

Regional Circular Economy Project

Hasami Town



Background

Hasami Town is located in the centre of Nagasaki Prefecture, where making pottery has been a part of daily life for over 400 years. It is the birthplace and production area of Hasami ware, which boasts a 17% share of the national market for daily tableware, and is also one of the prefecture's leading rice producers, as people have come to live a 'half farming, half pottery' agricultural lifestyle which continues to flourish today.

The production of pottery in Hasami Town has a history of utilising a division of labour system to produce large quantities of pottery as daily tableware. The local industry is supported by the cooperation of:

1. mould makers, who make the pottery shapes out of plaster
2. clay makers, who pour the raw materials into the plaster moulds to make the prototype of the products
3. kilns, which paint and bake the clay to make it into a finished product
4. and trading companies, which ship and sell the products.

Hasami ware, which is sensitive to trends and the needs of consumers, is becoming more popular and well known, and the number of tourists visiting the town is increasing. However, the plaster moulds used in the manufacturing process are discarded after about 100 uses, as they lose their water absorbency and start to wear out, making it impossible to

maintain the uniformity of the product. These plaster moulds had previously been disposed of in landfills, but due to a change in policy, plaster moulds are unable to be thrown away and now are piling up at intermediate treatment plants both inside and outside the town. This not only ruins the town's scenery, but also raises the risk that the stable production system of Hasami ware might not be maintained. Therefore, in order to clean up not only the final product but also the manufacturing process from production to disposal, and for Hasami Town to continue to be a production area that customers can feel comfortable with, the town has decided to implement a regional circulation initiative.

Objectives

- 1 Establishment of a recycling system centred on waste plaster
- 2 Raise awareness of recycling among Hasami ware producers
- 3 Development of new souvenirs

Project Outline

Outside experts were invited in to secure a stable destination for waste plaster, review the fee system for waste disposal, and promote awareness among business operators. In addition, as a model to prove that recycling initiatives can lead to high added value for Hasami Town's local brand, souvenirs (sixth-industry products—products that are created through collaboration of primary, secondary, and

tertiary industries from start to finish) were developed, sold and promoted to promote ethical consumption, while the possibilities for upcycling plaster moulds were expanded, and a system of regional circulation centred on waste plaster was established.

◆ Securing a stable destination for waste plaster and fostering an awareness of recycling

Conventionally, waste plaster was mainly disposed of by burying it at final disposal sites, with a portion being reused as roadbed material, etc. However, as a result of efforts by the entire production ecosystem, involving repeated research and verification, solutions have been found to put waste into practical use as agricultural fertiliser and building material.

In addition, events focusing on sustainability are organised, and meetings and training sessions are held regularly for relevant parties to foster an understanding of the initiatives and appreciation of their necessity.

◆ Review of the fee system for waste disposal

When comparing the fees for disposal of waste in landfills with those for recycling, there was a problem that the processing fee for recycling was higher than that for landfill disposal because the recycling process is more varied and labour intensive. Therefore, intermediate treatment facilities that were understanding of the initiative made efforts to lower their prices, and external experts acted as intermediaries to ensure the stable acceptance of fly ash generated by thermal power plants, which generated a new income stream for the intermediate treatment facilities while also breathing new life into the fly ash, which is in turn used in construction. By increasing the profitability of the intermediate treatment facilities as a whole, the recycling fee for waste plaster was reduced, and stable operations involving waste plaster became possible.

◆ Development and sales of 'sixth industry' products

'Hasami Pottery Box Cookies', 'Hasami Pottery Box

Puffed Rice Cakes', and '833 Rice Kurawanka Sets' are all products that were planned and developed as zero-waste circular products, as they were made from rice that has been grown in unused fields with unproductive soil where crushed up plaster moulds were reused as a soil conditioner, combining local food and pottery and connecting them through the reuse of plaster. They are a model case of agriculture, pottery, local businesses, government, the Hasami Town Tourism Association, and experts all working together to solve a local issue through commercialisation, and high value being added in an initiative aimed at creating a local sustainable community.

Features and Innovations

This region is characterised by its unique approach for taking on challenges to solve problems, involving the public and private sectors working together to build systems for resource circulation and economic circulation while being aware of and practising environmental load reduction, with local industries at the core.

Results of the Project

The recycling rate of waste plaster increased from about 20% in 2020 to 95% in 2022, as regional circulation initiatives spread throughout Hasami Town. In addition, registration of Japan's first agricultural fertiliser that was derived from ceramic plaster was completed in 2023, and sales began under the trade name of 'Hasami no Megumi'.

Waste plaster is also being used as a building material, and tests are being conducted for use as interior and exterior materials. It was also discovered that it could meet JIS standards under certain conditions, and it was used for part of the wall surface of the new Hasami Town Hall building completed in December of the same year.

It is clear that the prospects are bright for finding a variety of uses for waste plaster through research and verification, and positive results are being

produced in terms of both stories and practical applications.

Issues, Problems and Responses

This initiative has been promoted as a town-wide issue that is focused on the future of Hasami Town, but there have been times when there has been a lack of understanding of its importance, even among those involved in the ceramics industry and the government, and this becomes a barrier to new initiatives. We would like to develop these initiatives steadily through repeated discussions on how to involve as many people and local residents as possible, so that they see it as their own issue and become actively involved.

Future Developments (expected effects and project vision and issues)

- ◆ Achievement of a 100% recycling rate for waste plaster
Raising the recycling rate of the entire production area by fostering awareness among businesses that are not at the centre of the initiative, and stabilising processing fees.
- ◆ Creation of sustainable production areas
By making our manufacturing process transparent to customers from start to finish, we aim to create a production area where both producers and consumers can feel confident in our product.

URL Reference

Contact

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Meaning of Technical Terms and Coined Terms Used

Regional circular economy project in Hasami
Re-Use of Plaster Mould Produced in the Pottery Making Process