

Sendai Framework for DRR Targets and Indicators

Oct. 2016

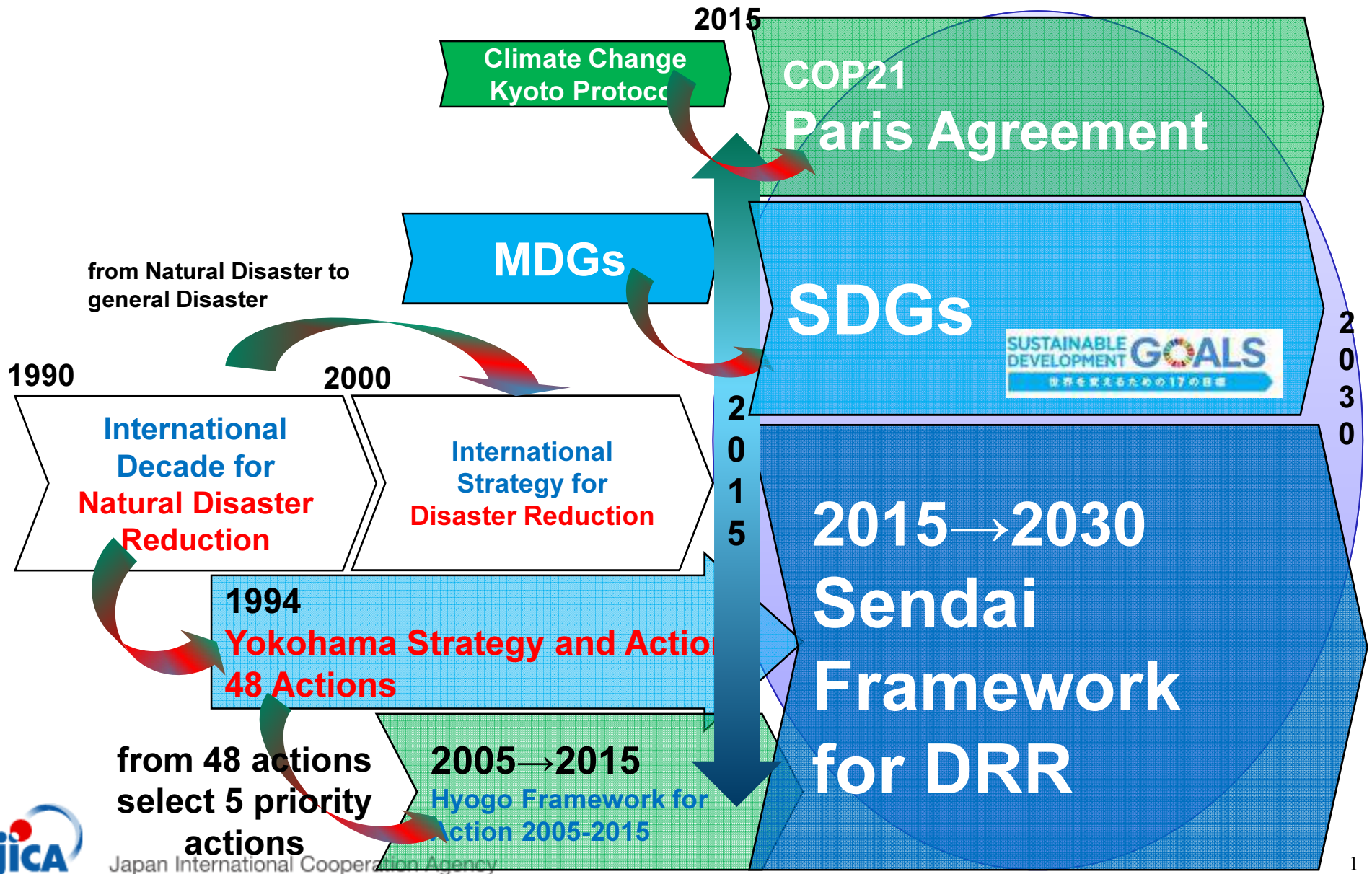
TAKEYA Kimio takeya.kimio@jica.go.jp

Distinguished Technical Advisor to the President, JICA

- **UNISDR, Member of Intergovernmental Expert Working Group on Indicators & Terminology relating to Disaster Risk Reduction**
- **UNFCCC, Members of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts**



World trend of Disaster Reduction



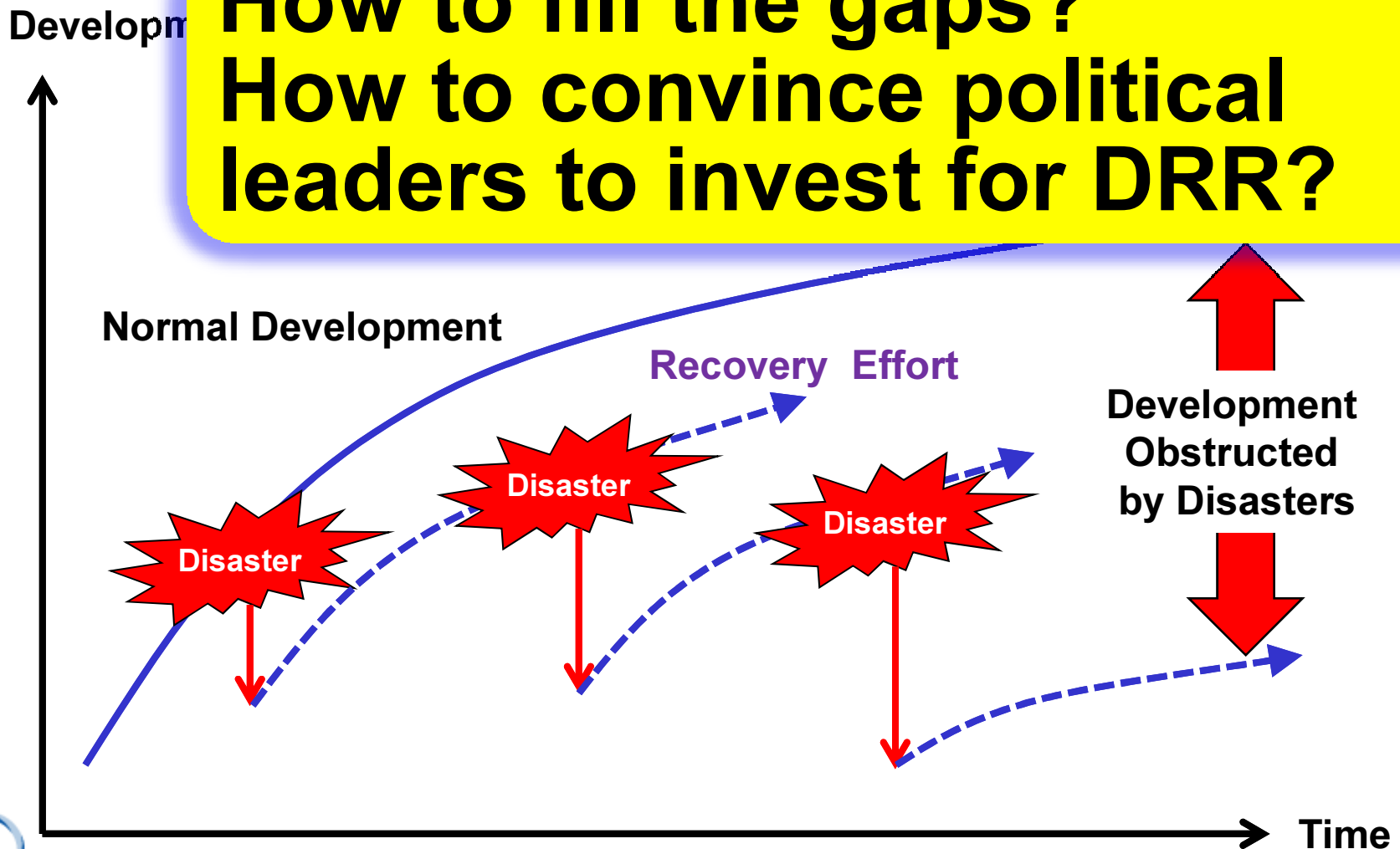
Development Obstructed by Disasters ~Micro, Personal, Family Level~



Development Obstructed by Disasters

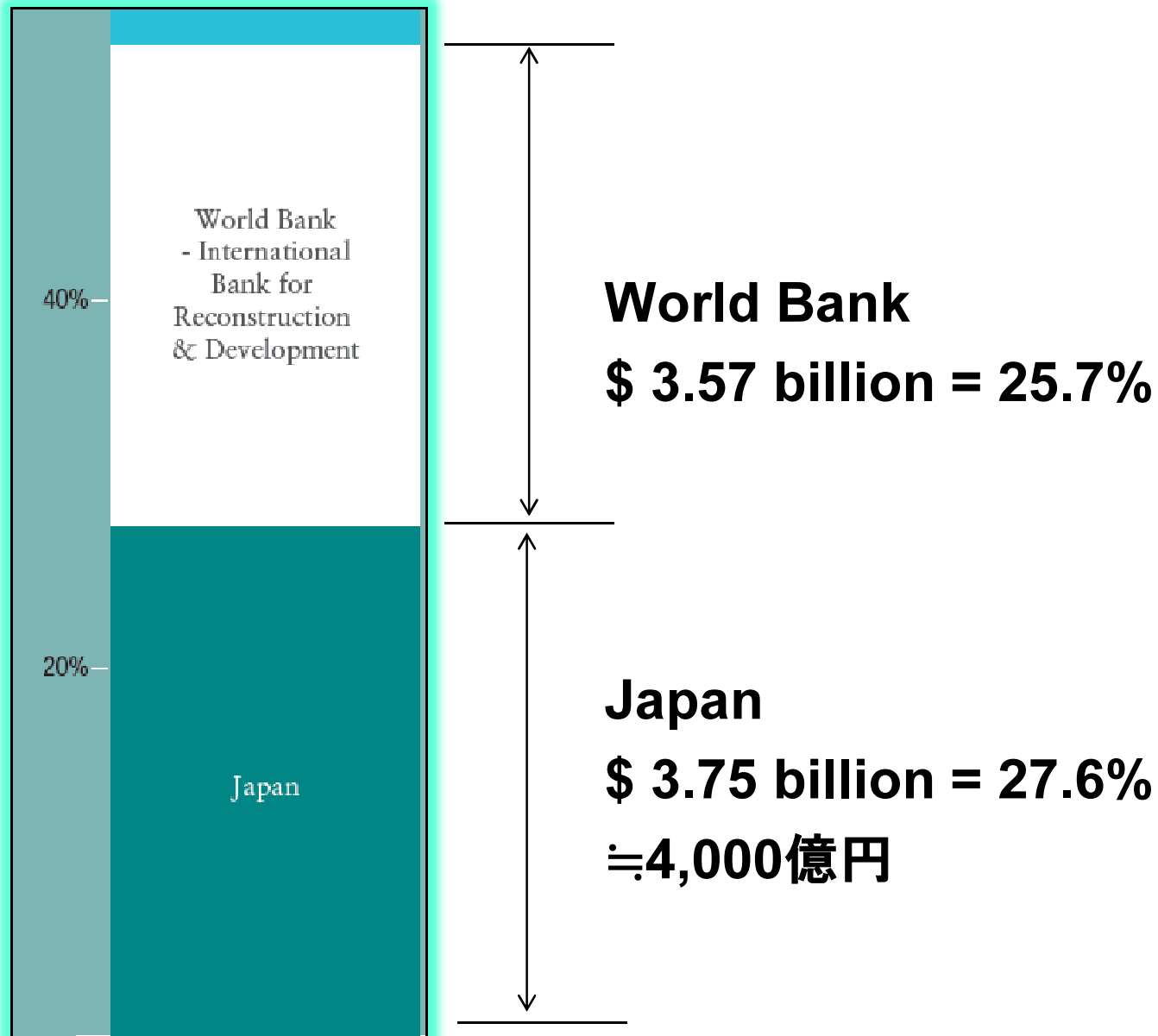
~ Macro, Country Level ~

How to fill the gaps?
How to convince political leaders to invest for DRR?



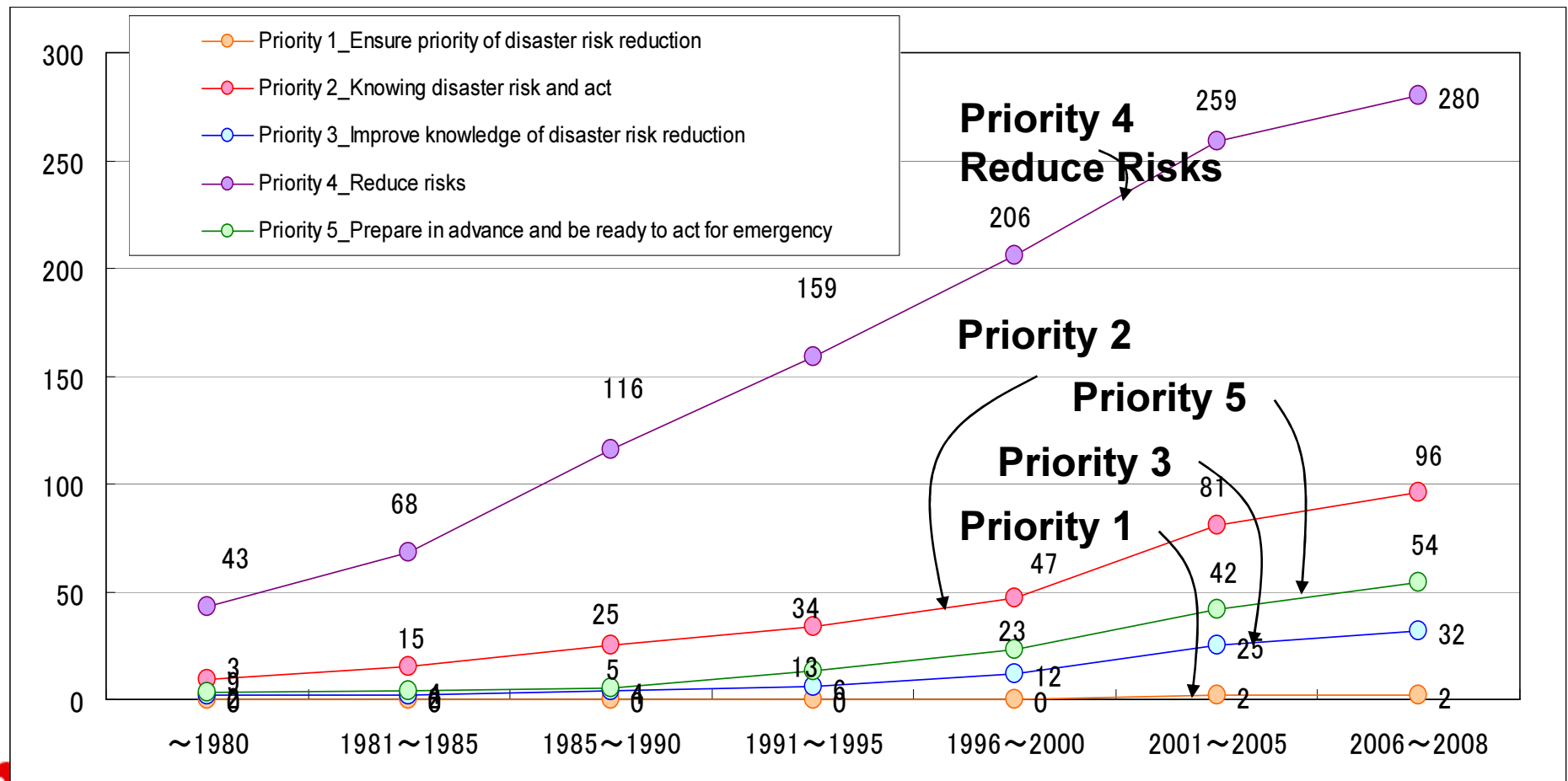
Total \$13.5 billion

20 years of international financing of disaster risk reduction (DRR)



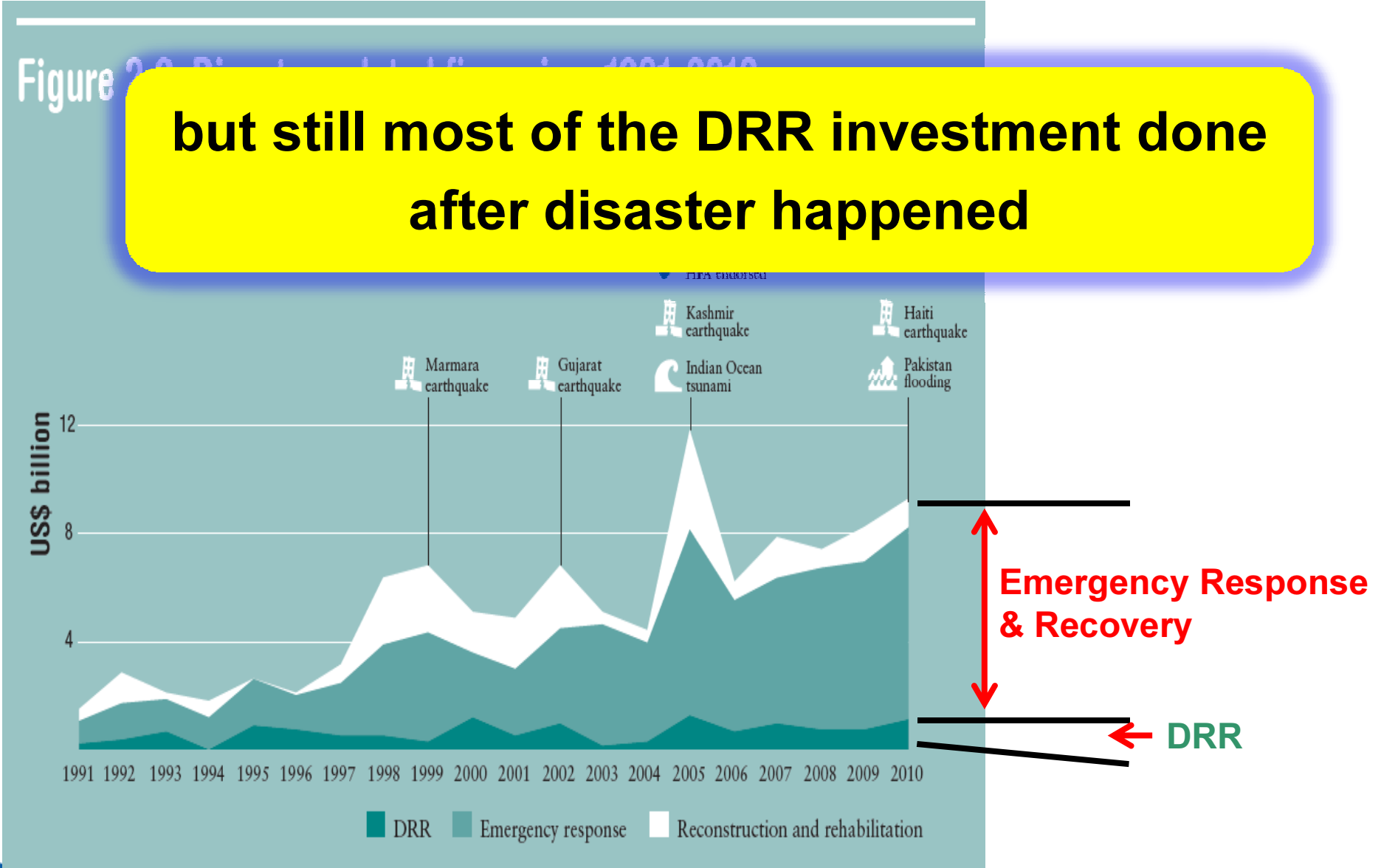
JICA's Support meet to the HFA Priority Action

- The projects related to priority action 4 are increasing rapidly compared to others.
- It entails the best mix of structural and non-structural measures.



Pre-investment is much Cheaper than recovery cost, but

but still most of the DRR investment done after disaster happened



The importance of pre-disaster DRR investment

Global Assessment Report P-87

GVR

Global Assessment Report on Disaster Risk Reduction

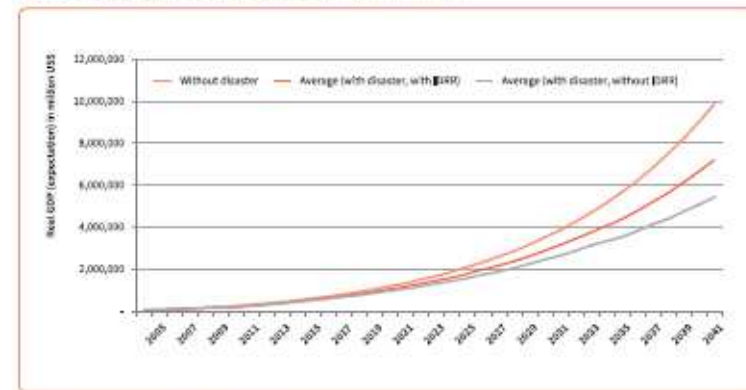
2013

From Shared Risk to Shared Value:
The Business Case for Disaster Risk Reduction



United Nations

Figure 5.11 Simulation for Pakistan (IDRR = investment in disaster risk reduction)



Source: Japan International Cooperation Agency (JICA)

more resilient than smaller economies, heavily dependent on single economic sectors (UNISDR, 2009 and 2011; Gencer, 2012). In less resilient economies, the wider impacts of disasters are more likely to be pervasive.

of economic growth projections shows that although real GDP growth would be impacted by a major disaster event, investments in disaster risk reduction could significantly curtail this impact (Figure 5.11).

Although further research is required to reconcile the results from different economic models, recent studies show that in the medium (Hochrainer, 2009) or long term (Hsiang and Jina, 2012), countries that have experienced intensive disasters may never recover this lost growth. For example, countries affected by tropical cyclones experience lower GDP growth in the 15 years that follow compared with the estimated growth that would have occurred without cyclone impacts. In countries with frequent severe cyclones—such as Madagascar and the Philippines—and large fiscal gaps, growth will be lower over several decades (see Figure 5.10). Countries with less frequent and severe cyclones—such as India or the United States of America—also experience lower growth, but the divergence is far less.

The impacts of disasters on economic growth over time can be understood when assessing potential mid- to long-term macroeconomic impacts. In Honduras, a one-in 100 year event could produce direct losses amounting to 33 percent of its GDP. Given its limited ability to finance this loss, the government also would have to prepare for further cumulative consequences over time, estimated at up to almost 24 percent of GDP over a period of 5 years (Figure 5.12).

Currently, national accounting does not adequately measure disaster impacts. On the contrary, accounting systems usually report reconstruction and relief spending, adding to GDP figures. Disaster risk may be included in new approaches to wealth accounting at the national level such as adjusted savings,⁴ to improve risk management and financing strategies in the future (Mechler, 2009).

New simulations of the impact of disaster risk reduction measures on economic growth also show useful results. In Pakistan, for example, an analysis

The importance of pre-disaster DRR investment

Global Assessment Report

Chapter 5

The Resilience Challenge

5.3 Macroeconomic effects

Disasters can negatively impact the economic development of any country, but for smaller economies that are heavily dependent on single economic sectors, these impacts are likely pervasive. Direct and indirect losses can result in macroeconomic effects that cumulate over time.

The importance of pre-disaster DRR investment

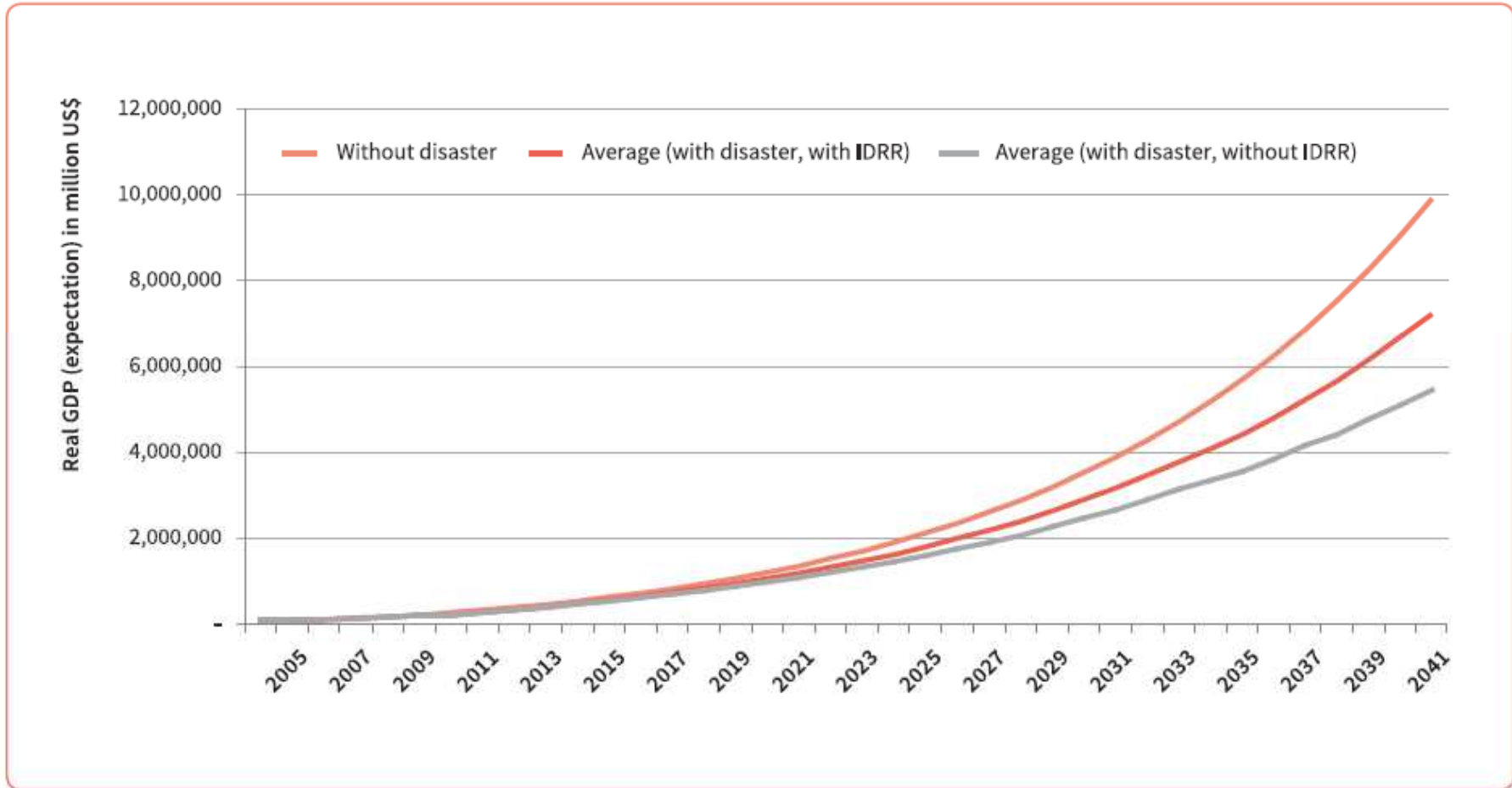
Global Assessment Report P-87

New simulations of the impact of disaster risk reduction measures on economic growth also show useful results. In Pakistan, for example, an analysis of economic growth projections shows that although real GDP growth would be impacted by a major disaster event, investments in disaster risk reduction could significantly curtail this impact (Figure 5.11).

The importance of pre-disaster DRR investment

Global Assessment Report P-87

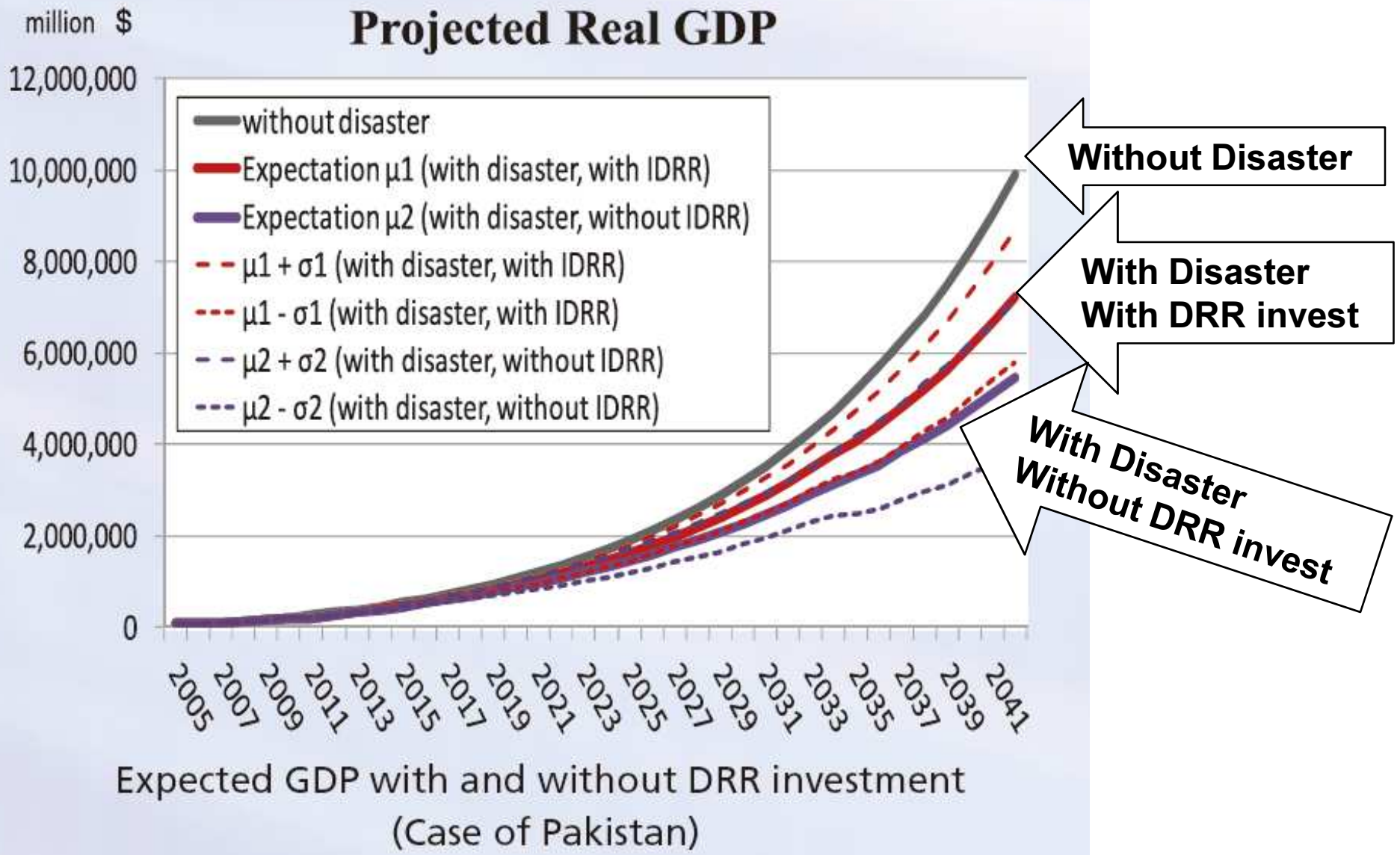
Figure 5.11 Simulation for Pakistan (IDRR = investment in disaster risk reduction)



(Source: Japan International Cooperation Agency (JICA))^{iv}

Pakistan case for 2042

GDP will 25% down without DRR investment



Debate for Risk Transfer

- **\$1 pre-disaster prevention investment can save \$7 damage & loss from disaster**
- **In order to cover \$7 by insurance, 25% of business cost will be needed, → \$2**
- **Instead of \$1 pre-investment, pay \$2 to insurance company and \$7 damage never reduced, lost lives never return**

How to convince developing country's political leader to make investment

The road to hell is paved with good intentions.

EU also appeal before Sendai Conference



UN World Conference on Disaster Risk Reduction

For every **€1**

invested in disaster prevention,

€4 to €7

are saved in disaster response.

#Road2Sendai #WCDRR

Shown in the Global Assessment Report 2015 UNISDR as a success case

GAR

Global Assessment Report on Disaster Risk Reduction

2015

Making Development Sustainable:
The Future of Disaster Risk Management



United Nations

extensive risk layers. In Japan, for example, continued investment in flood protection—together with regulation—has resulted in a dramatic reduction in the areas flooded and in mortality (Figure 5.3).

In contrast, many low and middle-income countries lack the necessary regulatory quality for norms and standards to be applied effectively. In many such countries, weak accountability of local to central government, of government to citizens, and across government sectors has undermined the effectiveness of norms, standards, laws and policies (Coskun, 2013). For example, while most disaster risk reduction laws provide some kind of mandate for the involvement of women and vulnerable groups, these often consist of general aspirational statements without specific mechanisms for implementation (IFRC and UNDP, 2014).

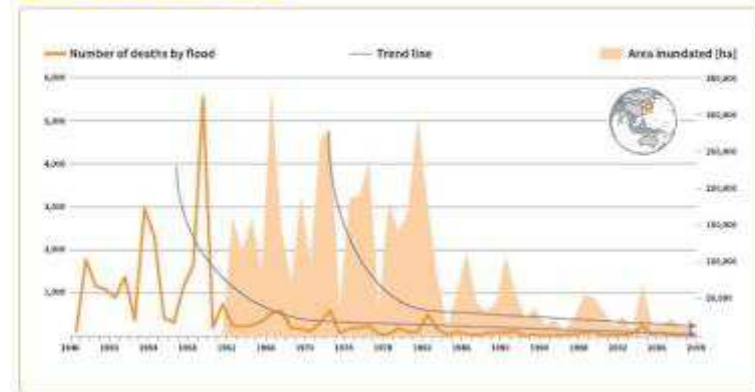
As a consequence, the adoption of improved building codes or environmental regulations in lower-income countries may lay a veneer of disaster risk management over the surface of relentless risk accumulation (Wamsler, 2006). In

particular, where a significant proportion of economic and urban development takes place informally (either in an informal sector *per se* or due to corruption and lack of compliance in the formal sector), instruments such as building codes and zoning plans are only effective in strictly limited areas and sectors, typically in higher-income enclaves and strategic economic sectors. Most building outside of these enclaves and sectors is non-engineered, most urbanization is unplanned and local governments have weak capacities to promote or enforce standards.

In addition, the adoption of inappropriately strict codes and standards may have the opposite effect of driving more development into the informal sector, as low-income households and small businesses are unable to afford the costs of building to code in areas zoned for residential or commercial use.

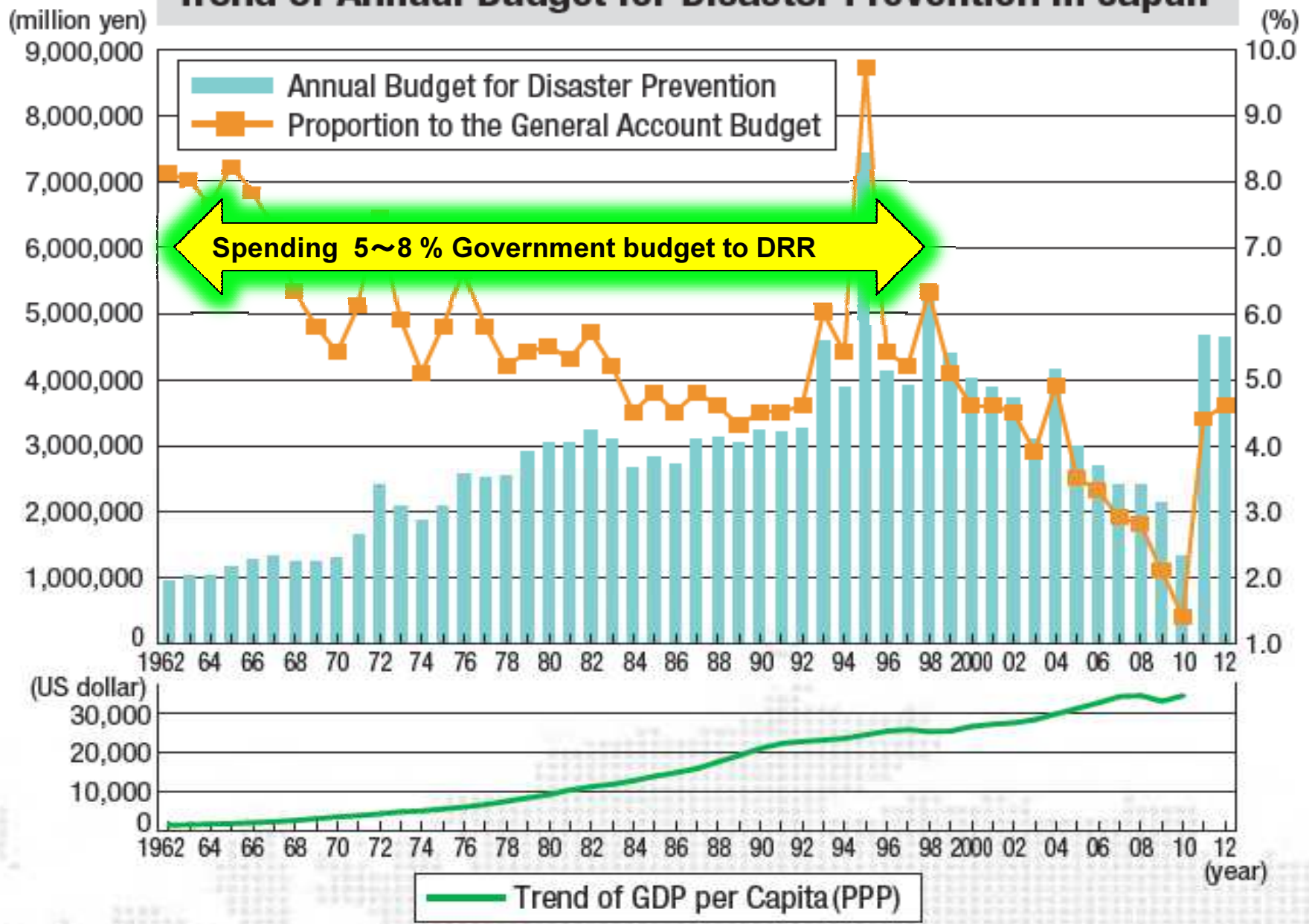
Finally, the responsibility of those taking the decisions with regard to urban development, the application of building codes or land-use planning is not always clear-cut, as seen in the legal

Figure 5.3 Successful flood reduction in Japan



Source: UNISDR with data from Japan (Korea, JICA)

Trend of Annual Budget for Disaster Prevention in Japan

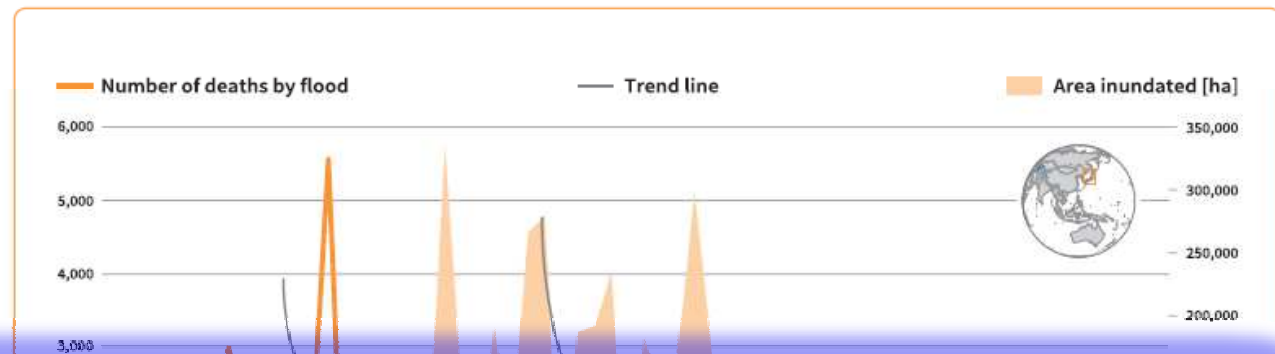


(Source) the Cabinet office

Shown in the Global Assessment Report 2015 UNISDR as a success case

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Figure 6.3 Successful flood reduction in Japan



How to convince developing country's political leader to make investment

(Source: UNISDR with data from Takyea Kimio, JICA.)

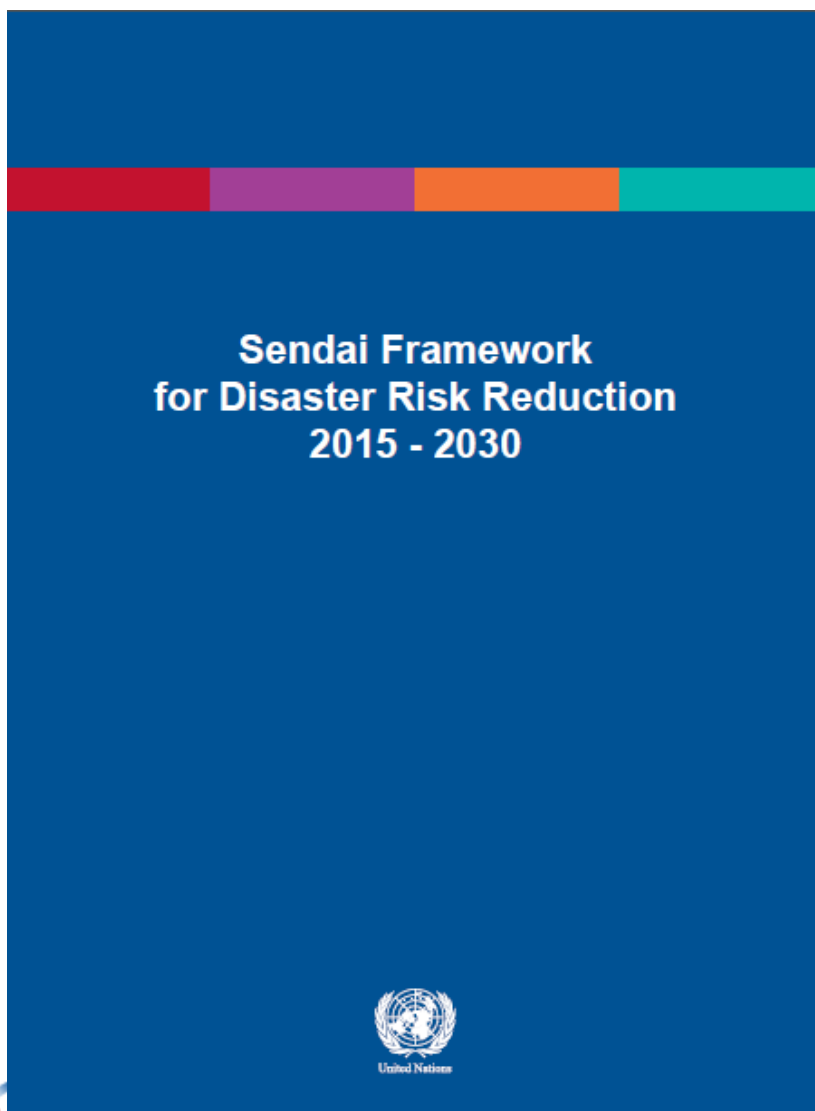
Sendai Framework for DRR Negotiation Discussion in Geneva UN/HQ from Aug 2014 – March 2015 Sendai



Make effective influence to the document of Post HFA, Sendai Framework by Japanese government



Finalized Sendai Framework for DRR



Sendai Framework for Disaster Risk Reduction 2015-2030

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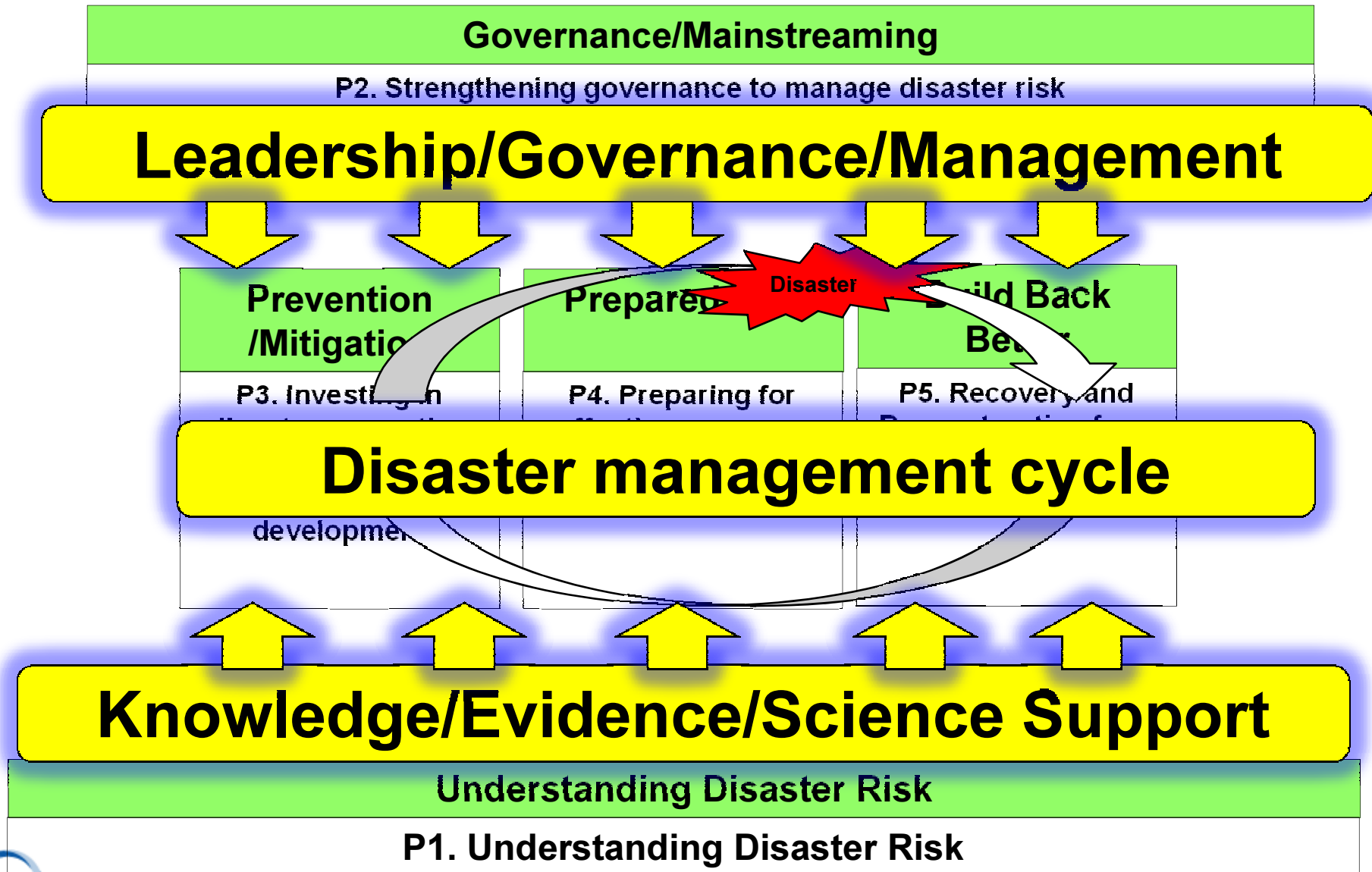
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JICA's Propose for the New Structure of Priority for Action

Priority for Action

Understanding Disaster Risk	Governance/ Mainstreaming	Prevention /Mitigation	Preparedness	Build Back Better
<p>P1. Understanding Disaster Risk</p>	<p>P2. Strengthening governance to manage disaster risk</p>	<p>P3. Investing in disaster prevention and mitigation as an asset for sustainable development</p>	<p>P4. Preparing for effective response</p>	<p>P5. Recovery and Reconstruction for a resilient society</p>

Logic of the Priority for Action



Priority 1

Understanding disaster risk

for Action

local, national, regional and global levels in the following four priority areas.

Priority 2

Strengthening disaster risk governance to manage disaster risk

Priority 3
Investing in disaster risk reduction for
Understanding disaster risk
resilience

Priority 4
Enhancing disaster preparedness for effective
response, and to «Build Back Better» in
recovery, rehabilitation and reconstruction

Experience indicates that disaster preparedness needs to be strengthened for more effective response and ensure capacities are in place for effective recovery. Disasters have also demonstrated that the recovery, rehabilitation and reconstruction phase, which needs to be prepared ahead of the disaster, is an opportunity to «Build Back Better» through integrating disaster risk reduction measures. Women and persons with disabilities should publicly lead and promote gender-equitable and universally accessible approaches during the response and reconstruction phases.

Priority 3

Investing in disaster risk reduction for Understanding disaster risk resilience

Primary responsibility of States to prevent and reduce disaster risk, including through cooperation

Share between Governments authorities stakeholders to national

local communities
non- as

Decision-making to be inclusive and risk-informed while using a multi-hazard approach

Coherence of disaster risk reduction and sustainable development policies, plans, practices and mechanisms, across different sectors

in disaster risk when determining measures to reduce risk

throughly assessment, evidence involving primarily on post-

on and reducing existing disaster risk

cooperation to be effective, meaningful and strong

from developed countries and partners to developing countries to be tailored according to needs

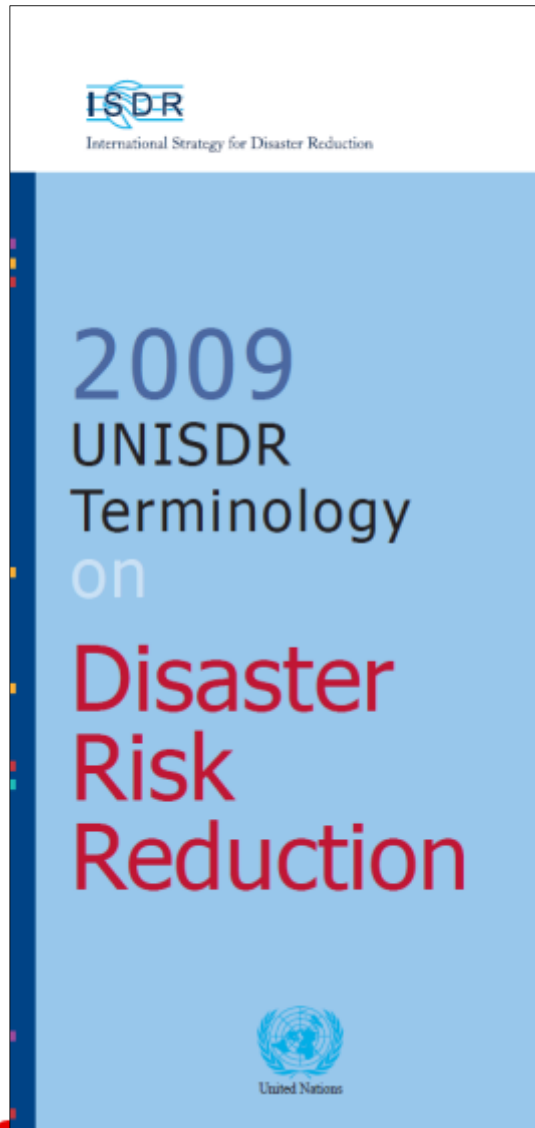
Priority 4

Enhancing disaster preparedness for effective response, and to «Build Back Better» in recovery, rehabilitation and reconstruction

www.preventionweb.net/go/sfdr
www.unisdr.org
isdr@un.org



what is “Resilient” and “Build Back Better”?



Resilience

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Comment: Resilience means the ability to “resile from” or “spring back from” a shock. The resilience of a community in respect to potential hazard events is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.

Concept of Build Back Better

Build Back Better

16 January 2015
Japanese Delegation

16 January 2015
Japanese Delegation

1

Concept

According to the definition of UNISDR, “recovery” after a disaster is “the restoration, and improvement, where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors” (UNISDR, 2009).

The “Build Back Better” concept is generally understood to utilize disasters as an opportunity to create more resilient nations and societies than before them through the implementation of well-balanced disaster risk reduction measures, including physical restoration of infrastructure, revitalization of livelihood and economy/industry, and the restoration of local culture and environment.

Among the past PDNA (Post Disaster Needs Assessment) reports which have been prepared by the respective governments with the assistance of GFDRR (Global Facility for Disaster Reduction and Recovery) and the international donor community, the concept of “Build Back Better” first appeared in the Ondoy Flood PDNA report 2009, which was prepared by the Philippine government. Since then, each PDNA report has been written based on this concept.

Relation between each Targets

e. Increase number of countries with national & local strategies by 2020

f. Enhance International Cooperation

g. Enhance Access to the Disaster Risk Information

3 input Target which can influence to another Targets

4 Outcome Targets

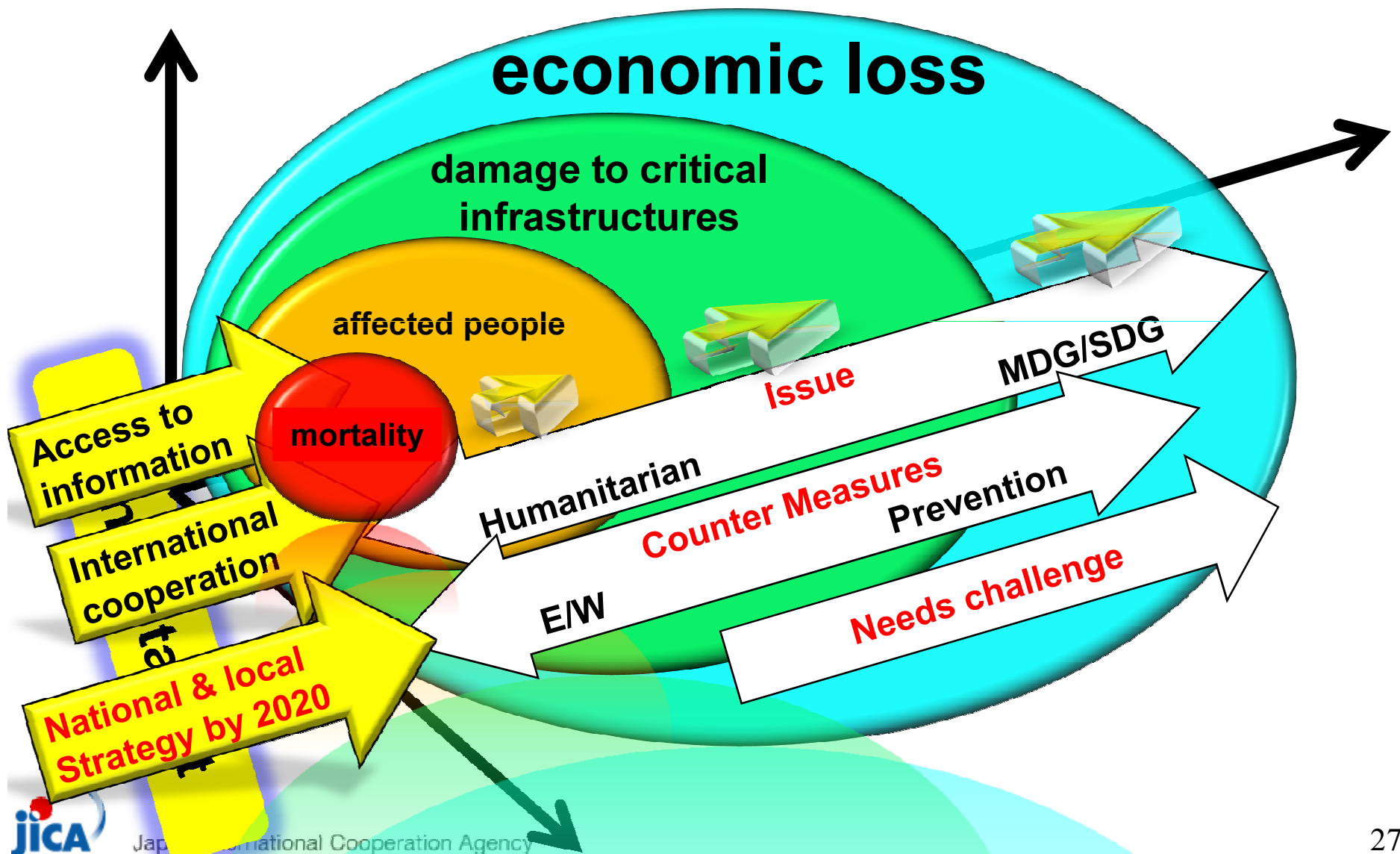
a. Reduce disaster mortality

b. Reduce the number of affected people

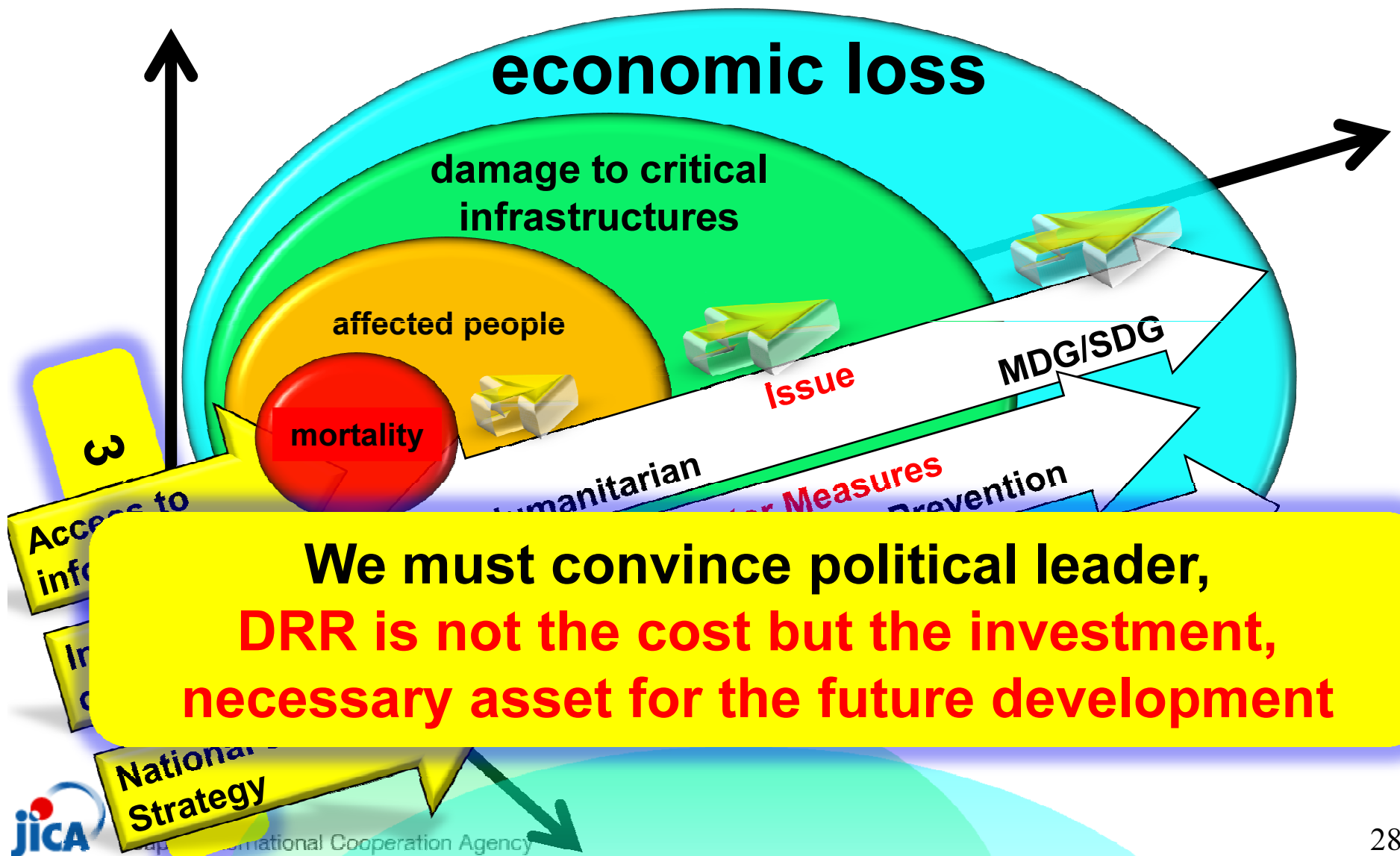
c. Reduce disaster economic loss

d. Reduce disaster damage of critical infrastructures

Sendai Framework for DRR Targets =Relation between 7 Targets=



Sendai Framework for DRR; Relation between 4 outcome Targets



Definition of Risks by Sendai Framework

- Para 15. shows the definition,
 - The present Framework will apply to the risk of small-scale and large-scale, frequent and infrequent, sudden and slow-onset disasters **caused by natural or man-made hazards**, as well as **related environmental, technological and biological hazards and risks**. It aims to guide the multi-hazard management of disaster risk in development at all levels as well as within and across all sectors.

Indicators of Sendai Framework

- Indicator to monitor **the implementation of Sendai Framework** for DRR itself
- Used for relevant indicators for SDGs
- Indicator to monitor **the achievement of the 7 Targets**
- **What kind of indicator be needed for Sendai Framework for DRR monitoring and mainstreaming DRR into the governmental policy?**
 - ① **minimum level:**
monitor the implementation of Sendai Framework for DRR, **including proxy data-set** also acceptable
 - ② **standard level:**
not only monitor but show evidence to political leader, to mainstream DRR as a development issue to Gov. policy
 - ③ **highest level:**
back ground data set, scientifically, statistically can provide future risk figure and solution, as academic resolution level

Sustainable Development Goals (SDGs)

(Adopted on Sep. 25th 2015)

1. Poverty eradication
2. Food security and nutrition
3. Health
4. Education
5. Gender equality and women's empowerment
6. Water & sanitation
7. Energy
8. Economic Growth
9. Industrialization, innovation & infrastructure
10. Reducing inequality
11. Sustainable cities & human settlements
12. Sustainable Consumption and Production
13. Climate Change
14. Marine resources, oceans and seas
15. Ecosystems & biodiversity
16. Peaceful & inclusive society
17. Means of implementation

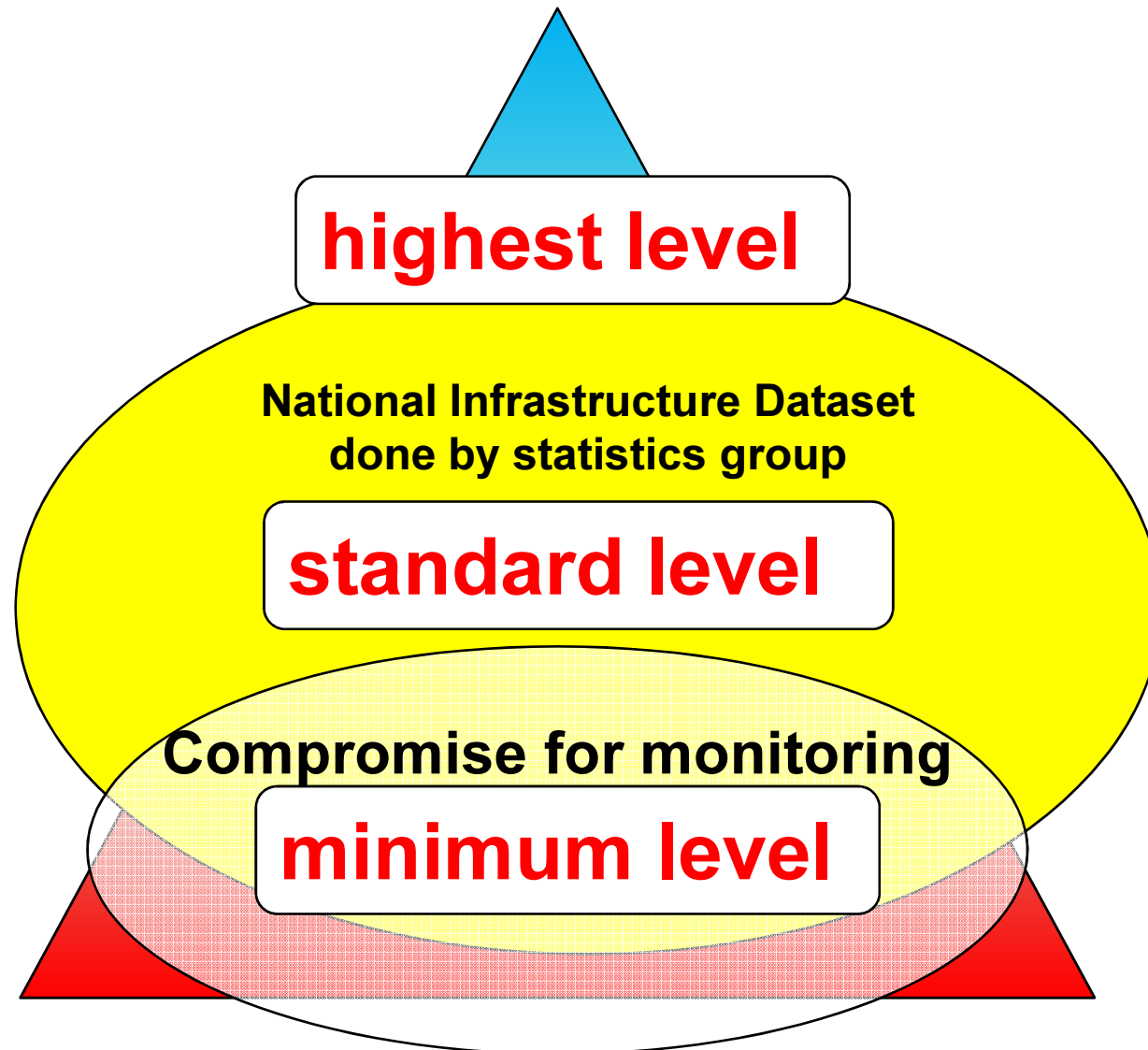
17 Goals
169 Targets

230 Indicators have
been approved by
UN Statistical
Commission
(Mar. 2016)

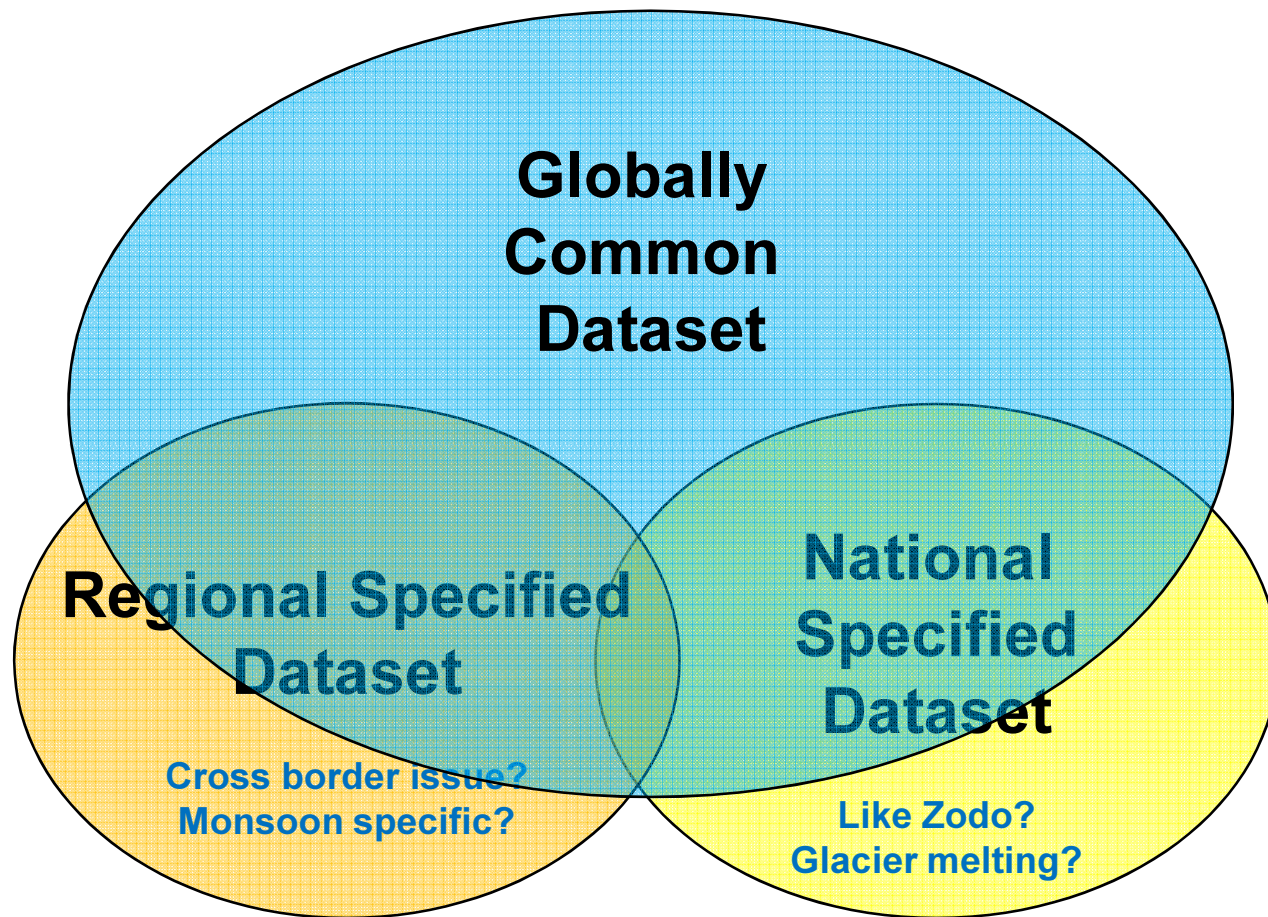
 SUSTAINABLE DEVELOPMENT GOALS



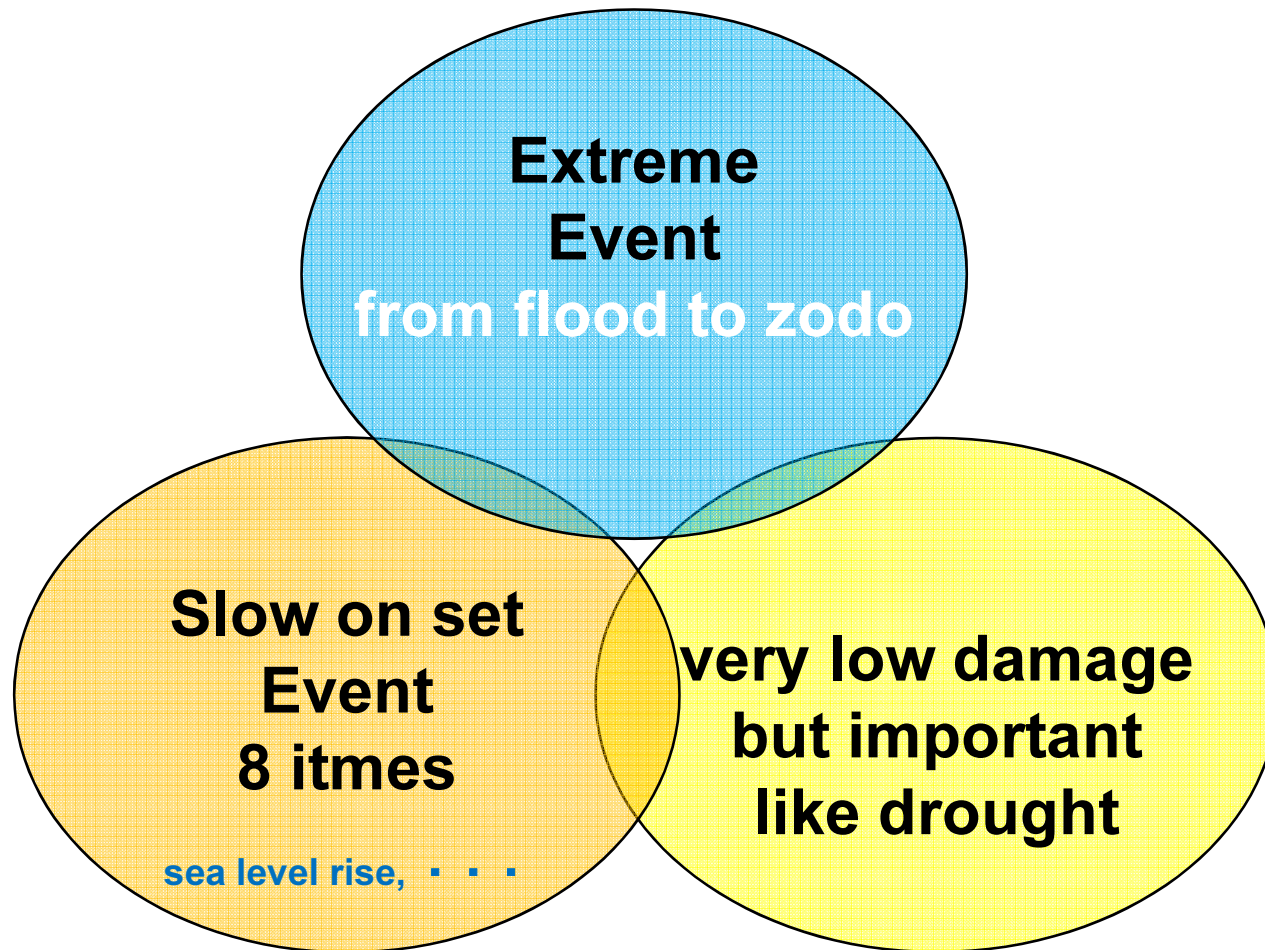
Indicators and National Statistic Dataset



Variations of dataset 1



Variations of dataset



Japanese Initiative for finalizing Indicators

Feasibility assessment of proposed indicators, using existing disaster damage statistics in Japan

June 2016

Proposed for Feasibility Exercise on Indicators for the Sendai Framework for Disaster Risk Reduction

17 July 2016

1. The discussion in the OEWG and need for examination of the proposed indicators

The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was adopted by UN Member States in March 2015, in which seven Global Targets are included. At present we are working to determine indicators to measure progress made in terms of achieving these targets. These indicators are very important for continuing the current review or progress towards achieving the goal of the Sendai Framework.

These indicators are being discussed by the representatives of each country in the open-ended intergovernmental expert working group (OEIWG) on indicators and terminology regarding disaster risk reduction. Their discussions will be held in the 17th session of the OEIWG scheduled for November 21, following which a report will be compiled and submitted to the UN General Assembly in December. Subsequently, the monitoring will begin using these indicators from next year.

Basic data for indicators in each country is crucial for monitoring to measure the progress. Before beginning the process of monitoring, we need to know whether it will be possible, through examining the existing basic data. In case whereby basic data that can be used directly for this purpose is not available, we must produce basic data that can be used for indicators through processing existing data. At the same time, we need to establish a sustainable process to accumulate data, in which we conduct surveys to collect basic data, compile and aggregate the results. The tasks cannot be carried out by each country's National Platform alone. Understanding and participation of each country's line ministries is essential.

Many indicators have been proposed based on the diverse opinions shared by each country in OEIWG to date.

Target	Indicator candidates
a. Global disaster mortality	11
b. Number of affected people	19
c. Direct disaster economic loss	10
d. Increase the number of countries with national and local disaster risk reduction strategies by 2020	10
Total	50

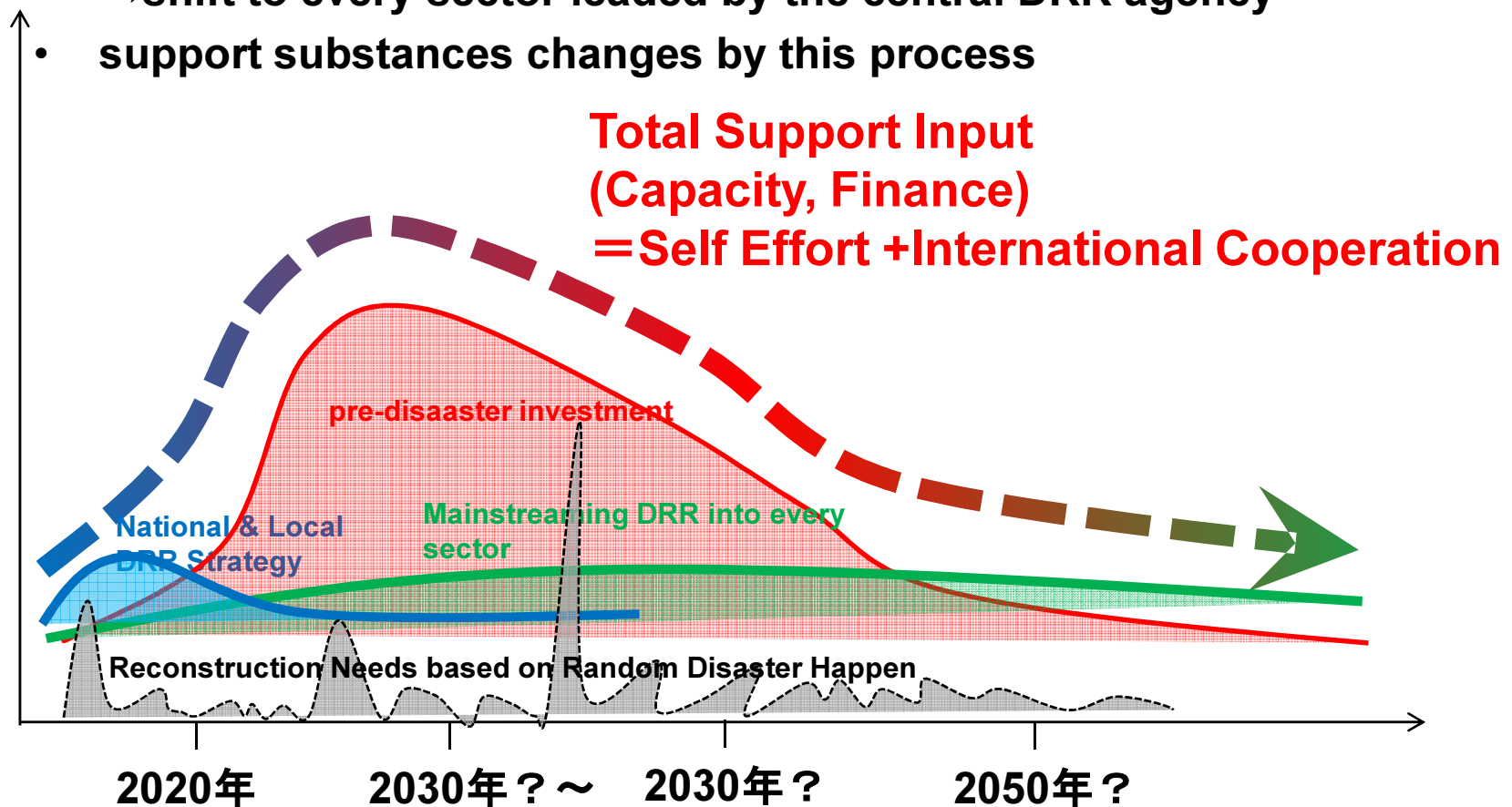
However, in regard to these proposed indicators, it has not been proven whether:

- 1) basic data is existent that can be used directly for indicators exists;
- 2) in the case whereby such basic data does not exist, it is possible to produce basic data that could be used for indicators, through processing existing data; and

Page 11 of 6

Relation between Capacity and International Cooperation Needs

- Requested resources depends on each countries' condition
Capacity → Finance → Capacity
- Start from Capacity Development Support for strategy
→ shift to implementing financial support
→ shift to every sector leaded by the central DRR agency
- support substances changes by this process





Poor layer is continuously struggling with Spiral of “Disaster and Poverty”



Poor people living in the vulnerable area



live more vulnerable area sometime on the street

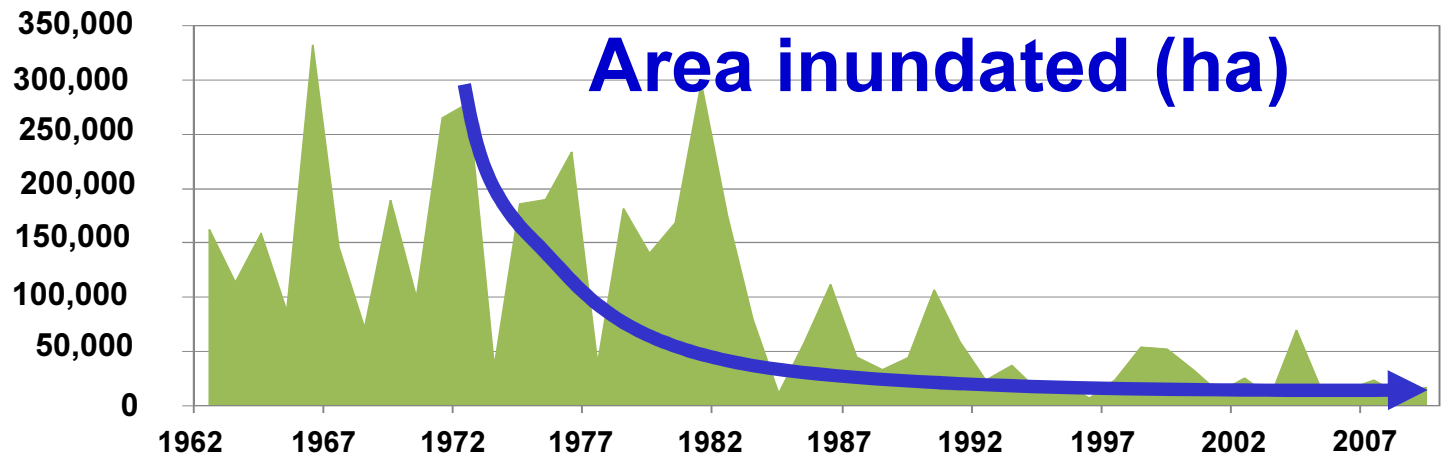
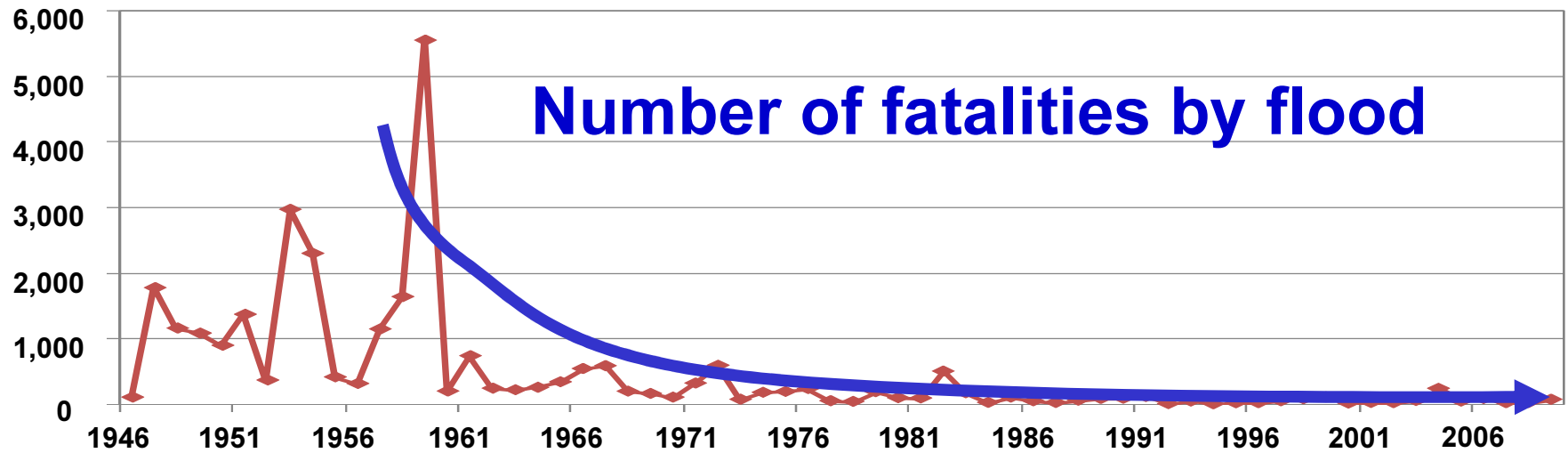


easy to damage

easier to be damaged



Reduction of **flood damages** in Japan by continuous investment



Number of fatalities and inundation area have dramatically been reduced in Japan due to continuous investment in and efforts for flood mitigation.



Japan International Cooperation Agency

Source: Water Disaster Statistics, Ministry of Land, Infrastructure Transport and Tourism

Proposing tools for Post MDG/HFA

Political
Leaders

Practi-
tioner

Donors

Convince Policy Maker
by **DR²AD Model**

Approach for today's invest
Low Regret Investment

Disaster Risk Assessment
to all projects

Science & Technology Conference on the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030

27-29 January 2016 - International Conference Centre, Geneva, Switzerland



PROVISIONAL PROGRAMME

Wednesday 27 January	Thursday 28 January	Friday 29 January						
<p>Badging 8:30 - 9:45 - CICC Main entrance</p> <p>Opening Ceremony & Plenary Panel Introduction of the Science and Technology Partnership and Road Map for the implementation of the Sendai Framework 10:00-12:30 - Room 2</p>	<p>Work stream 2 Understanding disaster risk, risk assessment and early warning 9:00-9:45 - Room 2</p> <p>Poster exhibition and Coffee Break 9:45 - 10:30 Open Space</p> <table border="1"> <tr> <td>Group 1 Hazard monitoring and Early Warning 10:30-12:30 Room 3+4</td> <td>Group 2 Vulnerability and exposure 10:30-12:30 Room 5+6</td> <td>Group 3 Multi-hazard risk assessment & management 10:30-12:30 Room 2</td> </tr> </table> <p>Wrap-up 12:30-13:00 - Room 2</p>	Group 1 Hazard monitoring and Early Warning 10:30-12:30 Room 3+4	Group 2 Vulnerability and exposure 10:30-12:30 Room 5+6	Group 3 Multi-hazard risk assessment & management 10:30-12:30 Room 2	<p>Work stream 2 Understanding disaster risk, risk assessment and early warning 9:00-9:45 - Room 2</p> <p>Poster exhibition and Coffee Break 9:45 - 10:30 Open Space</p> <table border="1"> <tr> <td>Group 1 Leveraging science 10:30 - 12:30 Room 2</td> <td>Group 2 Capacity development 10:30-12:30 Room 3+4</td> <td>Group 3 Research gaps 10:30-12:30 Room 5+6</td> </tr> </table> <p>Wrap-up 12:30-13:00 - Room 2</p>	Group 1 Leveraging science 10:30 - 12:30 Room 2	Group 2 Capacity development 10:30-12:30 Room 3+4	Group 3 Research gaps 10:30-12:30 Room 5+6
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<p>Side Events 13:00-14:00</p> <p>Work stream 1 The Scientific and Technical Partnership for the implementation of the Sendai Framework 14:00-14:45 - Room 2</p> <p>Poster Exhibition and Coffee Break 14:45-15:30 - Open Space</p> <table border="1"> <tr> <td>Group 1 National and local levels networks and platforms 15:30-17:30 Room 2</td> <td>Group 2 Regional science and technology networks and platforms 15:30-17:30 Room 3+4</td> <td>Group 3 Global science and technology networks and platforms 15:30-17:30 Room 5+6</td> </tr> </table> <p>Wrap-up 17:30-18:00 - Room 2</p> <p>Welcome reception (Tbc) 18:15-19:30 Open Space</p>	Group 1 National and local levels networks and platforms 15:30-17:30 Room 2	Group 2 Regional science and technology networks and platforms 15:30-17:30 Room 3+4	Group 3 Global science and technology networks and platforms 15:30-17:30 Room 5+6	<p>Side Events 13:00-14:00</p> <p>Work stream 3 Use of science, technology and innovation tools, methods and standards to support the implementation and reporting of the Sendai Framework 14:00-14:45 - Room 2</p> <p>Poster Exhibition and Coffee Break 14:45-15:30 - Open Space</p> <table border="1"> <tr> <td>Group 1 Sharing standards, protocols and practices for data collection & reporting 15:30-17:30 Room 2</td> <td>Group 2 Generating, synthesising and sharing data and knowledge for implementation & reporting 15:30-17:30 Room 3+4</td> <td>Group 3 Sharing innovations to improve implementation & reporting 15:30-17:30 Room 5+6</td> </tr> </table> <p>Wrap-up 17:30-18:00 - Room 2</p>	Group 1 Sharing standards, protocols and practices for data collection & reporting 15:30-17:30 Room 2	Group 2 Generating, synthesising and sharing data and knowledge for implementation & reporting 15:30-17:30 Room 3+4	Group 3 Sharing innovations to improve implementation & reporting 15:30-17:30 Room 5+6	<p>Side Events 13:00-14:00</p> <p>Side Events' commitments 14:00-14:30 - Room 2</p> <p>Closing Plenary Panel Endorsement of the UNISDR Science and Technology Road Map and Closing Ceremony 14:30-16:00 - Room 2</p>
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<p>Side Events: Knowledge Hubs for DRR science for the implementation of the Sendai Framework (Wednesday 13:00-14:00 Room 18) The Role of Youth in the application of Science for DRR (Wednesday 13:00-14:00 Room 5,6) Supportive publishing practices in DRR: Leaving no scientist behind (Thursday 13:00-14:00 Room 18) Science and Technology for Addressing Gender Inequality of Disaster Risk (Thursday 13:00-14:00 Room 5,6) Bioethics and Ethics of Science and Technology in DRR (Friday 13:00-14:00 Room 18) Research funding for DRR (Friday 13:00-14:00 Room 5,6)</p>								

All meetings will be held in English.

Badges distribution will take place from 15:00 to 18:00 on Tuesday 26/01 and from 8:30 to 9:45 on Wednesday 27/01.

Participants are invited to pick up their badges at their earliest convenience to avoid delays.



JICA

V161215 1500 SP

Existing knowledge for each priority area from the practitioner's "brute" view, enough or not?
= not from deliver side but from needs on the ground =

Action Area	Existing Knowledge/Research enough or not? Expected support from S&T
Priority 1	
Understanding disaster risk	hazard/risk mapping ○ Disaster statistic data stock × Standardization of dataset △ CC/downscaling into practical plan/reduce uncertainty × Earthquake prediction × Using satellite/nondestructive methodology △ Using innovated technology for Meteorology ○
Priority 2	
Strengthening disaster risk governance to manage disaster risk	National/Local DRR Planning ○ Political mechanism/dynamism research × Convince Political Leader/Social, Political Science × Effective Monitoring methodology ×
Priority 3	
Investing in disaster risk reduction for resilience	Practical prevention measures ○ Macroeconomic evidence of DRR effectiveness × CC/downscaling into practical plan/reduce uncertainty ×
Priority 4-1	
Enhancing disaster preparedness for effective response	Using satellite practical methodology × Prevent produce future/underlying risk ×
Priority 4-2	
"Build Back Better" in recovery, rehabilitation and reconstruction	CC/downscaling into practical plan/reduce uncertainty × Appropriate seismic design for masonry house △