

44-1 Revitalization of Industries and Livelihoods (Initiatives to restore farmland and agricultural facilities, and resume farming operations)

Case study	“Strawberry Complex” revives producing region				
Location	Watari Town and Yamamoto Town, Miyagi Prefecture				
Phases	<table border="1"> <tr> <td>Emergency response phase</td> <td>Recovery phase</td> </tr> <tr> <td>Early reconstruction phase</td> <td>Late reconstruction phase</td> </tr> </table>	Emergency response phase	Recovery phase	Early reconstruction phase	Late reconstruction phase
Emergency response phase	Recovery phase				
Early reconstruction phase	Late reconstruction phase				
Members	Initiative bodies: Watari Town and Yamamoto Town, Miyagi Prefecture Supported by: Sendai City, Miyagi				

Activity overview:

Strawberry producers in Watari Town and Yamamoto Town, Miyagi Prefecture, the largest strawberry producing areas in Tohoku, suffered catastrophic damage from the tsunami. They were able to secure alternative parcels of land in inland areas, which enabled them to quickly resume strawberry growing and shipment. In addition, they built strawberry complexes where they introduced a new and more productive method of growing called elevated bed nutriculture to replace conventional soil cultivation, and also strawberry sorting facilities. With shipment amounts exceeding that of the pre-earthquake period and other improvements, they are on a steady path to recovery.

Activity details:

■ Early resumption of strawberry growing by securing alternative sites

Before the earthquake hit, JA Miyagiwatari was the largest strawberry producing region in Tohoku with a growing area of 96 ha and 380 producers producing a sales volume of 3,600 tons. But the tsunami from the Great East Japan Earthquake caused catastrophic damage to 95% of their growing area, as well as facilities such as pipe frame greenhouses and strawberry sorting facilities.

While there was only a limited amount of land that could be used for fields to resume growing in a short amount of time, they were able to secure alternative land, including abandoned farmland in the Awakuma Oyama district of Watari Town along the Abukuma River in the inland area. There they constructed pipe frame greenhouses and other facilities using the Great East Japan Earthquake Grant for Agricultural Production Measures. They received free seedlings from other producers in the prefecture and Tochigi Prefecture, and 104 growers resumed growing with soil cultivation on 19.2 ha, or about 20% of the area of their original farmland that was affected by the disaster. Thanks to their efforts to have the strawberries ready for shipment before Christmas when demand for strawberries is at its highest, they were able to ship in November 2011.

■ Developing strawberry complexes with national government subsidies

The affected growers requested support from the towns of Watari and Yamamoto so that they could re-erect their pipe frame greenhouses and take other steps to resume strawberry production early. In response, the two towns, in cooperation with JA and other organization, used the Great East Japan Earthquake Grant for Agricultural Production Measures from FY2011 to FY2012 to repair large

greenhouses and elevated benches, and also introduced production materials such as pipe frame greenhouses. In FY2012 and FY2013, seven strawberry complexes (103 ha of land with 41 ha of growing area) and a strawberry sorting facility (1.8 ha of land and 0.4 ha of facilities) were newly developed in Watari and Yamamoto with the use of the "Grant for Recovery from the Great East Japan Earthquake." As a result, 151 growers have been able to resume strawberry growing in September 2013.

■Introducing new growing methods, and challenges

In resuming growing strawberry in the complexes, the growers introduced high-efficiency elevated bed nutriculture instead of conventional soil cultivation, and improved productivity by automating temperature control. Elevated bed nutriculture is a method of growing strawberries by installing planters at a height of about one meter above the floor and circulating nutrient solution. While soil cultivation requires work such as ridge making, this method eliminates the need for such work and allows people to work while standing, thus saving labor and improving efficiency.

The conversion from soil cultivation to elevated bed nutriculture required growers to learn growing techniques that they had no previous experience in, so the government, prefecture, and JA provided support, including training programs. As a result, the strawberry complexes in Watari and Yamamoto achieved yields of more than 5 tons per 10 hectares, a significant increase from before the earthquake. However, one of the issues that the growers now face is that their cost burden is high, as they are basically responsible for all costs related to the cultivation environment, such as maintenance and management costs associated with the introduction of elevated bed nutriculture and the rebuilding of pipe frame greenhouses.

■Steadily recovering as a strawberry producing area

Although, in the beginning, growers had a very difficult time learning the techniques due to a combination of difficulties, including the pressure they faced to quickly restart production, aging growers, and the work that went into rebuilding their own lives, production recovered in 2015, with 59 ha of cultivated area, 218 growers, and 2,476 tons sold. Largely owing to the introduction of the elevated bed nutriculture, the region has been steadily accelerating its recovery, with sales exceeding pre-disaster levels at JPY 3.4 billion in 2018 (cultivated area: 64 ha, 232 growers).

Source (Listed in other case studies, etc.):

- ・ 梅本雅「小特集「震災と地域農業—食と農の視点から—」震災からの復旧・復興過程における農業経営と地域農業」農林業問題研究（2012年）p365-373
https://www.jstage.jst.go.jp/article/arfe/48/3/48_365/_pdf
- ・ 農林水産省東北農政局「農業者等による復旧・復興取組事例 宮城県 東北一のいちご産地復興への取組」（2016年3月）
https://www.maff.go.jp/tohoku/osirase/higai_taisaku/hukkou/pdf/ja-miyagiwatari_2803.pdf
- ・ 同上「農業・農村の復興・再生に向けた取組と動き」（2021年2月）p17

https://www.maff.go.jp/tohoku/osirase/higai_taisaku/hukkou/torikumi.html

- 農林水産省「東日本大震災からの農林水産業の復興支援のための取組」(2020年2月) p8

<https://www.maff.go.jp/j/kanbo/joho/saigai/attach/pdf/torikumi-0202.pdf>

- 宮城県「みやぎ復興プレス第43号」(2015年12月)

<https://www.pref.miyagi.jp/uploaded/attachment/335329.pdf>

Systems and mechanisms applied:

- Grant for Agricultural Production Measures
- Reconstruction grants

Project cost:

- FY2011-2012 project cost: JPY 1.06 billion (JPY 530 million)
(Great East Japan Earthquake Grant for Agricultural Production Measures)
- FY2012-2013 project cost: JPY 20.5 billion
(Grant for Recovery from the Great East Japan Earthquake)