

Reconstruction of Okushiri Island after the Tsunami Disaster of 1993, from a Disaster Risk Reduction Perspective

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Many reconstruction projects are continuing in the tsunami-hit areas after the Great East Japan Earthquake and Tsunami (GEJET) of 2011. However, some large-scale construction projects have provoked adverse reaction. In Rikuzentakata City, enormous conveyor belts deliver mud for raising the ground level up to an average height of 7.4 meters. However, some researchers have pointed out the negative effects of this action on the ecosystem. There are other instances, such as the controversial construction of massive seawalls along the coast. In the tsunami-hit areas on the eastern coast of Japan, the standard was adopted that the seawalls should withstand a once-in-a-hundred-years tsunami. After the GEJET, gray infrastructure was created in many of the coastal areas. However, some fishermen have complained that the concrete infrastructure obstructed the view of the sea from their houses. Some conservationists have also warned that Japan was depending too heavily on these measures. These topics are under discussion among the national government, local governments, local authorities, the local inhabitants, researchers, and nature conservationists.

Some of the topics include which body decides whether the gray infrastructure should be constructed, and how such a decision was to be made. As regards the tsunami-hit areas of east Japan, a well-argued land-use plan should have been created in an early stage of the post-disaster reconstruction, even though each stakeholder had a different opinion on the subject. To give an example, disaster prevention awareness might be raised while environment awareness might be relatively reduced in the post-disaster areas. Therefore, it is most important that there should be a balanced approach in terms of the land-use plan. If such an approach is followed, the methodology has to be created to combine the land-use plan with the concept of nature conservation. From this point of view, the purpose of this study is 1) to regard the Okushiri Island as a tsunami-disaster-area case study in order to classify the aspects for disaster risk reduction (DRR), and 2) to address the challenges of reaching consensus among the local stakeholders.

With the aim of discerning the future points for discussion, Okushiri Island in Japan was selected as a tsunami-disaster study area in preference to the Sanriku coastal area. In 1993, this island was hit by a tsunami, which led to 172 deaths and 26 missing persons. Some 437 houses were destroyed, while 88 were damaged. The total cost of the damage was approximately 66 billion yen. In the aftermath, based on the evidence of the tsunami, 11-meter-high seawalls were erected on Okushiri Island. However, this reconstruction project has also led to controversy. Literal materials were collected and interviews were conducted in 2014 and 2015 in order to summarize the points at issue. The concerns relating to DRR and the decision-making process were also summarized.

It was found that the local government had placed a priority on the rapid restoration and rebuilding of the infrastructure in the area, including houses, the sewage treatment plant, the town, and the like. Although the ruins of the houses and infrastructures can have warning messages related to a disaster risk, they were not preserved because of this priority. However, the fishermen on the island, anglers, and tourists have complained that the sea was no longer visible from the low land. One of the fishermen expressed the opinion that the poor catch of fish had been caused by ground subsidence, and not by the massive seawall. It was found that there were different approaches to the reconstruction. In respect of Okushiri Island, a top-down approach had been adopted to expedite the reconstruction of the island and to reduce the disaster risks. The results of the study suggest that bridging the gap between the different views on reconstruction and finding common ground for the future is needed.

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