22-1 Reconstruction of Homes and Cities (Devising project methodologies to rebuild and relocate cities)

Case study	Realization of careful and considerate urban reconstruction and relocation projects at an early stage that offer a sincere response to the needs of disaster victims
Location	Noda Village, Iwate Prefecture
Phases	Emergency response phase Recovery phase Early reconstruction phase Late reconstruction phase
Members	Noda Village, Reconstruction Planning Committee (in cooperation with Iwate University), 21st Century Village Development Committee

Activity overview:

Disaster public housing in Noda Village was constructed at an earlier stage than other projects in Iwate Prefecture, with the process of rebuilding and relocating communities moving ahead at a rapid pace as construction started on projects on promoting group relocation for disaster prevention. As a small municipality, the foundation of the project was the face-to-face relationship between the village mayor and other village officials with disaster victims. A variety of different reconstruction options were put together for each of the communities affected by the disaster, with a sincere effort to address the needs of each and every disaster victim. Another feature of this project is that the entire village is involved in reconstruction efforts, including the organization of roundtable meetings with the participation of residents from outside affected areas as well.

Activity details:

■City development with multiple lines of defense against disasters with the construction of high embankments to act as tertiary levees

Noda Village, Iwate Prefecture constructed a 14-meter-high seawall as a primary levee and uses National Route 45 and the Sanriku Railway as secondary levees. In addition to this, the village also constructed high embankments to act as tertiary levees based on the results of tsunami simulations to reduce the scope of flood damage from tsunamis and secure enough time for evacuating, resulting in a form of city development providing multiple lines of defense against disasters. Pocket-shaped buffer zones between the secondary and tertiary levees have been developed into parks, and a tsunami of the same scale as that in the Great East Japan Earthquake would not flood residential areas inland past the tertiary levees.

Although restrictions were placed on residency due to the extensive disaster hazard zone (76.2 ha), the consensus building process was smooth because the area had already experienced a number of tsunamis in the past and residents had no desire to live there.

■Use of directly administered surveys

Through relief activities immediately after the disaster, the village had a general idea of the extent of the damage, but had no time to conduct basic surveys to publicize the true scope of the damage because they were busy providing support to the victims and temporarily restoring lifelines. For this reason, the

village requested a consultant responsible for directly administering surveys at the national level to implement a detailed study, conduct final checks, and organize information about damage conditions using data collected previously by the fire department and village workers, as well as tax data.

Village staff conducted frequent field inspections of disaster-affected areas. Armed with the knowledge of these conditions, they assumed a 6-meter flood line and restricted housing past that line towards the sea. The prefectural government determined the height of levees, and tsunami simulations based on the directly administered survey were used to scientifically verify and set this 6-meter line. Multiple patterns for the height of the tertiary levee were also considered to determine the height of this line of defense that would prevent flooding in the residential area.

■Rebuilding and relocation with community focus

A total of five districts were affected by the disaster in the central city area (Jonai district) and small villages along the coast (Maita, Minamihama, Shimoakka, and Nakazawa districts). Smaller communities are relocating and rebuilding within their respective districts, in consideration of retaining the cohesiveness of their own communities.

Originally, the Shimoakka and Nakazawa districts were expected only to relocate to higher ground through a project on promoting group relocation for disaster prevention. However, in April 2011, the residents in the Shimoakka district submitted a request for their community to be rebuilt. Many of the residents in this district fished for a living in this area known as the location of the best salmon hatchery in the Tohoku region, so many members of the community wanted to rebuild in this original location. Residents also wanted to relocate to higher ground from a safety perspective, so in response to this, the village made use of a project to strengthen disaster management functions in fishery villages to rebuild housing in the area and relocate to higher ground by raising building lots. The same situation was found in the Nakazawa district. The prefectural government raised the prefectural road up to 4.5 meters in response to requests from residents to accommodate the raised housing lots in areas being reconstructed in the Shimoakka district. This same project also utilized the Great East Japan Earthquake and Tsunami Reconstruction Fund to subsidize interest for borrowing loans to rebuild housing without assistance, so that there would be no difference with those eligible for assistance through projects on promoting group relocation for disaster prevention. The Maita and Minamihama districts were relocated to higher ground nearby in the same area through a project on promoting group relocation for disaster prevention.

However, infrastructure in the former central urban area of the Jonai district, such as housing lots, roads, parks, water and sewage systems, were developed through a land readjustment project concerning reconstruction of urban districts damaged by disasters, with the district moved to higher ground through projects on promoting group relocation for disaster prevention. Support was also provided to residents to offer them a variety of choices regardless of the project area. Residential housing sites in disaster risk areas were purchased by the village through a project on promoting group relocation for disaster prevention, and the acquisition of land for an urban park project in the disaster risk zone also

played a role in building consensus among residents. However, residents in land readjustment project areas who expressed a desire to move to higher ground were able to choose to live in new locations through prior purchase. Land readjustment projects also include the construction of several roads toward the inland area, as well as the development of evacuation routes and construction of an evacuation building that also functions as a health center.

Independently reconstructed housing and disaster public housing were mixed and not divided into zones, at the request of residents in housing complexes on higher ground, in order to maintain community ties.

■Development of an urban park examined, planned, maintained and managed with the cooperation of residents

With the small size of the village, the development of an urban park approximately 19 ha in size was a large undertaking, requiring systems to be put in place for the utilization, maintenance and management of the park after it opened. Accordingly, this project was promoted through public participation, from the conception and planning stages. To ensure that the opinions of children as future leaders were reflected in plans, workshops were held on development and usage details for students at elementary, junior high and technical high schools in the village, in addition to the organization of workshops by the 21st Century Village Development Committee, which consisted of representatives from communities in all districts throughout the village and various organizations.

Since the park has opened, various groups in the village clean the restrooms and cut the grass as paid volunteers. Playground equipment has been installed at the multipurpose event square to offer a safe space for children to play, and is used as a destination for field trips by nursery schools and other groups in neighboring municipalities. With little snowfall during the winter, the plaza attracts a number of senior citizens from neighboring municipalities who enjoy playing “park golf” throughout the year. The park has become a space for recreation and relaxation for a wide range of people, age 0 to 100 and beyond.

■Organization of district roundtables in affected areas and the village as a whole

Noda Village formulated a tsunami reconstruction plan in November 2011. When a draft of the plan was almost finalized in September 2011, a ten-day roundtable meeting was held with local residents in all districts in the village. Subsequently, the village continued to hold panel discussions once a year in all districts to request the ongoing understanding and cooperation of residents who had not been affected by the disaster on the progress of reconstruction efforts and projects, utilizing the framework of public advisory councils that had been in place prior to the earthquake.

Since September 2012, the 21st Century Village Development Committee, consisting of representatives from communities and various organizations from all districts in the village, has examined the plan, which was upgraded to the Noda Village Reconstruction and Village Development Plan in April 2013, with guidelines established for the development of the streetscape.

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

- 岩手県野田村「野田村復興記録誌」（2018 年 3 月）
  http://www.vill.noda.iwate.jp/kakusyukouhyou/663.html
- 2020 年 10 月 26 日実施のヒアリング結果に基づく

Systems and mechanisms applied:

- Project on promoting group relocation for disaster prevention
- Land readjustment projects concerning reconstruction of disaster areas
- Project to strengthen disaster management functions in fishery villages
- Urban park project

Project cost:

Project name	Project cost (yen)
Project on promoting group relocation for disaster prevention	2,183,131,768
Land readjustment projects concerning reconstruction of disaster areas	1,398,336,781
Project to strengthen disaster management functions in fishery villages	439,522,551
Urban park project	2,186,197,736
Total	6,207,188,836

Land readjustment project and urban park development in the central city area (Jonai district)

Health center that also functions as an evacuation building (in land

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Disaster public housing (in land readjustment area)

Shinmachi district (project on promoting group relocation for disaster prevention)

Maita district (project on promoting group relocation for disaster prevention)