

Measuring Life Reconstruction Process Using the Index of Recovery and Reconstruction Calendar

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1. Introduction

Major disasters cause sudden, large-scale shifts in the living environments of those people affected. As a result of a major disaster, victims may sustain both person and material damage, and struggle to carry on with their ordinary lives as normal. The process for recovering everyday life while people and society adapt to a post-disaster environment is called the disaster process or life recovery/reconstruction process if the lives of people are brought into focus. If the disaster process is understood objectively, the situation and needs of victims and their society can be realized by answering the following questions, which problems occur for whom in what sequence, and how these problems can be solved.

2. Recovery and Reconstruction Calendar

We developed a recovery and reconstruction calendar for measuring overall reconstruction quantitatively for victims and stricken areas, clarifying the disaster process by ethnography interviews verified through quantitative examination.[1] Milestones in recovery and reconstruction are mentioned in the social survey, questions ask when events happened and answers obtained. This set of procedures is called the recovery and reconstruction calendar. Table 1 shows questions.

Table 1 Items of Recovery and Reconstruction Calendar

- Eleven items, which are milestones of ethnography survey findings as events marking restoration and reconstruction many victims experienced
- ① I understood the entirety of the damage.
 - ② I felt safe.
 - ③ I was prepared to have an uncomfortable life for a while.
 - ④ Office/school have resumed.
 - ⑤ Problem of housing was finally settled.
 - ⑥ Personal financial situation was no longer influenced by the earthquake.
 - ⑦ Everyday life settled down.
 - ⑧ Local activity was restored.
 - ⑨ I did not define myself as a disaster victim.
 - ⑩ Local economy was no longer influenced by the earthquake.
 - ⑪ Local roads were reconstructed.

3. Recovery and reconstruction calendar of the Mid Niigata Prefecture Earthquake

On October 23, 2004, the Mid-Niigata Earthquake had a death toll of 68 people, and around 16,000 homes were either fully or partially destroyed. It was an intermediate and mountainous area disaster, striking an intermediate

and mountainous area in the rice producing area of Japan. We conducted random sampled social survey in October 2006, two years after the Earthquake to clarify the victims' life reconstruction process using recovery and reconstruction calendar.

Figure 1 shows the result. For I was prepared to have an uncomfortable life for a while, it took 10 hours (the day after the earthquake, 63.5%), which corresponds to the time for overcoming disorientation to understanding the disaster. It took 5 days for acceptance of the new reality phase to finish to understand damage (6 days after the earthquake, 50.0%). It took more time to grasp the scale of damage, because the disaster occurred in a mountainous area far different than in the urban Hanshin-Awaji Earthquake. After one week, office and school began to resume rapidly and 53.2% answered that they had resumed two weeks after the earthquake.

For other questions, the percentage exceeded the majority of 1,000 hours after the earthquake when heavy winter snows began to melt in stricken areas. The percentage of those who answered everyday life settled down and I felt safe exceeded the majority in March 2005, about half a year after the earthquake (56.6%, 52.7%). From spring, the number of respondents who answered local activity was restored (8 months after the earthquake, 60.1%) and problem of housing was settled (about 8-11 month after the earthquake, 54.7%) increased notably.

At one year after the earthquake, the numbers of respondents who answered personal financial situation was no longer influenced by the earthquake (about one year after the earthquake, 54.2%) and I did not define myself as a disaster victim (about one year after the earthquake, 50.0%) increased notably. It took one year and a half until the percentage of those who answered local roads were reconstructed exceeded the majority (53.4%). Even at the time of the survey, about two years after the earthquake, the percentage of those who answered local economy is influenced by the earthquake exceeded the majority, suggesting that it will take much more time to restore local economy and individual lives.

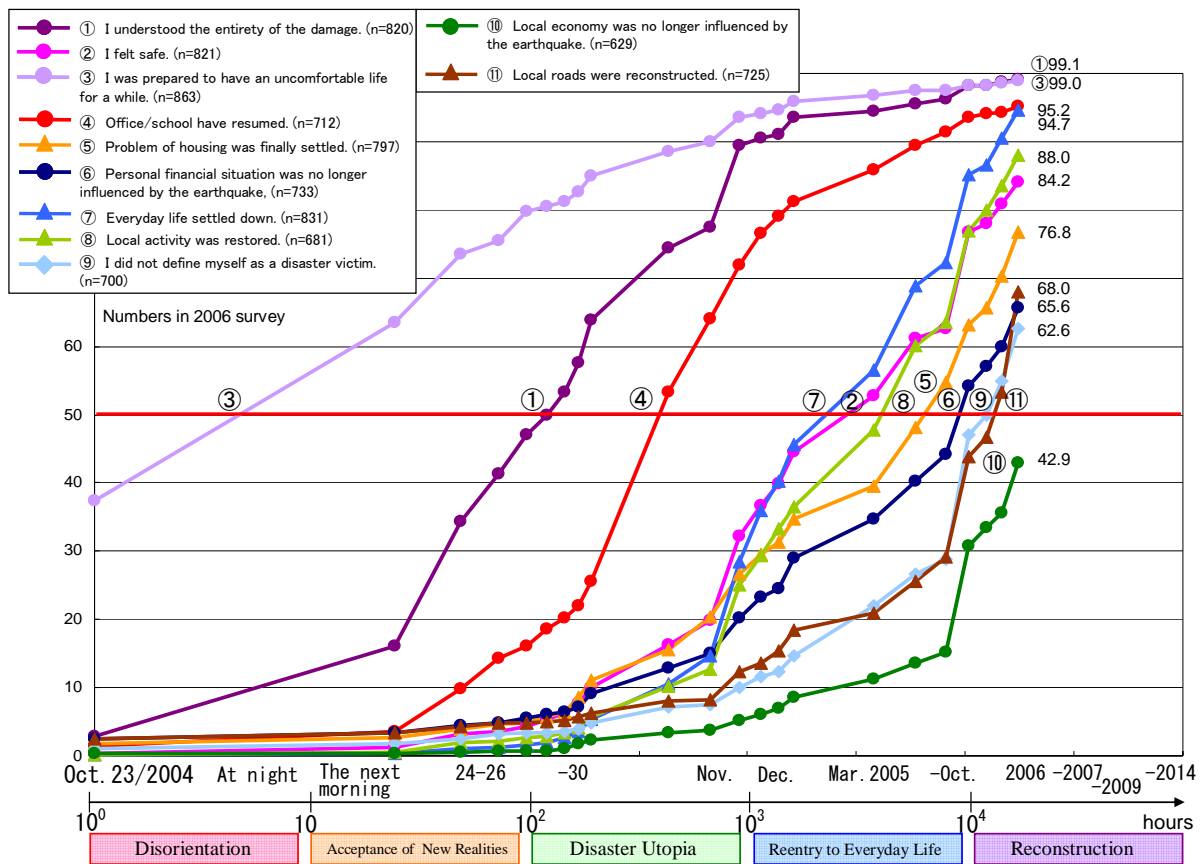


Figure 1 Recovery and Reconstruction Calendar (Mid Niigata Survey in October 2006)

References

[1] Kimura, R., "Recovery and Reconstruction Calendar," *Journal of Disaster Research*, Vol.2, No. 6, pp.465-474, 2007.