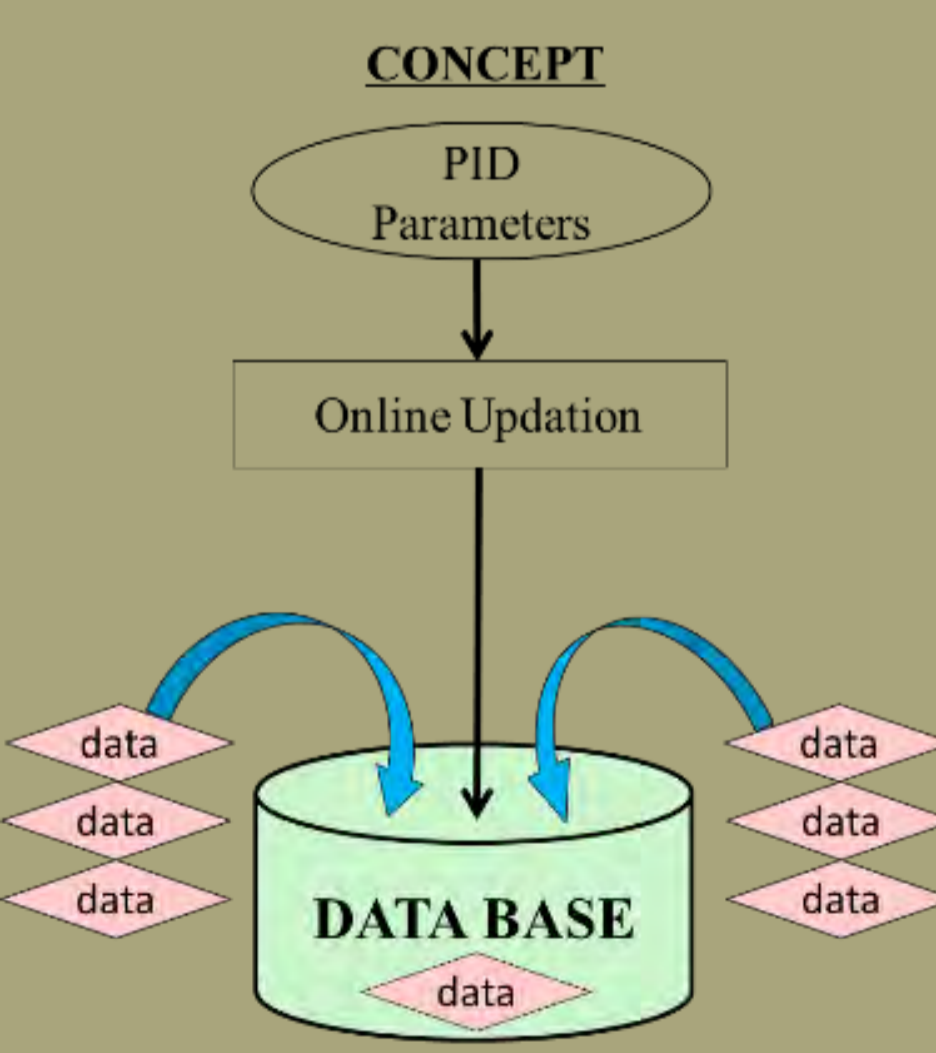
A Social And Cultural Collaboration event hosted on march 24th. This event brought together consumers and farmers to discuss issues related to seeds.

Major Themes of the Event

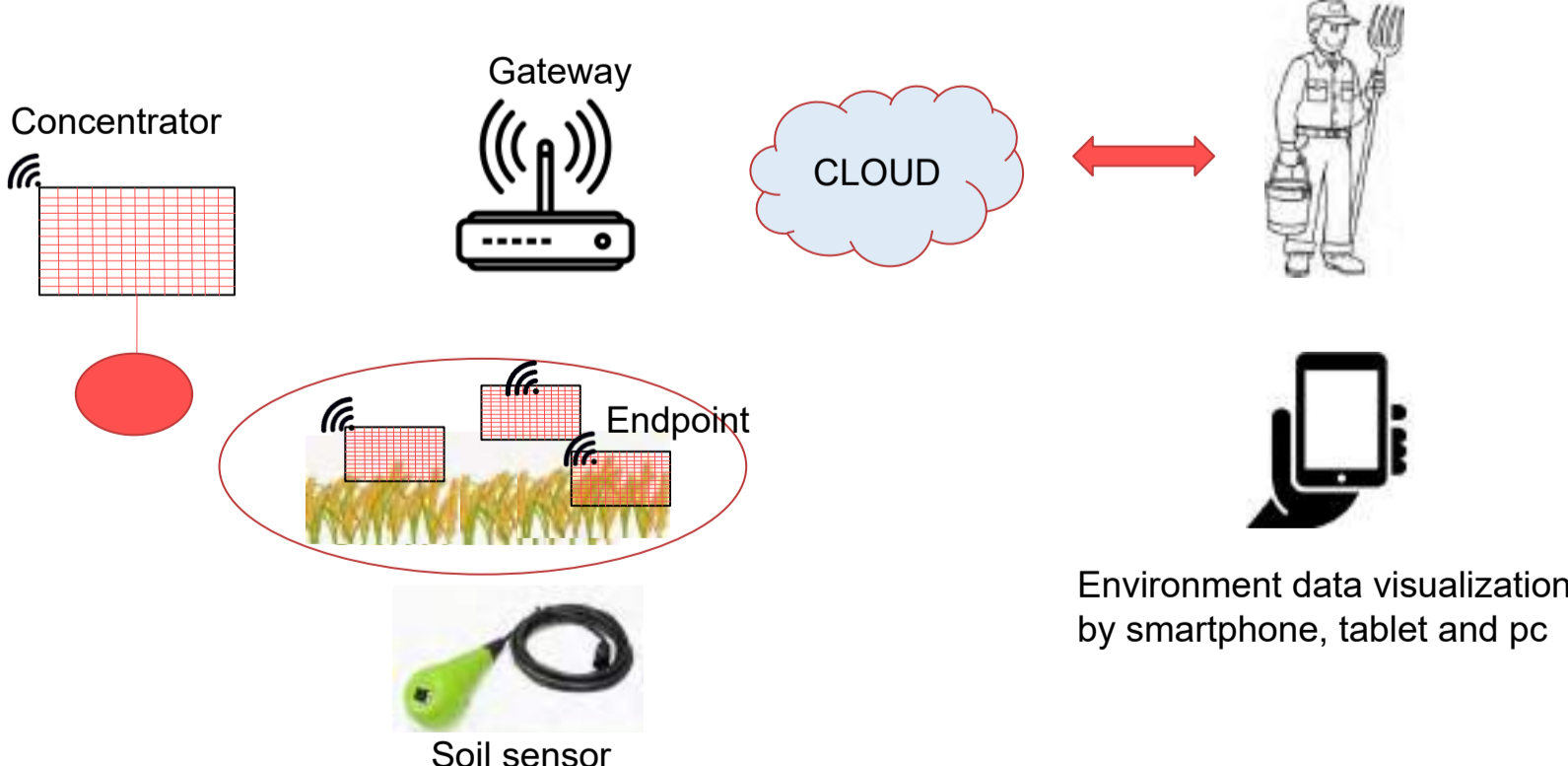
- Networking
- Seed Laws and Rules
- Proactive Understanding of the Seed Law
- Seed Libraries and Seed Exchanges
- Economic Diversity
- Biodiversity
- Food Security



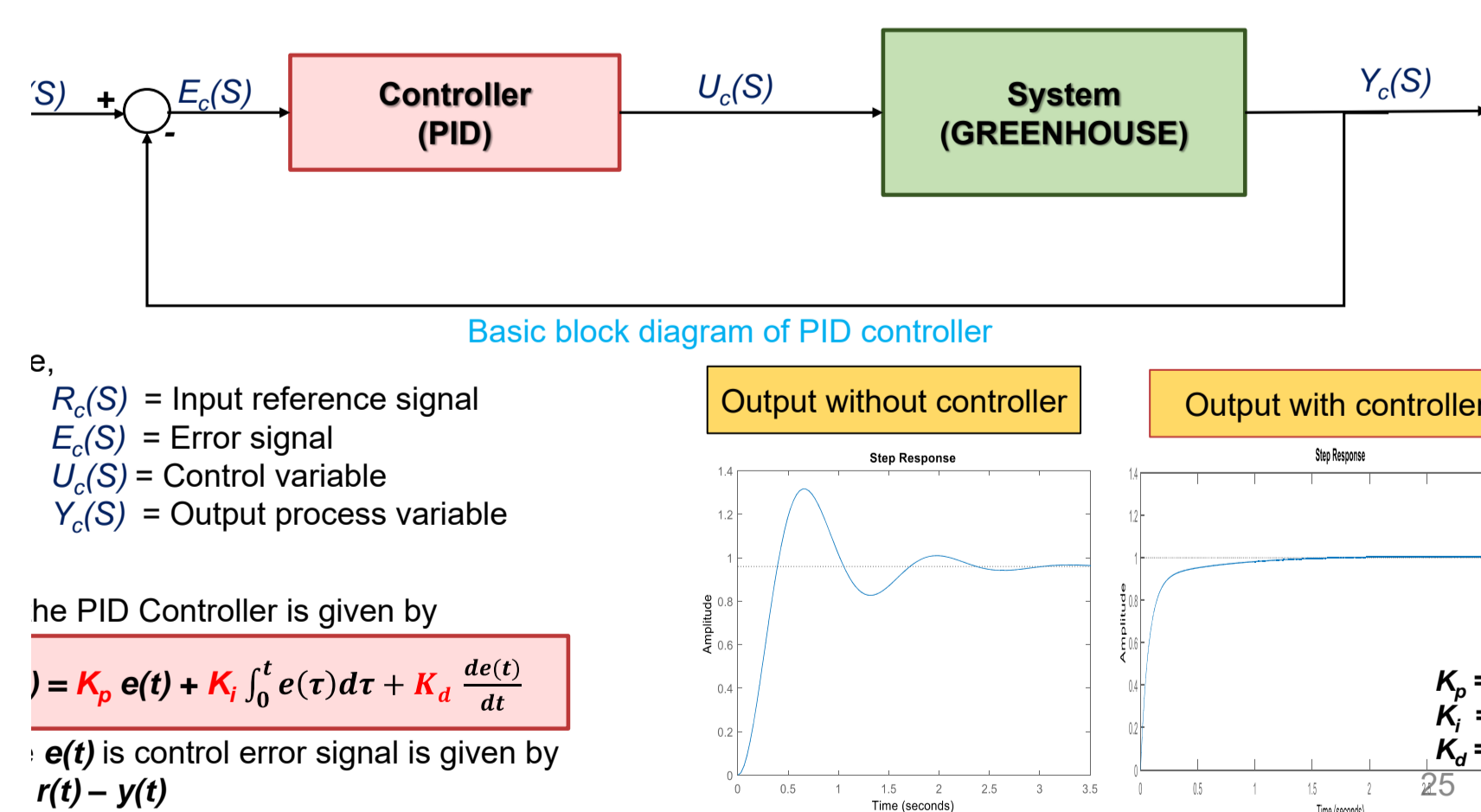
APPROPRIATE TECHNOLOGY: SOIL SENSOR AND THE AIGAMO-I ROBOT



Technical creation:
 Measuring and maintaining soil quality using soil sensor



Methodology



AIGAMO-I: An automated weeding robot developed for rice fields

Small 3kg robot utilizing a 3D printed waterproof body. Lab tested buoyancy, a programmable rudder for direction control in the rice fields. The direction control is a key factor for controlling the movement and operation.

This part of the AIGAMO-I development work has focused on the robot's navigation. The robot navigation between the rice plant rows is developed here based on an offline motor rotation pattern and online position feedback control.

Contributions to the project

- The soil sensor technology:
 - can be integrated into farms who are using sustainable farming methods;
 - is easy to install and cost-effective, thus making it appropriate even for small scale farms;
 - with the implementation of IoT technology, farmers can monitor the field data from anywhere

Regarding the development of the weeding robot "AIGAMO-I", this technology contributes directly to pesticide-free farming styles and is particularly relevant in the context of Japan.

