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# Great East Japan Earthquake There Is A Rainbow In

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The Fukushima Daiichi Nuclear Accident  
 Extreme Natural Hazards, Disaster Risks and Societal Implications  
 Law and Disaster  
 Agricultural and Forestry Reconstruction After the Great East Japan Earthquake  
 The Fukushima and Tohoku Disaster  
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## HAILEY CASSIUS

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*The Fukushima Daiichi Nuclear Accident*  
 Springer

Shaking very hard. Shaking at wherever I go. My body and mind can't stay calm, but I need to act for the next thing. Unordinary view like some SF film jumps into my eyes, but I still need to think and move. This is what the evacuation is during a catastrophe. How do you protect yourself when you cannot stay calm? Let's think about the "importance of escaping" together.

**Extreme Natural Hazards, Disaster Risks and Societal Implications**

Routledge

This book explores the possibility of using

social media data for detecting socio-economic recovery activities. In the last decade, there have been intensive research activities focusing on social media during and after disasters. This approach, which views people's communication on social media as a sensor for real-time situations, has been widely adopted as the "people as sensor" approach. Furthermore, to improve recovery efforts after large-scale disasters, detecting communities' real-time recovery situations is essential, since conventional socio-economic recovery indicators, such as governmental statistics, are not published in real time. Thanks to its timeliness, using social media data can fill the gap. Motivated by this possibility, this book especially focuses on the relationships between people's communication on Twitter and Facebook

pages, and socio-economic recovery activities as reflected in the used-car market data and the housing market data in the case of two major disasters: the Great East Japan Earthquake and Tsunami of 2011 and Hurricane Sandy in 2012. The book pursues an interdisciplinary approach, combining e.g. disaster recovery studies, crisis informatics, and economics. In terms of its contributions, firstly, the book sheds light on the "people as sensors" approach for detecting socio-economic recovery activities, which has not been thoroughly studied to date but has the potential to improve situation awareness during the recovery phase. Secondly, the book proposes new socio-economic recovery indicators: used-car market data and housing market data. Thirdly, in the context of using social media during the recovery phase, the

results demonstrate the importance of distinguishing between social media data posted both by people who are at or near disaster-stricken areas and by those who are farther away.

**Law and Disaster** Cambridge University Press

*The Fukushima and Tohoku Disaster: A Review of the Five-Year Reconstruction Efforts* covers the outcome of the response, five years later, to the disasters associated with the Great East Japan earthquake on March 11, 2011. The 3.11 disaster, as it is referred to in Japan, was a complex accident, the likes of which humans had never faced before. This book evaluates the actions taken during and after the earthquake, tsunami, and nuclear accident, for which the Japanese government and people were not prepared. The book also provides recommendations for preparing and responding to disasters for those working and living in disaster-prone areas, making it a vital resource for disaster managers and government agencies. Includes guidelines for governments, communities and businesses in areas where similar complex disasters are likely to occur. Provides information, propositions, suggestions and advice from the people that were involved in making suggestions to the Japanese government. Features case studies (both pre- and post-disaster) of three simultaneous disasters: the Great East Japan earthquake, the resulting tsunami, and the Fukushima Nuclear Power Plant disaster.

**Agricultural and Forestry Reconstruction After the Great East Japan Earthquake** Springer

This book provides insights into the enormous impact of fetal and newborn loss in the aftermath of the natural disasters that Japanese society constantly has to face. It first reveals effect of the Great East Japan Earthquake in 2011 on the next generation and reproductive attitudes and shows that prenatal care strategies for emergencies had not been established by any local government in Japan. With continuing research on birth outcomes in the area surrounding the catastrophe, the authors emphasize the importance of the pre-hospital obstetric care team in disaster response and highlight the inequality in health care in a highly aging society like Japan, where perinatal health care is given lower priority than elderly care. Following the creation of a specialized project for pre and postnatal care the authors conducted surveys on how community preparedness in maternal and child health for post-disaster areas impacted population changes. This book is

a valuable resource for researchers who are interested in the association between rapid population decline and the disaster management system for maternal and child health, as well as the effect of culture, gender bias, and family traditions. *The Fukushima and Tohoku Disaster* Springer Nature

How has Japan responded to the March 2011 disaster? What changes have been made in key domestic policy areas? The triple disaster that struck Japan in March 2011 began with the most powerful earthquake known to have hit Japan and led to tsunami up to 40 meters in height that devastated a wide area and caused thousands of deaths. The ensuing accident at the Fukushima-Daiichi nuclear power plant was Japan's worst and only second to Chernobyl in its severity. But has this triple disaster also changed Japan? Has it led to a transformation of the country, a shift in how Japan functions? This book, with fresh perspectives on extraordinary events written by diplomats and policy experts at European embassies to Japan, explores subsequent shifts in Japanese politics and policy-making to see if profound changes have occurred or if instead these are limited. The book addresses those policy areas most likely to be affected by the tragedy - politics, economics, energy, climate, agriculture and food safety - describes how the sector has been affected and considers what the implications are for the future. Book jacket.

**Beyond Fukushima** National Academy Press

This open access book covers comprehensive but fundamental principles and concepts of disaster and accident prevention and mitigation, countermeasures, and recovery from disasters or accidents including treatment and care of the victims. Safety and security problems in our society involve not only engineering but also social, legal, economic, cultural, and psychological issues. The enhancement needed for societal safety includes comprehensive activities of all aspects from precaution to recovery, not only of people but also of governments. In this context, the authors, members of the Faculty of Societal Safety Science, Kansai University, conducted many discussions and concluded that the major strategy is consistent independently of the type and magnitude of disaster or accident, being also the principle of the foundation of our faculty. The topics treated in this book are rather widely distributed but are well organized sequentially to provide a clear understanding of the principles of societal

safety. In the first part the fundamental concepts of safety are discussed. The second part deals with risks in the societal and natural environment. Then follows, in the third part, a description of the quantitative estimation of risk and its assessment and management. The fourth part is devoted to disaster prevention, mitigation, and recovery systems. The final, fifth part presents a future perspective of societal safety science. Thorough reading of this introductory volume of societal safety science provides a clear image of the issues. This is largely because the Japanese have suffered often from natural disasters and not only have gained much valuable information about disasters but also have accumulated a store of experience. We are still in the process of reconstruction from the Great East Japan earthquake and the Fukushima nuclear power plant accident. This book is especially valuable therefore in studying the safety and security of people and their societies.

**Lessons from the Great East Japan Earthquake** Apollo Books

*The Fukushima and Tohoku Disaster: A Review of the Five-Year Reconstruction Efforts* covers the outcome of the response, five years later, to the disasters associated with the Great East Japan earthquake on March 11, 2011. The 3.11 disaster, as it is referred to in Japan, was a complex accident, the likes of which humans had never faced before. This book evaluates the actions taken during and after the earthquake, tsunami, and nuclear accident, for which the Japanese government and people were not prepared. The book also provides recommendations for preparing and responding to disasters for those working and living in disaster-prone areas, making it a vital resource for disaster managers and government agencies. Includes guidelines for governments, communities and businesses in areas where similar complex disasters are likely to occur. Provides information, propositions, suggestions and advice from the people that were involved in making suggestions to the Japanese government. Features case studies (both pre- and post-disaster) of three simultaneous disasters: the Great East Japan earthquake, the resulting tsunami, and the Fukushima Nuclear Power Plant disaster.

**Networks and Mobilization Processes: The Case of the Japanese Anti-Nuclear Movement after Fukushima** MCD

This book is a joint endeavour of the three partner universities to develop a book with in-depth and state-of-art analysis for the academic community of East Asia and the

world. Past disasters, like the 2008 Great Sichuan Earthquake in China and the 2011 Great East Japan Earthquake, saw good efforts of East Asian countries in helping each other. Such a trend has been further strengthened in these countries' recent cooperation and mutual support in their fight against Covid-19 pandemic. While China, Japan, and South Korea are geographically and culturally contiguous and hence may share some characteristics in their risk management principles and practices, there may also be many significant differences due to their different socioeconomic and political systems. The commonalities and variances in East Asia risk management systems are also reflected by their recent responses to the Covid-19 challenges. While all three countries demonstrated overall success in controlling the epidemic, the measures taken by them were different. This research will be of interest to policymakers, scholars and economists.

*Japan after 3/11* Springer

This book summarizes the results of 3 years of agricultural and forestry reconstructive efforts and applied research conducted directly in the affected areas of Fukushima following the Great East Japan Earthquake. It describes fast and effective revival methods and technologies from tsunami and radiation damages, demonstrated through the collaborative efforts of researchers, students, local farmers, forest owners, and municipalities gathered under the Tokyo University of Agriculture East Japan Assistance Project. Consisting of four parts, the first part of the book provides an overview of the damage and measures taken to overcome them by the local municipalities and the Tokyo University of Agriculture. The second part presents data and results of agricultural recovery from the tsunami—for example, monitoring systems, reconstruction models, and convenient, low-cost methods developed for the restoration of tsunami-damaged paddy fields. The third part focuses on recovery from radiation-contaminated farmlands and forests and consequent reputational damages. Included are various primary data obtained from field experiments and surveys, studies on the mechanism of contamination, and the results of radical monitoring, decontamination, and restoration techniques performed at this site. The final part is a collection of reflections of local farmers, forest owners, and students who participated in the project. The academic trials and errors recorded in this book are an invaluable contribution to disaster management and recovery processes. It is

written for a wide audience, not limited to researchers and students, but also for government and state officials, municipalities, agricultural cooperative staff members, and farmers.

*The Fukushima and Tohoku Disaster*  
IUDICIUM Verlag

While not all natural disasters can be avoided, their impact on a population can be mitigated through effective planning and preparedness. These are the lessons to be learned from Japan's own megadisaster: the Great East Japan Earthquake of 2011, the first disaster ever recorded that included an earthquake, a tsunami, a nuclear power plant accident, a power supply failure, and a large-scale disruption of supply chains. It is a sad fact that poor communities are often hardest hit and take the longest to recover from disaster. Disaster risk management (DRM) should therefore be taken into account as a major development challenge, and countries must shift from a tradition of response to a culture of prevention and resilience. Learning from Megadisasters: Lessons from the Great East Japan Earthquake consolidates a set of 36 Knowledge Notes, research results of a joint study undertaken by the Government of Japan and the World Bank. These notes highlight key lessons learned in seven DRM thematic clusters—structural measures; nonstructural measures; emergency response; reconstruction planning; hazard and risk information and decision making; the economics of disaster risk, risk management, and risk financing; and recovery and relocation. Aimed at sharing Japanese cutting-edge knowledge with practitioners and decision makers, this book provides valuable guidance to other disaster-prone countries for mainstreaming DRM in their development policies and weathering their own natural disasters.

*Nexus of Resilience and Public Policy in a Modern Risk Society* Nova Science Publishers

Sponsored by the Coasts, Oceans, Ports, and Rivers Institute of ASCE; Port and Airport Research Institute of Japan. On March 11, 2011, a magnitude 9.0 earthquake rumbled off the east coast of Japan, followed by a tsunami that generated waves more than 18 meters high. The earthquake and tsunami caused devastation throughout the Tohoku and Sendai regions of Japan, killing nearly 16,000 people and causing damage estimated at more than US\$126 billion. For seven days in May 2011, an ASCE/COPRI Coastal Structures Team investigated the earthquake and tsunami effects specific to engineered coastal structures, coastal

landforms, and coastal processes in northeast Japan. Joined by colleagues from Japan's Port and Airport Research Institute, the survey team observed five categories of coastal protection structures: coastal dikes, tsunami seawalls, floodwater gates, breakwaters, and vegetated greenbelts. This report provides background to the field investigation, including an event summary, the tectonic and geologic setting, and the generation, propagation, and runup of the tsunami. It then describes 11 mechanisms causing damage or failure and includes photographs illustrating the effects each mechanism. Finally, the report presents lessons learned regarding what worked and what didn't and how this knowledge can be used to engineer against future natural disasters. For coastal engineers, structural engineers, geotechnical engineers, and disaster risk managers, the observations and analysis in this report provide critical information for engineering infrastructure that withstands major earthquake and tsunami events.

*The Great East Japan Earthquake 3.11*  
Springer

This publication sheds light on how Japan-based German firms dealt with the impact of the Great East Japan Earthquake that occurred in March 2011. To gather data, a questionnaire was developed and sent out in April 2012 to 244 German subsidiaries based in the Kanto area, mainly in Tokyo, with replies received from the top managers of 84 firms. In addition, the author conducted follow-up interviews with top managers of 14 of those firms in Tokyo to illuminate interesting aspects of the responses given in the questionnaires. It is shown that the overall impact on the performance of German firms was comparatively low. Those firms have now returned to normal operation and face relatively few disaster-related problems. However, firms with higher autonomy more frequently moved their offices either to the Kansai area, including Osaka, Kobe and Kyoto, or at least temporarily closed down. In retrospect, the interviews made clear that relocating or suspending operations was a costly mistake. In contrast to transaction cost theory, which states that subsidiaries should be given high autonomy in such cases of emergency, it would have been better for the headquarters offices to have communicated more intensively with the management of their subsidiaries.

*The Era of Great Disasters* University Press of Kentucky

*The Teas That Bind* is the first book from J. C. Greenway, an English writer based in Japan. It is a collection of posts first

written for the website ten minutes before about life in Japan before and since the Great East Japan Earthquake in March 2011. It also includes a selection of emails, status updates and tweets from the days after the disaster and the following year, covering the writer's involvement in fundraising and volunteering efforts - along with plenty of new material - in an attempt to answer the question, 'what was it like?'

*Great East Japan Earthquake and Tsunami Aid Report* University of Washington Press  
A unique interdisciplinary approach to disaster risk research, including global hazards and case-studies, for researchers, graduate students and professionals.  
Animals and the Fukushima Nuclear Disaster Lulu.com

Natural disasters are often multifaceted and cause severe damage. Disasters initiated locally can become national and even global crises. Today's world urgently needs a new body of knowledge and techniques for the mitigation of and response to disaster. Central to such a body of knowledge are disaster preparedness, emergency and crisis management systems of government, of which capacity building is becoming an increasingly important element in public administration, management and governance. Today, disasters are to be managed by sound local, national, and global governance, through all the phases of preparedness, prevention, mitigation and then to relief, recovery and reconstruction. During all these phases, government plays the most important role. This book provides a case of the disaster governance of Japan, by presenting information and analyses on what happened in the Magnitude 9 Great East Japan Earthquake that caused the huge tsunami and the INES Level 7 Fukushima nuclear power plants accidents on March 11, 2011. In examining this Japanese case study, this book illustrates the socio-economic damage of the stricken areas together with the overall picture of the disasters. It examines Japan's capacity for disaster governance and its crisis management system in response to the most devastating disaster that the country has ever encountered since the end of WWII. It also offers preliminary findings learned from this experience in the Japan's public administration and governance systems, challenged to be more accountable and transparent during the

recovery and reconstruction efforts now in progress.

Five Years After Lulu.com

Three years since the Great East Japan Earthquake, which was a nightmare. This is the diary of a quake survivor who wrote under severe circumstances about the actual situation of the earthquake, activities of the Self-Defense Forces, actions of mass media and the government. It is a unique, devoted, timeless edition describing "How the author felt about the reality of the Great East Japan Earthquake".

Disaster Resilient Cities Lulu.com

Five years after the Triple Disaster--the earthquake, tsunami, and the nuclear disaster at the Fukushima Daiichi power plant--the national government's response is often criticized. However, despite the magnitude of the disaster, the recovery and reconstruction have been rapid. If it is true that the Japanese government has failed in the response to the nuclear accident but succeeded in the recovery and reconstruction from the earthquake and tsunami, it must be acknowledged that both failure and success come out of the same characteristics of the same system. Starting from this premise, this anthology attempts to conduct a reassessment of the national response to the Great East Japan Earthquake and its aftermath from the perspective of the social sciences, ranging from politics, economics, community sociology, public administration, and communication studies. It takes care to distinguish assessment of short-term responses to the disaster from the necessity for long-term changes in society. How has the recovery process proceeded in such fields as reconstruction of public infrastructure, housing reconstruction, support for evacuees, reopening schools, and debris disposal? Was TEPCO's precaution and post-disaster response inappropriate to the accident? What were the critical issues to be discussed in the crisis communication of national and local government? Has the Fukushima Daiichi nuclear accident provided momentum to bring about revolutionary changes to nuclear power plant safety in Japan and Japan's energy policy? This collaboration attempts to provide perspective in a time of turmoil.

**Risk Management in East Asia**

University of Michigan Press

On March 11th 2011, the Great East Japan earthquake (GEJE) caused huge tsunamis

up to 40 meters, killing 18,500 residents. The earthquake knocked out the Northern Japan Power Grid, while the resulting tsunamis disabled electric power supplies at Tokyo Electric Power Co. (TEPCO) Fukushima Daiichi (FD) six-unit nuclear power plant causing a nuclear emergency. This book presents research on the causes and resulting consequences of the damaged Fukushima Daiichi Nuclear Power Plant.

*Social Media Communication Data for Recovery* Springer

It was tough enough to live in the refuge. And now it's not easy staying upstairs." The expression of the neighbor lady portrayed both the bliss and hardness of living in her own house. There were a lot of people who spent hard days without any utilities after the Great East Japan Earthquake. However, a few people recognized what it was like. I spread out our case on reflection as an example of an ordinary household; how we had gone through without enough commodities in the bitter winter, how we had scraped up our daily necessities. What are the most important, and yet forgettable things in devastated times? I hope these things that I incorporated in here save people from their suffering in case of emergency.

*The Great East Japan Earthquake The Diary of a Disabled Victim* Springer Nature

A puzzling tsunami entered Japanese history in January 1700. Samurai, merchants, and villagers wrote of minor flooding and damage. Some noted having felt no earthquake; they wondered what had set off the waves but had no way of knowing that the tsunami was spawned during an earthquake along the coast of northwestern North America. This orphan tsunami would not be linked to its parent earthquake until the mid-twentieth century, through an extraordinary series of discoveries in both North America and Japan. The Orphan Tsunami of 1700, now in its second edition, tells this scientific detective story through its North American and Japanese clues. The story underpins many of today's precautions against earthquake and tsunami hazards in the Cascadia region of northwestern North America. The Japanese tsunami of March 2011 called attention to these hazards as a mirror image of the transpacific waves of January 1700. Hear Brian Atwater on NPR with Renee Montagne  
<http://www.npr.org/templates/story/story.php?storyId=4629401>