International cooperation to reduce the loss of lives due to natural disasters

Kenji Okazaki
Professor
National Graduate Institute for Policy Studies (GRIPS)
Tokyo, Japan

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The more international communities express their commitment for disaster reduction, the more people are killed by disasters

10 most deadly disasters in the last 30 years

<table>
<thead>
<tr>
<th>Nation</th>
<th>Disaster</th>
<th>Year</th>
<th>Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>Earthquake</td>
<td>1988</td>
<td>25,000</td>
</tr>
<tr>
<td>Iran</td>
<td>Earthquake</td>
<td>1990</td>
<td>35,000</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Cycl/flood</td>
<td>1991</td>
<td>140,000</td>
</tr>
<tr>
<td>Venezuela</td>
<td>Flood</td>
<td>1999</td>
<td>30,000</td>
</tr>
<tr>
<td>Iran</td>
<td>Earthquake</td>
<td>2003</td>
<td>27,000</td>
</tr>
<tr>
<td>Indonesia Others</td>
<td>Eq/tsunami</td>
<td>2004</td>
<td>280,000</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Earthquake</td>
<td>2005</td>
<td>80,000</td>
</tr>
<tr>
<td>Myanmar</td>
<td>Cycl/flood</td>
<td>2008</td>
<td>130,000</td>
</tr>
<tr>
<td>China</td>
<td>Earthquake</td>
<td>2008</td>
<td>90,000</td>
</tr>
<tr>
<td>Haiti</td>
<td>Earthquake</td>
<td>2010</td>
<td>230,000</td>
</tr>
</tbody>
</table>

UN and International activities

UN/IDNDR: 1990-1999
1994: Yokohama Principles


• Deadly disasters occur in developing countries (10/10)
• Deadly disasters occur mostly in Asia (7/10)
• Deadly disasters are mostly caused by earthquakes (7/10)
• Deadly disasters have been increasing (6 in 2000's)

Human lives lost by disasters: how cheap?

• “One death is a tragedy. A million of deaths are statistics.”
  (Stalin)
  Thousands of tragedies behind thousands of deaths.

• Economic value of human lives are not included in the economic loss due to disasters
  Economic loss of 3.11 Great East Japan Earthquake: Total 17 trillion yen (Value of lost human lives: zero)

• “To protect the lives of citizens” is the highest priority of the governments.
  Are governments making every effort to protect people’s lives from disasters?

International activities for disaster management

• Most international resources focus on response (rescue and recovery) activities
  - Urgent and humanitarian
  - Covered by mass media because such activities are dramatic

However:

• Relief activities cannot recover the lost lives.
  Thousands of people are instantly killed in disasters.
• If people survive, recovery and reconstruction would be much easier and less costly.
• Donor countries cannot fund for response any more after repeating super disasters recently

More focus on protecting lives before disasters hit!!
Inappropriate resource allocation for disaster risk management

- Post-disaster > Pre-disaster
- Engineered > Non-engineered
- Hardware (infrastructure and modern technologies) > Software (human power/education)

The most important lesson of 2011 Great East Japan Earthquake Disaster

“Thousands of people would not have been killed if they would have evacuated promptly”

- People in this region knew the tsunami would strike after a strong earthquake.
  Repeated Tsunamis – Meiji Sanriku Tsunami (1896), Showa Sanriku Tsunami (1933), Chile Earthquake Tsunami (1960), etc.
- Most people in this region knew “Tsunami Tendenko” (in case of tsunami, you should evacuate promptly by yourself without taking care of other family members)
- Tsunami warning was issued 3 minutes after the earthquake. People had approx. half an hour or more before the tsunami stroke.
- Municipalities instructed people to evacuate promptly.
  Yet, they had many reasons not to evacuate promptly

The most important lesson of 1955 Hanshin-Awaji Earthquake Disaster

“At thousands of people would not have been killed if they would have retrofitted their vulnerable houses”

- Most of the victims were killed by collapse of their houses
- Currently, most of Japanese citizens know that vulnerable houses may collapse and kill the residents in earthquakes.
- Japan has severe building codes.
- Techniques for retrofitting are available.
- Financial assistances for retrofitting are available.
  Yet, people have many reasons not to retrofit their vulnerable house.

People are risk-takers in disaster risk management

- People are risk-seekers when the choice involves loss (Prospect theory, Kahneman & Tversky).
  Question : Choose between:
  A. Sure loss of $3,000
  B. 80% chance of losing $4,000 and 20% chance of losing nothing.
  Result: 92% selected B
- Future uncertain loss is psychologically much discounted.
- Investment (retrofitting) for safety would be waste if a large earthquake would not occur soon.
  - Life expectancy of a house: approx. 30 years (Japan)
  - Remaining life expectancy of an investor: 20-50 years
  - Return period of a big earthquake: hundreds or more years
  It is rational for people not to take actions to avoid future disaster risk.
How can we convince people to take actions before a disaster hits

- Education, training, and awareness raising
- Community-based disaster management
- Policy development and institutionalization for safer communities

Disaster education can play an important role

- **Capacity building and awareness raising**
  - Local people, particularly children, should understand better their disaster risk and take appropriate actions to reduce the impact of disasters

- **Technology and policy development**
  - Experts should develop affordable and applicable technologies, and develop policies for disaster reduction, reflecting the local conditions.

- **Risk communication**
  - Experts should be able to communicate with local people with trust in laymen’s language with professional knowledge.

Education for Disaster Management Professionals by GRIPS

**Master’s degree programs on “Disaster Management”**

- **English program since 2005**
  - Conducted jointly with BRI (Building Research Institute), PWRI (Public Works Research Institute), and JICA
  - 3 courses: Seismology/Earthquake Engineering, Tsunami, Water-related disasters
  - Target Groups: Technical officials, or researchers in developing countries

- **Course Duration**: 1 year (October–September)
- **Approx. 50 students in 2012-2013**

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**Japanese program since 2012**

- **Target groups**: national and local government officials
- **Course Duration**: 1 year (April–March)

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Accepting application for 2013 entrance!!

Community Based Disaster Management (CBDM)

- Local people are potential victims and assume responsibility in managing the risk
- Disasters reflect local conditions, of which local people are well aware
- Local people can better understand disaster risk and how to avoid such risks through risk communication
- Participatory decision making process leads to ownership of risk and actions

RADIUS project by IDNDR
Shake table demonstration by UNCRD
Current vicious cycle for unsafer communities

- Large casualty/damage in disasters
- Increase of vulnerable communities
- Support for recovery nationally and internationally
- No incentive for safer communities

Proposed cycle for safer communities

- Support for safer communities nationally and internationally
- Increase of safer communities
- Strong incentives for safer communities
- Decrease of victims and recovery cost

Recommendation for international cooperation to reduce the loss of lives due to disasters

- International commitment to promote proactive efforts
- International communities (international organizations such as UN and UNESCO and donor countries like Japan) should assist more explicitly those countries which are making proactive efforts.
- Fostering more experts who can develop appropriate policies for disaster reduction and have good skills for risk communication with local people
- Financial and technical assistance to promote community-based disaster management
- More researches to investigate how to motivate people and local governments to take actions against disaster
- Establishing multi-disciplinary academic approach for disaster risk management, incorporating economics, politics, sociology, psychology, engineering, etc.

Thank you!

Kenji Okazaki
Professor
National Graduate Institute for Policy Studies (GRIPS)
7-22-1 Roppongi, Minato-ku, Tokyo, 106-8677 Japan
Email: okazakik@grips.ac.jp
Web: http://www.grips.ac.jp