

TC21: Transdisciplinary Approach (TDA)
for Building Societal Resilience to Disasters



Introduction of TC21 Activity

TC21 Special Session on JSCE Annual Meeting
September 6, 2021

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Asian Civil Engineering Coordinating Council (ACECC)

Established in 1999

14 Societies

ASCE American Society of Civil Engineers, CICHE Chinese Institute of Civil and Hydraulic Engineering, EA Engineers Australia, Fed. MES Federation of Myanmar Engineering Societies, HAKI Indonesian Society of Civil and Structural Engineers, ICEI Institution of Civil Engineers India IEB Institution of Engineers, Bangladesh, IEP Institution of Engineers, Pakistan, JSCE Japan Society of Civil Engineers, KSCE Korean Society of Civil Engineers, MACE Mongolian Association of Civil Engineer, NEA Nepal Engineers' Association, PICE Philippine Institute of Civil Engineers, VFCEA Vietnam Federation of Civil Engineering Associations

Major objective:

Promote collaborative works among international communities towards SDG.

Technical committee and major conference

27 Technical Committees (TC)

Civil Engineering Conference in the Asian region (CECAR)

Objective of TC21:

Promote the transdisciplinary approach (**TDA**) for **Scientific Knowledge-based Decision-making (SKD)** for building societal resilience to disasters

How to design and practice TDA



- Discussion and case studies of TDA practices by members of different sectors
- Perform comparative analyses and describe factors and positive effects of TDA
- Publication and dissemination

TC21 Activities (excerpt)

Date	Activity	Place
2016/8	TC21 Kick off Meeting and Technical session	Hawaii, USA
2016/11	Tech. Survey and TC21 1 st Intl. Symp.	Ormoc, Davao Philippines
2017/3	Intl. Symp. on Natural Disaster Mitigation	Hanoi, Viet Nam
2017/4	Tech. Survey and TC21 2 nd Intl. Symp.	Kathmandu and Chautara, Nepal
2017/5	JSCE “the Global Leaders Symp.”	Tokyo, Japan
2017/7	Presentation at Intl.disaster relief workshop	Taipei, Taiwan
2017/9	Presentation at 7 th Intl. Conf. on Flood Management	Leeds, UK
2017/9	TC21 session at JSCE Annual Convention	Fukuoka, Japan
2017/11	TC21 session at World BOSAI Forum 2017	Sendai, Japan
2018/4	Tech.Survey and TC21 3 rd Intl. Symp.	Hanoi, Viet Nam
2019/4	CECAR8	Tokyo Japan
2019/11	TC21 session at World BOSAI Forum 2019	Sendai, Japan
2020/10	TC21 session at ACECC ECM hosted by PICE	Webinar

Kick-off Meeting and Seminar in CECAR7

TC21 was approved in the 28th ACECC ECM in Gunsan, Korea in **March 2015**.

TC21 held a kick-off meeting and a seminar in CECAR7 **in August to September 2016**.



September 2016



Co-Chairs Dr. Takeuchi and Usec Momo at the TC21 Kick-off Meeting



TC21 Members from Indonesia, Taiwan, and U.S.A.

Launched TC21 Website in October 2016

<http://www.acecc-world.org/TC21>

The TOR, member list, all symposium documents are available in the site.

October 2016

ACECC TC21: Transdisciplinary Approach (TDA) to Build Resilient Societies

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The 21st technical committee of *ACECC* (Asian Civil Engineering Coordinating Council "to Disasters," was established in October 2015 at the Executive Committee Meeting to enhance scientific knowledge-based decision-making on disaster risk reduction.

[Symposium: International Comparison of Scientific Knowledge-based Decision-making on Disaster Risk Reduction](#)
Friday, November 18, 2016, 13:00 - 17:00, Davao City, the Philippines

[Download symposium documents in PDF \(About 90MB\)](#)

The [Kick-off Meeting](#) of and the [Technical Session](#) were held on August 31 and September 1, 2016 in Hawaii.



Kick-off meeting of TC21 in Honolulu, Hawaii



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(Last updated on June 11, 2018)

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ACECC **TC21**
Transdisciplinary Approach (TDA)
for Building Societal Resilience to Disasters

The 21st technical committee of *ACECC* (Asian Civil Engineering Coordinating Council) was established in October 2015 at the Executive Committee Meeting of ACECC held in Gunsan, Korea, to enhance scientific knowledge-based decision-making on disaster risk reduction (DRR) through TDA.

[Third International Symposium on Natural Disaster Risk Reduction](#)



Site Survey in Nam Dinh Province, Vietnam (April 10, 2018)



Meeting with Policy Makers in the Philippines

Ormoc City: 8,000 deaths and missing by Typhoon Uring in 1993

Tacloban City and Palo Municipality: Severely damaged by storm surge caused by Typhoon Haiyan (Yolanda) in 2003

November 2016

Leyte Island



Meeting with Vice-Mayor of Ormoc City, Leyte Island, the Philippines



Meeting with Mayor of Palo Municipality, Leyte Island, the Philippines

Site Survey in the Philippines

Ormoc City:
Establishment of Flood Mitigation Committee covering central and city government, and barangay, the smallest administrative unit in the Philippines. River maintenance works are done by communities.

Tacloban City
Palo Municipality
Ormoc City

November 2016



Slit Dam in Ormoc City, Leyte Island, the Philippines



Resettlement Housings, Tacloban, Leyte Island, the Philippines

Meeting and Symposium in the Philippines

1st TC21 Symposium:

International Comparison
of Scientific Knowledge-
Based Decision-Making
Schemes for Disaster
Reduction



Panel Discussion in
the Symposium



Participants of the
Symposium

November 2016

International Symposium in Hanoi, Feb. 2017



International Symposium on Natural Disaster Mitigation was held in University of Transport and Communication in Hanoi, Vietnam

February 2017

We introduced TC21 and JSCE's activities regarding disaster risk reduction



Meeting with Policy Makers in Nepal

We discussed how scientific knowledge is applied to decision-making.

April 2017



Meeting at regional office of Department of Urban Development and Building Construction (DUDBC)



Stakeholder meeting among academia, government, and private sector

Site Survey in Nepal, April 2017



Historical Former Prime Minister's Office building in Kathmandu damaged by 2015 Nepal Earthquake

April 2017

Reconstruction works of housings in Irkhu Village, Sindhupalchowk District



Meeting and Symposium in Nepal, April 2017

TC21 committee meeting

April 2017



2nd TC21 Symposium on Scientific Knowledge-Based Decision-Making Schemes for Disaster Reduction



JSCE Global Leaders Symposium, May 2017

Video Message by
TC21 Co-Chair, Mr.
Romeo S. Momo

May 2017



Video Message by Mr. Irwin L.
Antonio, Leyte 4th Office,
Department of Public Works and
Highways (DPWH), Philippines



Training in Taiwan and Intl' Meeting in U.K.

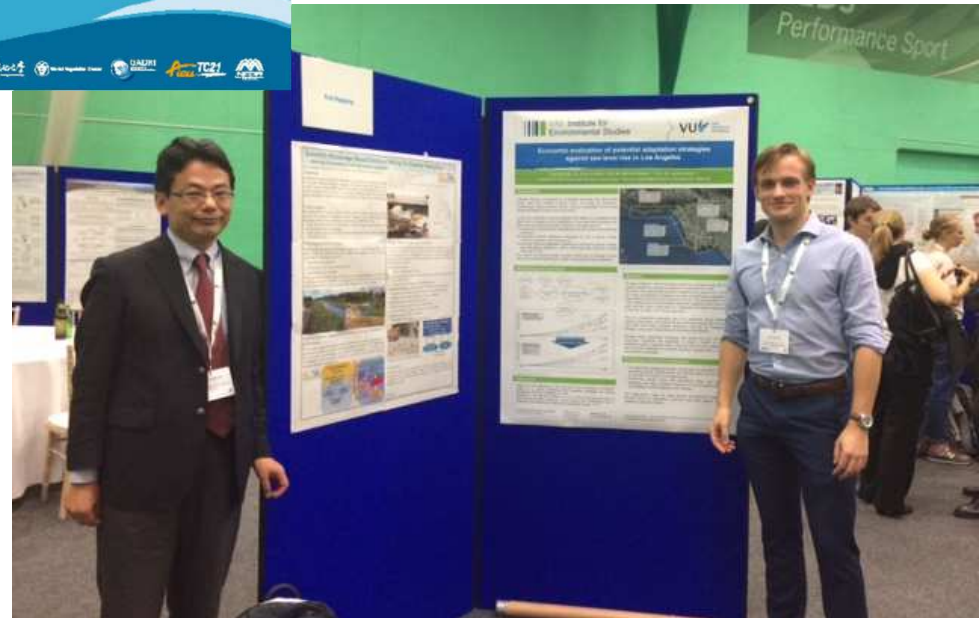


International Disaster Mitigation Training Workshop Co-hosted by National Science and Technology for Disaster Reduction (NCDR), Taiwan, TC21, and others.

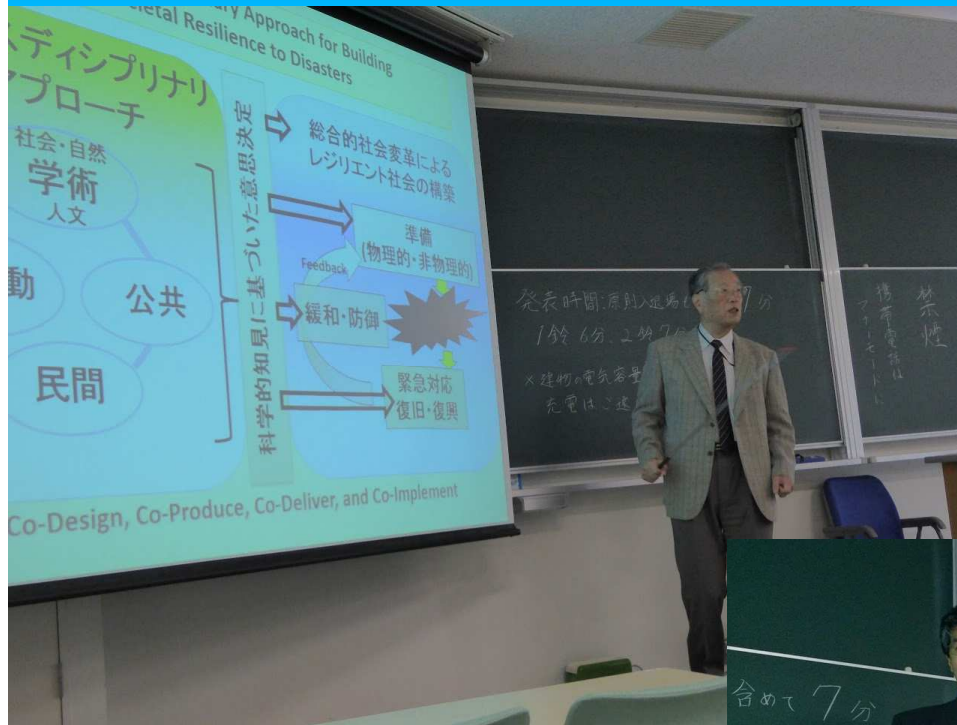
July 2017

September 2017

Dr. Ishiwatari, TC21 member, introduced a case study in Ormoc, the Philippines, and TDA at the 7th International Flood Management Meeting held in Leeds, U.K.



Annual Meeting of JSCE, September 2017



Hosted by ACECC TC21 Support Committee of JSCE, we introduced TC21 activities and case studies in Japan from the point of view of TDA at the Annual Meeting of JSCE held in Fukuoka, Japan.

September 2017



World Bosai Forum, Sendai, November 2017

TC21 held a special session at the World Bosai Forum held in Sendai, Japan. We introduced TDA case studies and measures to remove root causes of disaster.

November 2017



Site Survey in Nam Dinh Province, Vietnam



TC21 members surveyed areas affected by coastal erosion in Nam Dinh Province, Vietnam

April 2018

Damaged church as a monument of storm surge disaster, Nam Dinh Province, Vietnam



Meeting with Government Officials in Vietnam

April 2018



We discussed with local government officials in Nam Dinh Province about the current situation and issues about disaster management.



Third TC21 Symposium in Vietnam



Session 1: Disaster management practices in Vietnam

Session 2: TDA case studies from TC21 member states

April 2018



TC21 Sessions at CECAR8 and JSCE Annual Meeting

TC21 session at JSCE Annual Meeting: Sept. 2019

ACECC TC21 Sessions at CECAR8:
Transdisciplinary Approach (TDA)
for Building Societal Resilience to Disasters



November 2016: Survey of flood prevention works in Ormoc, Philippines
 November 2016: Survey of new settlements in Tacloban, Philippines
 April 2017: Survey of reconstruction after earthquake in Chactara, Nepal
 April 2018: Survey of coastal hazards in Nam Dinh Province, Vietnam
 April 2018: Damaged church as a monument of storm surge disaster

This session presents the concepts, activities, and future issues of Disaster Risk Reduction (DRR), where the main focus is on promoting transdisciplinary approach (TDA) for implementing scientific knowledge-based decision-making.

Date & Time Tuesday, April 16, 2019
 First Session: 14:00-15:30 Second Session: 16:00-17:30

Venue Hotel Metropolitan Ikebukuro (Room: Fuji-2)

April 2019

Program

First Session Results of Case Studies by TC21 Member States

Opening Address and Outline of the Session:
 Dr. Kuniyoshi Takeuchi (TC21 Co-Chair, Emeritus Professor, Yamanashi University)

Preparedness: State, type of DRR, Presenter

- Taiwan:** Preparedness against landslides, Mr. Ting-Chi Tsao (Principal Engineer and Group Chief, Sinotech Engineering Consultants, Inc., Taiwan)
- Indonesia:** Preparedness against tsunami, Dr. Harkunti Rahayu (Prof. Institute of Technology Bandung, Indonesia)

Recovery and mitigation: State, type of DRR, Presenter

- Philippines:** Recovery of city from storm surge, Dr. Senro Kuraoka (Chief Engineer, R&D Center, Nippon Koei Co., Ltd., Japan)
- Vietnam:** Mitigation of coastal erosion, Dr. Pham Hoang Kien (Professor, University of Transport and Communications, Vietnam)
- Bangladesh:** Mitigation of vulnerable buildings, Md. Abdul Malek Sikder (Freelance Consultant, Fellow, Institution of Engineers Bangladesh (IEB), Bangladesh)
- Nepal:** Recovery of buildings from earthquake, Mr. Masashi Inoue (Researcher, EJ-Research Center for Disaster Risk Reduction, Eight-Japan Engineering Consultants, Inc. Japan)
- Pakistan:** Mitigation of vulnerable structures, Dr. Sarosh H. Lodi (Faculty of Civil & Architecture, NED University of Engineering & Technology, Pakistan)
- Japan:** Recovery of cities from tsunami, Dr. Mikio Ishiwatari (Visiting Prof. Graduate School of Frontier Sciences, The University of Tokyo)
- Japan:** Recovery of historical structure from earthquake, Mr. Masaru Arakida (Senior Researcher, Asian Disaster Reduction Center, Japan)

Second Session Summary, Q&A, and Way Forward

Activities of TC21 from 2016 to 2019: Dr. Yoshihiro Katsuhama (Manager, R&D Planning Office, Nippon Koei Co., Ltd., Japan)
Summary of Case Studies: Dr. Senro Kuraoka (Chief Engineer, R&D Center, Nippon Koei Co., Ltd., Japan)
Forthcoming TC21 Activities / Announcement of TC21 Publication:
 Dr. Kenichi Tsukahara (Professor, Faculty of Engineering, Kyushu University, Japan)
Overview Lecture: Dr. Kuniyoshi Takeuchi (TC-21 Co-Chair, Emeritus Professor, Yamanashi University)
Q&A Session: Dr. Kuniyoshi Takeuchi
Closing Remarks:
 Mr. Romeo S. Momo (TC-21 Co-Chair, Grand Master of Freemasonry, Former Undersecretary of DPWH Republic of the Philippines)







Special TC21 session at 2019 World Bosai Forum

The aim of the session was to present the needs of the TDA for disaster risk reduction (DRR) and discuss the current progress and issues. Experts of DRR from Indonesia, Japan, Malaysia, Nepal, and the Philippines presented specific examples to clarify the needs and the merit of TDA.

November 2019



Photos of TC21 Special session at the Sendai International Center

ACECC TC21 Webinar

TC21 Webinar entitled “Transdisciplinary Approach (TDA) for Building Societal Resilience to Disasters under and after COVID-19” was held on October 6, 2020. Case studies from the Philippines and Japan were introduced to show how COVID-19 influences disaster preparedness and response from the viewpoint of TDA.

October 2020



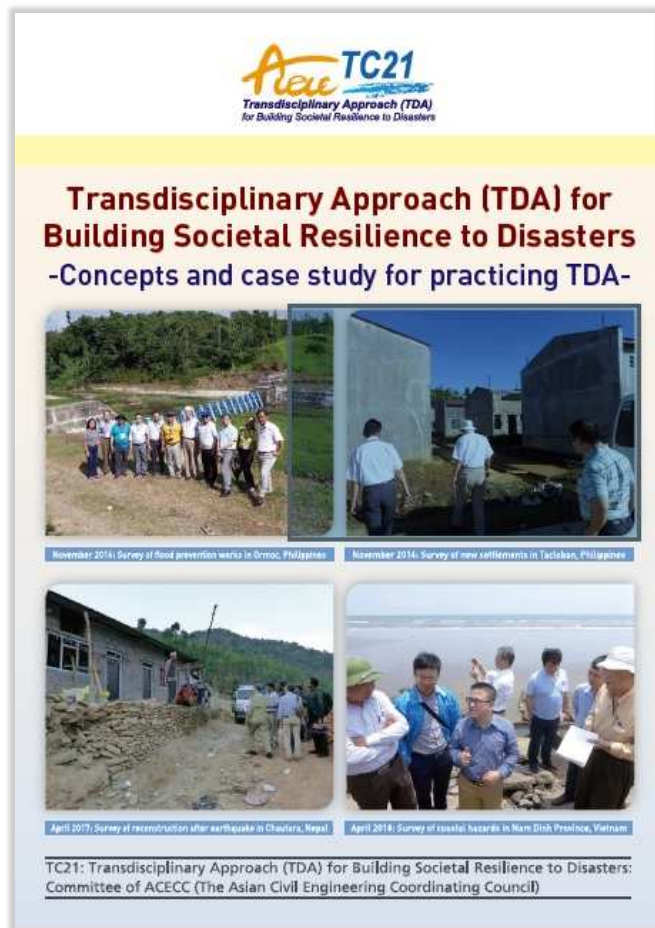
The banner features the ACECC logo at the top left with the tagline "For a Better Quality of Life". The main title is "ASIAN CIVIL ENGINEERING COORDINATING COUNCIL Technical Committee 21 Session". Below this, it specifies the topic: "Transdisciplinary Approach for Building Societal Resilience to Disasters (JSCE&PICE) Under and After COVID-19". It mentions the meeting format: "Video Meeting through the system 'ZOOM'" and the date and time: "October 6, 2020, Tuesday, 20:00-21:00 (Philippine Time)". The host is listed as "PHILIPPINE INSTITUTE OF CIVIL ENGINEERS, INC." with the slogan "SEE YOU VIRTUALLY!". A central graphic shows a world map with a yellow highlight over the Philippines. A small inset image shows a Zoom meeting interface with the number "0/22". At the bottom, there are logos for various member organizations: ASCE (American Society of Civil Engineers), Chinese Institute of Civil and Hydraulic Engineering (CICHE), Engineers Australia (EA), Federation of Myanmar Engineering Societies (Fed. MEE), Indonesian Society of Civil and Structural Engineers (IASSE), The Institution of Civil Engineers (ICE India), The Institution of Engineers Bangladesh (IEB), The Institution of Engineers Pakistan (IEP), Japan Society of Civil Engineers (JSCE), Korean Society of Civil Engineers (KSCE), Malaysian Association of Civil Engineers (MACE), Nepal Engineers' Association (NEA), Philippine Institute of Civil Engineers (PICE), and Vietnam Federation of Civil Engineering Associations (VFCEN).

TC21 Publication

Transdisciplinary Approach (TDA) for building
Societal Resilience to Disasters

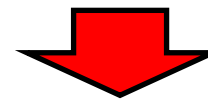
- *Concepts and case study for practicing TDA* -

<http://www.acecc-world.org/TC21/> ISBN: 978-4-8106-1014-7



Discusses the key components and structure of TDA models that were assessed through the case studies.

The contents are intended to clarify the necessity of TDA and catalyze innovative approaches



How to design, practice, and evaluate TDA

TC21: Transdisciplinary Approach (TDA) for Building Societal
Resilience to Disasters

Thank you.

