

Reconstructing homes in disaster regions: challenges and support

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1. Damage to housing by the Great East Japan Earthquake

Many homes were damaged by the Great East Japan Earthquake. More than 120,000 homes including those washed away by the tsunami were completely destroyed, while about 370,000 were partly damaged. Many victims have been forced to live in evacuation centers, but the construction of emergency temporary homes began promptly, and combined with the renting of private dwellings and provision of public housing, a total of about 140,000 emergency homes have been provided. This is different to past disasters; in addition to prefabricated homes, temporary wooden homes have been constructed by local companies, temporary rental homes have been used extensively, and many people are living in temporary homes outside their home prefecture. The reconstruction of durable homes will remain a significant challenge.

In Miyagi and Iwate Prefectures, guidelines and plans for the reconstruction of homes have already been presented (in Fukushima Prefecture, these were being drawn up when this report was being prepared): the Basic Guideline for the Reconstruction of Homes in Iwate Prefecture of October 2011 calls for the supply or repair of 16,000 to 18,000 homes, and the Miyagi Prefecture Housing Reconstruction Plan of December 2011 calls for 72,000 homes.

2. Challenges to reconstruction of housing

The Great East Japan Earthquake has created a number of different challenges for housing reconstruction compared with past disasters, due to different historical circumstances. Examples include the massive and widespread scale of damage, and the fact that many of the disaster regions face harsh geographical, economic and social conditions.

- [1] Ensuring safety: The construction and location of housing must ensure safety from tsunami.
- [2] High volume supply: Necessary land and production systems must be obtained under topographical and other restrictions.
- [3] Convenient living: Housing must have all the functions needed to form sustainable communities.
- [4] Consideration for the elderly: Facilities for daily life are required because communities have aged remarkably.

- [5] Harmony with the environment: The region has a rich natural environment, and restrictions on energy must be dealt with.
- [6] Maintaining the history and culture of the region: Homes are part of a region's culture, so memories engraved in the region must be preserved.
- [7] Guaranteeing employment: Many places of employment were damaged; jobs near residential districts are needed.
- [8] Procuring funds: Assistance for rebuilding houses is needed for people with insufficient resources.
- [9] Shortness of time: If reconstruction is delayed, people will continue to live in temporary housing, which may hinder recovery of the population.

To overcome these challenges, housing plans and production methods must be linked with town planning to prioritize contribution to regional economies and community-building.

The Government's Basic Guideline to Recovery from the Great East Japan Earthquake (August 2011) includes the following guidelines (abridged) to ensure the stability of housing for disaster victims.

- By planning for entire regions, support shall be given to guarantee durable housing while considering continuing and ensuring employment and guaranteeing living facilities needed by the elderly.
- For disaster victims who do not have the money to reconstruct or buy homes, systems such as disaster recovery public housing leased at low rents shall be improved and used, and their supply shall be increased.
- Housing integrated with community functions and with service functions for elderly people, etc. shall be provided so that the elderly and other occupants can easily obtain local assistance and rebuild their lives.
- Regarding disaster recovery public housing, in regions at low risk of tsunami, wooden construction shall be promoted, and on flat land, these shall include tsunami evacuation functions.

Housing reconstruction not only helps the people living in a disaster region but also stimulates economic activities including the flow of materials and jobs. If housing restoration can be linked with medical care, welfare and support for daily life, etc. for elderly people, who cannot easily reconstruct their homes

with their own resources, and if housing production can be based on local employment using local materials and housing companies, such a region may become a model for a sustainable lifestyle in regions where the population is shrinking, society is aging, and the birthrate is declining. The National Institute for Land and Infrastructure Management is therefore using its knowledge and research on housing policies and reconstruction after past disasters to provide technical support for housing reconstruction. Major initiatives are introduced below.

3. Survey of disaster recovery public housing

Disaster recovery public housing, which plays a key role in ensuring housing, must be supplied promptly and efficiently while ensuring stable housing for victims and responding appropriately to regional needs. Under the Great East Japan Earthquake Restoration Special District Law, organizations have been expanded by, for example, enacting special measures concerning occupancy qualifications and handling the transfer of property; 4,000 and 5,000 homes are planned for Iwate Prefecture and another 12,000 homes are planned for Miyagi Prefecture.

To help provide disaster recovery public housing, the Urban Renaissance Agency (UR) took the initiative under a basic agreement signed with some regional governments which met the necessary conditions, and started the Study of Disaster Recovery Public Housing Planning and Supply Methods in December 2011, commissioned by the Housing Bureau of the Ministry of Land, Infrastructure, Transport and Tourism based on the third supplementary budget of FY2011. This investigation included the concepts and standard designs for housing provision, and the results will be distributed to many regional government bodies in the disaster regions.

The investigation was done by region and by theme, with the former considering overall supply plans and proposing plans for 33 cities, towns, and villages in candidate regions (9 in Iwate, 16 in Miyagi, and 8 in Fukushima) which wished to be included among those designated by the Severe Disaster Law. The investigation by theme summarized matters to be considered and specific policies related to disaster prevention and crisis management, regional stimulation, the environment, and community and the elderly.

The National Institute for Land and Infrastructure Management has, in cooperation with the Building Research Institute, given technical guidance for the study by region, summarized proposed plans for housing estates based on regional characteristics, wooden single-family dwellings or RC medium- and high-rise collective dwellings, according to the circumstances and wishes of each city, town, or village, while exchanging views and conducting field surveys in the three prefectures and 33 cities, towns,

and villages. This will help rapidly provide disaster recovery public housing in the future.

4. Regional restoration housing initiatives

To support housing reconstruction with the resources of the victims and to help create jobs and stimulate industry in the regions while considering the mass construction of housing in future, a system for producing good-quality low-rent wooden housing using local materials must be established with the cooperation of local housing producers. Therefore, the Regional Restoration Housing Liaison Committee formed jointly by the public and private sectors was established in September 2011. Its members come from various fields including local government (housing, forestry), design, construction, materials, lumber, and so on from the three prefectures in the disaster region, with staff of the National Institute for Land and Infrastructure Management participating as academic experts to provide technical guidance and overall project planning.

The study results were compiled as the Regional Restoration Housing Design and Production System Guideline in December 2011, and sample common specifications and model designs were proposed for each prefecture in line with the six guiding concepts of: long-term use, future growth, environmental protection, low price, suitability with the region, and meeting demand. Based on the guideline, groups consisting of carpentry and building contractors' offices, design offices, forestry companies, and lumber mill operators will be formed to handle production and supply. To ensure practical development, the Liaison Committee was reorganized as the Regional Restoration Housing Promotion Consultative Committee in February 2012. In the future, the Consultative Committee is expected to reconstruct suitable local housing by beginning practical work in line with various administrative policies.

References

National Institute for Land and Infrastructure Management and Building Research Institute: Report on Survey Research on the Great East Japan Earthquake of 2011, March 2012.