44) Initiatives to restore farmland and agricultural facilities, and resume farming operations [emergency response phase, recovery phase, early and late reconstruction phases]

[Issues] (1) How to proceed with the recovery of farmland and agricultural facilities.
(2) How to tackle the issue of expediting the resumption of farming.
(3) How to secure agricultural workers for post-earthquake local agriculture.

[Situation and issues created by the Great East Japan Earthquake]

In the Great East Japan Earthquake, damage to agriculture, forestry, and fisheries, the key industries in the affected areas, amounted to 2.38 trillion yen, or about 26 times that sustained in the Great Hanshin-Awaji Earthquake and about 18 times that sustained in the Chuetsu-Oki Earthquake in Niigata Prefecture. Of this amount, agriculture and forestry suffered 1.12 trillion yen in damage, and 21,480 ha of farmland was washed away or flooded by the tsunami.

In the affected areas, the challenge was to resume farming operations as soon as possible by removing debris and salt from farmland, the production base of agriculture, restoring agricultural facilities, and providing support to farm management organizations. In restoring farmland, the challenge was not to simply return it to its pre-earthquake state, but also to improve agricultural productivity by expanding field plots and consolidating farmland for use by workers in local agriculture.

[Initiatives in the aftermath of the Great East Japan Earthquake]

・Disaster recovery projects for farmland and agricultural facilities (Issue 1)

The affected areas made use of national government subsidies to restore farmland by removing debris, sediment, and salt, as well as restore drainage channels, drainage pump stations, and other agricultural facilities. After the Great East Japan Earthquake, new salt removal projects were formed due to the severe flooding damage caused by the tsunami, and farmland restoration from the disaster was also carried out as projects under direct control of the national government.

At the request of eight coastal municipalities, including Rikuzentakata City, Iwate Prefecture dispatched a Farmland and Agricultural Facilities Disaster Recovery Support Team to gather information on damage from the disaster, and conducted disaster assessments and restoration work on behalf.(1)

In order to implement disaster recovery projects for the vast amount of farmland and agricultural facilities in the three affected prefectures, requests were made to the national government and all prefectures to dispatch agricultural civil engineers. As a result, engineers were dispatched as support staff for a total of 9,000 person-months (as of the end of FY 2019).(2)

→ *Related item: 61) Dispatching support staff (initiatives by supportive local authorities)*

・Promoting the expansion of field plots, and collaboration with other reconstruction projects (Issues 1, 2)

In the wake of the earthquake, prefectural governments became the implementing body of projects to restore farmland and expand field plots (0.5 ha or larger) with the use of the reconstruction grant, etc., in order to improve farming productivity. In the Sendai Higashi District of Sendai City, Miyagi Prefecture, based on requests from Miyagi Prefecture and Sendai City, the national government carried out field plot expansion work on 1,900 ha of farmland as part of its National Government Disaster Recovery Project, and also promoted the organization and incorporation of farming organizations.(3)

The orderly use of land, including pre-relocation sites, was implemented in Iwanuma City, Miyagi Prefecture, and other locales through farmland development that was carried out in conjunction with the project on promoting group relocation for disaster prevention in which houses that previously stood in tsunami-affected coastal areas were relocated to higher ground.(4)

→ *Related item: 25) Efficient use of sites from where people relocated*

・Early resumption of production areas by securing alternative sites (Issue 2)

The Miyagi Watari Agricultural Cooperative in Yamamoto Town and Watari Town, Miyagi Prefecture, was the largest strawberry producing region in Tohoku before the earthquake, with a growing area of 96 ha, 380 farms, and sales volume of 3,600 tons. Although 96% of the region's growing area was damaged in the earthquake, abandoned plots of land in inland areas were secured as alternatives by October 2011, pipe structure greenhouses were constructed using the national government's Grant for Agricultural Production Measures, and production and shipment of soil-grown strawberries resumed in November on acreage amounting to 20% of that before the earthquake. Since 2012, the towns of Watari and Yamamoto have developed land for 7 complexes and built greenhouses for growing (40.6 ha) based on the reconstruction grant, and 51 households resumed farming in September 2013. In this new strawberry complex, a new production method called elevated bed nutriculture was introduced to increase farmers' work efficiency. Under this system, planters are installed at a height of about 1 meter above the floor and fed with nutrient solution in which fertilizer is dissolved. Furthermore, production got back on track and full-scale farming resumed with the completion of the strawberry selection plant, and in 2018, shipments exceeded pre-earthquake levels (Case study 44-1).

・Consolidating farmland use in the hands of agricultural workers by establishing agricultural cooperative corporations (Issue 3).

Before the earthquake, a large number of farmers in the Arahama community in the Sendai Higashi district of Sendai City, Miyagi Prefecture, were dual-income earners, and primarily conducted farming operations under contract with agricultural corporations. The corporation that played a central role was dissolved following the earthquake, and a new receptacle was needed to take over the farmland. At the time, farmland in the Sendai Higashi area was to be expanded (from 30 to 90 a) in a project under the direct control of the national government, and the use of farmland was also an issue that needed to be considered.

As a result of discussions within the community, in January 2015, 41 dual-income farmers took the

lead in establishing Sendai-Arahama, an agricultural cooperative jointly owned by JA. Rather than establishing usage rights with individual farmers, Sendai Arahama utilized a project for intermediary farmland management to consolidate and integrate 88% of the entire 120 ha of farmland in the Arahama community. In the expanded plots of land, large-scale agriculture is being implemented with the introduction of large machinery to grow rice, soybeans, and wheat at low cost, as well as using nursery houses to grow mini-tomatoes and other high-profit crops.(5) (6)

[Lessons learned and know-how gained]

(1) Promote the expansion of farmland plots with the aim to expedite the recovery of farmland and agricultural facilities, and improve productivity.

- Take steps to restore farmland and agricultural facilities expeditiously with support from the national and prefectural governments.
- In addition to restoring farmland, expand farmland plots to expand the scale of operations and achieve productivity improvements.
- Consider the orderly use of land through farmland development carried out in conjunction with the project on promoting group relocation for disaster prevention.

(2) Expeditiously resume farming operations by securing alternative land, etc.

- Expeditiously resume farming operations by securing alternative land, and recover production areas through the introduction of advanced cultivation management systems and other means.

(3) Use farmland effectively by consolidating farmland use in the hands of new agricultural workers.

- Secure new workers in local agriculture through the establishment of corporations, etc.
- Work with the Institution for Intermediary Farmland Management to consolidate farmland in the hands of agricultural workers to keep farmland owned by farmers who decide to leave farming from being abandoned or underutilized.

Refernces

(1) 岩手県「東日本大震災津波からの復興―岩手からの提言―」2020 年３月
https://www.pref.iwate.jp/shinsaifukkou/densho/1027741/index.html?theme=3
(2) 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９月
http://www.maff.go.jp/j/kanbo/joho/saigai/attach/pdf/torikumi_0209.pdf
(3) 農林水産省東北農政局「農業・農村の復興・再生に向けた取組と動き」2020 年１月
https://www.maff.go.jp/tohoku/osirase/higai_taisaku/hukkou/torikumi.html
(4) 宮城県岩沼市「岩沼市復興整備計画について」
https://www.city.iwanuma.miyagi.jp/bosai/fukko/suishin/fukkoseibi.html
(5) 森田明「宮城県の水田地帯の震災復興」『農業研究』31:2018 年 297-307.
http://www.nohken.or.jp/31-8morita297-307.pdf
(6) 石原清史・平林光幸・畠幸司・小野智昭「宮城県津波被災地域における農業の復興」『農林水産政策研究所』編
『東日本大震災津波被災地における農業復興過程に関する現状と課題』2017 年３月
https://www.maff.go.jp/primaff/kanko/project/attach/pdf/170327_29sinsai1.pdf