

**World Federation of Engineering Organizations
Standing Technical Committees on Disaster Risk Management
2016 Activities, Annual Report (March 2016 to February 2017)**

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Reference 1: Report on 2016 International Symposium on Disaster Prevention and Reduction in
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Reference 3: Front page of e-newsletter (issued in January 2017)

Reference 4: Minutes for WFEO-CDRM face-to-face meeting in Lima, Peru

Table of Abbreviations

WFEO-CDRM Chair
Prof. Toshimitsu Komatsu



1. Name of Committee Secretary

WFEO-CDRM Secretary

Kenichi Tsukahara

WFEO-CDRM Deputy Secretary

Nobuaki Kimura

Dep. of Urban & Environmental Engineering,

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2. List of Committee Members with National Membership and Their Affiliations

The committee has 23 active members from seven countries and regions. They were officially confirmed by their national members in February 2017.

WFEO-CDRM MEMBER LIST

Chair, Vice Chair and leaders

Country	Name and title	Position and affiliation	Remark
Japan	Prof. Toshimitsu Komatsu	Chair, WFEO-CDRM; Vice President, WFEO; Chair, Committee on WFEO, Science Council of Japan; Professor Emeritus, Kyushu Univ.	Active
Japan	Prof. Syunsuke Ikeda	Vice Chair, WFEO-CDRM; Member, Committee on WFEO, Science Council of Japan, Japan Cabinet Office; Professor Emeritus, Tokyo Institute of Technology.	Active
Peru	Dr. Jorge E Alva Hurtado	Vice Chair, WFEO-CDRM; President, Peruvian Association of Professional Engineers; Distinguished member, National Academic of Science of Perú; Member, Pan American Academy of Engineering.	Active
USA	Dr. Vilas Mujumdar	Vice Chair, WFEO-CDRM; USA Consulting Engineer, Retired Program Director, National Science Foundation; WFEO National Member Representative (USA); Member, WFEO Executive Council; President, UPADI, Committee on Disaster Risk Management and Resilience.	Active
India	Er. Ashok K. Basa	Leader, Subcommittee CBNDRM, WFEO-CDRM; Director, B Engineers & Builders Ltd; Immediate-Past President, Institution of Engineers (India)	Active
Japan	Prof. Kenichi Tsukahara	Leader, Subcommittee WDRM, WFEO-CDRM; Secretary, WFEO-CDRM; Secretary, Committee on International Cooperation for Natural Disaster Risk Reduction, Science Council of Japan; Professor, Dept. of Civil Engr., Kyushu Univ.	Active
Japan	Prof. Akira Wada	Leader, Subcommittee EQDRM, WFEO-CDRM; Professor Emeritus, Tokyo Institute of Technology; Council Member, Science Council of Japan; Vice-President, International Association for Bridge and Structural Engineering.	Active

Subcommittee on Water-related Disaster Risk Management (WDRM)

Country	Name and title	Position and affiliation	Remark
Canada	Prof. S. Chan Wirasinghe	Professor, Dept. of Civil Engr., Schulich School of Engr., Univ. of Calgary.	Active
China	Dr. Peng Jing	Vice President, China Institute of Water Resources and China Institute of Water Resources and Hydropower Research (IWHR)	Active
Japan	Dr. Ali Chavoshian	Engineer, CTI Engineering Co. Ltd; Assistant Professor, Iran Univ. of Science and Technology.	Active
Japan	Prof. Syunsuke Ikeda	Same as above	

Country	Name and title	Position and affiliation	Remark
Japan	Dr. Yumio Ishii	Former Chair, WFEO-CDRM; Senior corporate adviser, CTI Engineering Co. Ltd.	Active
Japan	Dr. Kazumasa Ito	Former Secretary, WFEO-CDRM; Chief Engineer, CTI Engineering Co. Ltd.	Active
Japan	Prof. Kazutoshi Kan	Professor Emeritus, Shibaura Institute of Technology.	Active
Japan	Mr. Tsuneyoshi Mochizuki	Councilor, Japan River Association	Active
Japan	Prof. Kuniyoshi Takeuchi	Advisor, the International Center for Water Hazard and Risk Management (ICHARM), Public Works Research Institute (PWRI); Professor Emeritus, Univ. of Yamanashi.	Active
Japan	Dr. Son Hung Nguyen	Engineering Advisor, International Business Division, CTI Engineering Co. Ltd.; The former Secretary, WFEO-CDRM in the first term (2008-2010).	Active
Kuwait	Eng. Talal M. Al-Qahtani	Chair of Kuwaiti Society of Engineers.	Active
Peru	Ing. Loren M. Ruiz García	Researcher, member of Capitulo de Ingenieria Agricola del, Consejo Departamental de Lima del, Colegio de Ingenieros del Peru.	Active

Subcommittee on Earthquake-related Disaster Risk Management (EQDRM)

Country	Name and title	Position and affiliation	Remark
India	Er. Ashok K. Basa	Same as above	
Peru	Dr. Alberto Delgado	Director, technical and project manager in Disaster Risk Reduction Peru International S.A.C.	Active
USA	Dr. Vilas Mujumdar	Same as above	

Subcommittee on Capacity Building for Natural Disaster Risk Management (CBNDRM)

Country	Name and title	Position and affiliation	Remark
Canada	Prof. S. Chan Wirasinghe	Same as above	
China	Prof. Fang Chen	Professor, Institute of Remote Sensing and Digital Earth (RADI) Chinese Academy of Sciences	Active
Kuwait	Eng. Ahmad H. Bahman	Chair, Disaster Risk Management for the Kuwait Chapter, Kuwait Society of Engineers; Head, installation inspection Dept. of Prevention Sector of the Kuwait Fire Services Brigade.	Active
USA	Dr. Vilas Mujumdar	Same as above	

WFEO-CDRM Secretariat

Country	Name and title	Position and affiliation	Remark
Japan	Prof. Kenichi Tsukahara	Same as above	
Japan	Dr. Nobuaki Kimura	Deputy Secretary of WFEO-CDRM; Post-doctoral fellow of Dep. of Civil Eng., Kyushu Univ.	Active

3. Recruitment of New Members

WFEO - standing technical Committee on Disaster Risk Management (WFEO-CDRM) successfully recruited plural new members: Dr. Alberto Delgado (Peru), Dr. Jorge E. Alva Hurtado (Peru), Dr. Peng Jing (China), and Prof. Fang Chen (China). However, less active members chose to resign voluntarily, or at the recommendation of their national members and the World Federation of Engineering Organizations (WFEO) Executive Board.

4. Detailed Budget and Sources of Funds

The financial statement of the WFEO-CDRM from March 2016 to February 2017 during the Fiscal Year 2016 (hereafter FY2016) is discussed. Revenues and Expenditures for the FY2016 are shown below the table. The budget for the FY2016 was spent as planned in the previous year. Most of the funds were used for participation in international meetings/conferences (including registration fees), such as the WFEO Extended Executive Board meetings (Paris, March 2016), the 12th International Conference of the I3R2 (Kandy, Sri Lanka, August 2016), and WFEO Executive Council & committees' meetings, and the World Engineering Conference on Disaster Risk Reduction (WECDRR) (Lima, Peru, December 2016).

WFEO-CDRM Financial Statements for FY2016

Revenue

Content	Unit	Amount
WFEO allocation	EUR	0.00

Expenditures

Content	Unit	Amount
1. WFEO Extended Executive Board meetings (Paris, France, March 21-25, 2016)		
- Consumable printing supplies (e.g., papers)	JPY	2,000
2. I3R2 International Conference (Kandy, Sri Lanka, August 6-7, 2016)		
- Registration fee (two persons)	JPY	70,000
- Consumable printing supplies (e.g., ink, drums, papers)	JPY	10,000
3. International Symposium on Disaster Prevention and Reduction (Tainan, Taiwan Chin, September 27-29, 2016)		
- Consumable printing supplies (e.g., papers)	JPY	10,000
4. WFEO Executive Council & committees' meetings, and WECDRR 2016 (Lima, Peru, December 3-9, 2016)		
- Registration fee (one person)	JPY	67,800
- Consumable printing supplies (e.g., papers)	JPY	10,000
5. Report on WFEO-CDRM activity		
- Editing and proofreading of the report	JPY	30,000
- Consumable office supplies (e.g., envelopes)	JPY	300
6. Other		
- Bank transfer fee		100
Total	JPY	198,400
Total	EUR	1,653.4
Balance (subtracted from WFEO allocation)	EUR	- 1,653.4

Note that 1 JPY = 0.0083 EUR (as of February 2017), and sales tax is included. The deficit cost in the above table and business trip fees, such as hotel and flight costs (~16,300 EUR), were covered by Kyushu University, the Science Council of Japan (SCJ), and the Japan Federation of Engineering Societies (JFES).

5. Report on the CDRM Webpage on the WFEO Homepage

Three areas and items were updated to the website between March 2016 and February 2017, as follows:

Posting of the WFEO-CDRM e-newsletter in 2017

uploaded January 2017

Posting of the minutes of the WFEO-CDRM annual face-to-face meeting in 2016

uploaded December 2016

Update of membership lists (addition of new member and removal of less active members)

updated July 2016

Submissions of the 2015 annual activity report for WFEO-CDRM

uploaded May 2016

Submissions of the strategic plan for WFEO-CDRM

uploaded May 2016

6. Organizational Structure in 2016

The WFEO-CDRM currently consists of three subcommittees: Water-related Disaster Risk Management (WDRM), Earthquake-related Disaster Risk Management (EQDRM), and Capacity Building for Natural Disaster Risk Management (CBNDRM). Dr. Marlene Kanga left the WFEO-CDRM to take her new position (WFEO President Elect). Because she was a vice-chair and leader of CBNDRM, total vice-chairs now number two, and Er. Ashok Basa (India) was assigned as head of CBNDRM. In addition, Dr. Jorge E. Alva Hurtado (Peru), who is the president of the Peruvian Association of Professional Engineers (CIP), was appointed as a vice-chair in December 2016 because the CIP is supposed to host the WFEO-CDRM after December 2017. The other positions have not been changed since September 2013. A detailed membership list can be found in section 2.

Chair

Prof. Toshimitsu Komatsu (Japan)

Vice-chairs

Prof. Syunsuke Ikeda (Japan), Dr. Jorge E. Alva Hurtado (Peru), and Dr. Vilas Mujumdar (USA)

Subcommittee on WDRM

Current leader: Prof. Kenichi Tsukahara (Japan).

Subcommittee on EQDRM

Current leader: Prof. Akira Wada (Japan).

Subcommittee on CBNDRM

Current leader: Er. Ashok K. Basa (India).

Secretary and deputy secretary

Current secretary: Prof. Kenichi Tsukahara (Japan);

Current deputy secretary: Dr. Nobuaki Kimura (Japan).

7. Past Strategies and Action Plans for 2016

The action items for 2016 were planned in February 2016 and approved at the extended Executive Council meetings (Paris, March 2016). They are as follows:

7.1 International Symposium

WFEO-CDRM will hold a joint international symposium on Disaster Risk Management in Tainan, Taiwan China in fall 2016 organized by WFEO-CDRM and National Cheng Kung University.

7.2 International Collaborations

7.2.1 WFEO-CDRM will collaborate with the I3R2 at an international conference held in Kandy, Sri Lanka in early August, 2016. At least one member will be sent to the conference to work with the I3R2 committee members.

7.2.2 WFEO-CDRM will collaborate with a disaster-related committee of the Federation of Engineering Institutions of Asia and the Pacific (FEIAP). We hope to establish good relations with the FEIAP disaster-related committee through potential activities (e.g., collaboration on a WFEO-CDRM international symposium). At the next FEIAP meeting in Perth, Australia, to be held in July 2016, Dr. Kanga (ex CBNDRM subcommittee leader) will attend on behalf of the WFEO-CDRM.

7.2.3 WFEO-CDRM may cooperate with the Earth Sciences and Geo-Hazards Risk Reduction Section (SC/EES/EGR) of UNESCO to publish a handbook of building seismic standards.

7.2.4 WFEO-CDRM may cooperate in an earthquake-related symposium to be held in Lebanon in May 2016.

7.3 Routine Work

We will perform the following tasks annually or otherwise routinely:

- Recruitment of new members.
- Continuous updating of information on the WFEO-CDRM homepage.
- Issuance of WFEO-CDRM e-newsletter (annually).
- Annual face-to-face meeting during WFEO Executive Council & committee meetings, and the WECDRR, in Lima, Peru on December 4, 2016.

8. Results of the Proposed Activities in 2016

Based on the 2016 action plans (see section 7 above), the midterm status and progress made on WFEO-CDRM activities between March 2016 and February 2017 are as follows:

8.1 International Symposium

WFEO-CDRM held a joint international symposium (or workshop) on Disaster Risk Management in Tainan, Taiwan China on September 28, 2016, organized by WFEO-CDRM, JFES, the Tainan City Government, and the National Cheng Kung University - Disaster Prevention Research Center (NCKU-DPRC), Supported by Japan Society of Civil Engineers (JSCE) and Architectural Institute of Japan (AIJ). The symposium/workshop involved some sessions concerning water-related and earthquake-related disasters with ten guest speakers and approximately 50 participants. The detailed program is shown in Reference 1.

8.2 International Collaboration

Prof. Wirasinghe and Dr. Kimura (WFEO-CDRM members) participated in the 12th International Conference of I3R2, held in Kandy, Sri Lanka on August 6-7, 2016. The conference assigned Prof. Komatsu (WFEO-CDRM Chair) as co-chair. A detailed report is shown in Reference 2. In addition, Dr. Kanga (the former WFEO-CDRM member) participated in the FEIAP General Assembly in Perth, Australia in early July 2016 on behalf of the WFEO-CDRM. Er. Basa (WFEO-CDRM member) also participated in the General Assembly. Dr. Kanga exchanged information with Mr. Sugk-Yong Yoon, the chair of the FEIAP Committee on DRM, to discuss future collaboration with the WFEO-CDRM. The disaster-related guideline for building seismic standards was in little progress with some collaboration with researchers of the SC/DRR of UNESCO. The other event, an earthquake-related symposium in Lebanon, was canceled due to lack of information from a certain former WFEO-CDRM member involved.

8.3 Routine Work

We made efforts to recruit new members (four members) to our committee and regularly updated the information on our website. The committee e-newsletter was published in January 2017. We successfully held the WFEO-CDRM annual face-to-face meeting in Lima, Peru on December 4, 2016.

8.4 Other Business

Based on the results of discussion at the last face-to-face meeting of the WFEO-CDRM, we did not change the name “Committee on Disaster Risk Management.” In addition, Prof. Tsukahara (WFEO-CDRM Secretary) worked to implement the Sendai Framework for Disaster Risk Reduction, adopted in the 3rd UN World Conference on Disaster Risk Reduction (Japan, 2015), by collaborating with the national Integrated Research on Disaster Risk Japan committee, the WFEO Japan committee within the SCJ.

9. Subcommittees' and Individual Members' Activities in 2016

9.1 CBNDRM, which Er. Basa currently leads, performed one activity: an international collaboration (information exchange) with the FEIAP-CDRM.

9.2 The WFEO-CDRM secretary, Prof. Tsukahara, served as a chief editor for a special issue of the Journal of Disaster Research (ISSN: 1881-2473 [Print] /1883-8030 [Online]). The special issue is related to the International Symposium on River Technologies for Innovations and Social Systems at the WECC2015 and the Special Session on Disaster Risk Management at the 11th I3R2. It was published in December 2016 (see www.fujipress.jp/jdr/dr/).

9.3 Prof. Chan Wirasinghe (a member of WFEO-CDRM subcommittees WDRM and CBNDRM) and his group members published the following academic papers related to DRM:

H. J. Caldera, O. Ebadi, M. Salari, L. Wang, M. Ghaffari, and S. C. Wirasinghe, (2016) Severity classification for tsunamis based on fatality analysis. Proceedings of the 12th International Conference of I3R2, University of Peradeniya, Kandy, Sri Lanka, August 2016, pp.1-9.

S. Wickramaratne, D. Suriyamudali, J. Y. Ruwanpura and S. C. Wirasinghe, (2016) Recent developments in the international & Indian Ocean tsunami warning process and its benefits to Sri Lanka. Proceedings of the 12th International Conference of I3R2, University of Peradeniya, Kandy, Sri Lanka, August 2016, pp.10-17.

He has also worked on the disaster research project entitled “Analysis of Severity Level of Natural Disasters” with his student (H. Jithamala Caldera in Department. of Civil Engineering, University of Calgary, Canada). The project aligns with the priority of the Sendai Framework for DRR 2015-2030 to improve communication and understanding of disaster risk. Their studies developed a new classification system for disaster severity based on fatalities because of no universal method that provides real magnitude of the natural disasters' severity levels. The classification system is used to understand the disaster continuity and impact.

9.4 Dr. Kimura (WFEO-CDRM deputy secretary) published the following DRM-related paper:

N. Kimura, Y. Sugihara, S. Imagama, N. Matsunaga, A. Tai, A. Hashimoto, and T. Komatsu, (2016) Effective dam use for flood control during a heavy rainfall event. Proceedings of the 12th International Conference of I3R2, University of Peradeniya, Kandy, Sri Lanka, August 2016, pp.183-190.

9.5 Dr. Vilas Mujumdar (WFEO-CDRM vice-chair) participated in the following activities related to Disaster Risk management:

He was invited to and chaired a session at the international symposium on Sustainability, held in January 2016 in Reston, VA, USA, organized by the American Society of Civil Engineers. He chaired a session. The symposium involved 100 invitees and dealt with sustaining urban areas during disasters and other events.

He gave a half-day workshop on “Natural Hazard Risk and Management” at CECAR, the

triannual meeting of the Asian Civil Engineering Coordinating Council (ACECC), in Hawaii on August 30, 2016. He participated in the panel discussion of the inaugural meeting of Technical Committee 21 (TC21) of ACECC, Transdisciplinary Approach for Building Social Resilience to Disasters and presented the paper, “A complex system Framework for Developing Societal Resilience.”

He was invited to give a talk at the annual meeting of the Pan American Academy of Engineering and UPADI in Panama City, Panama, taking place October 25-27, 2016. He was also invited to give a keynote lecture at the WECDRR in conjunction with the WFEO meeting in Lima (Peru) on December 5-6, 2016.

9.6 Dr. Kuniyoshi Takeuchi (a member of the WFEO-CDRM subcommittee WDRM) performed the following activities related to DRM.

In October 2015, he was appointed chair of TC21, Transdisciplinary Approach for Building Societal Resilience to Disasters of the ACECC. The objective of TC21 is similar to that of the WFEO-CDRM. In addition to serving as secretary of the WFEO-CDRM, Dr. Kenichi Tsukahara was also appointed secretary of TC21, makes our collaboration very convenient. Dr. Vilas Mujumdar, the member of the WFEO-CDRM, is also a TC21 member.

On August 23-24, 2016, Dr. Takeuchi attended the 1st Asian Science and Technology Conference on Disaster Risk Reduction and presented his research, entitled “Transdisciplinary approach for scientific knowledge-based decision making,” focusing on the importance of professional societies for scientific knowledge-based decision making at both the local and the national level. Many reactions were received from local NGOs seeking collaboration.

From August 31 to September 2, 2016, Dr. Takeuchi attended the 7th ACECC General Assembly held in Hawaii, and held a TC21 session gathering members from the Philippines, the USA, South Korea, Taiwan China, Japan, and other countries. TC21 officially and enthusiastically launched its action plan.

9.7 Dr. Alberto Delgado (a member of the WFEO-CDRM subcommittee EQDRM) was a member of the Organizing Committee of the WECDRR (see <http://wecdr2016.cip.org.pe/>) to be held in Lima, Peru on December 5-6, 2016. He worked on preparation for the WECDRR.

9.8 Dr. Yumio Ishii (a member of the WFEO-CDRM subcommittee WDRM, former chair) conducted several international activities. For instance, in September 2016, the Federation Internationale des Ingenieurs Conseil (FIDIC), a partner of WFEO, held its annual conference in Marrakesh, Morocco with the main theme “Engineering for the Challenges of Climate Change.” Invited speakers included the Moroccan minister on environment, the Iranian deputy vice-president on environment, and distinguished engineers. Dr. Ishii delivered a presentation at the FIDIC conference on the successful 5th World Engineering Conference and Convention (WECC2015) held in November 2015 in Kyoto (Japan) with the main theme “Engineering: Innovation and Society”, co-organized by WFEO, UNESCO, SCJ and JFES and served by him as chair of the executive

committee (see www.jfes.or.jp/wecc2015/index.html). Dr. Ishii's presentation at the FIDIC conference focused on the conference's discussions concerning countermeasures against disasters caused by climate change, and on the role expected of engineers under the UN SDGs, the Paris Agreement of COP21, and Kyoto Declaration of WECC2015 (a product of WECC2015).

10. Future Action Plans for 2017

In addition to the committee routine works (homepage updates, recruitment of new members, etc.), the WFEO-CDRM will propose 2017 action plans as follows:

10.1 WFEO-CDRM will hold the 11th joint international symposium on Disaster Risk Management in Fukuoka, Japan, in the middle of September 2017, which will be run by the WFEO-CDRM and the local academic organizations: JFES, JSCE, and AIJ.

10.2 WFEO-CDRM will collaborate with the I3R2 for an international conference, which will be held in Shenzhen, China, in early July 2017. At least one member will be sent to the conference in order to work together with the I3R2 committee members.

10.3 WFEO-CDRM will collaborate with a disaster-related committee in FEIAP. We will maintain a good relation with the disaster-related committee through a potential activity.

10.4 The future WFEO-CDRM host would be transferred from the SCJ (Japan) to the CIP (Peru) after early December 2017 when next WFEO general assembly is held in Rome, Italy. The current chair and secretariat will support a smooth transfer of the host's duties.

The above plans will be performed mainly by the WFEO-CDRM secretariat.

10.5 Other potential action plans

10.5.1 WFEO-CDRM may have cooperation with Earth Sciences and Geo-Hazards Risk Reduction Section (SC/EES/EGR) in UNESCO in order to publish a building seismic-standards handbook.

10.5.2 Prof. Tsukahara (WFEO-CDRM Secretary) will participate in the 2017 Global Platform for DRR, which will be held in Mexico and hosted by UNISDR, to discuss the implementation of Sendai Framework (www.unisdr.org/conferences/2017/globalplatform/en).

Reference 1

Report on the 2016 International Symposium on Disaster Prevention and Reduction in Tainan, Taiwan China: In Conjunction with the 10th Joint International Symposium on Disaster Risk Management

An international workshop on disaster prevention and reduction was held on September 28, 2016 in Tainan, Taiwan China (hereafter TC). For the workshop, 10 speakers from TC and Japan—recognized as natural disaster experts—were invited. Approximately 50 participants were attended during two sessions related to earthquake and water disasters despite the fact that the powerful Typhoon Megi had inflicted damage throughout TC the day before. The aim of the workshop was to facilitate information exchange and dissemination activity for disaster prevention and reduction in the East Asia region (where natural disasters often occur). It was organized by the Tainan City Government (Mayor Ching-te Lai), National Cheng Kung University - Disaster Prevention Research Center, NCKU-DPRC, in TC (Professor and Director Chjeng-lun Shieh), World Federation of Engineering Organizations - Committee on Disaster Risk Management, WFEO-CDRM, (Professor Emeritus and Chair Toshimitsu Komatsu), and Japan Federation of Engineering Societies, JFES, (Dr. Junichi Satoh, president). The workshop was also supported by the Japanese academic organizations: Architectural Institute of Japan (AIJ) and Japan Society of Civil Engineers (JSCE). The original program and venue were modified because of the typhoon's impact (see the "Program" below).

Opening remarks were given by Mr. Jun-yan Hou—Executive consultant for the Office of Disaster Management in the Tainan Fire Bureau—instead of the mayor of Tainan. Mr. Hou reported on recent events associated with natural disasters in TC and addressed the importance of collaborations between TC and Japan for disaster prevention. In the earthquake disaster session, Dr. Shin-ping Lee (NCKU-DPRC), the first speaker, discussed the Tainan earthquake that occurred on February 6, 2016. Mr. Hou followed with a description of the reconstruction process after the Tainan earthquake. Speakers from Japan included Mr. Nobuhiko Shiraishi (Shizuoka Prefecture), Prof. Susumu Kono (Tokyo Institute of Technology), Prof Emer. Shoichi Nakai (Chiba University), and Prof. Naoto Tanaka (Kumamoto University). Their respective topics included disaster countermeasures of local governments, development of new materials for seismic strengthening methods, measures against earthquake-induced liquefaction, and disaster-prevention action plans of local communities. Finally, Prof. Chjeng-lun Shieh organized an open-ended discussion in which the speakers and audience actively performed.

Another session associated with water disasters was held simultaneously the building housing the Engineering Department at NCKU; the four speakers included Prof Emer. Toshimitsu Komatsu, Prof. Kenichi Tsukahara (WFEO-CDRM), Prof. Shao-hua Marko Hsu (Feng Chia University, TC), and Dr. Wen-chi Lai (NCKU-DPRC). Their presentation included adaptation to climate change utilizing technical measures, cost-effective land use for protection during water and landslide disasters, bridge collapse mechanisms of flood and rainwater penetration systems in urban areas, and development of a forecast system using the empirical formula for landslides, respectively. Then, the four speakers returned the meeting hall where the earthquake session was held. At the end of two sessions, Dr. Shieh closed the international workshop.

On September 27, speakers visited the Fire Bureau, Tainan City Government; additionally, some speakers look part in a field trip to past natural disaster sites on September 28.

Photos:



Dr. Komatsu's speech



The audience in the hall



Group photo after the water disaster session



Visit to the Fire Bureau, Tainan City

Note: The Workshop Committee took these photos. Copyright © 2016 by the Workshop Committee, 2016 International Symposium on Disaster Prevention and Reduction in Tainan, TC. All Rights

Reserved.

Program in English

I. Earthquake disaster session

Time	Speaker's Topic	Speaker	Remarks
8:15–8:30	Registration		
8:30–8:40	Opening remarks by Tainan mayor		<u>Canceled</u>
8:40–9:20	Description of Meinong Earthquake (02/06/2016)	Dr. Shin-ping Lee (Deputy Director, Disaster Prevention Research Center, National Cheng Kung University)	
9:20–10:40	Earthquake disaster prevention strategies of local governments	Mr. Nobuhiko Shiraishi (Deputy Director, Department of Risk Management, Shizuoka Prefecture, Japan)	
10:40–12:00	Seismic design pertaining to structures and reinforcement strategies for huge earthquakes	Dr. Susumu Kono (Professor, Tokyo Institute of Technology, Japan)	
12:00–13:30	Lunch Break		
13:30–14:50	Measures against earthquake-induced liquefaction	Dr. Shoichi Nakai (Professor Emeritus, Chiba University, Japan)	
14:50–15:10	Tea Time		
15:10–16:30	Earthquake disaster prevention by communities and individuals	Dr. Naoto Tanaka (Associate Professor Kumamoto University, Japan)	
16:30–17:00	Earthquake disaster recovery efforts of local governments	Mr. Chun-yen Hou (Office of Disaster Management -Tainan City Government)	<u>He was replaced to the 2nd speaker.</u>
17:00–17:30	Panel discussion		

II. Water-related disaster session

Time	Speaker's Topic	Speaker	Remarks
13:00–13:20	Registration		
13:20–13:30	Director's opening remarks		<u>Canceled</u>
13:30–14:10	Implementation-oriented technology for coping with natural water-related disasters resulting from climate change	Dr. Toshimitsu Komatsu (Professor Emeritus, Kyushu University, Japan; WFE0 Vice-president/ WFE0-CDRM Chair)	
14:10–14:50	Disasters induced by sediment yields—a historical review of Japan	Dr. Syunshuke Ikeda (Professor emeritus, Tokyo Institute of Technology; Senior Advisor, CTI Engineering Co. Ltd.; Executive Director, Engineering Academy of Japan; WFE0-CDRM Vice-chair)	<u>Canceled</u>
14:50–15:10	Tea Time		
15:10–15:50	Land-use management for water-related disaster mitigation in the age of population decline	Dr. Kenichi Tsukahara (Professor, Kyushu University, Japan; Secretary WFE0-CDRM)	
15:50–16:30	Preventing bridge-collapse disasters by real-time scour observation and reducing urbanization by Low Impact Development (LID)	Dr. Shao-hua Marko Hsu (Professor, Feng Chia University, TC)	
16:30–17:10	Development of evaluation methods for a large-scale landslide-affected area	Dr. Wen-chi Lai (Team Leader, Disaster Prevention Research Center, National Cheng Kung University, TC)	
17:10–17:30	Panel discussion		<u>Canceled</u>

III. Other activities

September 27: Visit to the Tainan City Government's Fire Bureau
September 29: Field trip to Siaolin Village, Kaohsiung City

Reference 2

Report on the participation in the 12th International Conference of the International Institute for Infrastructure Resilience and Reconstruction (I3R2).

Prof. S. Chan Wirasinghe and Dr. Nobuaki Kimura (Photo-A), the members of the Committee on Disaster Risk Management of the World Federation of Engineering Organizations (WFEO-CDRM), participated in the I3R2 International Conference, a gathering of approximately 70 attendees held on August 6-7, 2016 in Kandy, Sri Lanka (www.iiirr.org/iiirr/conference). As the founder of I3R2, Prof. Wirasinghe supported the I3R2 International Conference's organizing committee. Dr. Kimura attended as the representative of Prof. Toshimitsu Komatsu (WFEO-CDRM Chair), a co-chair of the organizing committee, because Prof. Komatsu was unable to participate. Dr. Kimura presented his research concerning natural disasters, entitled "Effective dam use for flood control during a heavy rainfall event" (Photo-B). Prof. Wirasinghe attended the I3R2 Steering Committee meeting, during which the hosting of the next conference (2017) was awarded to Tsinghua University, China. He also co-presented two papers. WFEO-CDRM was unfortunately unable to send several members for a WFEO-CDRM sponsored session this year's conference owing to budget shortages, unlike the successful collaborative session held at last year's conference in Seoul (South Korea). WFEO-CDRM will continuously collaborate with I3R2 to provide an opportunity for the various discussions of effective disaster risk reduction, one of the targets identified in the United Nations Sustainable Development Goals (UN-SDGs).



Photo-A, Prof. Wirasinghe and Dr. Kimura



Photo-B, Dr. Kimura was presenting.

Reference 3

Front page of e-newsletter

(visit to www.wfeo.org/wp-content/uploads/stc-disaster_risk/CDRM_Newsletter_2017_0201.pdf)



World Federation of Engineering Organizations (WFEO) ISSUE 01, January 2017

Committee on DRM Newsletter

Newsletter of Standing Technical Committee on Disaster Risk Management

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Photos in the no.7 face-to-face meeting of WFEO-CDRM in Lima (Peru), on December 3, 2016

DRM committee Action Plans for the 2nd-term (2013-2017)

- **Major purposes:**
 - (1) Active collaboration with other international organizations
 - (2) Awareness campaign though holding international symposiums
 - (3) Practical developments of disaster risk management (DRM) and adaptation technologies under global climate change
- **Subcommittee plans:**
 - (s1) Water-related DRM
 - Development of methods, tools, and guidelines for water-disaster risk management/prevention, warning systems etc. based on a standardized procedure
 - (s2) Earthquake-related DRM
 - Contributions/inputs to an international conference for DRM by engineering views.
 - (s3) Capacity Building for Natural DRM
 - Creation of practical and training manuals for Capacity Building
 - Establishment of web-based communication of information
 - Holding of seminars, etc.

Mid-term report of the WFEO-CDRM, Mar. to Sept. 2016

The 2016 midterm report was submitted to the WFEO headquarters in September 2016. A summary of the report is as follows (For the full report, see the WFEO-CDRM website).

>**Organization structure:** The WFEO-CDRM has maintained its structure in 2015: a Chair, three Vice-chairs, three subcommittee leaders, a secretary, a deputy secretary, and 14 members from 7 countries (see [Page 5](#)). A new vice-chair and a new subcommittee leader (disaster capacity building) were replaced and four new members were added. The number of members was reduced due to strict confirmation processes to maintain the membership of the committee.

>**International Collaboration and Workshop:** The WFEO-CDRM collaborated with I3R2 for an international conference on the I3R2 in Kandy, Sri Lanka, in August 2016 (see [Page 4](#)). It had an international workshop with Tainan City Government and National Cheng Kung University in Tainan, Taiwan China, in September 2016 (see [Page 2](#)).

>**Financial report:** As to the accounting balance for WFEO-CDRM activities during 6 months of 2016, the balance status shows zero revenue due to no allocation from the WFEO headquarter, and spending of 112,400 EUR for all expenses including travelling fees. Spending increases by the final balance. These expenses are supported by WFEO-CDRM secretariat, SCJ, and JFES.

>**Other businesses:** the other planned activities have done or been in progress (a) routine tasks such as recruitment of new members, update of the official WFEO-CDRM website, issue of the E-newsletter; (b) creation and update of DRM guidelines for earthquake, flood-debris, drought and storm-surge disasters; (c) the international collaboration with UN family (UNESCO and UNISDR) and other international organizations (e.g., FEIAP and ACECC) related to the UN-SDGs with potential collaboration with other STCs; and (d) the 7th face-to-face meeting of WFEO-CDRM in December 2016 in Lima, Peru (see [Page 3](#)).

>**Near-future strategic plans:** In 2016, the CDRM will continue to work for promoting international collaborations for the UN-SDGs with UN-bodies and ACECC, maintaining the membership and activity's records/reports, and establishing a cooperative relationship with FEIAP's disaster committee.

Note: ACECC= Asian Civil Engineering Coordinating Council; JFES= Japan Federation of Engineering Societies; FEIAP= Federation of Engineering Institutions of Asia and the Pacific; I3R2= International Institute for Infrastructure Renewal and Reconstruction; SCJ= Science Council of Japan; STCs= WFEO Standing Technical Committees; UNESCO= United Nations Educational, Scientific, and Cultural Organization The; UNISDR= United Nations Office for Disaster Risk Reduction; UN-SDG= United Nations - Sustainable Development Goals.

WFEO-CDRM website: http://www.wfeo.net/stc_disaster_risk_management/

-1-

Reference 4

Minutes for the WFEO-CDRM face-to-face meeting in Lima, Peru

World Federation of Engineering Organizations (WFEO) - standing technical Committee on Disaster Risk Management (CDRM)

Annual Face-to-Face Meeting No. 7

When: December 4 2016, Sunday, 14:00–16:30

Where: Foyer of Peruvian Association of Professional Engineers, Lima, Peru

Meeting Materials: Agenda for WFEO-CDRM Face-to-Face Meeting (one page)

-- Agenda --

1. Opening remarks by the committee chair (Prof. Komatsu)
2. Self-introduction of each participant
3. Meeting summary of the WFEO-CDRM annual face-to-face meeting no. 6 in Kyoto
Appendix I: minutes of the 2015 annual face-to-face meeting
4. Activity reports for 2016

Reporters: Prof. Komatsu, Engr. Basa, etc.

4.1 Committee mid-term report

4.2 Sub-committee activity report presented by Engr. Basa

5. Future activities for 2017

Reporters: Prof. Komatsu, Engr. Basa, etc.

5.1 Important activity plans

- Joint International Symposium on Disaster Risk Management

- Collaboration with I3R2 to be held in Beijing in 2017, among others

5.2 Sub-committee activity plans presented by Engr. Basa

5.3 Other international activities

6. Other businesses

6.1 Introduction of a potential new host

7. Closing remarks and adjournment (Prof. Komatsu)

Note:

Committee Chair: Professor Emeritus Toshimitsu Komatsu (Japan)

Sub-committee Leader (Capacity Building): Engr. Ashok Basa (India)

Moderator and Recorder: Dr. Nobuaki Kimura (Japan)

-- Minutes --

0. Attendance List

Chair

Prof Emer Toshimitsu Komatsu Japan (Vice President at WFEO, Division Chair at SCJ)

Vice Chair

Dr. Vilas Mujumdar United States (Representative, WFEO National Member; AAES)

WDRM Subcommittee Members

Engr. Loren M. Ruiz Peru (Researcher, Department of Agricultural Engineering, Lima Council; Member, CIP)

EQDRM Subcommittee Members

Dr. Alberto Delgado Peru (Director, DRPeru International S.A.C.; Member, CIP)

CBNDRM Subcommittee Members

Engr. Ashok K. Basa India (Director, B Engineers and Builders Ltd; Representative, WFEO National Members)

Secretariat

Dr. Nobuaki Kimura Japan (Deputy Secretary, WFEO-CDRM)

Observers

Prof. Engr. Paul S. Nacouzi Lebanon (Professor, Saint Joseph University)

Prof. Jian-ping Wu	China (Professor, Department of Civil Engineering, Tsinghua University)
Engr. Pratarp Singh	Fiji (President, SPEA; Former President, FIE)
Engr. H.C. Syne Berry	India (President, IET)
Engr. Carmen M. Castillo Aparicio	Peru (Member, CIP)
Engr. Jose C. del Carpio	Peru (Research Assistant, IGP)
Engr. Carlos Benavente Escóbar	Peru (Geologist, Geological Mining and Metallurgical Institute)
Dr. Michael K. J. Milligan	United States (Executive Director and Chief Executive Officer, ABET)
Engr. Blanca N. Bautista Layme	Peru (Member, CIP)
Engr. Carmen E Ortiz Salas	Peru (Lecturer, PUCP)
Dr. Jorge E Alva Hurtado	Peru (President, CIP)
Dr. Jose Machare	Peru (Scientific Director, Geophysical Institute of Peru)
Engr. Carlos F. Herrera Descalzi	Peru (Former Minister of Energy and Mines of Peru)

1. Opening remarks

The committee chair (Prof. Komatsu) extended welcoming greetings to the attendees and emphasized the importance of face-to-face meeting among the WFEO-CDRM members and the audience.

2. Self-introductions

Each participant introduced himself/herself briefly by stating their names and affiliations. A number of participants announced their organizations' activities shortly after.

3. Summary of the 6th face-to-face meeting

The summary of the minutes of the previous face-to-face meeting in Kyoto in November 2015 was reported (see Appendix-I).

4. Activity reports for 2016

The committee chair first addressed the mission and vision of the WFEO-CDRM, and then reported the current membership status and organizational structure. Three new members (one from Peru and two from China) were introduced and their photos were shown. In July 2016, Engr. Ashok Basa of India became the leader in the subcommittee EQDRM. The committee chair went on to report several outputs of the WFEO-CDRM activities, including routine undertakings (e.g., webpage updating and e-newsletter publication) and special ones (e.g., collaborative conference with I3R2 in Sri Lanka in August 2016 and joint international symposium on DRM in Taiwan China in September 2016). He remarked that in the Tainan international symposium, the participants experienced disaster after the powerful Typhoon Megi passed through Taiwan China. He also reported the other results of international activities by WFEO-CDRM members, such as proactive commitments to the Sendai Framework for DRR through the SCJ (ref. www.unisdr.org/we/inform/publications/43291), collaboration with the UN bodies, local activities in the regional engineering organizations (ACECC, FEIAP, FIDIC, and UPADI). In particular, Peruvian members worked for the preparation of the WECDDR, which was held in Lima in December 2016. In addition, the committee chair also mentioned the lack of funding for activities that caused crucial financial issues.

Participants provided a number of comments and raised a few questions; among these are as follows: (a) three subcommittees currently exist; can a new subcommittee be created? Yes, we can make a new one if necessary; (b) is there any big picture in risk reduction for bank and finance businesses? No, at this moment, our goal is to reduce "natural disaster" risk; resilience can be a key to reduce business risk, potentially affected by disasters, through capacity building.

5. Action plans for 2017

Dr. Kimura discussed international collaborations for 2017. Proposed action plans were as follows:

- Two international symposiums on DRM and resilience will be held in Beijing, China in collaboration with I3R2 and in Fukuoka, Japan, with local academic organizations (e.g., JSCE).
- International activities related to the Sendai Framework for DRR will be performed in cooperation with local science and engineering organizations (SCJ, ACECC, and FEIAP). Note that the Sendai Framework for DRR is strongly related to one of the goals (Goal 11) in the UN's SDGs.

Regarding potential action plans in 2017, the participants raised several comments, including the following: (a) it was suggested that this committee needs proactive, specific actions based on strategic plans in order to change a similar activity trend; the committee chair agreed that proactive actions are required in this committee; (b) major impacts by this committee seem to be weak for a specific disaster (e.g., small island disaster).

6. Other businesses

- Engr. Basa, leader of subcommittee CBNDRM discussed his action plans in the subcommittee. To achieve a sustainable development society in Asia where disasters often occur, his action plans considered of two things: the investigation on solution for local disaster issues and the commitment to the implementation of the Sendai Framework for DRR. For the Sendai Framework, the committee chair commented that “Build Back Better” in recovery, rehabilitation, and reconstruction is also important. By extending the subcommittee reports, WFEO-CDRM members and observers had valuable discussions on DRM, resilience, and robust social infrastructure related to the implementation of effective technologies (e.g., IT monitoring of and detecting tools for natural disasters) and the achievement of sustainable societies beyond reliance on technologies.
- The committee chair announced that he had edited a book that describes the state-of-the-art implementation of climate change adaptation.
- The committee chair proposed that a successor host country for the WFEO-CDRM would be Peru; the current host (Japan) must release the committee owing to the WFEO Rules of Procedure. Dr. Jorge E. Alva (CIP President) accepted the succession to host and discussed his expectations on future WFEO-CDRM activities.

7. Closing remarks and adjournment

The committee chair expressed his appreciation to the participants who had contributed to a valuable discussion and requested their continued support to the committee activities.

Abbreviations

AAES	= American Association of Engineering Societies
ABET	= Accreditation Board for Engineering and Technology, Inc.
ACECC	= Asian Civil Engineering Coordinating Council
AIJ	= Architectural Institute of Japan
CBNDRM	= Capacity Building for Natural Disaster Risk Management (subcommittee of WFEO-CDRM)
CDRM	= WFEO-Committee on Disaster Risk Management
CECAR	= Civil Engineering Conference in the Asian Region
CIP	= Colegio de Ingenieros del Perú - Consejo Nacional (Institute of Engineers in Peru – National Council)
COP	= Conference of the Parties
DRM	= Disaster Risk Management
Eng./Engr./Er.	= honorific title of Engineer
DRPeru	= Disaster Risk Reduction Peru
DRR	= Disaster Risk Reduction
EQDRM	= EarthQuake-related Disaster Risk Management (subcommittee of WFEO-CDRM)
FEIAP	= Federation of Engineering Institutions of Asia and the Pacific
FIDIC	= International Federation of Consulting Engineers
FIE	= Fiji Institute of Engineers
I3R2	= International Institute for Infrastructure Renewal and Reconstruction
IEI	= Institute of Engineers (India)
IGP	= Geophysical Institute of Peru
Ing.	= Ingenieur (French), Ingeniero (Spanish), honorific title of Engineer
IT	= Information Technology
JFES	= Japan Federation of Engineering Societies
JSCE	= Japan Society of Civil Engineers
NCKU-DPRC	= National Cheng Kung University - Disaster Prevention Research Center
Prof., Prof Emer	= Professor, Professor Emeritus
PUCP	= Pontifical Catholic University of Peru
S.A.C.	= Sociedad Anonima Cerrada (Private company in Peru)
SCJ	= Science Council of Japan
SC/EES/EGR	= Earth Sciences and Geo-Hazards Risk Reduction Section
SDGs	= Sustainable Development Goals
SPEA	= South Pacific Engineers Association
UN	= United Nations
UNESCO	= UN Educational, Scientific, and Cultural Organization
UNISDR	= UN Office for Disaster Risk Reduction
UPADI	= Pan American Academy of Engineers Association
WDRM	= Water-related Disaster Risk Management (subcommittee of WFEO-CDRM)
WECC2015	= 5th World Engineering Conference and Convention in 2015
WECDRR2016	= World Engineering Conference on Disaster Risk Reduction in 2016, held in Lima (Peru)
WFEO	= World Federation of Engineering Organizations