Minister of Agriculture, Forestry and Fisheries Award

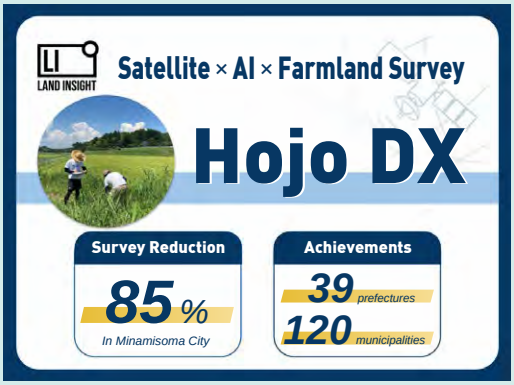
農林水産省

Development of "Hojo DX," a digital transformation support service for agricultural field surveys in collaboration with Minamisoma City

LAND INSIGHT

Case Overview

We co-developed "Hojo DX," a service that utilizes satellite data and AI technologies to address the long-standing burden of crop planting verification on farmland (visual inspection requirements) such as aging workforce, labor shortages, and heatstroke risks, faced by Minamisoma City in Fukushima Prefecture. As a result, the city achieved the remarkable outcome by reducing the number of personnel required for on-site verification work by approximately 85% (FY2025 results). Building on this success, the service has expanded to initiatives (demonstrations and implementation) in 120 municipalities across 39 prefectures nationwide. This is an example of the social implementation of space utilization as a standard model for administrative DX that contributes to solving urgent issues facing local governments.



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Key points regarding receiving the award (Comments from the selection committee)

By utilizing satellite data and AI to automatically and accurately identify crop planting conditions on farmland, the initiative improves the efficiency of on-site verification work and significantly reduces the burden on administrative staff. Beginning with its introduction in Minamisoma City, Fukushima Prefecture, the service has expanded to 120 municipalities across 39 prefectures nationwide, demonstrating substantial achievements. This aspect is highly commendable.

Its high technological level and contribution to improving administrative efficiency are highly regarded nationwide, including a 60% reduction in personnel required for on-site verification work (Minamisoma City, FY2024 results).

Concrete Results

1. Contribution to creating new areas for space development and utilization

This initiative is a new challenge that utilizes satellites to address urgent issues faced by Japan's agricultural administration and local communities. Due to the declining and aging population, securing survey personnel has become difficult. In addition, "on-site visual inspections" under extreme heat have been common practice, posing safety risks to survey staff engaged in farmland verification. We approached this issue from space in collaboration with Minamisoma City and co-created a service that replaces on-site surveys with satellite data and AI analysis. This initiative ensures the safety of survey staff while dramatically improving operational efficiency, opening up a new area of space utilization in agricultural administration. The innovation in this case goes beyond simply introducing new technology. Following the Ministry of Agriculture, Forestry and Fisheries' policy revision allowing the use of satellite data, Minamisoma City became one of the first local governments to implement this approach and served as a pioneering case of analogue regulation reform led by the Digital Agency. The Minamisoma Model, which achieved both technological development and regulatory reform, has the potential to significantly transform the future of local administration as a co-creation GovTech model that uses space to address regional issues and drive national regulatory reform.

2. Contribution to expanding the space development and utilization market

Our "Hojo DX" service has created a new frontier of space utilization, the "GovTech market," and driving its expansion. Starting with co-creation with Minamisoma City in Fukushima Prefecture, implementation and demonstrations have rapidly expanded to more than 120 municipalities across 39 prefectures nationwide. Supported by national regulatory reforms, both the number of contracts and sales are increasing.

According to estimates by the Digital Agency, the cost of on-site surveys related to farmland management amounts to approximately JPY 82 billion annually nationwide. In response to this large potential market, we provide satellite solutions that reduce personnel and operational costs, and we expect to secure a significant market share in the future. Furthermore, this successful model of municipal DX can be applied beyond Japan to infrastructure inspection and disaster prevention fields overseas facing similar challenges, such as labor shortages. It has great potential to contribute to solving administrative challenges on a global scale.

3. Contribution to the advancement of the economy and society

"Hojo DX" is a prime example of how space utilization can fundamentally transform public administration and contribute to solving social issues.

It goes beyond merely addressing immediate challenges, such as heatstroke risks and labor shortages. The essential contribution of this initiative lies in freeing administrative staff from demanding on-site surveys and reallocating the human resources created to higher value-added tasks. For instance, it enables staff to focus on strategic work that previously received limited attention, such as planning agricultural promotion policies and providing management guidance to farmers.

In other words, space utilization is not simply a tool for efficiency; it enables administrative work to advance from "maintenance" to "development." This is essential to realizing sustainable agriculture and local communities in Japan.

4. Contribution to technology

"Hojo DX" combines advanced AI technology with the capability to implement solutions in society to meet the strict requirements of administrative operations, opening up new horizons for space utilization technologies.

1. Development of a high-precision AI model capable of supporting administrative work

To capture crop growth cycles, over 100 features are extracted from multiple satellite images taken at different times, achieving a high accuracy of over 95% for the major crops of rice, wheat, and soybeans. In addition, from FY2025, analysis of vegetables such as broccoli has also been implemented in Minamisoma City.

2. Technical reliability enabling national regulatory reform

This high level of accuracy and operational stability led Minamisoma City to carry out a fundamental review of its on-site verification work and encouraged the national government to promote the use of satellites as a best practice for improving its efficiency. This case demonstrates that space technology can become a standard solution for local administration.

3. Contribution to knowledge accumulation for the future

Nationwide expansion will lead to the accumulation of knowledge and data on space utilization in administrative fields, including agricultural policy. It will accelerate further improvements in AI model accuracy and the development of diverse applications, such as wide-area surveys of farmland and agricultural production and disaster countermeasures, thereby making a significant contribution to the development of space utilization in Japan.

5. Contribution to promoting public understanding and human resource development

This initiative has broadly demonstrated the social value of space development and utilization from three perspectives: (1) promoting public understanding, (2) contributing to regional revitalization, and (3) nurturing the next generation of human resources.

1. Presenting a case of social implementation of space utilization

This case, in which regional issues were addressed using space technology, was widely reported through channels such as Digital Agency news and conveyed to the public the understanding that space supports everyday life.

2. A model case of regional revitalization through space business

The relocation of the company's headquarters to Minamisoma City is a pioneering example of a space company becoming rooted in a local community, creating employment, and contributing to community development.

3. Investment in the next generation

Through lectures at agricultural schools, practical knowledge on the use of satellite data is shared with future agricultural professionals. This directly contributes to developing the human resources who will support the future of agriculture and to sustainable regional communities and agriculture.

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