

Activities of International Institute of Seismology and Earthquake Engineering (IISEE), BRI

- Training for young researchers/engineers of developing countries on building earthquake disaster reduction
- Research related to "International Training in Seismology, Earthquake Engineering and Tsunami Disaster Mitigation" (JICA joint program)

History of Training

- 1960 : 1st International Training in Seismology, Earthquake Engineering to meet the demand of trainings at the 2nd World Conference on Earthquake Engineering (WCEE) held in Tokyo
- 1962 : IISEE was established in Building Research Institute (BRI) to conduct international training
- 1962 ~ present : IISEE is conducting "Annual Trainings" (courses of seismology and earthquake engineering) (It has been conducted as a joint project with UNESCO and Govt. of Japan for first 9 years.)
Tsunami Disaster Mitigation Course was established in 2006 and is being conducted. From 2015, courses of Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation were combined together.
- 1980 ~ 2000 : "Follow-up Training" was conducted for ex-participants of annual (regular) training course
- 1995 ~ present : "Global Seismological Observation Course" is being conducted at IISEE.
- 2005 ~ present : Master degree can be obtained in cooperation with National Graduate Institute for Policy Studies (GRIPS) in Tokyo to participants of IISEE annual training courses.
- 2009 ~ 2012 : China Seismic Building Course was conducted.
- 2014 ~ present : Latin America Earthquake Engineering Course was established and is being conducted.
- In addition, "Individual Training" is conducted based on the request.



Courtesy visit to the Minister of Land, Infrastructure, Transport and Tourism, Mr. Keiichi ISHII, in 2016



Lecture scene at IISEE, BRI (Tsukuba, Japan)



History of International Training in Seismology and Earthquake Engineering -2



1960 1968 1980 1995 2005 2006 2009 2012 2014 2017

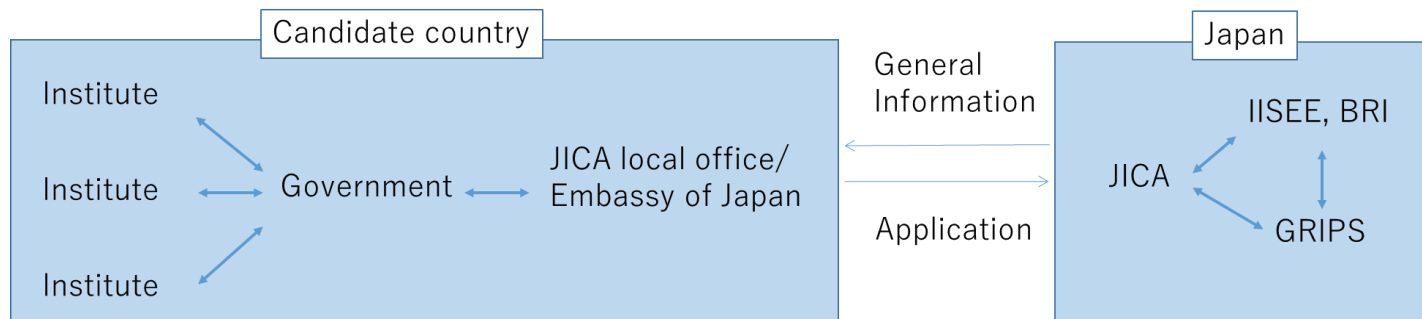
International Training in Seismology and Earthquake Engineering	Annual Courses (Regular Courses)	Seismology Course	1960 ~ 2005 Master Degree Course
		Earthquake Engineering Course	1960 ~ 2005 Master Degree Course
		Tsunami Disaster Mitigation Course	2006 ~ Master Degree Course
	Seminar Courses on Earthquake Engineering	China Seismic Building Course	2009 ~ 2012
		Latin American Earthquake Engineering Course	2014 ~
		Others	1980 ~
	Global Seismological Observation Course	1995 ~	
	Individual Courses	1968 ~	



Regular Courses: Seismology, Earthquake Engineering and Tsunami Disaster Mitigation



- The regular courses are provided to increase capacities of technical officials, engineers, and researchers in the fields of seismology, earthquake engineering and tsunami disaster mitigation who are conducive to earthquake and tsunami disaster mitigation and disaster recovery policy. The period is one year (from October to September in the next year).
- JICA training course title is:
Seismology, Earthquake Engineering, and Tsunami Disaster Mitigation
- The name of master's degree program name by the GRIPS and the BRI:
Disaster Management Policy Program (http://www.grips.ac.jp/en/education/inter_programs/disaster/)
- How to apply
 - The general information (GI) of this training is distributed to each candidate country through JICA. JICA receives applications through their local office or Japanese embassy.
 - The applications are evaluated (including English proficiency) by the JICA, IISEE (BRI), and GRIPS.

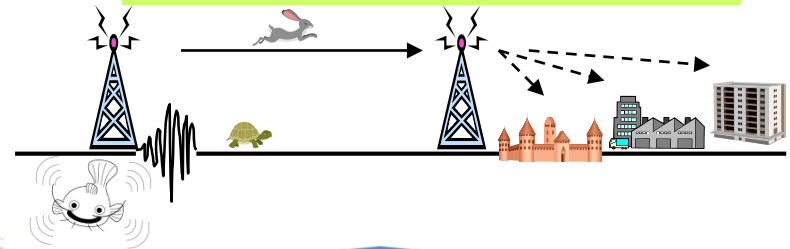
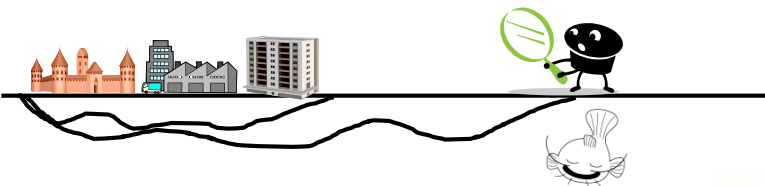


Candidate country: The Ministry of Foreign Affairs of Japan and JICA will survey the needs of JICA group training and region-focused training courses in each developing country around July every year (IISEE FAQ List, <http://iisee.kenken.go.jp/?p=faq#q8>). Candidate countries are decided through this survey.

Human Resource development initiative for earthquake disaster reduction based on comprehensive understanding of natural phenomena of “Earthquake”

EARTHQUAKE HAZARD ASSESSMENT

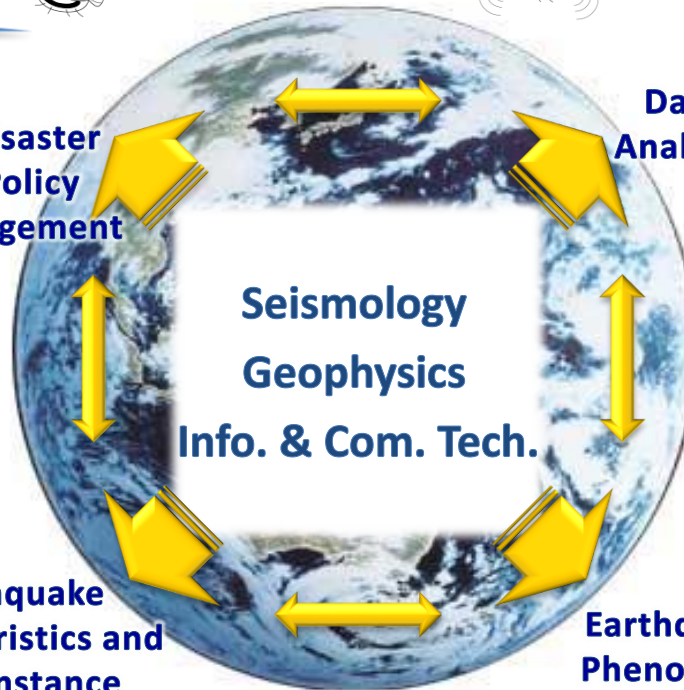
EARTHQUAKE DISASTER REDUCTION



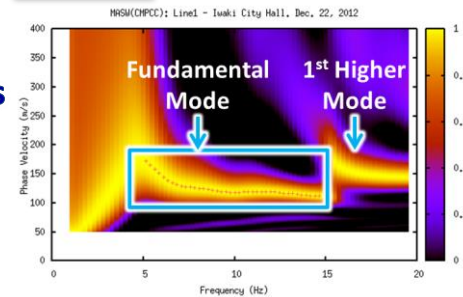
Earthquake Disaster Mitigation Policy and Risk Management



Earthquake Characteristics and Circumstance



Data Analysis



Earthquake Phenomena

Aiming at reduction of structural damage and induced human damage

Curriculum :

- Geotechnical, structural engineering, policy
- Theory of earthquake resistant structures (for RC, steel and masonry structure, etc.)
- Innovative technology (base isolation, control)
- Individual studies based on each issue/interest



Ability to solve proper problems



Damage by earthquakes



Outline : One year training course for young researchers/engineers in developing countries in tsunami prone regions

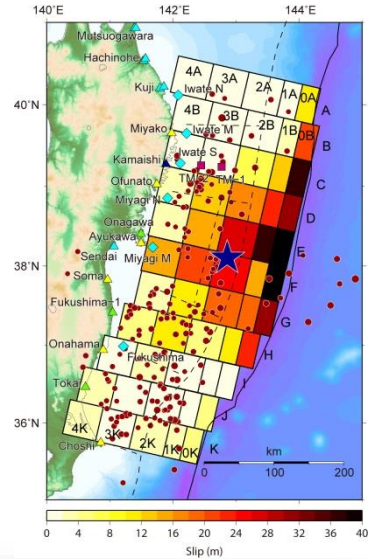
History : After 2004 huge tsunami disaster by Sumatra off-shore earthquake, this course was established in Oct., 2006 and conducted with seismology course

Objective : Train advanced human resources who can manage planning, guidance and dissemination of tsunami mitigation technology including seismology, policy etc.

Overall Goal

The damage of tsunami disaster in target countries is mitigated through establishment of Tsunami Early Warning system, development of Tsunami Hazard Assessment and other Tsunami countermeasures.

Slip distribution on the fault model of the 2011 Tohoku-oki earthquake. Mainshock (Blue star) and aftershocks determined by JMA (red circles). (Satake and Fujii et al., 2013, BSSA)



Number of Trainees of Tsunami course (countries in Indian Ocean, Pacific Ocean)

Recent Tsunamis

Year	Mo	M	Area, Country	Death (Missing)
2001	Jun	8.4	S. Peru	26
2004	Dec	9.1	Sumatra, Indonesia	226,898
2005	Mar	8.7	Indonesia	10
2006	Jul	7.7	Java Island, Indonesia	802
2007	Apr	8.1	Solomon Islands	52
2007	Apr	6.2	Southern Chile	10
2009	Sep	8.0	West Samoa	192
2010	Feb	8.8	Off Southern Coast, Chile	156
2010	Oct	7.8	Sumatra, Indonesia	431
2011	Mar	9.0	Tohoku-oki	15,894 (2,550)

Country	Number of Trainees
Indonesia	16
Malaysia	10
Bangladesh	2
Thailand	2
Fiji	1
Papua New Guinea	1
Philippines	3
Myanmar	2
Peru	4
Chile	1
Nicaragua	5
Ecuador	4
Egypt	1
Total	52

Field Visit in Tohoku region to observe tsunami damage area (Onagawa)



Field Visit in Hirokawa town to observe Hiromura Seawall



The course is launched in 1995 at the request of the Ministry of Foreign Affairs of Japan. It is conducted as part of the Japan's contribution to the world's nuclear disarmament in cooperation with the Japan Metrological Agency and JICA.

Course objective and goal

Course objective

The course objective is for course participants to acquire knowledge and techniques of global seismological observation to play important roles in the monitoring system of nuclear tests under the CTBT.

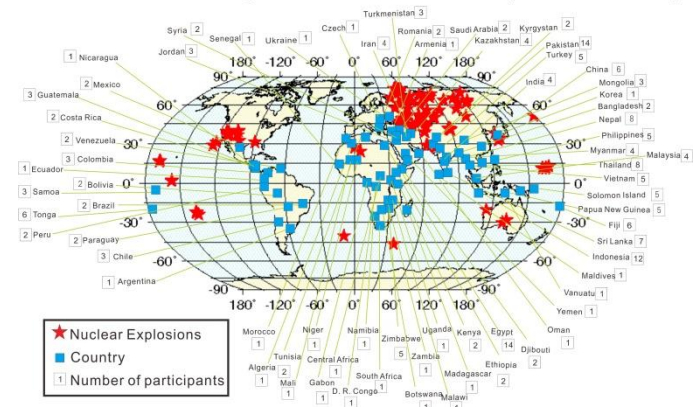
Goal

The goal is to strengthen capacities of National Data Center (NDC) and/or International Monitoring System (IMS) in the field of seismology for contributing to the promotion for taking effect of Comprehensive Nuclear Test Ban Treaty (CTBT).

Training Period and Countries of Participants

- The IISEE gives this training once every year with a duration of two months for participants from developing countries. The number of participants is around ten every year.
- In total, 208 participants from 70 countries have participated in our training course by March, 2016.

World Map with Participants of Global Seismological Observation Course (As of Jan. 2016)



Lecture by Mr. Wilber Bell, Director of IDC, CTBT



Field visit in Matsushiro Seismological Observatory

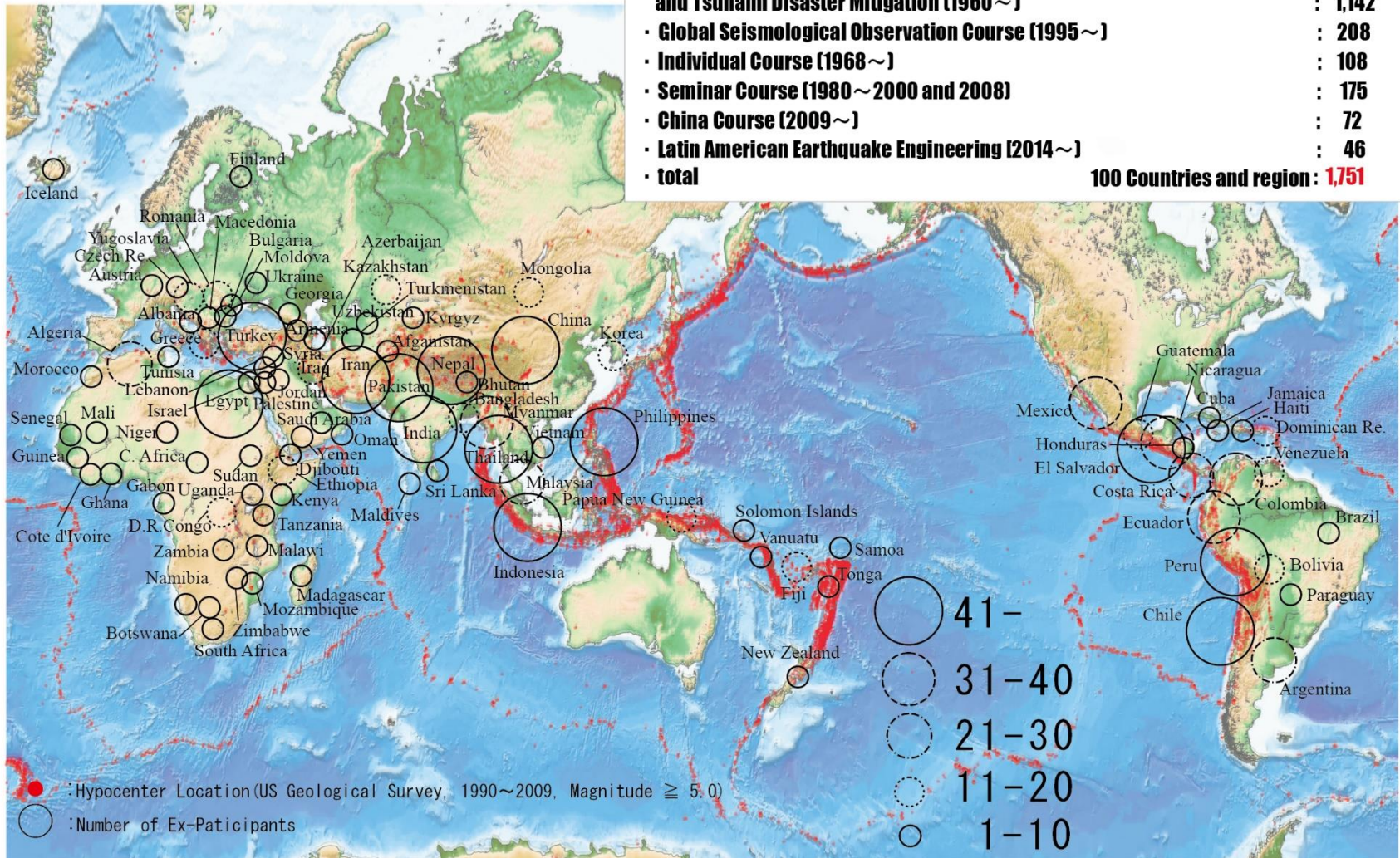


Study trip to A-Bomb Dome in Hiroshima

Number of Ex-participants of IISEE Training Courses

(As of September 30, 2016)

• Annual Training on Seismology, Earthquake Engineering and Tsunami Disaster Mitigation (1960~)	: 1,142
• Global Seismological Observation Course (1995~)	: 208
• Individual Course (1968~)	: 108
• Seminar Course (1980~2000 and 2008)	: 175
• China Course (2009~)	: 72
• Latin American Earthquake Engineering (2014~)	: 46
• total	100 Countries and region : 1,751



Tohoku

2010.05



Taro, Miyako city

Kumamoto

2017.04



Minamiaso Village

2011.11



2017.04



Kumamoto city