



Universitas Gadjah Mada

PROGRAM BOOK

Summer Course

Gender & Vulnerability in Disaster Risk Reduction

*Departments of Nursing
Faculty of Medicine, Public Health, and Nursing*

Yogyakarta, 19 - 30 August 2019

ABOUT

Since 2018 which the very first course was successful, Kobe UNESCO Chair on Gender and Vulnerability in Disaster Risk Reduction Support and partner institution committed to continuing the program in 2019.

This year Summer Course provides a two-weeks program with diverse background of contributors. In collaboration with UNESCO Chair Gender in Equality in Disaster Risk Reduction Support, Kobe University Japan, we design the Summer Course not only in-class activities but also workshops, field trips, role play, disaster drill, and cultural exchange.

The co-hosts of this summer course comprise National Kaohsiung University of Science and Technology (Taiwan), Universiti Tun Abdul Rahman (Malaysia), and Mercy (Malaysia).

This year, some contributors from University of Gothenburg (Sweden), UNESCO Jakarta office, Center for Natural Disaster Studies, and Regional Board for Disaster Management Yogyakarta are keen to share their expertise in this course

By holding this program, we expect to increase the awareness of disaster risk reduction endeavors for all community member.

ORGANIZED BY



Universitas
Gadjah Mada



United Nations
Educational, Scientific and
Cultural Organization



UNESCO Chair on Gender and Vulnerability
in Disaster Risk Reduction Support,
Kobe University, Japan

CO-HOST:



NKUST



UTAR
UNIVERSITI TUNKU ABDUL RAHMAN



Mercy
MALAYSIA

CONTRIBUTOR:



UNESCO Jakarta

Regional Science Bureau for Asia and the Pacific



UNIVERSITY OF
GOTHENBURG



DEAN'S WELCOME

Time flies so fast! It feels like only couple weeks ago that I welcomed 30 student participants from divers' countries on the first Summer Course on "Gender and Vulnerability in Disaster Risk Reduction Support" last September. Now, I am more than delighted to welcome you all, forty students from Japan, Taiwan, and of course from Indonesia. At the second year of this organizing summer course, once again I would like to emphasize the urgency of carrying out an integrated disaster risk management.

This summer course is very valuable to improve capacity as well as students competence in disaster management professionally and multidisciplinary. Various activities both indoor and outdoor have been designed in a simulation model to get students closer to the real situation of disaster management. Not to mention, an array of skills and science in disaster management will be delivered by expert speakers who interactively engage you to deepen exploration on gender and vulnerability in disaster risk reduction support.

As the next generation of disaster management team, you play an important role in this course, so enjoy it! Please make the most of a two-week activities to get new insight, to actively live up the discussion for coloring this system with your fresh ideas, and to strengthen this collaborative network of disaster risk reduction support. Still, spare your time and energy for having fun to explore the tasty culinary and the uniqueness of our hometown, Yogyakarta.

Welcome to the 2019 summer course! welcome to Faculty of Medicine, Public Health, and Nursing Universitas Gadjah Mada.

Regards,

Prof. Ova Emilia, M.D., M.Med.Ed., Sp.OG(K)., PhD.

Dean

Faculty of Medicine, Public Health, and Nursing
Universitas Gadjah Mada



DEPARTMENTS OF NURSING

Welcome to Yogyakarta!

On behalf of Departments of Nursing, Faculty of Medicine, Public Health, and Nursing Universitas Gadjah Mada, I welcome you to Summer Course: Gender and Vulnerability in Disaster Risk Reduction.

Since Indonesia experienced various great disaster events which occurred at last 30 years, the Departments of Nursing have concerned and developed Disaster Nursing curriculum to thrive the awareness of disaster risk reduction in community. The implementation to state this concern by holding this course collaborate with Kobe University UNESCO Chair on Gender and Vulnerability in Disaster Risk Reduction Support.

I believe this course provides valuable experiences for students and contributors related to disaster risk reduction. Therefore, I am grateful to the many experts who have come to share their knowledge to all participants. I am sure you will have a fruitful exchange in the next two weeks.

Regards,

Lely Lusmilasari, S.Kp., M.Kes., PhD.

Head, Departments of Nursing

Faculty of Medicine, Public Health, and Nursing

Universitas Gadjah Mada



KOBE UNIVERSITY GENDER EQUALITY OFFICE

It is with great pleasure that I welcome you to this second Integrated Course on Gender and Vulnerability in Disaster. This course is one of the activities of the Kobe University UNESCO Chair on Gender and Vulnerability in Disaster Risk Reduction Support.

A UNESCO Chair is an accreditation given by UNESCO to a project that meets certain standards of excellence for research, education and international collaboration. Our UNESCO Chair project was begun in 2018 and will last for four years. During that time, we will collaborate with our partners at Universitas Gadjah Mada (Indonesia), Universiti Tunku Abdul Rahman (Malaysia), National Kaohsiung University of Science and Technology (Taiwan), MERCY Malaysia and Thammasat University (Thailand) to engage in research, education, and to create guidelines for gender-sensitive disaster risk reduction that takes into account various kinds of vulnerabilities.

The summer course is an extremely important part of this effort, especially because of you, the students. Your questions, observations and perspectives will add new and different dimensions to our work. Communication might be difficult at times, but each one of you has something special to contribute to saving lives and making our world safer. I am so happy to be here together! Thank you!

Prof. Ronni Alexander
Director
Kobe University Gender Equality Office



MESSAGE FROM COMMITTEE

Welcome!

On behalf of the organizing committee, I would like to deliver my warmest welcome to all contributors, speakers, and participants of the Summer Course. This Summer Course provides two-weeks program with diverse background of contributors.

In collaboration with UNESCO Chair Gender and Vulnerability in Disaster Risk Reduction Support, Kobe University Japan, we design the Summer Course not only in-class activities but also workshop, field trip, role play, disaster drill, and cultural exchange.

I hope that all participants to take the time over two-weeks to exchange your experiences.

Also, I would take this opportunity to wish you fruitfull meeting and a pleasant stay in Yogyakarta.

Sincerely

Melyza Perdana, S.Kep., Ns., M.S.

Course Director

Program Details

DAY 1

Time	Monday, Aug 19th	Venue
08.30 – 09.00	Registration	Auditorium, Tahir Building 1st floor
09.00 - 09.30	Opening Ceremony	
09.30 - 10.00	Orientation & Introduction Melyza Perdana, S.Kep., Ns., M.S.	
10.00 -10.15	Break	
10.15 - 12.00	Drama in Education (Pre-Test) Widyawati, S.Kp., M.Kes., PhD.	
12.00 - 13.00	Break	
13.00 – 13.45	Group Activity: Group Dynamics Azam David Saifullah, S.Kep., Ns., MSc.	
13.45 – 14.30	Disaster Concept & Management Syahirul Alim, S.Kp., MSc., PhD.	
14.30 – 15.15	Discussion	
18.00 – 21.00	Dinner & Cultural Performance	

DAY 2

Time	Tuesday, Aug 20th	Venue
08.00 – 08.30	Registration	<u>Ruang Kuliah 1</u> <u>Gedung S3 Lama</u>
08.30 – 10.00	Workshop: Gender Vulnerability and Disaster Prof. Junko Okada	
10.00 - 10.30	Discussion	
10.30 -10.45	Break	
10.45 – 11.45	The Impact of Climate Change Prof. Jin-Long Lu	
11.45 - 12.15	Discussion	
12.15 – 13.30	Lunch	
13.30 – 14.15	Natural Disaster in Indonesia <u>Agung PSBA UGM</u>	
14.15 – 14.45	Discussion	
14.45 – 15.45	Daily Wrap Up	

DAY 3

Time	Wednesday, Aug 21 st	Venue
08.00 – 08.30	Registration	Ruang Kuliah 1 Gedung S3 Lama
08.30 – 09.15	The Role of Forensic Medicine in a Disaster dr. Yudha Nurhantari, PhD., Sp.F.	
09.15 - 09.30	Discussion	
09.30 - 10.15	Mental Health in Disaster Sri Warsini, S.Kp., M.Kes., PhD.	
10.15 – 10.45	Discussion	
10.45 – 11.00	Break	
11.00 – 11.45	Tsunami Marine Hazards on Marine Environment Dr. Mitsuru Hayashi	
11.45 – 12.15	Discussion	
12.15 – 13.30	Lunch	
13.30 – 14.15	Lesson Learned from Indonesia: local community in tsunami preparation in Kemadang Sutono, S.Kp., M.Sc., M.Kep.	
14.15 – 14.45	Discussion	
14.45 – 15.00	Briefing for Field Trip Bayu Fandhi A., S.Kep., Ns., M.Kep.	
15.00 - 16.00	Daily Wrap Up	

DAY 4

Time	Thursday, Aug 22 nd	Venue
08.00 – 15.00	Field Trip to Kemadang Area Community Disaster Preparedness (Tsunami)	Kemadang, Gunung Kidul

DAY 5

Time	Friday, Aug 23rd	Venue
08.00 – 08.30	Registration	Ruang Kuliah 1 Gedung S3 Lama
08.30 – 10.00	Popoki Peace Disaster (Workshop) Prof. Ronni Alexander	
10.15 - 10.30	Break	
10.30 – 11.30	Flood Management Yuk Feng Huang	
11.30 – 11.45	Discussion	
11.45 – 13.00	Lunch	
13.00 – 14.00	SDGs Implementation of UNESCO's Natural Science Sector Ardito Kodijat	
14.00 – 14.30	Discussion	
14.30 – 15.30	Daily Wrap Up	

DAY 6

Time	Monday, Aug 26 th	Venue
08.00 – 08.30	Registration	Ruang Kuliah 1 Gedung S3 Lama
08.30 – 09.15	Humanitarian Assistance in Disaster Management Hafiz Amirrol	
09.15 - 09.30	Break	
09.30 – 10.30	Group Activity Hafiz Amirrol	
10.30 – 11.00	Break	
11.00 – 11.45	Gender and Vulnerability Prof. Ronni Alexander	
11.45 – 12.15	Discussion	
12.15 – 13.30	Lunch	
13.30 – 14.15	Penjelasan Field trip and Assignment Uki Noviana, S.Kep., Ns., MNSc., PhD.	
14.15 – 15.00	Group Discussion about Assignment Uki Noviana, S.Kep., Ns., MNSc., PhD.	
15.00 – 16.00	Daily Wrap Up	

DAY 7

Time	Tuesday, Aug 27th	Venue
08.00 – 15.00	Field Trip to BPBD DIY (Regional Board for Disaster Management) & Shelter Mountain Area: Cangkringan	BPBD & Huntap

DAY 8

Time	Wednesday, Aug 28th	Venue
08.00 – 15.00	Disaster Drill: Preparedness & Response <ul style="list-style-type: none">• Table Top Exercise• Tactical Floor Game	Auditorium, Tahir Building 1st floor
15.00 – 16.00	Daily Wrap Up	

DAY 9

Time	Thursday, Aug 29th	Venue
08.00 – 15.00	Drama in Education Prof. Margret Lepp Disaster Drill Recovery <ul style="list-style-type: none">• Table Top Exercise• Tactical Floor Game	Auditorium, Tahir Building 1st floor
15.00 – 16.00	Daily Wrap Up	

DAY 10

Time	Friday, Aug 30th	Venue
08.30 – 11.30	Sharing Experience (Wrap Up)	Auditorium, Tahir Building 1st floor
12.00 – 14.00	Lunch and Closing Ceremony	

SPEAKERS



Prof. Ronni Alexander
Gender Equality Office
Kobe University, Japan



Prof. Junko Okada
Gender Equality Office
Kobe University, Japan



Prof. Margret Lepp
Sahlgrenska Academy
University of Gothenburg, Sweden



Prof. Jin Long Lu
National Kaohsiung University of Science
and Technology, Taiwan



Ardito M. Kodijat
Disaster Risk Reduction & Tsunami
Information Unit
UNESCO Office Jakarta, Indonesia



Syahirul Alim,
S.Kp., MSc., PhD
Department of
Basic & Emergency Nursing
Universitas Gadjah Mada



Sri Warsini,
S.Kep., Ns., M.Kes. PhD
Department of
Mental Health & Community Nursing
Universitas Gadjah Mada



Dr. Mitsuru Hayashi

Kobe University Research Center
for Inland Seas (KURCIS), Japan



Sutono,
S.Kp., M.Sc., M.Kep.
Department of
Basic & Emergency Nursing
Universitas Gadjah Mada



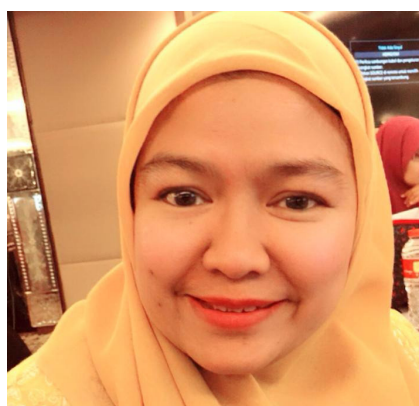
Yuk Feng Huang

Universiti Tun Abdul Rahman,
Malaysia



Hafiz Amirrol

Strategic Planning
MERCY Malaysia
Asian Disaster Reduction & Response Network



Widyawati,
S.Kp., M.Kes., PhD.

Department of
Pediatric & Maternity Nursing
Universitas Gadjah Mada



**dr. Yudha Nurhantari, Sp.
F.M., PhD.**

Department of
Forensic Medicine & Medicolegal
Universitas Gadjah Mada



**Dr. Agung Harijoko,
ST., M.Eng.**

Center for Natural Disaster Studies
Universitas Gadjah Mada

COURSE ORGANIZER



**Uki Noviana,
S.Kep., Ns., MNSc., PhD**

Department of
Mental Health & Community Nursing
Universitas Gadjah Mada



**Melyza Perdana,
S.Kep., Ns., M.S.**

Department of
Medical and Surgical Nursing
Universitas Gadjah Mada



**Ariani Arista Putri P,
S.Kep., Ns., MAN., DNP**

Department of
Basic & Emergency Nursing
Universitas Gadjah Mada



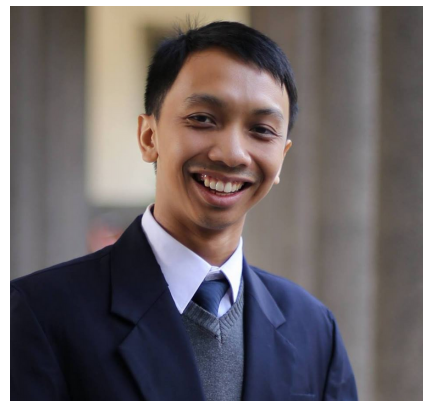
**Happy Indah Kusumawati,
S.Kep., Ns., MN.Sc.**

Department of
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**Bayu Fandhi A.,
S.Kep., Ns., M.Kep.**

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**Ery Yanuar A.B.S.,
S.Kep., Ns., MN.Sc (IC).**

Department of
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Azam David Saifullah,
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Alenda Dwiadila Matra
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ORGANIZING COMMITTEE

Course Director

Melyza Perdana, S.Kep., Ns., M.S.

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Uki Novianna, S/Kep., Ns., MNSc., PhD.

Alenda Dwiadila Matra Putra, S.Kep., Ns.

Secretary

Alenda Dwiadila Matra Putra, S.Kep., Ns.

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Fasilitator

Bayu Fandhi Achmad, S.Kep., Ns., M.Kep.

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Kurnia Yuliandari, S.Kep., Ns., MSc.

Happy Indah Kusumawati, S.Kep., Ns., MNSc.

Azam David Saifullah, S.Kep., Ns., MSc.

Accommodation, Logistic, Transportation

Mudi Raharjo

Hanafianti Nugrahani

Tubagus Laka

Syaiful Ghozali

Publication and Public Relation

Ayyu Sandhi, S.Kep., Ns., MSc.

Aurum Etsa

Ina Amali Fauziah

Hadi Maulana Yusuf

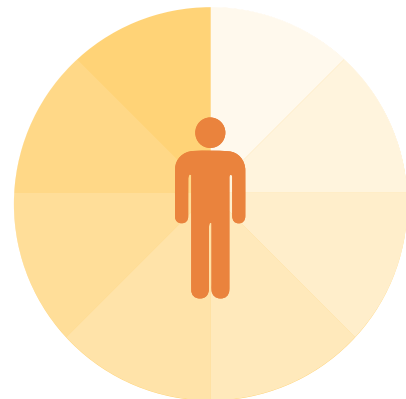
Sponsorship

Hasna Arifa Setiyadi

Dhea Ayu Daniswari

Dea Arista Febrianti W

Nia Lestari Muqarohmah



VENUES

Faculty of Medicine, Public Health, and Nursing
Universitas Gadjah Mada



Tahir Building



Gedung S3

FIELD TRIP



**BPBD Sleman DIY
Regional Board for
Disaster Management**



Kemadang Area



**Merapi Mountain
Shelter**

COURSE ATTIRE



INTERNATIONAL COLLABORATION CONTACT PERSON

Don't hesitate to contact our International team if you find any issues regarding to exchange program.

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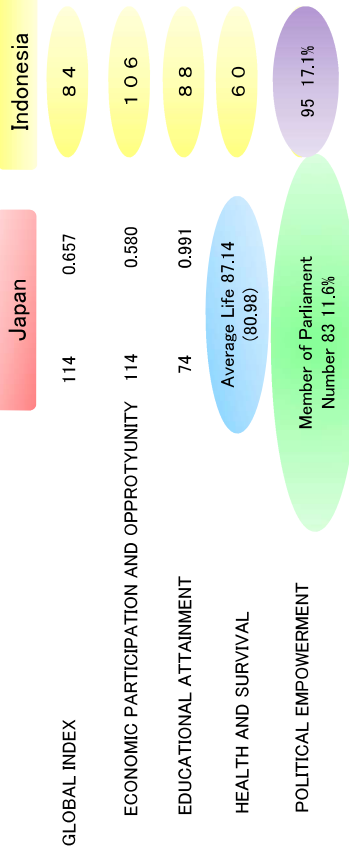
office hours: 07.15-16.15 (Mon-Thurs)

07.15-15.00 (Fri)



*Program
Handouts*

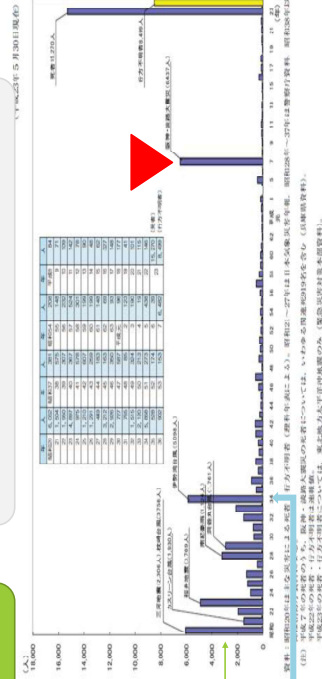
Actual situation in Japan
Gender Gap Index World Ranking 2017



http://www3.weforum.org/docs/WEF_GGGR_2017.pdf

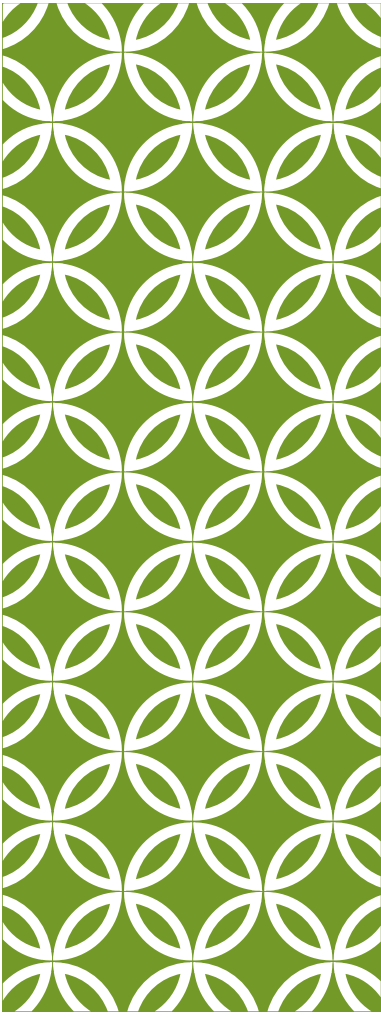
Mikawa Earthquake 1945/01/13
2306
Makurazaki Typhoon 1945/09/27
3756

The number of deaths or missing by disaster in Japan 1945~2011



Isewan Typhoon 1959/09/26
5098

JICE 国土技術研究センター
Japan Institute of Geography and Engineering
<http://www.jice.or.jp/knowledge/japan/commentary09>



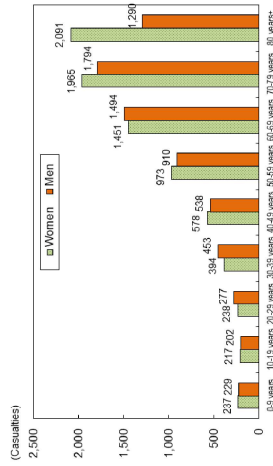
GENDER EQUALITY IN DISASTER RISK REDUCTION THE JAPANESE EXPERIENCES

Junko OKADA
Kobe University
2019/08/18-30

CONTENT

- Disaster in Japan
- Issues concerning gender equality which became apparent through our experiences with the Great East Japan Earthquake
- Basic Disaster Management Plan Amended (December 2011, September 2012, January 2014)
- Guidelines for disaster planning, response and reconstruction from a gender-equal perspective (May 2013)
- Actual situation in Japan
- Let's think 'How to promote the gender equality'

東日本大震災 ジェンダー・年齢別死者 (岩手、宮城、福島)



(Notes) 1. The data refers to Causes of Death for Casualties in the Great East Japan Earthquake, 11.03.11-13.12. National Police Agency
2. Figures do not include casualties whose gender or age is not identified.

http://www.gender.go.jp/english_contents/about_danjo/whitepaper/pdf/ewp2012.pdf

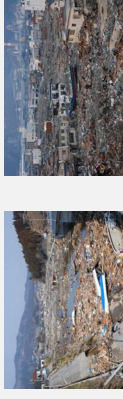
The Great Hanshin-Awaji Earthquake



(平成17年12月22日現在) 2005/12/22

- 死者 the number of deaths 6,434人
- 負傷者 the number of injured people 43,792人
- 全壊及び半壊棟数 the number of houses or buildings fully or partially destroyed 249,180棟

The Great East Japan Earthquake

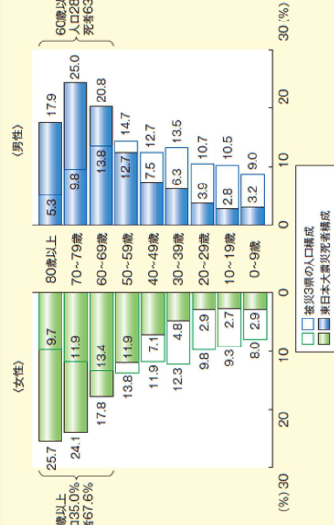


<https://www.city.yokohama.jp/www.contents/1640802548/index.html>

(平成24年6月30日警察庁発表) 2012/5/30

- 死者 the number of deaths 15,859人、行方不明者 the number of missing 3,021人
- 負傷者 the number of injured people 5,942人(2011/10/17)
- 全壊 10都県 約13万棟
- The number of fully destroyed houses or buildings : about 130,000 in 10 prefecture
- 半壊 13都道県 発生、約26万棟
- The number of partially destroyed houses or buildings : about 260,000 in 13 prefecture

第1-特-3 図 東日本大震災における男女別死者数と地域人口の年齢構成比較 (岩手県・宮城県・福島県)

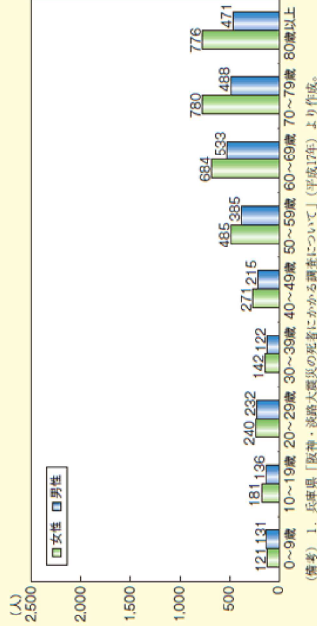


(備考) 1. 警察庁「東北地方太平洋沖地震による死者の死因等について」(2011-2013.12)及び関係者「国際調査」(平成22年)
2. 岩手県「女性死者を100%としたときの各年齢階級の構成比(%)」
3. 被災3県の人口構成は、年齢別詳を載く。東日本大震災被災者構成は、性・年齢不詳を除く。

http://www.gender.go.jp/about_danjo/whitepaper/n24/zentai/html/zuhyo/zuhyo01-00-03.html

内閣府 平成24年男女共同参画白書

第1-特-2 図 阪神・淡路大震災の男女別・年齢階層別死者数 (兵庫県)



(備考) 1. 兵庫県「阪神・淡路大震災の死者にかかる調査について」(平成17年)より作成。
2. 性別不詳、年齢不詳は除く。

阪神淡路大震災 男女別・年齢階層別死者数
内閣府 平成24年男女共同参画白書

http://www.gender.go.jp/about_danjo/whitepaper/n24/zentai/html/zuhyo/zuhyo01-00-02.html

Japanese Gender Equality Bureau described the response after the Great East Japan Earthquake as follows.

It is **difficult** to carry out response measures from the perspective of gender equality immediately after a natural disaster occurs.

Immediately after the earthquake struck, the Japanese government requested that response measures be carried out while considering the needs of women or families with children.

However, this was **not widely recognized in the front lines of the response efforts.**

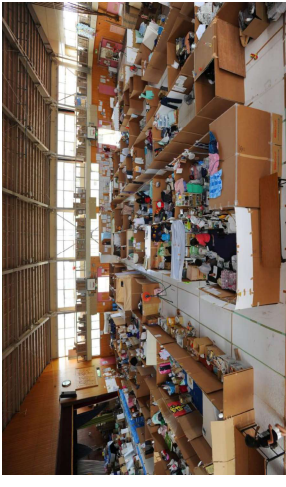


Differences between the needs of men and women are **not considered** when carrying out emergency response measures.

• There is a shortage of menstrual products and women's underwear. Since most of the people who run the evacuation areas are men, it is difficult for women to receive and ask for the necessary supplies.



Evacuation site



Elementary school/junior high school gymnasium is designated as a shelter

Issues concerning gender equality which became apparent through our experiences with the Great East Japan Earthquake
By Japanese Gender Equality Bureau

- * It is **difficult** to carry out response measures from the perspective of gender equality immediately after a natural disaster occurs.
- * Differences between the needs of men and women are **not considered** when carrying out emergency response measures.
- * Women are **not involved** in the decision-making process for disaster management and recovery policies.



There is no space where women can nurse their babies or change in the evacuation areas.



The withdrawal or isolation of men in the temporary housing became a problem.

- Unemployment
- Death of his wife or family
- Loss of property

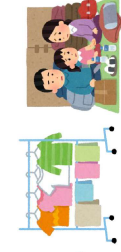


Masculinity

- isolation
- alcoholism
- dementia



There is no space where women can hang up their clothes, so they are unable to hang up their underwear.



Women prepared the meals for people in the shelter



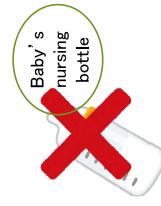
Not paid

Men took out the rubble of the town caused by Tsunami.



paid

Saving for emergency



○ **Administration of the Evacuation Areas**

The plan clearly states that the evacuation areas must be administered by considering the needs of women as well as families with children by doing the following

- : promotion of the participation of women in administering the evacuation areas
- : provision of special spaces for women (clothes drying areas, changing rooms, and nursing rooms)
- : the distribution of menstrual products and women's underwear by women; ensuring the safety of the evacuation area, etc.

Women are not involved in the decision-making process for disaster management and recovery policies.

- Percentage of female members for prefectural disaster management councils: 3.6% (There are no female members in 12 prefectures.) *As of April 2011
- Percentage of female members involved with formulating recovery plans in committee meetings: 11.2% *As of April 2012; Data for 38 municipalities located in coastal areas.

EX.

Iwate Prefecture Committee for reconstruction	
2013	19 participants (1 woman) 5%
2018.3	25 participants (4 women) 16%

○ **Administration of Emergency Temporary Housing**

The plan clearly states that the emergency temporary housing must be administered by assuring the safety of the residents, providing psychological health care to prevent solitary death or withdrawal, building a community among the residents, promoting gender equality making arrangements so that the views of the residents, beginning with women, are reflected.

It is important to understand how to carry out emergency response measures from the perspective of gender equality even before a natural disaster occurs.



How to promote the gender equality?

Guidelines for disaster planning, response and reconstruction from a gender-equal perspective (May 2013) Japanese Gender Equality Bureau

Guidelines and Instruction handbook

Presenting basic matters, based upon disaster experiences of the past, to be used as guiding principles for local governments to take actions and respond from a gender equality perspective in prevention, emergency, recovery and reconstruction, and other stages.

Expecting local governments to draw up or revise local disaster management plans, shelter management manuals, and so on, to draw up guidelines or manuals individually, and to establish organizations for disaster prevention and reconstruction from a gender equality perspective.

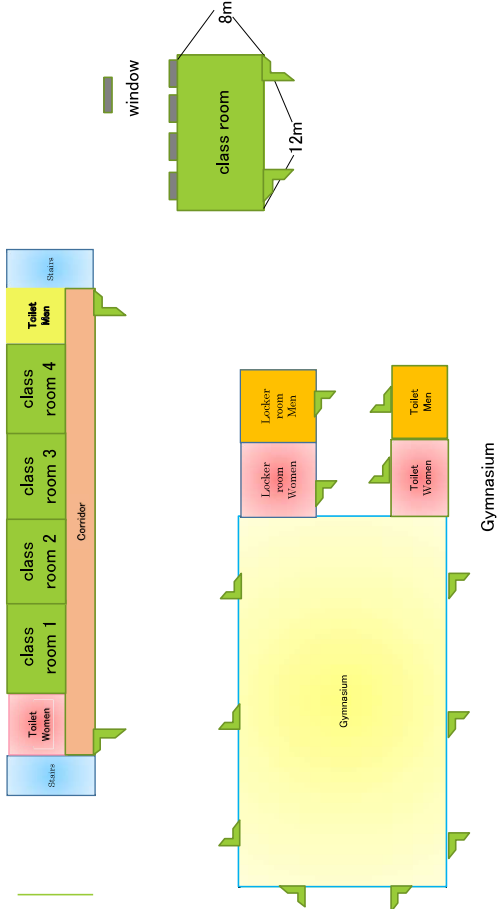
Being available for reference to volunteer deals with fire or flood, welfare and child commissioners, community disaster prevention organizations, NPOs, NGOs, community groups, companies, universities, and other organizations that engage in disaster prevention or reconstruction activities.

<http://www.gender.go.jp/policy/naigai/shishin/pdf/shishin.pdf>

Guidelines for disaster planning, response and reconstruction from a gender-equal perspective (May 2013) Japanese Gender Equality Bureau

Basic concepts

- : promotion of gender equality in daily life is the foundation of disaster prevention
- : position women as the leader
- : Consider the different effects of disasters between men and women
- : Respect human rights and secure safety and peace of mind while respecting male and female differences
- : Private sector and government collaborate to promote gender equality



Climate change, what is it?

- A significant long-term change in the average weather of a city, a region, or Earth.
 - Could be a change in average annual rainfall.
 - Or, could be a change in average temperature for a month or season. *Source: NASA, What is climate change?*

There was no (less) rain last year.

We just experienced the warmest winter on record.

Climate Change: Impacts, Mitigations, and Adaptations

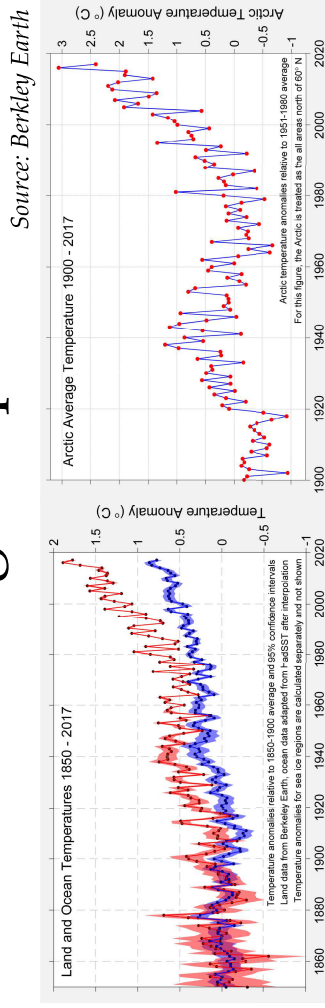
Lu, Jin-Long

@ Gadjah Mada University, Indonesia, 2019

Our climate is changing...

- One of the evidence is ...

Increasing temperature!



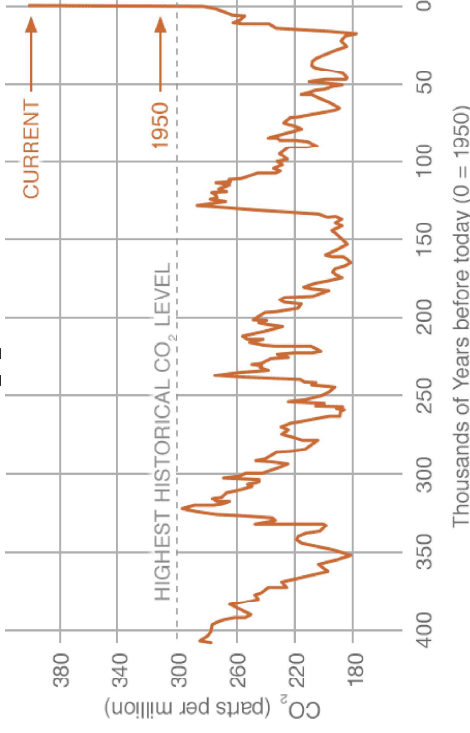
Climate vs. Weather

Weather is the changes we see and feel outside from day to day.

Climate is the usual weather of a place; it can be different for different seasons or places. → Average weather

Carbon Dioxide (CO₂)

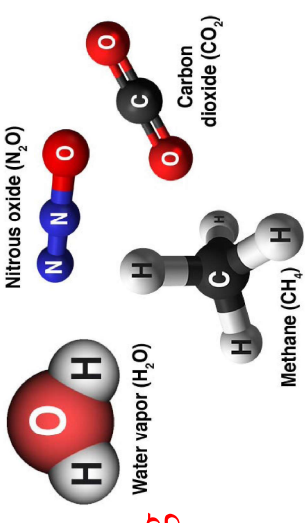
CO₂ level: 413.9 ppm in June 2019!



But, how come?

- Why the climate is getting warmer (and warmer)?

The natural greenhouse gases (GHGs) are changing due to increasing human activities.



What's the consequence of getting warmer climate?

- Melting polar ice and glacier
- Rising sea levels
- Causing severe droughts
- Longer fire seasons

What can GHGs do?

- The Greenhouse Effect
- Sunlight reaches the Earth, some energy is reflected back into space. Some is absorbed and re-radiated as heat.
- Most of the heat is absorbed by the greenhouse gases and reflected in all directions, warming the Earth.

What can we do?

Mitigation and Adaptation

- Mitigation: reducing emissions of and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere
 - The causes of climate change
- Adaptation: adapting to life in a changing climate – involves adjusting to actual or expected future climate
 - The impacts of climate change

~ NASA

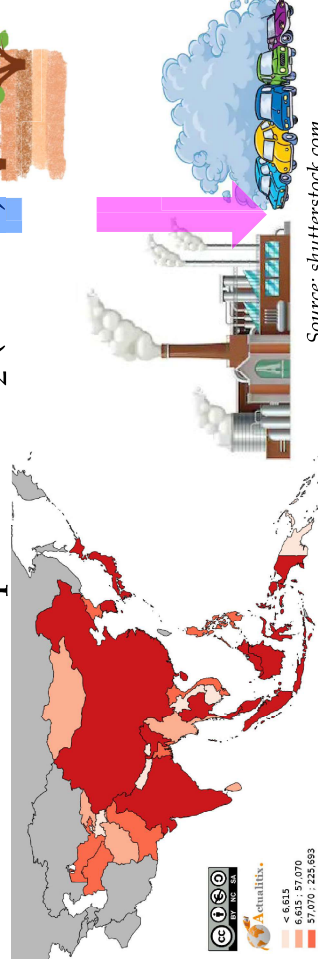


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Mitigation – Reducing the source

- What/who generates CO₂?
- What/who captures CO₂ (“sink”)?



Source: shutterstock.com



Actualities
< 6.65
6.65 to 24.63
> 24.63

CO₂ emissions (kt)

Source: The World Bank, 2011



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There're more ...

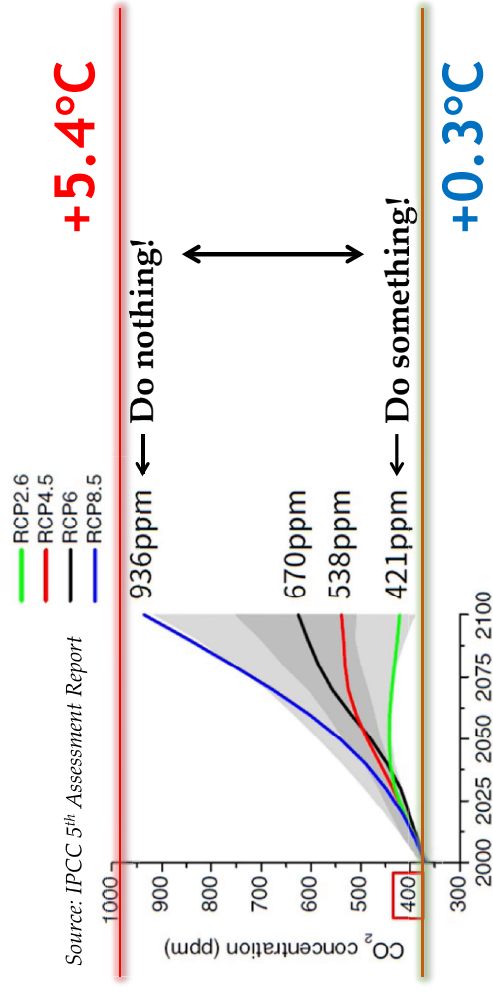
- Extreme weather event
 - Hot, cold, wet, dry
- Water scarcity
- Ecological crisis
- Disease
- Enormous property loss



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The future is in our hands



Source: IPCC 5th Assessment Report

RCP2.6
RCP4.5
RCP6
RCP8.5

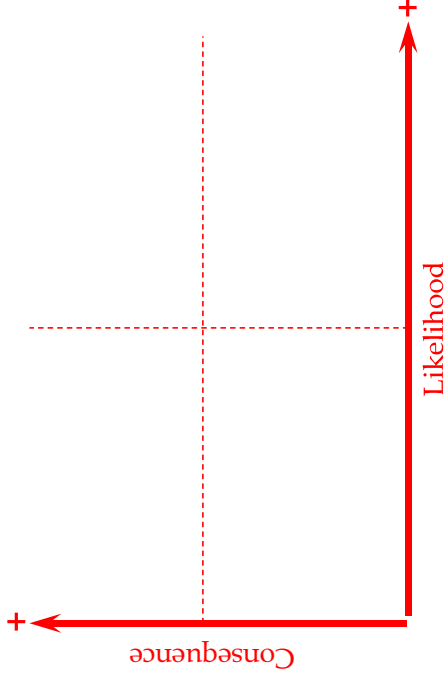


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Adaptation - Adapting to life in a changing climate → How?

- Risk assessment matrix



Adaptation - Adapting to life in a changing climate → How?

- Extreme disasters/risk management
- Lands and forests management
- Coastline management
- Water/food resource management
- Infrastructure protection/upgrades

Reactivation! Resilience! Reduction!

Mitigation – Reducing the source → How?

- Education
 - Know/Learn ...
- Efficient
 - Use ... efficiently
- Economic means
 - Cap and trade

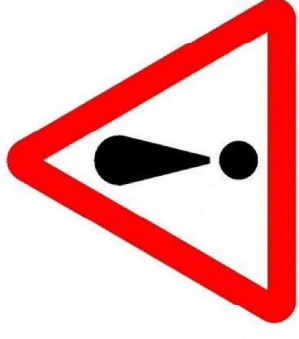
Take actions!
Just enough!
Less is more!

Adaptation - Adapting to life in a changing climate

- Who is the most vulnerable?



Thank you.

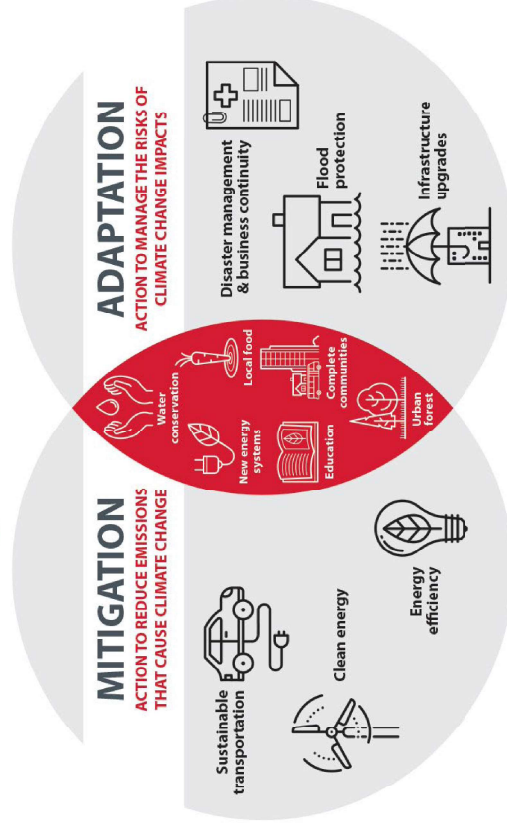


Maladaptation!

- *Adopting actions that ignore local relationships, traditions, traditional knowledge, or property rights, leading to eventual failure*
- *Adopting actions that favor directly or indirectly one group over others leading to breakdown and possibly conflict*



Building Climate Resilience



Source: Calgary's Climate Program



POPOKI IS MY FRIEND AND HELPER

- WE WANT TO MAKE A WORLD WHERE EVERYONE FEELS SAFE AND ALL LIVING THINGS ARE RESPECTED



2019/8/23

3

TALKING AND LISTENING IN A FOREIGN LANGUAGE IS HARD!

- COMMUNICATION CAN BE HARD! SO.....
- LISTEN WITH:
 - RESPECT
 - CARING
 - PATIENCE
- SPEAK WITH:
 - RESPECT
 - CARING
 - PATIENCE
- RESPECT PRIVACY AND SILENCE
- HELP EACH OTHER



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4

2019 UNESCO Chair Integrated Summer Program on Gender and Vulnerability in Disaster Recovery Support
Gadjah Mada University
23 August 2019 8:30-10:00



POPOKI, PEACE AND DISASTER

RONNI ALEXANDER, PH.D

PROFESSOR, KOBE UNIVERSITY GRADUATE SCHOOL OF INTERNATIONAL COOPERATION STUDIES
ADVISER TO THE UNIVERSITY PRESIDENT (DIVERSITY); DIRECTOR, KOBE UNIVERSITY GENDER EQUALITY OFFICE

DIRECTOR, POPOKI PEACE PROJECT



HELLO, I'M POPOKI!

I want to be your friend!

Won't you join me in thinking about peace?



I have 4 books!



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2

LET'S TRY POGAI! (POPOKI'S YOGAI!)



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7

WHAT WE WILL DO TODAY

- PART 1: GETTING STARTED
 - POPOKI PEACE PROJECT
 - 2011.3.11
 - POPOKI FRIENDSHIP STORY
- PART 2: DISASTER AND SAFETY
- PART 3 DISASTER, SAFETY AND PEACE



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5

THE POPOKI PEACE PROJECT (EST. 2006)

- POPOKI PEACE PROJECT
 - WE KNOW THE WORLD FIRST THOUGH OUR BODIES
 - WE CAN'T CREATE WHAT WE CAN'T IMAGINE
 - WE'VE NEVER EXPERIENCED TRUE PEACE
 - USE SENSES, EMOTIONS, ENTIRE BODY TO FEEL, IMAGINE, EXPRESS, AND CREATE PEACE
 - USES POPOKI'S PEACE BOOKS; EMPHASIZES ART AND CRITICAL IMAGINATION
 - WORKSHOPS, SEMINARS, EVENTS, ETC.



2016/11/01

8

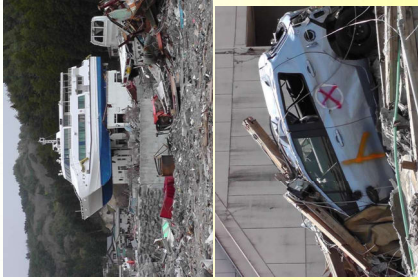
PART 1 GETTING STARTED



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6

Popoki wants to help!



- CONDITIONS FOR POPOKI'S SUPPORT
 - BASED ON POPOKI'S PHILOSOPHY
 - MULTI-DIRECTIONAL, NOT ONE-WAY
 - FOCUS ON LOCAL BUT MAKE GLOBAL VISIBLE
 - ANYONE/EVERYONE CAN PARTICIPATE
 - SUSTAINABLE
 - INEXPENSIVE

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11

ポ一ポキ劇場
Popoki Theatre



ポ一ポキの本を少し読もう!

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9

POPOKI'S FRIENDSHIP STORY PROJECT



(2011.4)

- The name:
- ✓ Each drawing has a story
 - ✓ Many express what the artist can't or doesn't say
 - ✓ When people draw, they share their stories
 - ✓ When they share, they can begin to become friends



(2019.2)

- A VERY LONG CLOTHI (45CM X 500CM)
- COLORED FELT PENS
- DRAWING FREELY
- EVERYONE CAN PARTICIPATE

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12

11 MARCH 2011



projectnextjapan
<https://www.youtube.com/watch?v=ovG1bp9upz0>

2016/11/01

10

PERFORMANCE TIME!

- STAND AND FORM A BIG CIRCLE
- FACE THE OUTSIDE OF THE CIRCLE AND CLOSE YOUR EYES
- WAIT FOR INSTRUCTIONS



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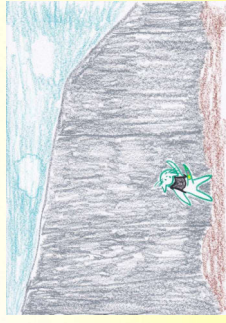
15

TWO OF THE IMPORTANT THINGS WE LEARNED!

- SOMETIMES PEOPLE USE DRAWINGS TO SAY THINGS THEY CAN'T OR DON'T SAY IN WORDS

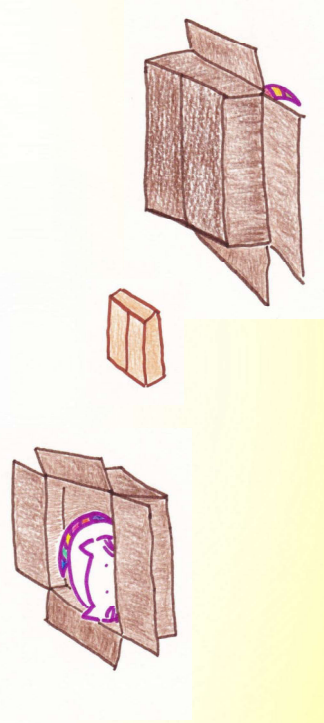


- BEING SAFE AND FEELING SAFE ARE NOT NECESSARILY THE SAME



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13



どんな場所なら安心できる？ ポーポキは、段ボール箱に入ると安心します。
Where do you feel safe? Popoki feels safe when he climbs into boxes.

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16

PART 2 DISASTER AND SAFETY



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14

WHAT WOULD YOU INCLUDE?

- YOU ARE DISASTER RISK REDUCTION LEADERS.
- YOU WANT YOUR COMMUNITY TO MAKE EMERGENCY BAGS.
- YOU MUST MAKE A SAMPLE LIST OF THE CONTENTS
- DECIDE ON 10 ITEMS
- WILL YOU INCLUDE SOMETHING TO MAKE THE OWNER FEEL SAFE?



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19

WHAT MAKES YOU FEEL SAFE?

- WHERE?
- WHEN?
- WITH WHOM?
- DOING SOMETHING?
- SOUND?
- SMELL?
- TASTE?



2019/6/23

17

PART 3 THINKING ABOUT SAFETY, DISASTER AND PEACE



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20



アイスクリーム！ きりんさん！ りんご！ 本！ まくら！ トランペットも！
I'll put in something to make me feel good, too!
Ice cream! Ciriaffe! Apples! Books! My pillow! And my trumpet!

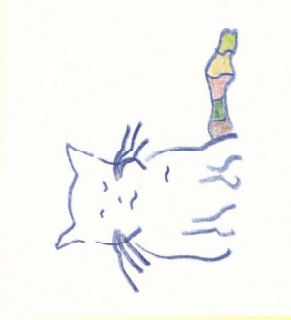
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18

NON-PEACE



- IT ISN'T WAR OR CONFLICT...
- THERE ARE NO GUNS OR FIGHTING...
- BUT, IT ISN'T PEACE...



ロニー・フレキヤンダー

2019.6.5

23

IS THERE A CONNECTION BETWEEN DISASTER AND PEACE?



YES!

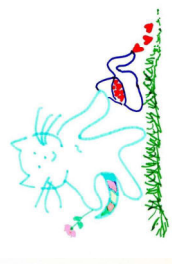
NO!

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21

WHAT IS PEACE?

- PEACE IS:
 - LACK OF ALL KINDS OF VIOLENCE
 - ROOTED IN JUSTICE
 - FULL OPPORTUNITIES FOR ALL
- PEACE MUST BE MADE AND MAINTAINED
 - EVERYONE HAS A ROLE TO PLAY
- PEACE IS ALSO A RIGHT
 - UN DECLARATION ON THE RIGHT TO PEACE (2016.12)
 - THE RIGHT TO PEACE INCLUDES GENDER EQUALITY



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24

PEACE



OR

SAFE?



ロニー・フレキヤンダー

2019.6.5

22

発表しましょう SHARING OUR WORK



質疑応答・コメント Questions & Comments

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35

PEACE, INCLUSION AND DISASTER

- PEACE MEANS:
 - ELIMINATING ALL KINDS OF VIOLENCE
 - PROMOTING EQUALITY, EQUITY AND JUSTICE
- INCLUSION MEANS:
 - MAKING A PLACE FOR EVERYONE
 - LEARNING NEW WAYS TO COMMUNICATE
- PEACEFUL SOCIETIES ARE MORE RESILIENT TO DISASTER THAN LESS PEACEFUL SOCIETIES
 - LESS VIOLENCE
 - MORE INCLUSION
 - MORE DIVERSE WAYS FOR COMMUNICATION



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33

THANK YOU VERY MUCH!



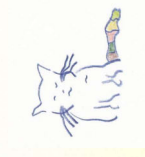
URL: <http://popoki.cruisejapan.com> e-mail: ronnandpopoki@gmail.com

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36


STORY MAKING TIME!

- THEME: DISASTER AND PEACE
- STORY: POPOKI IS CRYING...
- RULES
 - THE STORY MUST BE 5 PAGES
 - YOU WILL GET 5 WORDS. YOU MUST USE ALL OF THEM.
 - POPOKI MUST BE IN YOUR STORY
 - YOUR STORY MUST HAVE A HAPPY ENDING




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34

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Tsunami Marine Hazards on Marine Environment


Mitsuru Hayashi (Kobe Univ.)



Menu


Relationship between Disaster and Environment

Marine environmental shift caused by a mega tsunami.
- Importance of the predictive study -

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Climate Change

is a typical event.
included in both.
caused by Human Activities.
causes Natural Disasters & Environmental Disasters.
e.g. Desertification, Transition of Ecosystem,
High Tide, Storm Surge & Flooding,
Mega Typhoon & Hurricane

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Traditional Association between Disaster and Environment

- Natural disaster**
is emergency to human activities
by a drastic or huge change of natural environments
e.g. Volcanic eruption, Earthquake, Tsunami
- Environmental disaster**
is hazard for the natural environment
by human activities
e.g. Oil spill, Explosion of plant, Air pollution, War

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Additional Association between Disaster and Environment

- To End Poverty in all its forms everywhere
is Goal 1 of **SDGs** (Sustainable Development Goals)
(<https://www.un.org/sustainabledevelopment/>)

Q. Why are environment
and poverty & a disaster related?
> IUCN (<https://www.iucn.org/>)
(International Union for Conservation of Nature)
answered for the question in
“Environmental Guidance Note
for **Disaster Risk Reduction**”.

A. Climate change and disaster events are creating greater population **vulnerability**, especially among women and children. Vulnerable populations are more at risk to natural disasters – those are also heavily dependent on **ecosystem services** for their livelihoods and for physical protection. Therefore, investing in ecosystems and mainstreaming disaster risk and ecosystem management in development planning is likely to make a major contribution to the goal of achieving sustainable livelihoods for the poor.

Human and economic costs of disasters underestimated by up to 60 percent

MARRAKESH, November 14, 2016– The impact of extreme natural disasters is equivalent to a global \$520 billion loss in annual consumption, and forces some 26 million people into poverty each year, a new report from the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) reveals.

“Severe climate shocks threaten to roll back decades of progress against poverty,” said World Bank Group President Jim Yong Kim. “Storms, floods, and droughts have dire human and economic consequences, with poor people often paying the heaviest price. Building resilience to disasters not only makes economic sense, it is a moral imperative.”

The report, *Unbreakable: Building the Resilience of the Poor in the Face of Natural Disasters*, warns that the combined human and economic impacts of extreme weather on poverty are far more devastating than previously understood.

In all of the 117 countries studied, the effect on well-being, measured in terms of lost consumption, is found to be larger than asset losses. Because disaster losses disproportionately affect poor people, who have a limited ability to cope with them, the report estimates that impact on well-being in these countries is equivalent to consumption losses of about \$520 billion a year. This outstrips all other estimates by as much as 60 per cent.

> the World Bank answered for the question in “Unbreakable : Building the **Resilience** of the Poor in the Face of Natural Disasters” (<https://openknowledge.worldbank.org/handle/10986/25335>) The outline is introduced in Press Releases in News

(<https://www.worldbank.org/en/news>)

Natural Disasters Force 26 Million People into Poverty and Cost \$520bn in Losses Every Year, New World Bank Analysis Finds

November 14, 2016

Additional Association KOBE UNIVERSITY between Disaster and Environment

4. **Eco-DRR** (Ecosystem-based Disaster Risk Reduction) is the sustainable management, conservation and restoration of ecosystems to reduce disaster risk with the aim to achieve sustainable and resilient development.

“ The Ecosystem-based Disaster Risk Reduction - Case Study and Exercise Source Book – “ (<https://www.preventionweb.net/publications/view/54582>)

The World Conference KOBE UNIVERSITY
on Disaster Risk Reduction

is organized by UNDRR
(the UN Office for Disaster Risk Reduction)
(<https://www.unisdr.org/>)
to advance risk reduction policies of coming ten years.
All WCDRR were held in Japan.
The 1st @ Yokohama in 1994
“Yokohama Strategy & Plan of Action for a Safer World”
The 2nd @ Kobe in 2005
“The Hyogo Framework for Action (HFA)”
The 3rd @ Sendai in 2015
“Sendai Framework for Disaster Risk Reduction”
were adopted.

The Nankai Trough Earthquake KOBE UNIVERSITY

最大クラスの地震における震度の最大値の分布図
Distribution of Maximum Seismic Intensity (Shindo) in the event of maximum possible the Nankai Trough Earthquake

The Nankai Trough Earthquake with magnitude 8 or 9 will be with a probability of 70% within 30 years.

Sendai Framework KOBE UNIVERSITY
for Disaster Risk Reduction

(<https://www.unisdr.org/we/coordinate/sendai-framework>)
“The Citizen’s Guide to the Sendai Framework for Disaster Risk Reduction 2015-2030”(<http://jcc-drr.net/en/>)

Priorities for Action 3
Investing in DRR for Resilience

Urban Planning and Conservation of Ecosystems

When making decisions on urban planning and land usage it is important to take disaster risks into consideration. It is necessary to carry out risk assessments and mapping in order to identify safe areas, especially for farming communities in the mountains or near rivers, and communities in tsunami or flood zones. Through these processes, it is also possible to protect ecosystems which boost the resilience of the community.

& harness = Eco-DDR
e.g. **Green Infrastructure, Green/Bleu Carbon**

Tsunami by The Nankai Trough Earthquake

最大クラスの地震における津波高分布
Distribution of Tsunami Wave Height in the event of maximum possible the Nankai Trough Earthquake

津波高 (m)	市町村数
5m以上	124市町村
10m以上	21市町村

The huge tsunami will attack not only the shore line but also the inside bays.
Last one was in the end of WWII.
The next tsunami is our first one after the economic growth.
Different damage from the past may occur.
It is necessary to estimate it.

The tsunami caused by the Tohoku Region Pacific Coast Earthquake on 11 March 2011

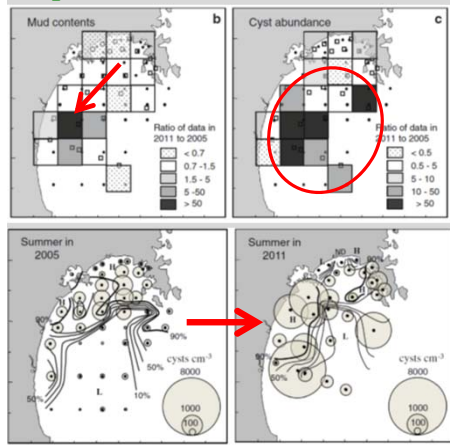


- # Huge tsunami (max. 40 m) attacked to the Tohoku Region.
- # Fishery is active in Tohoku region, and it is famous for the culture of oysters.



However, the culture bed and farm, seaweed and seagrass were swept away by the tsunami.

Impact of the tsunami for marine sediment



- # Marine sediment transferred to the offshore Sendai Bay.
- # Cyst abundance of *Alexandrium* in the sediment increased widely in the offshore.
- # *Alexandrium spp.* is a harmful phytoplankton that causes shellfish poisoning.

(Kamiyama *et al.*, 2014)

The tsunami with Muddy water

The tsunami with Muddy water

- # Marine sediments were disturbed, suspended and transported by a tsunami.



Various substances and microorganisms are contained in the marine sediment

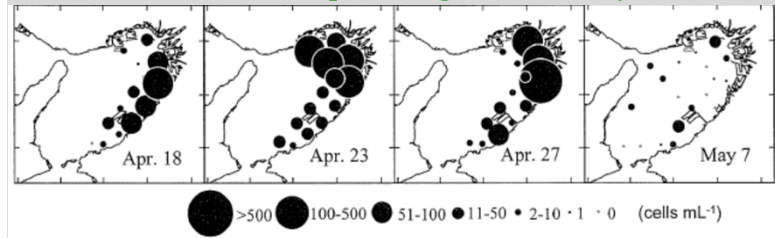
Impact of tsunami for a biological production

Depth (m)	Cell density (Cells/l)	Specimens <i>A. tamarense</i> (天然細胞)		ムラサキガイ中腸腺 平均±標準偏差(n=6)	
		調査日	6月5日 (mol%)	6月5日 (nmol/g (mol%))	
0	20				
2	100				
4	24160				
6	18440				
8	100600				
10	49600				
12	36600				
14	6800				
16	4300				
18	3520				
20	1220				
22	4080				
		合計		46.1 ± 29.3	

(Kaga *et al.*, 2012)

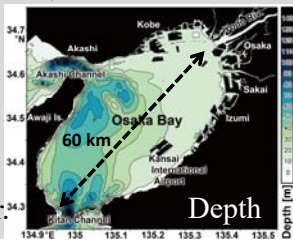
- # The *A. tamarense* in the water column increased.
- # Shellfish poisoning occurred in Ohfunato Bay
- # Density of the poisoning exceed the environmental standard.

A. tamarensis & Shellfish poisoning in Osaka Bay

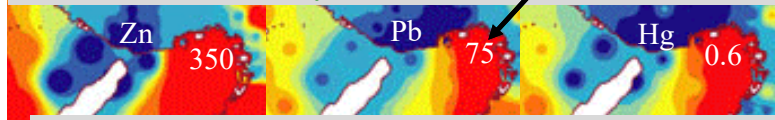


Cell density of *A. tamarensis* in the marine sediment (Yamamoto *et al.*, 2009)

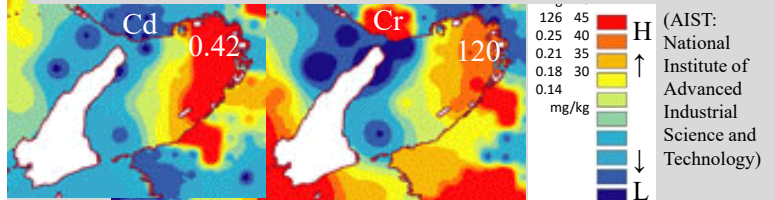
- # Osaka Bay is adjacent to the big cities,
- # Much nutrients are supplied from rivers.
- # Red tide of *A. tamarensis* and shellfish poisoning occur almost year.



Other risk in Osaka Bay

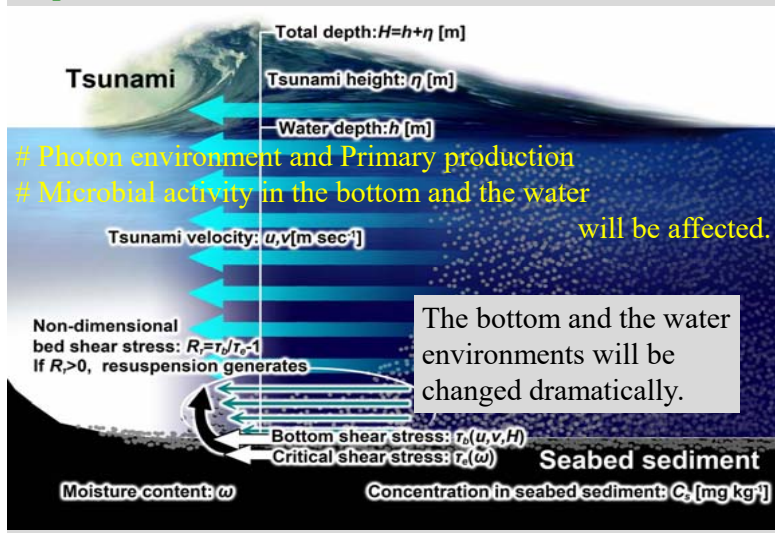


It is important to understand the potential of
 # the suspension and transport of the sediments
 # the water quality change
 in Osaka Bay.

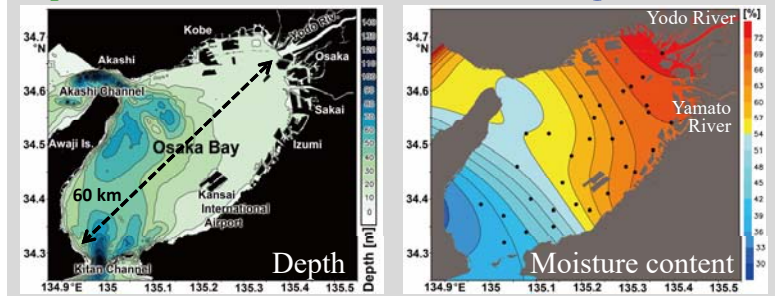


Heavy metal concentrations (mg/kg) in the sediment with 3cm thickness in 2010 by AIST.
 # Heavy metals are contained in the inner part of Osaka Bay.

Impact of tsunami for a microbial environment

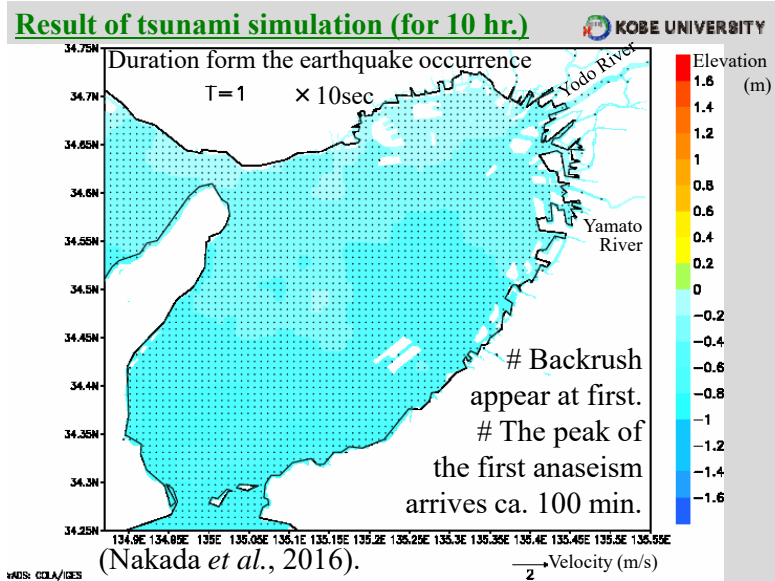
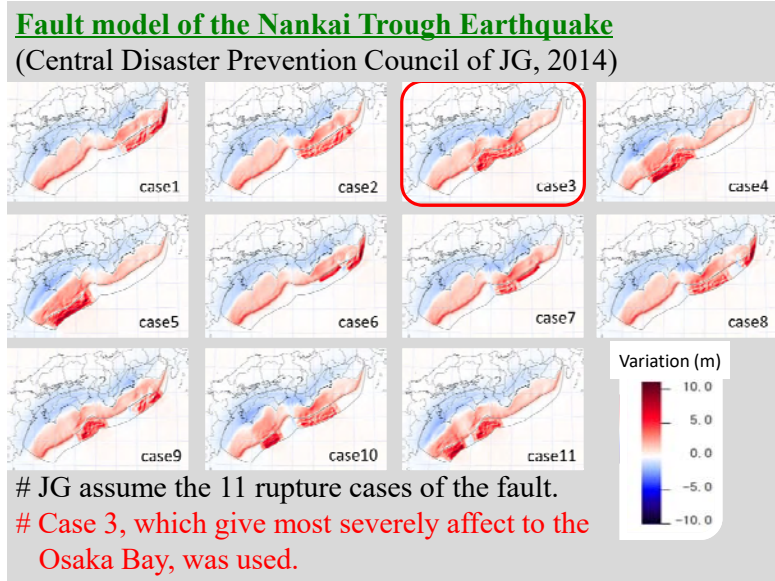
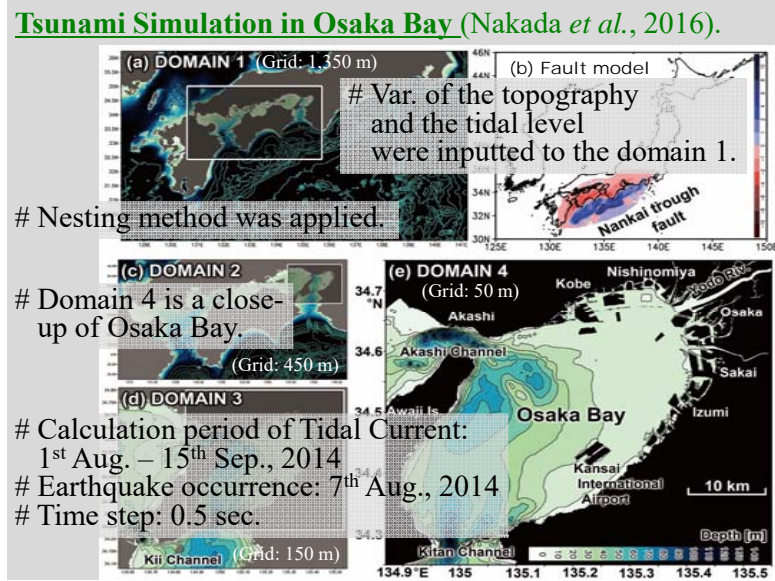
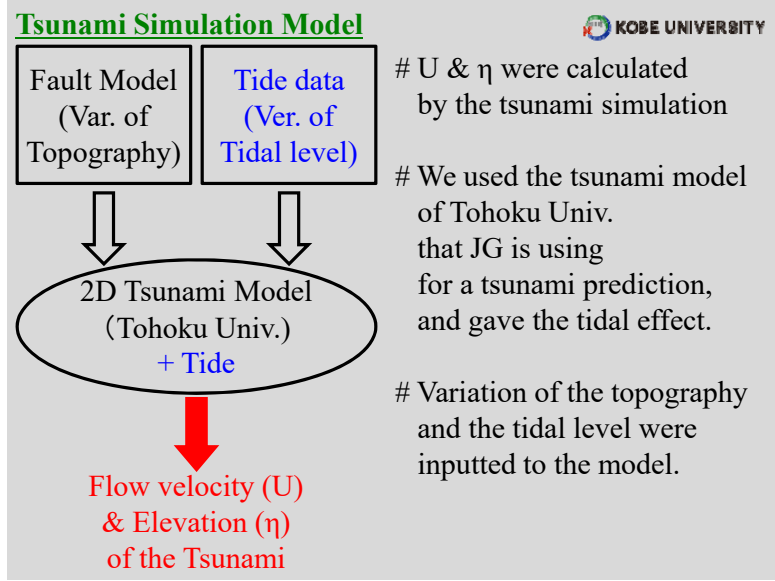


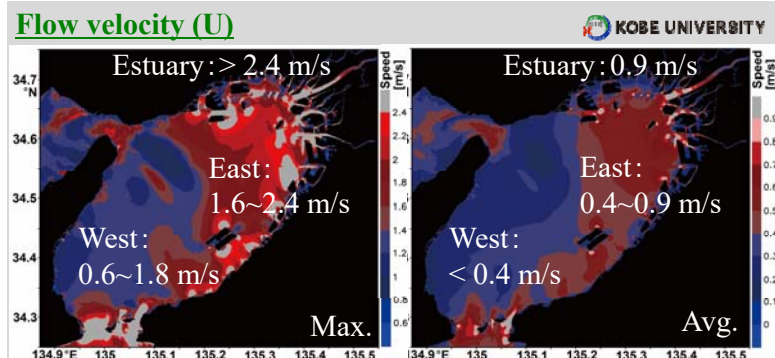
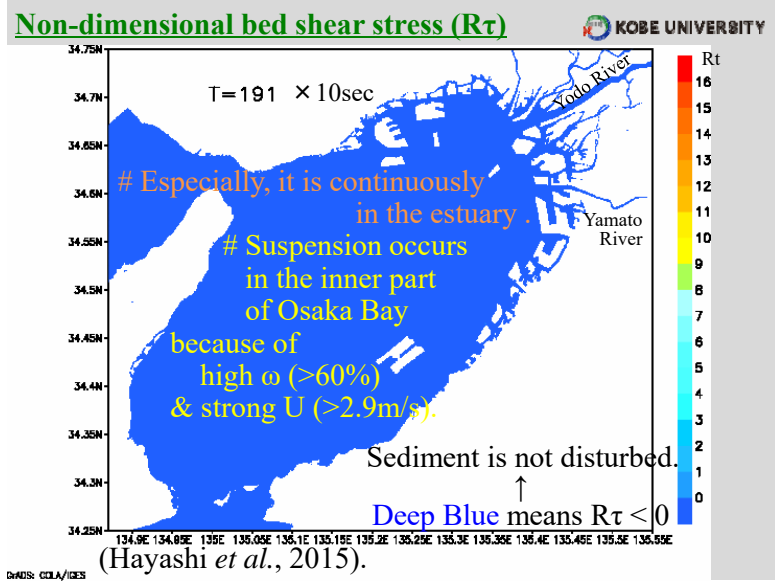
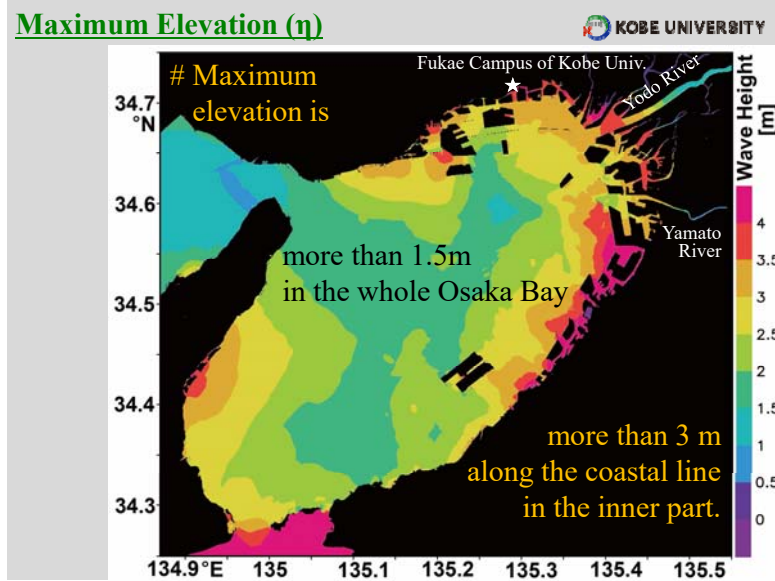
Depth, h & Moisture content, ω



- # East
 Shallow (almost < 30 m)
 High ω (max 75 %)
- # West
 Deep (almost > 30 m)
 Low ω (< 40 %)

Surveyed in 2013 by the Res. Inst. of Env., Agri. & Fish., Osaka Prefecture.
 # 50 m mesh data was created by the inner-extrapolation, which assumed the Gauss function.

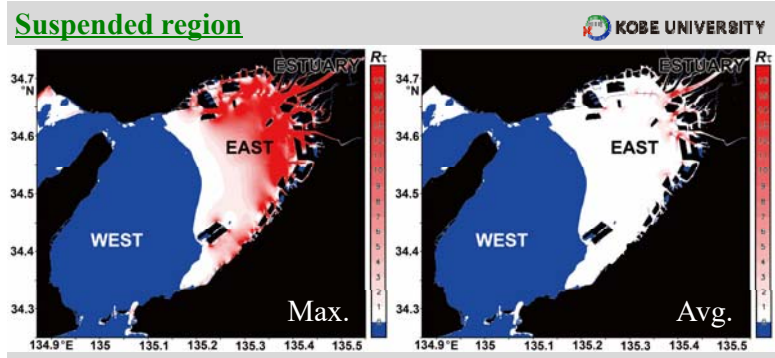




These are related to whether suspension occurs even if only once. whether suspension occurs easily and continually.

U is very large compared with ordinary tidal currents.

U in the estuaries is continually large.



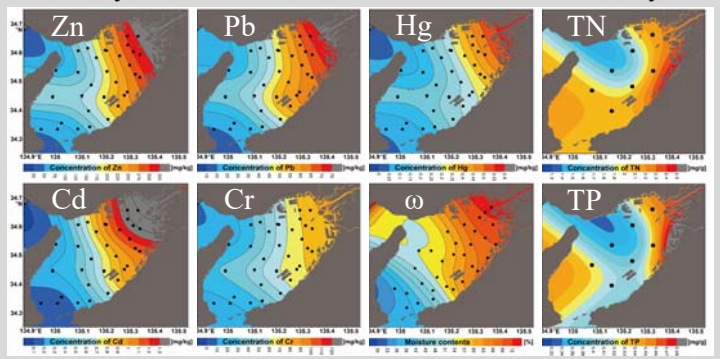
West ($h \geq 30$ m) : Does not occur. Hayashi *et al.* (2015)
 Deep & Low ω ($\leq 57\%$).

East ($h < 30$ m) : Occur.
 Shallow, High ω (>60%) & strong U (>2.9m/s).

Estuary ($h < 10$ m) : Hot Spot (Dominates and Continuously)
 Extremely large ω & Strong U.

Material concentrations, Cs (mg/kg) in the sediment

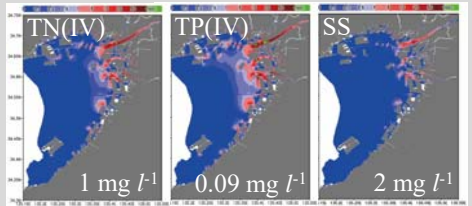
Heavy metals & Nutrients are focused in this study.



Heavy metals were surveyed by Nagaoka et al. (2004) with 3 cm thickness & AIST. TN & TP were surveyed MLIT of JG with 10 cm thickness.

All materials are contained much more in the inner part.

Standardized concentrations of TN, TP and SS



Because TN and TP concentrations in Osaka Bay is high basically, and exceed the standards sometimes.

The concentrations are high in the type IV region, especially in the south side.

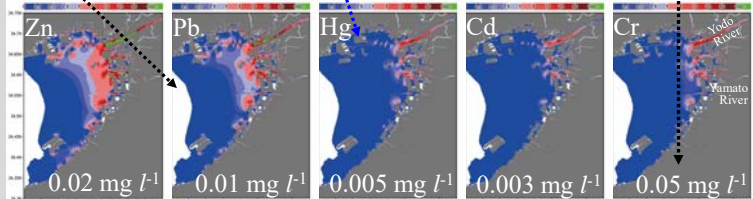
It is necessary to estimate the influence on the primary production considering both the nutrient and SS concentrations.

However, it may exceed the standards in wide area, and may fall into the hyper-eutrophic condition in the IV region.

Standardized concentrations of heavy metals in the water

The concentrations after 10 hours from the earthquake were estimated, and were divided by the environmental standard by Ministry of the Environment, JG to understand the water quality after the tsunami.

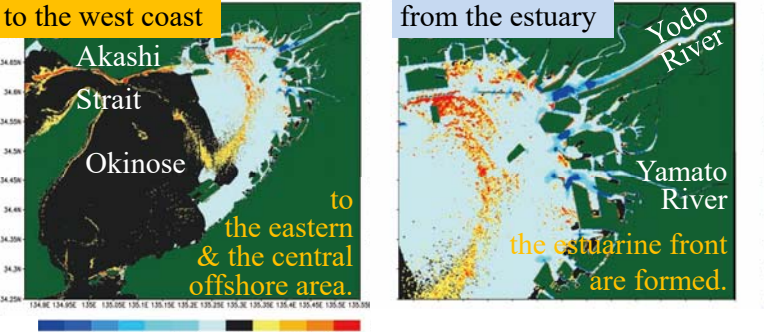
(White : Not disturbed Blue : Less than the standard)



Hayashi et al. (2019)

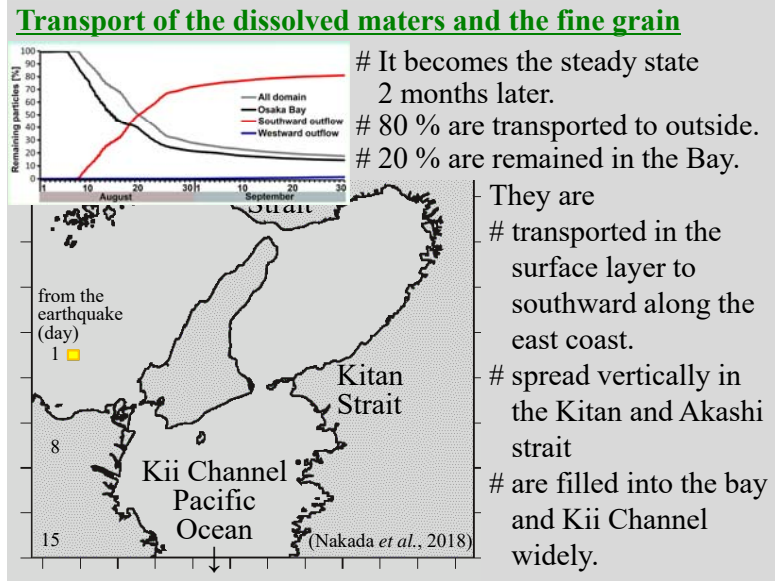
The concentration in the inner part exceeds the environmental standard for “health protection of people”
Especially, 10 times or more are seen in the estuary.

Reposition of SS after 1 month from the earthquake



(Nakada et al., 2016)

Okinose, the shallow water is formulated by the tide-induced residual current.
The locations of the offshore two lines accord with the place where the tidal front of Akashi Strait and

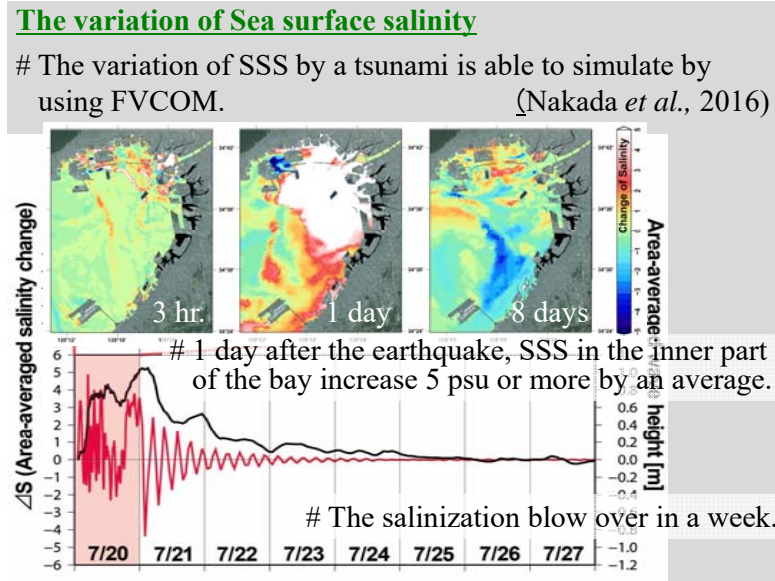


Conclusion -the Possible Scenario-

The huge tsunami with the Nankai Trough Earthquake attacks to Osaka Bay.
 The marine sediments & materials in the inner part of the bay are disturbed.

The concentrations of materials in the water exceed the environmental standard.
 The coastal water was significantly salinized.
 The salinization blow over in a week.
 2 months later, 20 % of materials are remained in the bay.

We have to consider carefully not only the short-term but also the long-term change of the primary production and the microbe environment.



Flood Management

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ABSTRACT

Floods are caused by many factors or a combination of any of these generally prolonged heavy rainfall (locally concentrated or throughout a catchment area), highly accelerated snowmelt, unusual high tides, tsunamis, or failure of dams, levees, retention ponds, or other structures that retained the water¹. Flooding can also be exacerbated by increased amounts of impervious surface. Some methods of flood control have been practiced since ancient times². These methods include planting vegetation to retain extra water, terracing hillsides to slow flow downhill, and the construction of floodways (man-made channels to divert floodwater)³. Other techniques include the construction of levees, lakes, dams, reservoirs⁴ retention ponds to hold extra water during times of flooding

¹ Wikipedia, *Flood control*, [website], n.d., https://en.wikipedia.org/wiki/Flood_control, (accessed 31 Jul 2019).

² MSN Encarta, *Flood Control*, [website], n.d., https://www.webcitation.org/5kwcGmDS0?url=http://encarta.msn.com/encyclopedia_761561222/flood_control.html, (accessed 31 Jul 2019).

³ MSN Encarta, *loc. cit.*

⁴ MSN Encarta, *loc. cit.*

NATURAL SCIENCES

SDGs implementation of UNESCO' Science Sector in Asia and the Pacific

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Harness science, technology, innovation and knowledge for sustainable development goals

GLOBAL PRIORITY
Increase the participation of women in STEM, including through STEM and Gender Advancement (SAGA).

Strengthen institutional and human capacities in science, technology and innovation to foster decent work and economic growth.

Narrow the STI gap between developed and developing countries to ensure that all countries fully benefit from scientific and technological progress and innovation.

UNESCO-designated Biosphere Reserves and UNESCO Global Geoparks are observatories of responsible consumption and production.

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Global Frameworks

Sectoral Policy: i.e. Paris Agreement

Continental Policy: i.e. Agenda 2063

Sendai Framework for Disaster Risk Reduction 2015 - 2030

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Natural Sciences for the 2030 Agenda

Harnessing the sciences, including the basic sciences, technology, and innovation and knowledge for sustainable development

Advancing science for sustainable management of natural resources, disaster risk reduction and climate change action

Improving knowledge and strengthening capacities at all levels to achieve water security

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Context

- (i) failure of **climate change** mitigation and adaptation; extreme weather events;
- (ii) **natural disasters**, man-made environmental disasters;
- (iii) **biodiversity** loss and ecosystem collapse, and;
- (iv) **water** crises.

Global risks report 2019
(World Economic Forum)

IPCC
IPBES
WWDRs

Climate change as a socio-economic issue

↓

SIDS and Africa bearing the heaviest burden

- pressure on natural resources
- many conflicts and instances of violent extremism have their source in an uneven distribution of natural resources
- people being displaced for lack of water, food and consequently job opportunities

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Context

Need for a global science, technology and innovation governance

- science diplomacy (SESAME, Global report on Biodiversity, Water diplomacy);
- international normative framework in STI (open science)

Need for STI and evidenced based policies

Technology and knowledge gaps

Global governance in STI, Need for monitoring trends and developments in (STI) governance

30 million researchers and engineers will be needed by 2030

Evidence based Integrated Policy

→ STI policy and capacity building

→ Science diplomacy + data

→ Engaging youth in science

→ Address the gender gap in STEM

→ Robust science and knowledge

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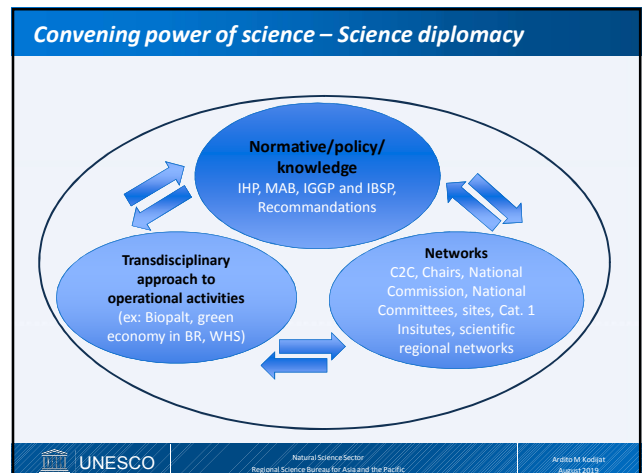
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Examples of relevance in the global agenda

- Highlights of the Final draft of the Political Declaration of the UN SDG Summit (24 - 25 September 2019)
 - Harnessing STI, with focus on digital transformation
 - Reducing disaster and building resilience
 - Investing in data and statistics for the SDGs
- MOPAN's Global Performance and Findings:
 - UNESCO is a global leader in knowledge and practice. UNESCO leads policy development in a broad range of fields, Global Geoparks and freshwater use, [...].
 - UNESCO is strong at mainstreaming gender equality (e.g. women in science and sport, climate change, and education) and interdisciplinary issues such as climate change
 - It has convening roles in relation to global work on freshwater

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Future Reflection

1. How to better reposition UNESCO in the 2030 Agenda, the 2063 African Union Agenda, the Paris Agreement, the Sendai Framework and the Addis Ababa Action Agenda?
2. How to best ensure UNESCO's support to the Member States in the implementation of these Agendas in its various domains? How to best support countries to access Science Technology & Innovation for sustainable development?
3. How to empower women scientists?
4. How to connect UNESCO science structures? Are tools tailored to address the national science context?
5. What role for UNESCO in the broad global responses to environmental crises, biodiversity and habitat loss? How science provides the baseline and the potential solutions?
6. What capacities are needed for sustainable and peaceful natural resource management?
7. How we see Science Diplomacy fit in with the global UN 2030 agenda?
8. What opportunities for a more integrated and transdisciplinary UNESCO activities that are inclusive, participatory, as well as Climate-neutral and climate-friendly?
9. What tools do we need to measure impact of the Science initiatives?

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STI Challenges in Asia Pacific

AP-FAST

Facility for Accelerating Science and Technology in Asia and the Pacific

- Weak STI culture and low government spending
- Inadequate S&T human resources engaged in R&D
- Difficulty in increasing employment opportunities and retaining S&T human capital
- Absence of a vibrant intellectual property culture
- Weak linkages among players in the STI ecosystem
- Restrictive regulations that hamper the implementation of R&D programs and projects
- Inadequate STI infrastructure
- Lack of international or regional cooperation

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APFAST Framework

1 Targets & Indicators

2 Science Tech.

3 Potential UNESCO SETI Supports

UNESCO's Category 1 & 2 Centres

SETI to accelerate the achievements of Targets and Indicators

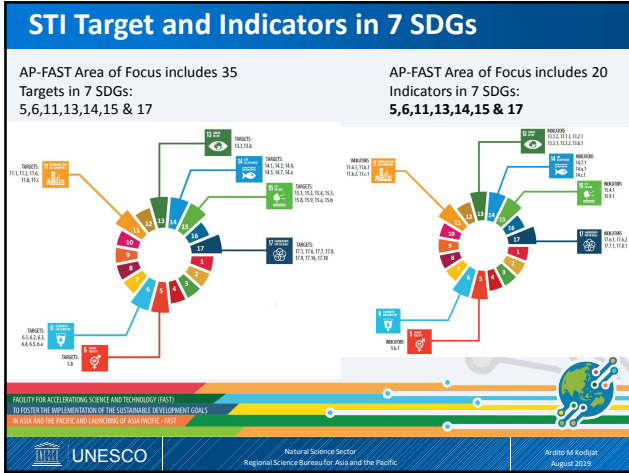
1. Identify the links between country's NAP and SDGs Target and Indicators and country's SETI Capacity.
2. Identify what SETI is needed to accelerate the achievements of the target and indicators.
3. Identify how SETI in UNESCO's programme and Centres could contribute to support countries to accelerate their S&T in achieving the SGD and NAP targets and indicators.

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Area Focus of APFAST

- #5: Achieve gender equality and empower women and girls
- #6: Ensure access to water and sanitation for all
- #13: Take urgent action to combat climate change and its impacts*
- #14: Conserve and sustainably use the oceans, seas and marine resources
- #15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss

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AP-FAST Scorecard SETI for SDGs

Mobile Application Under development

- The SETI Scorecard is an enabling tool which provides users an instrument where they can explicitly express the **detailed contribution of each of their respective projects' outputs** towards the attainment of the SDGs.
- The SETI Scorecard will guide SETI champions, funding institutions, policy makers, and other stakeholders in **defining and evaluating the relevance of all SETI Projects** in the global goal of sustainability.

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THE SETI for SDG SCORECARD

Project Title:							
Location:							
Implementer:							
Duration of the Project:							

SCORECARD FOR SETI PROJECTS IN TERMS OF ITS RESPONSIVENESS TO SDGs

1. OBJECTIVES OF THE PROJECT	2. MAJOR OUTCOMES OF THE PROJECT BASED ON THE OBJECTIVES (Observed or Prospective)	3. SDG TARGET	4. IMPACT TO THE ATTAINMENT OF THE SDG TARGET	5. REMARKS	6. RATING (3,2,1)	7. RESPONSIVENESS SCORE ((Likelihood + Relevance) * (1 if Direct Impact, 0.5 if Indirect Impact))
1.	1.	3.a	5.a	5.a Indicate available data if available as reference for rating the Likelihood of accomplishment according to the project timeline	5.a Likelihood	5.a Relevance
2.	2.	3.b	5.b	5.b Indicate how the outcomes will directly or indirectly contribute to the attainment of SDGs	5.b Likelihood	5.b Relevance
...
						8. AVERAGE RESPONSIVENESS SCORE = Total Responsiveness Score/Total # of ratings

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INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION OF UNESCO (IOC)

United Nations Educational, Scientific and Cultural Organization

Direction

2021-2030 United Nations Decade of Ocean Science for Sustainable Development

The Science We Need for the Ocean We Want

A Vision for the Decade
Develop scientific knowledge, build infrastructure, and foster partnerships towards a sustainable and healthy ocean

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IOC of UNESCO:
The UN Decade of Ocean Science for Sustainable Development (2021-2030)

Mission Orientation



A safe Ocean
Human communities are protected from ocean hazards and the safety of operations at sea and on the coast is guaranteed.



A Sustainable Productive Ocean
The provision of food supply and alternative livelihoods are secured.



A transparent and accessible Ocean
All nations, stakeholders and citizens have access to ocean data and information, technologies, and are capable of making informed decisions.



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Societal Outcomes



A Clean Ocean
Sources of pollution are identified, quantified and reduced, and pollutants removed from the Ocean.



A healthy and resilient Ocean
Marine ecosystems are mapped and protected, multiple impacts, including climate change, are measured and reduced, and the provision of Ocean ecosystem services is maintained.



A predicted Ocean
Society has the capacity to understand current and future Ocean conditions, forecast their change and impact on human wellbeing and livelihoods.



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Principles: Inclusive & transformative, focused on solutions

Science breakthroughs → top-down designed


- Mapping
- Observations
- Eco-systems
- Data and Information
- Multi-Hazard Warning Systems
- Ocean in Earth System Science
- CD, Education, Ocean Literacy

Pickup by practice → stimulated bottom-up

- Coastal zone management
- Marine Spatial Planning/ Blue economy
- Fishery management
- Disaster Risk Reduction (Re-insurance)
- Adaptation Mitigation
- Governance: Policies Peace Security

Solutions

Input Need Application



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Thank You



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