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## Recreating Livable Communities after Catastrophe: Managing the Recovery from Japan's Earthquake, Tsunami, and Nuclear Disaster of 2011

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## Description of Problem and Background:

The Great East Japan Earthquake and Tsunami of March 11, 2011, killed more than 20,000 people; devastated hundreds of kilometers of coastline in Northeast Japan, destroying homes, businesses, and infrastructure; triggered a nuclear crisis at the Fukushima Dai'ichi nuclear power station that led to long-term evacuation of all residents within a 30-km. radius of the plant; disrupted both communal life and the economy of dozens of communities; undermined the political standing of the sitting national leaders and government; and severely challenged the Japanese people's sense of security and well-being.

Building off of research begun in 2012, which first focused on the emergency response to this "triple disaster" and then on the early phases of transportation recovery in the affected region, this project extended and broadened the scope of our research on how Japan dealt with the catastrophe and its aftermath by assessing the country's ongoing progress with restoring transportation and other critical infrastructure, as well by examining several other interrelated aspects of recovery, including the rebuilding of housing, economic revitalization, and the re-establishment of community life. In the later stages of the project, while continuing to examine tsunami- and earthquake-affected communities, the team focused much of its research on examining the unique challenges municipalities affected by the nuclear crisis faced as they sought to reconstitute in the aftermath of the event.

Over the course of this project, we paid particular attention to the intergovernmental dynamics of the recovery process, especially in regard to disaster-related fiscal and technical aid programs and regulatory practices initiated and run by the national and prefectural governments and affecting local governments. In doing so, we considered the politics of recovery decision making, including contention over a vision of the region's future among different stakeholders and between local and central government policy makers, and the budgetary, operational, and management challenges of recovery programs.

In examining how recovery evolved over time (beginning about 3 years into the recovery process and continuing for about another three, this project coincided with the "maturing" of Japan's recovery efforts), we focused on the following themes and questions:

- *A Vision for the Future:* The destruction caused by a major disaster creates an opportunity to create a new future for the damaged area, one at least partially unencumbered by the path of development that had previously been unfolding. For some, that opportunity to "build back better" was highly attractive – and many ideas for rebuilding with improvements or even radical change were floated. On the other hand, other people merely wanted a return to the *status quo ante*: simple replication of what existed before the event. The research project thus asked:
  - To what extent did the planning for community recovery intersect with broader debate about what the disaster area's goals and possibilities for development were?

- Who were the key stakeholders that emerged to participate in recovery planning? Were there groups that were unable to participate or proved unexpectedly ineffective? For what reasons?
- To what extent did the process pit different stakeholder groups with conflicting interests against each other?
- How was that conflict managed?
- Did existing institutional forums have the capacity for discussing and setting policy on area goals, or did new institutions have to be established? Did any new institutions have difficulty establishing their legitimacy for this task of developing a vision for the future?
- *Tensions between Central Authorities and Local Government:* In the aftermath of this major disaster, local governing institutions were weakened both financially and operationally. Therefore, higher levels of government – at the provincial/prefectural level or in the national/central government – were called upon to initiate or support recovery efforts. At the same time, localities were burdened, if not overwhelmed, by the volume of new work and the range of new responsibilities. This created conflicts – within the locality or across levels of government -- over policy, programs, or implementation of specific recovery projects. In this regard, the project asked:
  - What roles did local, provincial/prefectural, and national/central governments, respectively, play in the restoration of infrastructure and services?
  - How did values and/or substantive policies differ among policy makers at each level of government?
  - Did non-governmental stakeholders unhappy with policies or decisions at one level seek to pursue their objectives at a different decision-making level?
  - What methods of conflict resolution were utilized in working out differences among levels of government?
- *Funding Options and Opportunities:* Whatever vision of the recovery future was adopted, implementation of this vision depended on the practical constraints of financing from various levels of government and private investors. The character of development is shaped in important ways by the availability (or unavailability) of funds and by the requirements of accessing them. This raised the following questions:
  - What forms of governmental aid – from what levels – were available for recovery?
  - To what extent and how were private investors involved in financing the reconstruction or expansion of infrastructure or services?
  - How did budget constraints affect the priority setting process for recovery? In what ways did the need to raise funding shape the nature of the options chosen by the recovery leaders?

- *Managing Construction and Service Restoration:* Once the nature of restoration and improvement projects has been determined, the tasks of managing construction and service restoration loom large. This may involve government workers or private contractors. Whichever course is chosen to oversee the work, government will need a coordinating/oversight staff or agency, which may be an existing department or a new coordinating entity. At this time, moreover, local residents may become aware of specific plans and launch efforts to alter them through legal action, political appeals, or protest activities. Therefore, the research asked:
  - How was reconstructive building and service restoration managed?
  - If private companies played a key role, how were their activities regulated and overseen?
  - At what level of government and by what institutions was this process accomplished?
  - Were new coordinating/oversight institutions required for recovery or to connect to the overall recovery process?
  - How were these established, with what scope of authority, and for what duration?

### **Approach and Methodology:**

This project used empirical research methods widely used for comparatively studying decision-making and institutional processes, including literature reviews and interviews with public officials through semi-structured interview protocols.

The research consisted of the following tasks, listed in sequential order:

- Task 1: Review of literature (government reports, published studies, newspaper archives, and other media coverage) on post-disaster recovery, planning, and land use – both about the affected sites specifically and about disaster recovery policy-making and implementation in general.
- Task 2: Development of semi-structured protocols for interviewing Japanese officials and community leaders responsible for and involved in recovery planning/implementation.
- Task 3: Identification and recruitment of Japanese officials and community leaders for participation in interviews. Based on previous research in Japan, the study team had developed an extensive network of contacts with expertise on and experience with the research topic, which researchers then utilized to identify and reach out to potential interview subjects.
- Task 4: In-person interviews with Japanese officials and community leaders responsible for post-disaster recovery planning and implementation. Over the course of this project, the research team visited nine communities (most repeatedly), interviewing representatives of those municipalities, as well as emergency management and recovery officials in three prefectural (i.e., state/provincial) governments (also repeatedly) – Fukushima, Miyagi, and

Iwate – and civil servants from the national government, including from the Reconstruction Agency; Ministry of Land, Infrastructure, Transportation, and Tourism; Ministry of Environment; and Ministry of Economics, Trade and Industry. Since most of the respondents were not fluent in English, the majority of the interviews were conducted with the support of bilingual interpreters.

- Task 5: Analysis and synthesis of research data and development of preliminary findings.
- Task 6: Periodic updating of data through reviews of newly published government reports, academic publications, and media accounts, and through targeted follow-up interviews with key informants.
- Task 7: Refinement of analysis and preliminary findings via feedback from other experts on the research topics. This included close collaboration with a Japanese academic studying similar issues, who our program hosted as a visiting fellow during the 2016-2017 academic year.
- Task 8: Identification of core research findings and drafting of materials for publication, preparation of presentations in conferences and workshops, and development of curriculum for courses taught by project PI, Dr. Arnold Howitt.

### **Findings, Conclusions, and Recommendations:**

The research conducted through this project revealed the extreme complexity and long-term nature of recovering from catastrophic disasters on the scale of the 03/11/11 earthquake, tsunami, and nuclear crisis in Japan. Time and again over the course of our research, we observed communities grappling with and then (for the most part) concluding thorough but painstakingly slow consensus building efforts to determine their futures. For instance, one of the major components of the recovery process was giving neighborhoods the option of either rebuilding more safely in the same locations they had been in previous to the tsunami or of relocating to elevated areas slightly more inland. In a remarkably deliberative and consensus-driven process, neighborhood groups spent an enormous amount of time and energy determining which option to pursue. While potentially beneficial for community cohesion in the long-run, this also significantly slowed down the recovery process, leading to frustration and various social and economic difficulties in the shorter term. This process stands in sharp contrast to those of other countries, such as in China, which has often taken a heavily centralized approach and in the United States, which has typically experienced a much more individualized and emergent rebuilding process. The prolonged nature of Japan's recovery also raises concerns that as the years pass and the country turns its attention to other pressing matters (the 2020 Tokyo Summer Olympics being one prominent example), national attention and support – including financial – for the affected areas will have faded, even as the recovery process remains far from complete.

The latter stages of our research revealed some particularly difficult challenges regarding the decontamination and repopulation of areas affected by the nuclear

disaster. The local politics relating to recovery in this area are in many ways quite different from what we observed in the tsunami-impacted areas. In the immediate aftermath of the disaster, some of the nuclear-zone communities were wholly evacuated and remained so for several years; however, their local governments continued to function remotely. Other communities were only partially evacuated, leaving a still functioning area of the community. This experience and the subsequent development of resettlement plans contrasted sharply with communities “only” affected by the tsunami and earthquake and which could thereby begin their recovery processes much earlier – and without fears about ongoing nuclear contamination lingering over them. At the conclusion of this project, serious questions remained for the communities directly affected by the nuclear crisis. The number of residents who had decided to return to these municipalities remained notably quite low. Would enough people eventually determine that these places were *safe* and *livable*, thus allowing for the redevelopment of *viable* communities?

These and other findings have been incorporated and disseminated in the following publications, presentations, and courses. The publications may be obtained by contacting project P.I. Arnold Howitt at [arnold\\_howitt@hks.harvard.edu](mailto:arnold_howitt@hks.harvard.edu).

#### *Publications*

- David W. Giles, “The Triple Catastrophe: Japan’s 03/11/11 Earthquake, Tsunami, and Nuclear Crisis,” Harvard Kennedy School Case Study (Cambridge, MA: President and Fellows of Harvard College, 2016)
- Caroline Brassard, David W. Giles, and Arnold M. Howitt (eds.), *Natural Disaster Management in the Asia-Pacific: Policy and Governance* (Tokyo, Springer, 2015).
- Note: Several other papers based on this project’s research are in draft form, with plans to publish them in academic journals.

#### *Presentations*

- Hiromi Akiyama, “Civil Society Sustainability in Post-Disaster Recovery: Comparison of China and Japan’s Experiences,” presentation at the *Global Conference of the International Network of Disaster Studies: Landscape-Scale Disasters, Emergency Response, and Regional Recovery*, at Iwate University, Morioka, Japan, July 17, 2018.
- Arnold M. Howitt, “Japan’s Challenges of Recovery from the 3.11 Triple Catastrophe,” at the *Global Conference of the International Network of Disaster Studies: Landscape-Scale Disasters, Emergency Response, and Regional Recovery*, at Iwate University, Morioka, Japan, July 17, 2018.
- Arnold M. Howitt, “In the Moment of Crisis: The Challenges of Response to Landscape-Scale Disasters,” Keio University, Kanagawa, Japan, July 10, 2018, and October 19, 2017.
- Arnold M. Howitt, “Leadership Challenges of Routine Emergencies and Crisis,” keynote presentation at the opening ceremony for the Graduate School of Arts and Science, Iwate University, Morioka, Japan, June 16, 2017.
- Arnold M. Howitt, “Resilience and the Concept of Advance Recovery: Can We Start Recovery Before the Disaster?” presentation at the conference *From the*

*Management of Crisis to the Governance of Risk*, Haikou City, Hainan, China, January 10, 2017.

- Arnold M. Howitt, "Tensions in Disaster Recovery: Building Back Better, Faster, Safer, Cheaper, Fairer, and More Familiar. Can We Have Them All?" panel discussion at the *Accelerating Disaster Recovery Conference*, Harvard University, Cambridge, MA, January 22, 2016.
- Arnold M. Howitt, "Governance of Disaster Recovery," panel discussion at the *Accelerating Disaster Recovery Conference*, Harvard University, Cambridge, MA, January 22, 2016.
- Arnold M. Howitt, "Building Resilience: Nepal and Japan in the Aftermath of Disaster," presentation at the Program on Crisis Leadership, Harvard Kennedy School, Cambridge, MA, October 14, 2015.
- Arnold M. Howitt, David W. Giles, and Hiromi Akiyama, "Greater Centralization or Decentralization for More Effective Disaster Response? The Great East Japan Earthquake and Tsunami in Perspective," presentation at Temple University, Tokyo, Japan, July 17, 2015.
- Arnold M. Howitt, David W. Giles, and Hiromi Akiyama, "Emergency Disaster Response Capacity: Perspectives on the 3.11 Disasters," presentation at Iwate University, Morioka, Japan, July 16, 2015.

#### *Courses*

Dr. Howitt incorporated research findings from the project into the curriculum of two Harvard Extension School graduate courses ("Disaster Relief and Recovery" and "Crisis Management and Emergency Preparedness") and a suite of Harvard Kennedy School Executive Education programs for professionals working in emergency management, homeland security, the military, and related fields. All of these courses were offered annually throughout the duration of this project.