

Disaster Risk Reduction
Methods, Approaches and Practices

Rajib Shaw *Editor*

Tohoku Recovery

Challenges, Potentials and Future

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ABOUT THE SERIES

SCOPE OF THE SERIES

Disaster risk reduction is a process, which leads to the safety of community and nations. After the 2005 World Conference on Disaster Reduction, held in Kobe, Japan, the Hyogo Framework for Action (HFA) was adopted as a framework of risk reduction. The academic research and higher education in disaster risk reduction has made/is making gradual shift from pure basic research to applied, implementation oriented research. More emphasis is given on the multi-stakeholder collaboration and multi-disciplinary research. Emerging university networks in Asia, Europe, Africa and Americas have urged for the process-oriented research in disaster risk reduction field. Keeping this in mind, this new series will promote the outputs of action research on disaster risk reduction, which will be useful for a wider range of stakeholders including academicians, professionals, practitioners, and students and researchers in the related field. The series will focus on some of emerging needs in the risk reduction field, starting from climate change adaptation, urban ecosystem, coastal risk reduction, education for sustainable development, community based practices, risk communication, human security etc. Through academic review, this series will encourage young researchers and practitioners to analyze field practices, and link it to theory and policies with logic, data and evidences. Thus, the series emphasizes evidence based risk reduction methods, approaches and practices.

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Preface

It has been more than 3 years since the devastating earthquake and tsunami (East Japan Earthquake and Tsunami: EJET) of March 11, 2011. Three years can be viewed as a short or long duration depending on the nature of the disaster. It can be a crucial time when the physical process of recovery is completed, or has just started—again, based on the scale and nature of the devastation. For the EJET, based on its scale and the nature of the damages, it is just the start of the recovery process. It is just the start when people in temporary shelter have formed their new communities, when people in small and medium enterprises are gradually getting back to their livelihoods, when the surroundings of the affected areas are changing from seawall construction to renewal of seaside areas, and so on.

Tohoku is undergoing a dynamic change. This is not just a physical change but a strong socioeconomic and social transformation, which we have not seen for a long time in Japan. People's resilience, capacities of local governments, leadership of local mayors' strong role in civil society, and voices from the field are some of the changes that we have not experienced in Japan before. Thus, this disaster is bringing about several transformations, and it is important that we recognize and appreciate these changes in a positive way.

There has been wide range of lessons learned over the past 3 years with more to come in the future. This book attempts to document some of these lessons through participatory field-based research and implementation in the affected areas. The book has two parts: the first part provides some lessons from different sectors, and the second part provides case studies. Needless to say, there are many lessons not included in this book. However, I hope that the compilation provides a good analytical overview of some of the emerging issues of the recovery process in Tohoku. I also hope that this book will provide some thoughts for the future direction of post-disaster recovery.

The book is written for students and young researchers aspiring to a career in disaster risk reduction and environmental studies including sustainable development, risk reduction, and disaster recovery. I hope that they will find the book useful and relevant to their work.

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Part I

Sector Lessons

Chapter 1

Tohoku Recovery: Reflections on Some Key Lessons

Rajib Shaw

Abstract In case of mega event like the east Japan Earthquake and Tsunami [EJET], 3 years is possibly the time when the communities get a bit time to think of the future recovery, and the actual recovery would be a long ranging process. The EJET has posed different problems, due to scale of disasters, level of devastations, human and economic impacts, damages to local governments, economic slowdown, large number of evacuees, amount of debris and its removal, lack of open flat spaces etc. The economy is getting back gradually, with small and medium enterprises starting their business. The fishing industry is not yet recovered fully, but gradually recovering. However, the key point remains is the social and psychological recovery. The social network of the affected areas still remains a key question, especially in the temporary housing, where the community formation took several months after the disaster. The chapter covers the key learning, starting from social transformation to new definition of community resilience, and social connectivity.

Keywords Tohoku recovery • Social transformation • Social network • Connectivity • Dissemination

1.1 Introduction

Three years have been often considered as a key turning point of a recovery process. In a relatively small scale disaster, 3 year is a time when most of the physical recovery part is completed. However, in case of mega event like the east Japan Earthquake and Tsunami [EJET], 3 years is possibly the time when the communities get a bit time to think of the future recovery, and the actual recovery would be a long ranging process. The EJET has posed different problems, due to scale of disasters, level of devastations, human and economic impacts, damages to local governments, economic slowdown, large number of evacuees, amount of debris and its removal, lack of open flat spaces etc. (Shaw and Takeuchi 2012). The nuclear issue has added more complexity to this problem. The recovery of the non-nuclear area has started with debris removal almost complete in most cases, temporary

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shelter already in place, and recovery plans prepared. The discussion for sea wall has been made in different cities and communities with different levels of agreements and disagreements. However, the constructions have been started in many places. The land readjustment process has been done, and construction in the sea-side area with land uplift has been started and completed in some cities.

The economy is getting back gradually, with small and medium enterprises starting their business. The fishing industry is not yet recovered fully, but gradually recovering. However, the key point remains is the social and psychological recovery. The social network of the affected areas still remains a key question, especially in the temporary housing, where the community formation took several months after the disaster. The relation between the affected and non-affected people is gradually becoming better although there are several tensions exist at different levels. The psychological recovery becomes a still major challenge, and will take more time, as observed in the Kobe earthquake also. The old age problem remains a major issue, where this group still remains as the most vulnerable group to recover lives and livelihoods.

At this junction, this chapter reviews some of the key changes observed in the affected areas, the key lessons and its implications to larger context of Japan and abroad.

1.2 Transitional Time

Over last 20 years, Japan experienced two major events, which changed the course of disaster risk reduction in Japan. Close to 20 years back, in 1995, the city of Kobe was hit by a major earthquake, killing 6,432 people and causing tremendous economic and social losses. The Kobe earthquake was a significant transitional event to many issues in Japan. The concept of disaster management changed significantly from government driven to government civil society cooperation. The research and education has changed from engineering based to social based solutions. Global risk reduction has also identified the importance of community based disaster management. The disaster has influenced the national disaster management law, and implementation of infrastructure related projects, retrofitting of buildings, development of micro-zonation maps at local government level, and community based disaster management maps at neighborhood level. Post Kobe has also influenced the preparation for other disasters, including typhoon, landslides and tsunami. In case of tsunami, construction of sea walls, early warning system, preparation of evacuation centers, evacuation routes, disaster drills, disaster education in school and community, community hazard maps were some of the activities conducted at different levels by different groups of stakeholders. Activities in Japan have widely contributed to disaster risk reduction agenda globally. Japan hosted two world conferences, one in 1994, and another one in 2005. The third world conference would be in 2015 in Sendai.

After 16 years of Kobe earthquake, the East Japan Earthquake and Tsunami [EJET] of 2011 gave another major blow to Japan, causing 15,667 death, 4,862 missing, and unprecedented damages to lives and properties. Five most affected prefectures of Iwate, Miyagi, Fukushima, Ibaraki and Chiba have the maximum burnt of the event. For the first time, in post World War II Japan, there has been internally displaced persons [IDP], especially from Fukushima, who went to as far as Okinawa islands. The official estimate of physical cost of the disaster was put at 16.9 trillion JPY, more than ten trillion yen in buildings and nearly four trillion yen in power, communications and transport infrastructures (Samuels 2013). However, this is just a direct cost, there has been tremendous amount of business losses, which are not accounted in many cases. Business interruptions include the loss of jobs at individual level, for small and medium enterprises, and also for the large corporate sectors. Trade was hard hit, and the regional economy was affected very strongly. Sendai and other regional airports were swamped by tsunami waves, 14 international ports were shut or washed away, and 260 smaller fishing harbors were destroyed.

The EJET has given a strong blow to already slowing Japanese economy. The political condition was also not that stable. Added to the disaster was the nuclear meltdown in Fukushima, which caused significant challenges at the initial stage, and also still after 3 years from the disaster. As mentioned earlier, the large number of evacuees from Fukushima, the amount of nuclear debris, soil, and food contamination, compensation to the affected people, were some of the issues which made significant challenges. The formation of Reconstruction Agency was one of the key steps to address the recovery process in comprehensive way, but the leadership in the Reconstruction agency, its links to the other existing ministries, initial financial issues were some of the problems.

In case of both post Kobe and post EJET, political changes were observed, and the change brought the economy back to track. After the EJET, with the initial slow down and problems in the decision-making, leadership and management, the new government has taken specific measures to fix the economy with large amount of economic revitalizations packages and spending. There are already several changes observed in the field, and it will be interesting to see what are new transitions the EJET brings to Japan and outside.

1.3 Social Transformation

EJET brought important social transformation, in terms of people's participation, redefined role of civil society, and role of social media. The Great Hanshin Awaji Earthquake of 1995 triggered the spirit of voluntarism profusely in Japan. 1995 is often called the "*The Year Zero*" of voluntarism. The earthquake occurred during the winter vacation in schools, and many students volunteers from all over Japan went to Kobe to serve the victims, which caused different problems and issues: like lack of coordination of volunteers, difference between supply and needs, pressure

on the local resources since most of the volunteers were not prepared properly, and need of technical volunteers etc. These lessons were instrumental to develop the national volunteer coordination center, where during pre-disaster time, one can enroll him/herself in the volunteer roster with the details of offered services, time frame etc. After the EJET, volunteer coordination center was established with government, non-government and corporate sector collaboration in Tokyo, and organized voluntarism was performed for a long time after the disaster. In contrast, the soft voluntarism is a rather new concept, which emerged on recent years, and has been informally developed through experiences (Shaw and Takeuchi 2012). Also, the concept of sending students from educational universities to support the education in emergency is another new concept emerging out of this disaster. It is of extreme importance to see how these concepts grow in future, and how these lessons are applied to the future disaster risk reduction as well as response activities. “*Ganbaro Nippon*”, “*Ganbaro Tohoku*” [Try your best, Japan, Tohoku] have been popular slogan to revitalize the national spirit to help each other in case of disaster. The “*Kizuna Project*” has become the key flagship project to link people and communities in the affected areas, across the countries and globally.

The other major change has been the role of civil society. Post Kobe civil society activities has been explained, documented and analyzed by several people (Shaw 2014 and references therein). After the utopia of volunteerism and civil society activities, the sustainability issues became the key problem of concern. There were several civil society models developed, where, the residents’ association provided an important interface between community and administration with the help of professional and non-professional organizations like NGOs, NPOs and CBOs. The scheme of cooperation generates its own resources within itself, the process is found to be sustainable. The association is also found to be effective in collective decision-making, and to represent the voice of the community. During the disaster events, this scheme is found to be useful, as exemplified by experience from other areas with different disasters in Japan, including flood and typhoon. In case of EJET, the civil society played an important role from the beginning, starting from evacuation center, where it severed required resources to the affected people. It then continued to the community based recovery-planning phase, where the civil society facilitated community needs, and also facilitated community reorganization process in the temporary housing. Both these activities need strong involvement, trust and cooperation with the local communities, as well as local governments. The long term recovery process has seen a decrease in the number of civil society activities in the field, however, the local non-profit bodies, which are rooted in the affected areas have found innovative mechanism to continue their support to the communities, and developed local development models which incorporates community businesses in many cases. Aldrich (2013) in his analysis of state and civil society organization with special reference to nuclear accident, has pointed out that “voices within civil society are, perhaps for the first time in modern Japanese history, penetrating the insulated nuclear village and prompting a reconsideration of nuclear-power policy among the country’s elites”.