Expert Dialogue on technologies for averting, minimizing and addressing loss and damage in coastal zones
Bonn, 17 June 2019

Session 2: Technologies for coastal zone risk management

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Inputs from the Ministry of Environment of Japan

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IRIDeS
International Research Institute of Disaster Science
TOHOKU
UNIVERSITY

Disaster Risk 101

Disaster Risk = Hazards x Vulnerability x Exposure / Capacity

Disaster Risk ↑ = Hazards ↑ x Vulnerability ↑ x Exposure ↑ / Capacity ➡

Intensifying Natural Hazards due to climate change: IPCC Reports

Rapid population growth, urban sprawl, lack of land use plan, poverty and other social, economic, and demographic changes to increase vulnerability and exposure

If capacity to cope with disaster risk is the same as before, disaster risk would increase.

Challenges:

- We do not know how much of disaster loss and damage is due to the impacts of climate change yet
- Number of deaths caused by disasters are not increasing
- Number of disasters and economic losses are increasing
- Yet, more fundamental issue is that we are still lacking official disaster loss and damage data

Important elements:

- Government data
- Disaggregated data (scale, location, age, gender, disability etc.)
- Not only disaster loss and damage data but also socio-economic-demographic data
- Why gathering data? --- Data analysis for policy making

- For gathering such data, vertical and horizontal coordination is mandatory (central-local government; National Disaster Management Organization and line-ministries)

Global Centre for Disaster Statistics (GCDS)

FUJITSU

TOHOKU UNIVERSITY

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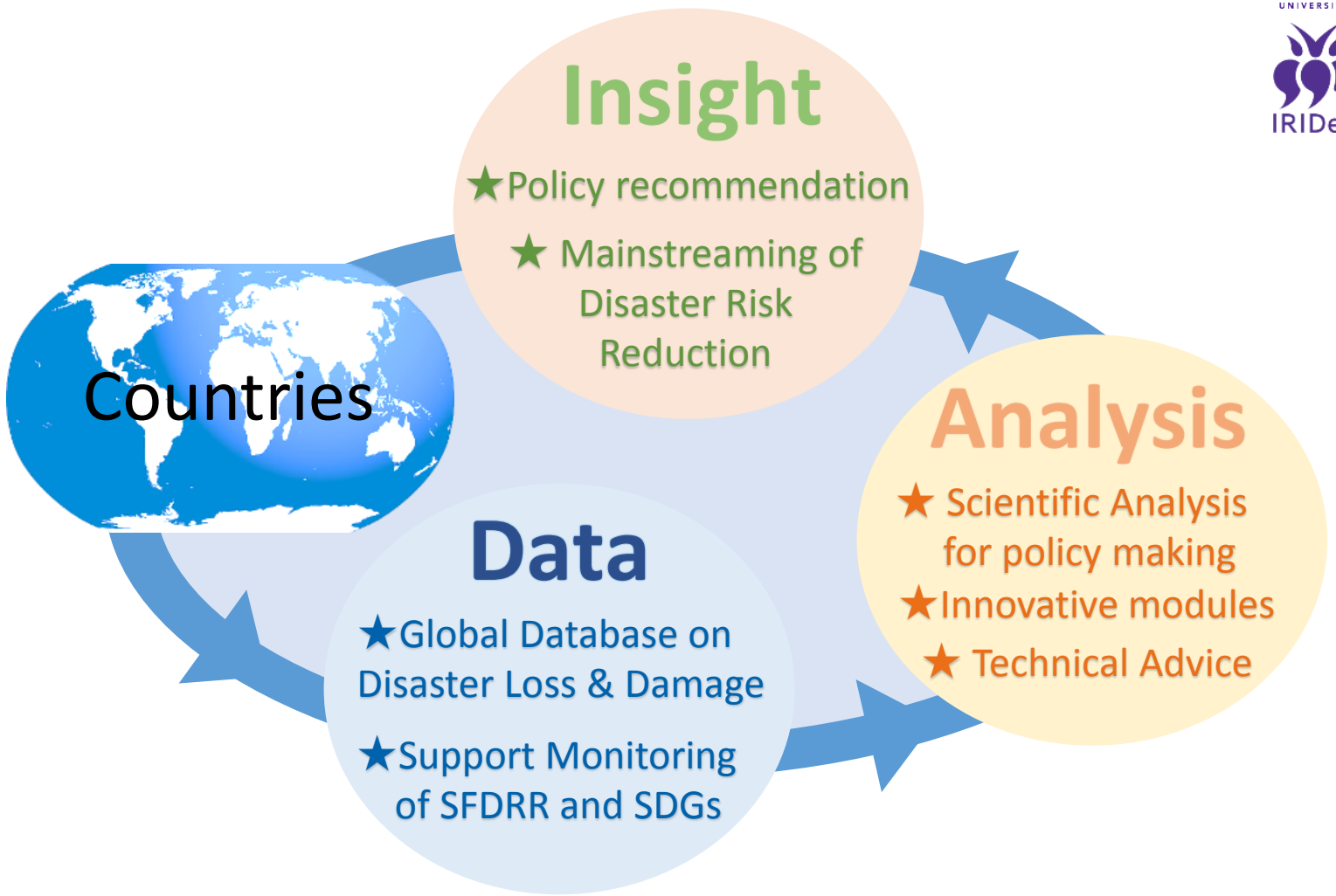
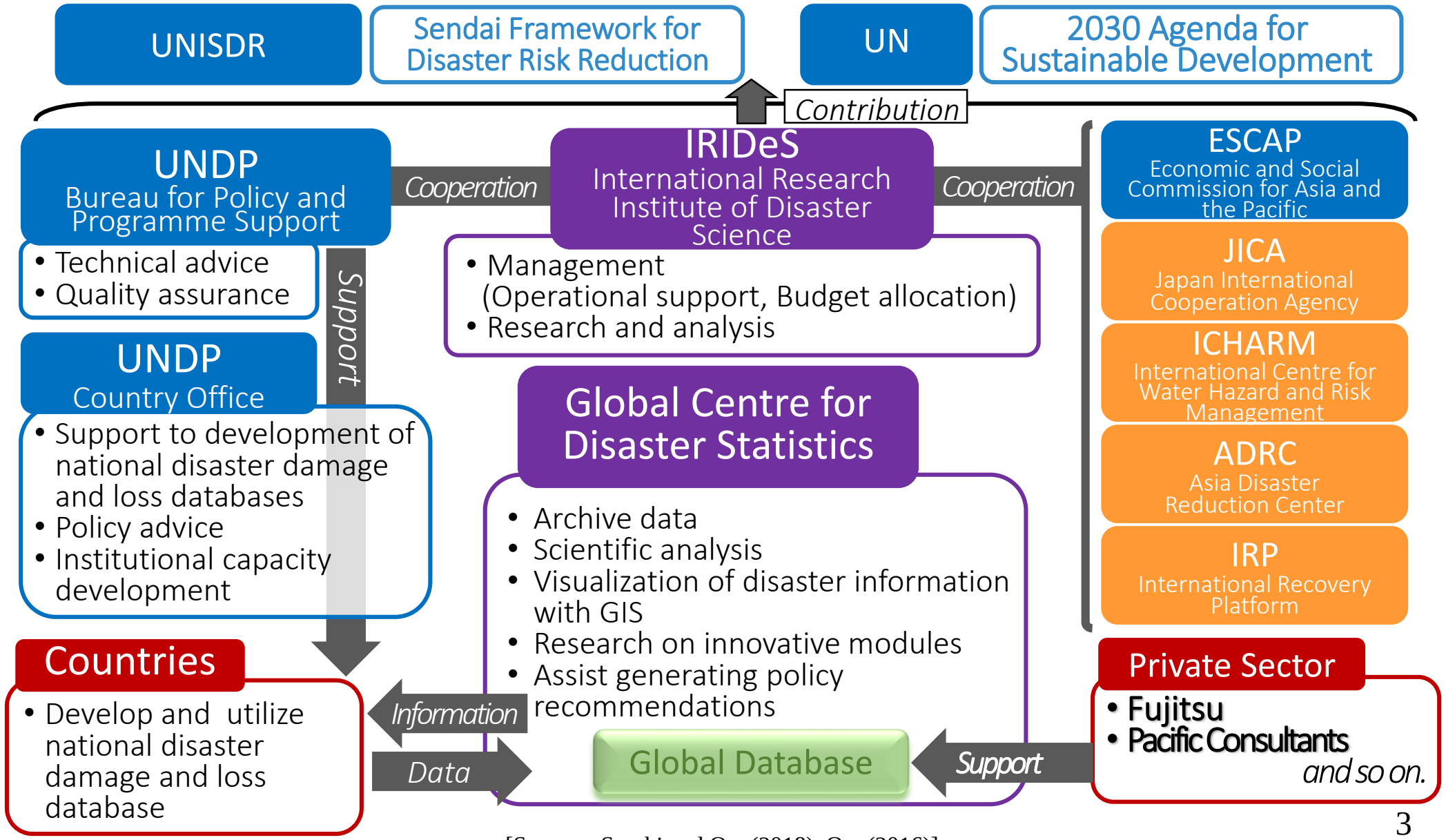
UNDP

Empowered lives. Resilient nations.



Detailed Scheme of the GCDS



[Sources: Sasaki and Ono(2018), Ono(2016)]

Sendai Framework for Disaster Risk Reduction

- Adopted 7 "Global targets"

(a) Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020-2030 compared to the period 2005- 2015;

(b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020-2030 compared to the period 2005-2015

(c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030

(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030

(e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020;

(f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030

(g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030

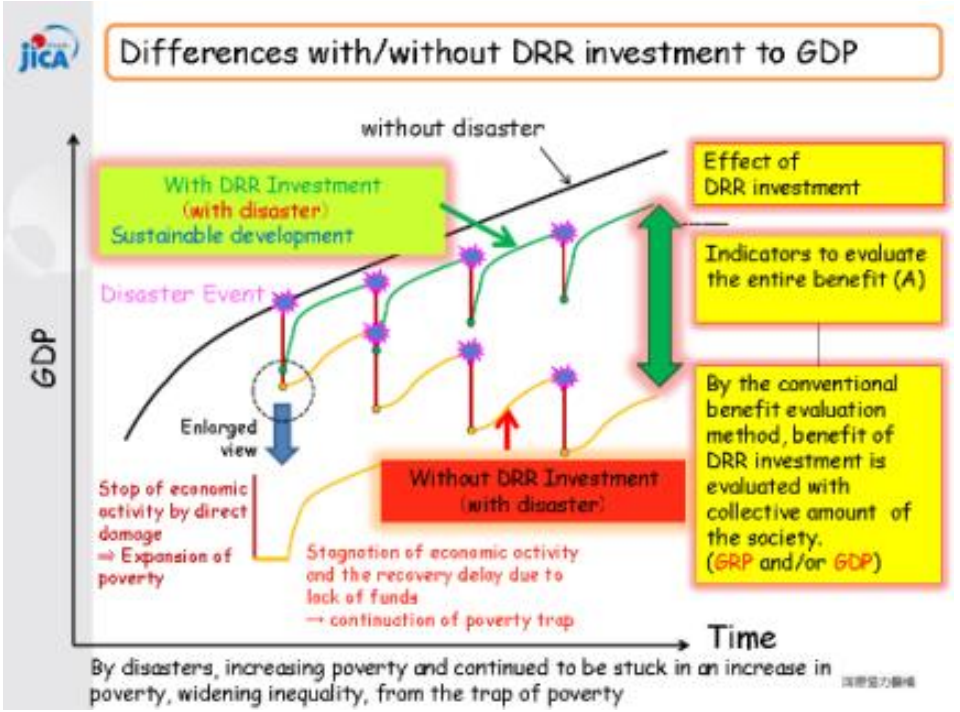
Analysis based on collected disaster loss data

- We will be able to tell the amount of loss and damage quantitatively caused by impacts of climate chang
- We will be able to project/simulate the potential impacts of climate change more accurately with details

Analysis based on collected disaster loss data

- Macro-economic analysis

* One example of the analysis to evaluate the effect of pre-disaster investment



- Analysis based on disaggregated data

* Data disaggregated by social, demographic, and economic characteristics

DR²AD model, developed by JICA, to quantitatively estimate the effect of pre-disaster investment to economic development

Results of Case Study in Pakistan

GDP

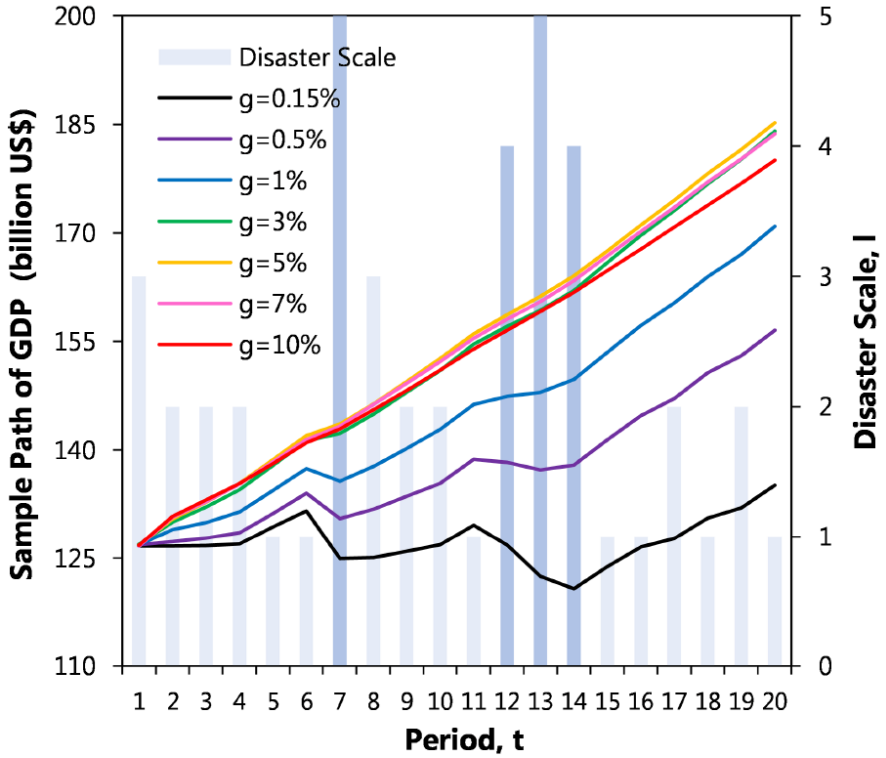


Fig. GDP Growth by DRR level (Sample Path)

Consumption

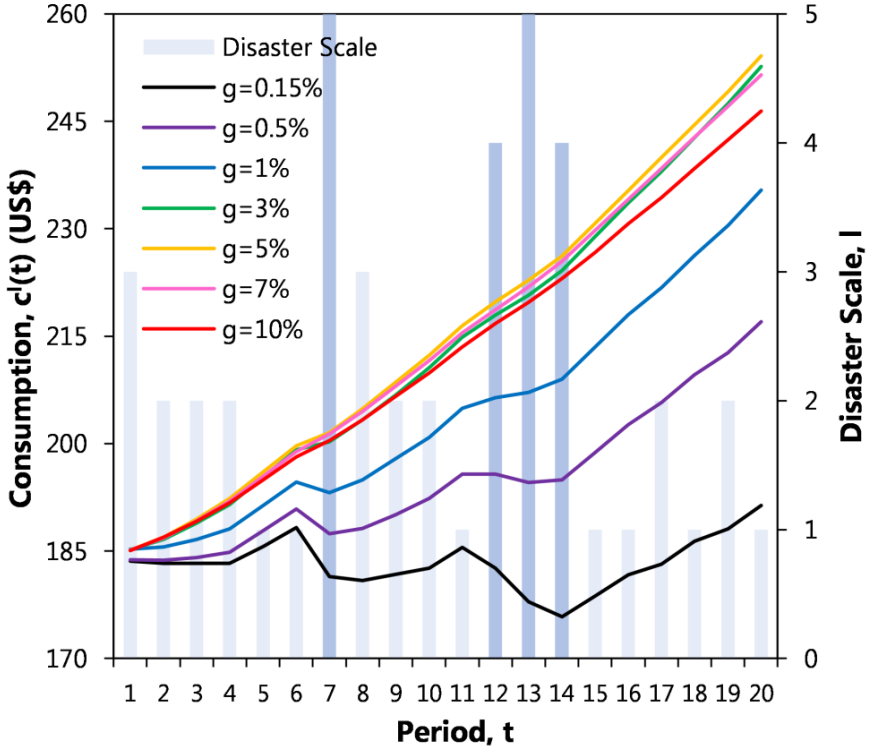


Fig. Consumption by DRR level (Sample Path)

※Source : Ishiwata and Yokomatsu (accepted, 2018)

Optimal percentage of DRR investment is approximately 3～5% of GDP (4~9 billion USD / year)

Annual Report (*White Paper* on DRR)

- *White paper* on DRR has been issued by the Cabinet Office of Japan annually based on the Disaster Countermeasures Basic Law in 1961. This policy paper reviews national DRR policy taken in the previous year supported by evidence, including disaster damage and loss data supplied by various national agencies. It is circulated to all the parliamentarian members to generate improved policy (kaizen in DRR).

- Learning from this good practice, GCDS would propose National Disaster Management Organizations (NDMOs) to generate a similar review report. GCDS intends to provide basic analysis for the report based on the national damage and loss data. GCDS welcomes joint work in this area with academia in each interested country as well.

The Global Database is to be launched
during the Second World Bosai Forum
in Sendai, Japan
9-12 November, 2019

www.worldbosaiforum.com/2019/english

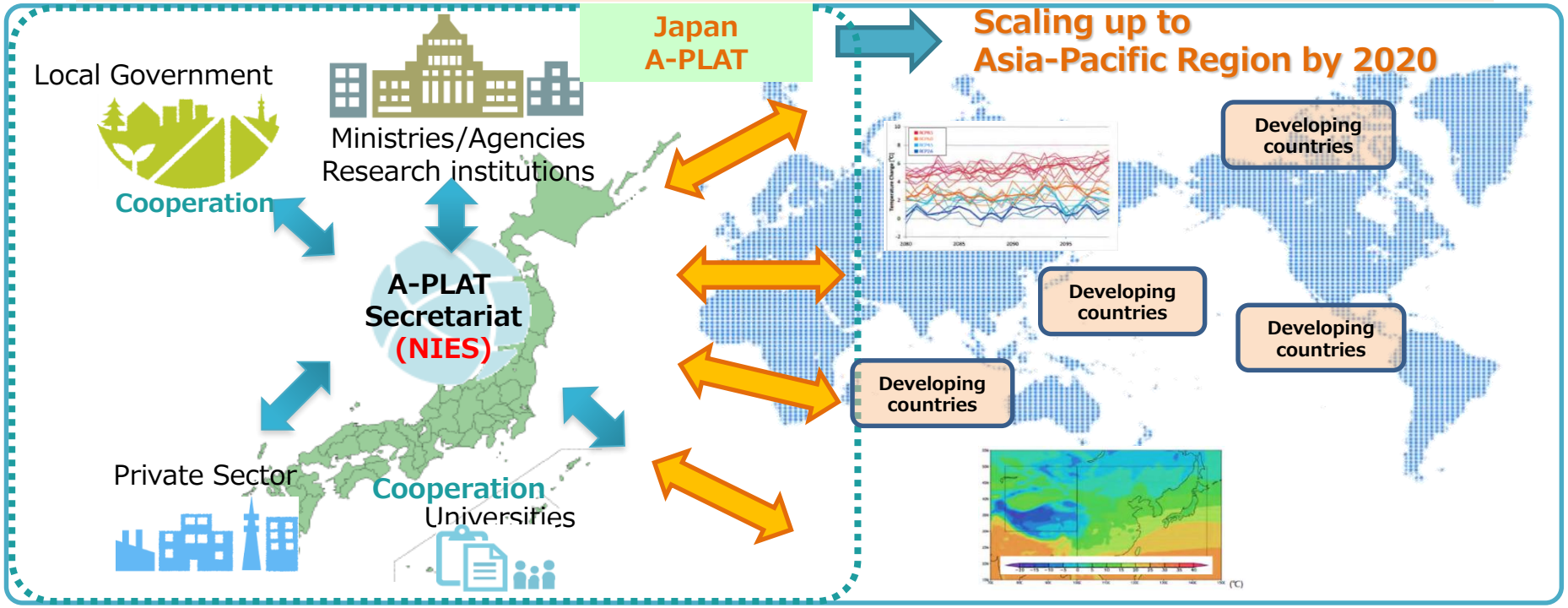
World
BOSAI
Forum
IDRC 2019 in SENDAI

Asia-Pacific Adaptation Information Platform (AP-PLAT)

- **Asia Pacific Adaptation Information Platform** was established in June 2019 during G20 Environment Ministry Meeting in Karuizawa, Nagano. (http://www.adaptation-platform.nies.go.jp/en/ap-plat/)
- We already have an adaptation information platform at national level in Japan called "A-PLAT" and expands it to Asia and pacific region.

Mission

Enabling environment for climate-risk informed decision making and practical adaptation action through collaboration among partner countries and organizations

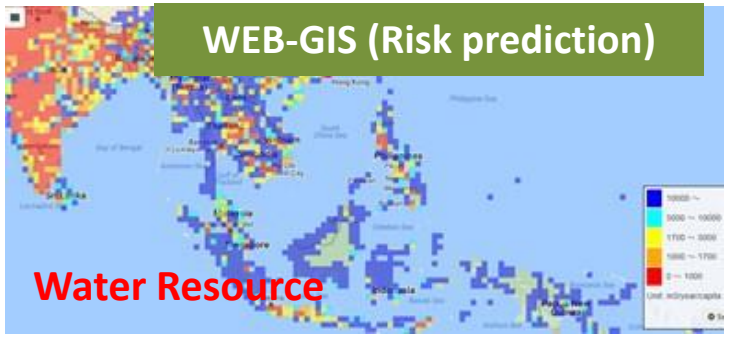


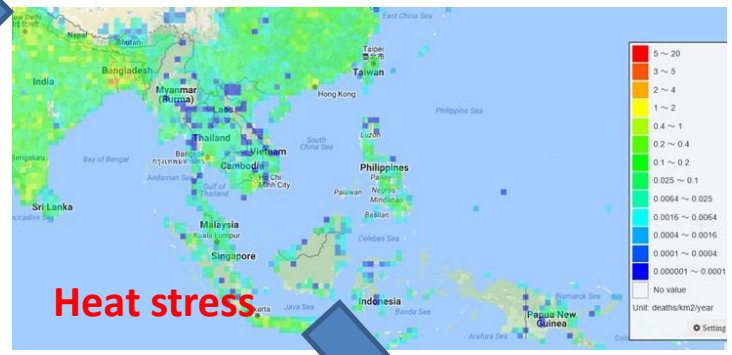
AP-PLAT Web-site

Sharing **climate risk information** via online with various partners

Top page

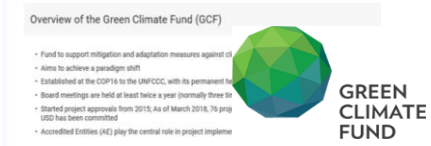
WEB-GIS (Risk prediction)



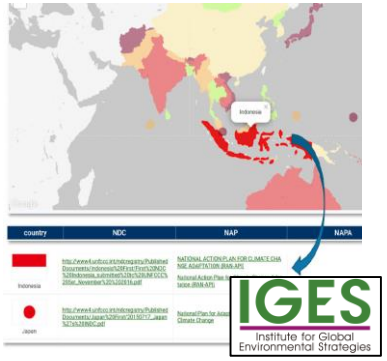


Financial Information

Green Climate Fund (GCF)



NAPs / NDCs

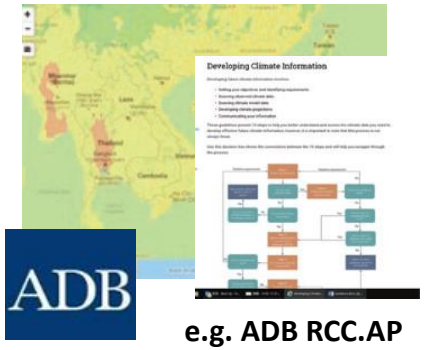


National Platforms

T-PLAT (Thailand)

I-PLAT (Indonesia)

Useful practices / tools from partners



e.g. ADB RCC.AP

Core Pillars of Activities with Partners