

Report on “UN/ISDR Comprehensive Tsunami Disaster Prevention Training Course”



*10 Participants and ICHARM staffs in front of the ICHARM building
after finishing the training course*

1. Outline

The Indian Ocean Tsunami on 26th December 2004 caused about 230,000 casualties and enormous property damage to Indian Ocean countries. This huge loss is basically due to the lack of proper awareness and preparedness for tsunami disasters from national to local levels.

UN/ISDR is currently implementing a two-year project of the “Building Resilience to Tsunamis in the Indian Ocean” funded by the European Union to promote tsunami countermeasures in Indian Ocean countries. In those countries, it is needed to develop human resources who can manage tsunami countermeasures, such as structural measures, early warning systems and local disaster mitigation plans, etc.

Japan has a long experience with tsunami disasters, such as the 1896 Meiji Sanriku Tsunami with a casualty of 22,000, and has been making major efforts to enhance tsunami disaster prevention.

Under the circumstances, ICHARM has conducted the “UN/ISDR Tsunami Disaster Prevention Training Course” as one of the UN/ISDR projects from 2nd June to 11th July with the support of the Japan International Cooperation Agency (JICA) to make good use of Japanese experience of tsunami countermeasures for developing countries. There were 11 course participants from four countries, including India, Indonesia, the Maldives and Sri Lanka. They were section-chief-level government administrators and responsible for promoting tsunami disaster mitigation in their home countries.

2. Contents

On the first day of this course, an opening ceremony and party were held at ICAHRM, and the course participants met ICHARM staff and trainees of other training courses.



Opening ceremony



Opening party at ICHARM entrance hall

During the 1st and 2nd weeks, the participants mainly listened to lectures and worked on exercises on tsunamis, coastal vegetation, and other tsunami-related issues provided by experts, including Prof. Shuto (Nihon University), Associate Prof. Tsuji (Tokyo University), Dr. Kato (National Institute of Land and Infrastructure Management; NILIM), Team Leader Tanaka (ICARM) and other governmental officers in disaster management sections.

In one class, they worked on “Project Cycle Management” exercises to become able to systematically think about actual tsunami-related situations and issues and logically make “action plans”.

They also had an exercise on coastal vegetation instructed by Prof. Matsutomi (Akita University), Prof. Tanaka (Saitama University) and Team Leader Tanaka (ICARM), as well as an exercise on tsunami hazard mapping by Dr. Dinar (ICARM).

The participants received a lecture on “Tsunami warning system in Japan” at the Japan Meteorological Agency and visited its forecasting room. During the visit, an earthquake occurred in Nagano Prefecture, and they had a rare opportunity to witness an actual example of earthquake information dissemination.

They also visited an experimental facility called “Giant Geo-Wave and Tsunami Experiment Flume” at the Port and Airport Research Institute (PARI) in Yokosuka. The facility generated 3.5m-high waves, which easily destroyed a 10cm-thick concrete wall. The experiment reminded the participants how destructive tsunami energy could be.



Lecture by Prof. Shuto



PARI's Giant Geo-Wave and Tsunami Experiment Flume

During the 3rd week, the participants visited the Sanriku coast area, one of the tsunami-prone areas in Japan, to conduct on-sight surveys and interviews to local residents and municipal personnel in charge of disaster mitigation.

In Fudai Village, disaster management personnel explained the outline of the local tsunami water gate and kindly demonstrated the closing of the gate.

And they were not only amazed to see gigantic tsunami structural countermeasures such as tsunami embankments in Noda Village, a tsunami water gate at the mouth of the Omoto River, sea walls in Taro District, tsunami breakwaters in Kamaishi and Ofunato, but also realized the importance of passing on tsunami experiences to the next generation by building tsunami monuments.

During the on-sight survey, the participants exchanged opinions with the residents and municipal personnel about disaster mitigation activities to raise public awareness.

Miyako City personnel said, “Despite the fact that there is no volunteer disaster prevention organization in Taro, the awareness level is very high. The awareness level is not always related to the number of volunteer disaster management organizations.”

A community leader of Nehama, Kamaishi City, explained how hard they have been working to raise awareness of residents who have had no experience of tsunami disasters.

And in Touni District, Kamaishi City, an old lady told her experience of the Showa Sanriku Tsunami, after which residents had to relocate to higher ground.

At Ryori Elementary School, the principal and the former principal explained about disaster prevention education at school. The participants were particularly impressed with a play

entitled "Violent Sea," written by the former principal. The play is so educational that not only students but also parents can learn about tsunamis through the involvement in its production.

In Kesennuma City Hall, city personnel emphasized the importance of disaster prevention education, and in the Kesennuma/Motoyoshi Disaster Prevention Center, too, fire fighting personnel talked about the importance of educating people about disaster preparedness.

During the 4th week, the participants paid a courtesy visit to Dr. Sakamoto, chief executive of PWRI. They also had lectures and exercises by Mr. Imai (Asian Disaster Reduction Center), Prof. Fujima (National Defense Academy of Japan) and Ms. Matsuoka (UN/ISDR). The participants visited the Japan Aerospace Exploration Agency (JAXA) and attended a lecture on the utilization of ALOS data by Dr. Moriyama.

The participant also had a chance to enjoy a taste of the Japanese culture. ICHARM office staff gave a demonstration of Japanese tea ceremony and the participants were very pleased.



Course participants visit PWRI Chief Executive Sakamoto.



A participant asks a question to Prof. Fujima.



Participants experience a Japanese tea ceremony.

During the 5th week, the participants visited Kii Peninsula, another tsunami-prone area in Japan as well as the Sanriku coast area. In the Sanriku area, the first tsunami is predicted to come in several tens of minutes in case of the anticipated earthquake, but in Kii Peninsula, within 10 minutes. With that prediction in mind, they conducted on-sight surveys and interviews with local

residents and disaster management personnel to investigate their awareness levels and disaster prevention activities.

In Mie Prefecture, they also listened to a lecture on how the prefecture prepares for the anticipated earthquake and tsunamis.

In Ise City, to learn the importance of raising public awareness at the community level, the participants had a chance to listen to a community leader of Ominato District speaking about the history of the district's voluntary activities, including the production of their original disaster prevention maps. At Futami Okitama Shrine, they attended another lecture on an evacuation drill which will be specifically implemented for tourists this coming September.

They then visited a temporary emergency shelter called "Nishiki Tower" in Nishiki District, Taiki Town. In the exhibition room of the five-story tower, an old wall clock with a trace of the 1944 Tonankai Tsunami is exhibited. The bottom half of the clock shows a different color from its top half, giving visitors an idea of how high a tsunami wave had reached at that time.



An Ominato community leader explains their original hazard map.



Participants listen to an explanation of a evacuation plan at Futami-koshitama Shrine.



Participants take a picture in front of Nishiki temporary shelter.



The old wall clock shows a trace of a tsunami which flooded its bottom half.

In Owase city, the participants conducted a “Town Watching” exercise. They walked around the city in three groups, investigating possible problems in emergency evacuation, checking the actual conditions of disaster prevention facilities, etc. After discussing the findings from the exercise, they produced and presented their original maps based on the discussion results in front of Owase city personnel. The participants contributed to the improvement of the city’s disaster mitigation plan through this “Town Watching” exercise.

And during Town Watching, Mr. Yamanishi, who experienced the Tonankai Earthquake Tsunami in 1944 and now is a community leader, gave a lecture on the improvement of public awareness toward disaster prevention in his community.



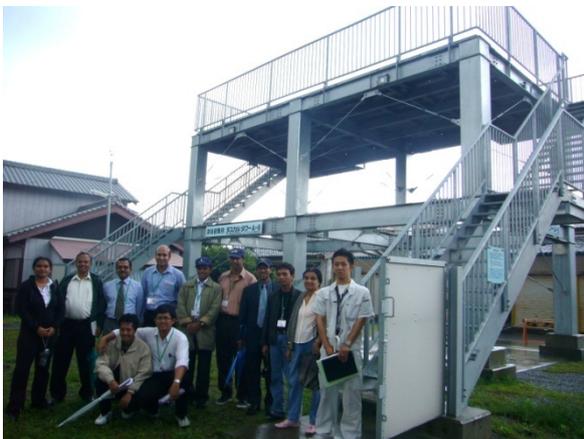
A team of participants exercise “Town Watching”.



Mr. Yamanishi speaks about his group's efforts in tsunami disaster mitigation

After Owase, the participants moved to Kushimoto Town for a lecture and on-site survey on an evacuation route made by a voluntary disaster management group in Omisaki District and a tsunami evacuation tower. A Maldivian participant said that this kind of tower would be helpful in the Maldives because there was no mountain to evacuate to there.

A lecture on tsunami countermeasures for tourists was given in Shirahama Town. Three million tourists visit the famous “Shirara-hama” beach every year, so it is important to make an evacuation plan specifically designed for tourists. We exchanged opinions with disaster management personnel in Shirahama.



Temporary evacuation tower in Kushimoto Town



Evacuation route in Omisaki District

The final destination of the field trip was Hirogawa Town. The town is famous as the home of Goryo Hamaguchi. “Inamura-no-Hi,” a story in which the main character, Gohe, saved people from tsunamis, was modeled after Goryo. The participants visited the town to see “Goryo Embankment” and attended a lecture by the director of “Inamira-no-Hi Museum” on how Goryo led the response and rehabilitation efforts after the tsunami. They also had a chance to watch the 6th grade students of Hiro Elementary School read aloud “Inamura-no-Hi” and the 5th grade students have a class on disasters and disaster preparedness. The participants were very interested in disaster prevention education in the elementary school.



Participants stand on “Goryo Embankment”.



Participants visit a disaster mitigation class at Hiro Elementary School

During the last week of the training course, the participants worked on and made presentations on their action plans considering the differences between Japan and their countries..

At the night before the last day, a closing party was held with other participants of ICHARM at JICA Tsukuba. Each country group sang songs of their own country, and everybody had a very good time.



A closing party is held at JICA Tsukuba.

In the closing ceremony, Dr. Ono, program officer of UN/ISDR, gave a closing remark, and Dr. Takeuchi, director of ICHARM, presented the course certificates to each participant. Then, three “ICHARM AWARDS” were given to Mr. SONKAR from India, Mr. Teuku from Indonesia, and Mr. Didi from the Maldives

At last, the representatives of each country gave addresses and the course ended successfully.



ICHARM Director Takeuchi hands out a course certificate to a participant.



Participants and ICHARM staffs smile for a picture in front of the ICHARM main entrance.

3. Action Plan

In this training course, the participants were asked not to think about direct application of Japanese tsunami countermeasures to their countries, but to recognize the difference between Japanese tsunami countermeasures and those in their countries and consider what should be done in their countries. As a result, they made various action plans for their home countries.

The Indian participants emphasized three points as follows;

- (i) Disaster mitigation and preparedness are as important as response, relief and rehabilitation
- (ii) Awareness among the citizens, particularly those in the vulnerable section of society, is most important and should be promoted on a priority basis
- (iii) Effective participation of residents in the planning and implementation of disaster-related activities should be ensured.

For these purposes, they said that the government should be asked to;

- strengthen awareness programs and information dissemination systems
- review the existing legal framework for disaster management and to amend the act for tsunami countermeasures in line with the 'Disaster Countermeasure Basic Act' prevailing in Japan, if needed
- review existing structural and non-structural measures and to take up suitable location-wise measures, based on research.

The Indonesian participants claimed that tsunami-related problems in Indonesia are rooted in the lack of coordination among disaster-related organizations, the lack of coastal structural countermeasures including vegetation, and the lack of operational training of tsunami warning systems.

To solve those problems they pointed out that the following activities should be done;

- Hold Trainings and Workshops for residents and teachers
- Establish community education groups
- Conduct end-to-end tsunami drills
- Develop disaster curriculum for school
- Develop local hazard maps

The Maldives is a low-lying land country and troubled with coastal erosion, lack of coastal vegetation, industrial dependency on fishery and tourism, and limited transportation. Therefore,

the Maldivian participants claimed that the government should be asked to;

- Promote and mobilize funds for policy development on building safe evacuation centres, and identify strong buildings suitable for evacuation in coordination with the Ministry of Construction and Infrastructure Development.
- Encourage resort owners to put in place tsunami countermeasures such as coastal forestation, construction of multipurpose evacuation buildings and take measures to protect their lifelines and communication systems around tourist resorts by coordinating with the relevant agencies
- Propose to an install early warning system in every house and install early warning towers to alert people working along the coast.

The topographical conditions in the coastal areas of Sri Lanka are completely different from those of Japan. For example, the entire coastal areas are flat with very few bays and openings, and the mouths of bays are much wider. The population is spread unevenly along the entire coastal belt. However, high capital investments will be a problem for this country. Further, there is a proposal to establish tsunami breakwaters at Galle Harbor with the assistance of the Japanese government.

The Sri Lankan participants proposed activities as follows;

- Awareness programs should be conducted in highly vulnerable districts with the consent of the DMC officials.
- Multi-language sign boards should be established based on the necessity. The existing sign boards have to be modified with luminous colors or solar panel boards. Several tsunami monuments should be established in vulnerable areas to convey the message to future generation.
- Awareness programs, for the vulnerable communities of the selected districts, should be conducted to motivate community residents, to establish coastal forests along the coast, and also to establish tree crops in their home gardens and to improve the existing coconut plantations.
- Awareness programs, for the school children of the vulnerable areas, should be conducted through different modes. The aim is to motivate the students to establish and maintain coastal forests along the coastal belt, introduce tree species in their home gardens, and serve as volunteer for their areas.

4. Evaluation on the training course

4. 1 Achievement by this course

On the last day of this course, the participants evaluate the course and answered the question “*What have you achieved in this training course?*”

Their answers are as follows:

- Most important was the awareness among the people about the disasters which is something we can implement in our country through campaigning.
(Mr. LALLOO PRASAD SONKAR, India)
- I was also able to witness a strong will both on the part of the Government and the community to make themselves resilient to disasters by way of putting combined efforts.
(Mr. Ujjwal Kumar, India)
- I learned the philosophy behind the great efforts in disaster management in Japan. I think, the strength in disaster countermeasures in Japan lies on the collaborative efforts shared by both the formal and informal disaster management organizations/groups with a particular note on the active participation of community members in the process.
(Mr. Teuku Alvisyahrin, Indonesia)
- We can adopt basic concepts for general disaster prevention of self-help, mutual support, and public assistance to increase community awareness and to remind people of what they should do if a disaster occurs.
(Mr. Juriono, Indonesia)
- The programme has provided us with an invaluable learning experience on a personal level too. The dedication and aspirations of individuals and volunteer groups at all levels, and the discipline of the Japanese people and their resilience to withstand and revive back after disasters has touched me and given me hope that together we too will be resilient to future hazards and is able to reduce the impact of tsunamis and other natural hazards.
(Mrs. Rilweena Asiath, Maldives)
- Most of the things that Japan has implemented as tsunami counter measures cannot be implemented in Sri Lanka, as it is a developing country. But there are many things which can be implemented. For example making aware the people, growing coastal forest, etc.,
(Mr. Sooriya Arachchige Ranjan Jayawardana, Sri Lanka)

4. 2 Evaluation on lectures & exercises

The participant evaluated each lecture and exercise based on 1-5 grades.

The evaluation results showed that the course contents met their expectations and needs as each lecture and exercise was given more than four points. In particular, the highest point given to the coastal vegetation lecture and exercise showed their strong interest and motivation to learn feasible tsunami countermeasures for their countries. The “Project Cycle Management” exercise was also

highly rated, revealing that the participants understood the effectiveness of the systematical method for analyzing problems and presenting solutions.

4. 3 Improvement for the course

Some participants pointed out that lectures via interpreters were hard to understand, and also proposed that a class should be shortened from 90 minutes to 45minutes. They wanted more time to discuss with local residents and municipal personnel, and suggested that lectures on structural measures should be increased.

5. Conclusion

In on-sight surveys in the Sanriku coastal area and Kii Peninsula, the participants were not only amazed to see gigantic structures, such as tsunami breakwaters and sea walls, but also overwhelmed by local people's high awareness toward disaster mitigation.

There is a Chinese proverb, saying, "In peace, prepare for war." It is very important for residents to raise awareness and constantly prepare for disasters.

In particular, tsunamis may cause so devastating damage in a wide range of areas at the same time that it is almost impossible for even trained administrative disaster mitigation organizations to manage everything. So in Japan "self-help" and "mutual-support" are the basic concepts for disaster mitigation. It is difficult to apply these concepts directly to other countries due to the differences of topological, climate, social, historical and other conditions, but if these Japanese concepts impressed the participants and became a hint for considering disaster management in their countries, this training course can be considered to have been successful.

Despite the fact that this was the first attempt for ICHARM to conduct tsunami-related training, the course was managed smoothly and produced satisfactory results. Last but not least, we at ICHARM sincerely appreciate every lecturer, officer, resident and the Japan International Cooperation Agency for helping ICHARM to conduct this fruitful training course.