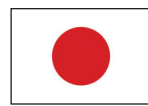




# JAPAN-WORLD BANK PROGRAM

FOR MAINSTREAMING DISASTER RISK MANAGEMENT  
IN DEVELOPING COUNTRIES

## 2017-18 Annual Report





This Annual Report covers the period between April 2017 and March 2018 (2017-18).  
It was presented for review at the Fifth Program Steering Committee Meeting,  
held in Tokyo, Japan on March 01, 2018.



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# 1. EXECUTIVE SUMMARY

## 1.1 Introduction

This annual report highlights the activities conducted and results achieved by the *Japan-World Bank Program for Mainstreaming Disaster Risk Management (DRM) in Developing Countries* (the Program) during **April 2017 to March 2018**.<sup>1</sup>

It provides an overview of activities supported by the World Bank Tokyo DRM Hub (Hub) through its two interdependent work streams: (i) the Country Program and (ii) Knowledge Program. The separate **2017-18 Program Profiles Report** provides full project-level reporting of activities for the 2017-18 period.

## 1.2 Key Highlights of 2017-18

In 2017, MoF disbursed the fifth and final tranche of its contribution (US\$ 20 million) as the Program initiated its fourth year of implementation. As of **February 2018**, there have been 43 projects awarded through the Country Program (US\$61.1 million) and 17 projects awarded through the Knowledge Program (US\$8.9 million).<sup>2</sup>

Key highlights from the reporting period include:

- The Hub approved **13 Country Program engagements and 2 Knowledge Program projects** connecting Japanese and global expertise in DRM with developing countries.
- The active multi-sector global Country Program portfolio of 43 technical assistance projects now totals US\$61.1 million and is **benefitting 10.8 million people in 55 countries** to build disaster and climate resilience.
- Through the **Knowledge Program**, the Hub continued to capture and deploy Japanese expertise for developing country officials and World Bank teams, producing 8 **knowledge products** to inform disaster resilient investments across the globe.
- Recognizing the importance of expanding **resilient infrastructure** to other sectors, the Hub formalized a partnership with the World Bank's Transport team establishing a collaborative **"Resilient Transport Partnership Program"** which will inform current and future World Bank transport investments.
- Notably, the Program has **leveraged 46 World Bank investment lending operations to date**, influencing or informing a portfolio of approximately **US\$6.3 billion in DRM informed investments worldwide**.
- The Hub convened **224 Client Country representatives** and **37 World Bank Task Team Leaders** through **32 knowledge exchange** events showcasing Japanese best practices and solutions on DRM.
- To date, the Hub has brought together **3,550 people** and conducted nearly **150 knowledge exchanges**.
- More than **160 Japanese expert contributors** from **the public and private sectors** have **participated in Hub events or been deployed** to developing countries this year, reaching a total of 765 since the start of the Program.

In 2017-18, the Hub solidified its capacity as an important convener of expertise and knowledge between Japan and the World Bank. Hub initiatives have been effective in enabling knowledge projects and targeted technical exchanges between developing country counterparts and Japanese experts on a wide range of DRM issues including resilient transport infrastructure, resilient cultural heritage, and seismic risk. In addition, in response to demand from client countries and World Bank operational teams, the Hub launched two new projects under the Knowledge Program advancing the areas of Emergency Preparedness and Response (EP&R) and Resilient Industries.

After four years of operation, the Program has delivered valuable technical advice, knowledge, and expertise to developing countries to raise awareness on DRM and translate this into policy dialogue. Having reached a certain point of maturity, 18 Country Program activities are now in final stages of implementation and many have led to country-level DRM policy outcomes. Specific examples of these outcomes are highlighted on Annex 1 as “Results Stories” and on the 2017-18 Country Program Profiles annex document.

To date, the Program’s US\$61.1 million in Country Program<sup>3</sup> commitments have successfully leveraged an estimated US\$6.3 billion in new DRM informed investments and increased World Bank cross-sectoral collaborations across sectors. As a result, innovative approaches to mainstreaming DRM are being piloted in the education, transport, urban development, and water and sanitation sectors.

During the reporting period, Hub knowledge activities have enhanced the quality of existing World Bank business lines such as risk identification and reduction, hydro-meteorological (hydromet) systems, but also fostered new and emerging business lines such as business continuity planning, emergency preparedness and response, and building regulation.

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<sup>1</sup> This annual report covers the period from April 2017 and March 2018, denoted as “2017-18” throughout this report.

<sup>2</sup> Information provided by the Tokyo DRM Hub. These figures include the number of Country Program and Knowledge Program grants awarded between March 2014 and February 1, 2018. Projects activated under the same World Bank project number, but with a different executing modality are not counted separately.

<sup>3</sup> As of February 2018

**TABLE 1: KEY FIGURES ON THE PROGRAM TO DATE**

	2014-15	2015-16	2016-17	2017-18 <sup>4</sup>
<b>MOF CONTRIBUTION TO THE PROGRAM</b>	\$20 million	\$30 million	\$30 million	\$20 million
<b>TOTAL COMMITMENTS (AT END OF THE 12-MONTH PERIOD)</b>	\$15 million	\$45 million	\$64 million	\$70 million
	16 projects (11 country & 5 knowledge)	31 projects (22 country & 9 knowledge)	48 projects (33 country & 15 knowledge)	60 projects (43 Country Program & 17 Knowledge Program)
	12 countries	32 countries	47 countries	55 countries
				<ul style="list-style-type: none"> <li>• CP projects: Analytical tools &amp; products developed - 101</li> <li>• CP projects contributing to advancing disaster resilience within critical infrastructures- 18</li> <li>• CP projects benefiting from Japanese Experts and Centers of Excellence - 27</li> <li>• CP projects: Trainings, Workshops &amp; Conferences - 156</li> <li>• CP projects: People trained on DRM - 15, 758</li> <li>• KP projects: 8 knowledge products delivered; 2 in final stages</li> </ul>
<b>OUTPUTS FOR 2017-18</b>	.. <sup>1</sup>	.. <sup>5</sup>	Of the 12 output indicators: 4 met or exceeded the target; 4 were approaching target; 4 were in progress.	
<b>LEVERAGING AND BENEFICIARIES</b>	.. <sup>5</sup>	\$0.7 billion leveraged in World Bank investments	\$1.55 billion leveraged in World Bank investments	\$6.3 billion DRM informed investments leveraged
	.. <sup>5</sup>	3.5 million beneficiaries	5.7 million beneficiaries	10.8 million beneficiaries

<sup>4</sup> As of February 2018.

<sup>5</sup> In the first year of Program operation, activities did not complete outputs and outcomes, therefore indicators were not reported. Other figures are estimated as of that date.



## 2. CONTEXT FOR HUB ACTIVITIES IN 2017-18

### BOX 1: THE JAPAN-WORLD BANK PROGRAM: AN OVERVIEW

The Program is a partnership of the Government of Japan and the World Bank. Beginning in March 2014, the Program is funded by a US\$100 million contribution from the Ministry of Finance, Japan (MoF). The Global Facility for Disaster Reduction and Recovery (GFDRR) manages the Program under the oversight of a Steering Committee that comprises representatives from MoF, the Japan International Cooperation Agency (JICA), and the World Bank. Day-to-day operations are conducted by the Hub, under the guidance of the World Bank's Special Representative in Japan.

The objective of the Program is to support developing countries in integrating DRM into national development planning and investment programs, through World Bank country strategies and operations. The Program also strives to connect Japanese and global expertise in DRM with developing country counterparts. To this end, the Program activities are aligned with, and contribute to, the four Priorities of Action under the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework).

The Program is global in scope and works through two components: the Country Program and the Knowledge Program. Through these, it funds technical assistance (TA) projects, knowledge products and exchanges to make Japanese and global DRM best practices and solutions accessible for developing countries.

Many developing countries are highly exposed to natural hazards. Without resilience measures, natural hazards are a core challenge to sustainable economic development due to their potential for wiping out development gains and pushing vulnerable populations back into poverty. Disaster risks are further exacerbated by population growth, urbanization, environmental degradation, unsustainable natural resource exploitation, and climate change.

Within this context, in 2017-18, high demand from developing countries for ex-ante best practices, technical advice, capacity building, and investments to address disaster and climate risks informed the Hub's Country Program engagements. Similarly, the Knowledge Program initiated new global engagements in emergency management and industrial business continuity planning because of increased client demand for preparedness and response activities.

During 2017-18, all Hub financed activities demonstrated that they:

- 1. Addressed the Drivers of Disaster Risk:** The Hub supported activities that addressed key development challenges, such as inadequately designed and constructed infrastructure, that threatens to increase disaster risks;
- 2. Enabled Japanese Expertise and Partners:** The Hub developed and deepened collaborations that enhanced the transfer of knowledge from Japanese centers of excellence to developing country officials and promoted operational and strategic coordination among partners; and
- 3. Catalyzed Large-Scale Investment:** The Hub prioritized TA activities with the potential to influence, inform, and leverage large-scale resilience investments supported by development partners, particularly the World Bank, as well as the public and private sectors.

In addition, the Hub's engagements were shaped by supporting major international policy frameworks and helping developing countries manage several key issues, as described below:

**Supporting the Global Resilience Policy Agenda:** In the context of disaster and resilience related international policy frameworks, all supported Hub activities were informed by international

policy frameworks that seek to raise the importance of disaster risk-informed economic and social development, namely the Sustainable Development Goals and the Paris Climate Agreement. Importantly, all Hub activities are aligned with, and contribute to, the four Priorities of Action under the Sendai Framework. Annexes 2 and 3 provide a cross-portfolio review of this.

**Quality Infrastructure:** Quality infrastructure investment is a crucial foundation for sustained economic growth in developing countries. Globally, in transport infrastructure alone, countries are investing an estimated US\$1.5-2 trillion every year. Supporting risk-informed and risk-reducing design, construction, operation, and maintenance of infrastructure enhances the overall quality, longevity, and resilience to the undesirable impacts disasters and climate risk pose. As of February 2018, the Hub has a portfolio of nearly US\$ 28 million in grant awards focusing on bolstering quality infrastructure, while resilient infrastructure has also become the predominant focus of the Knowledge Program.

**Climate Risks:** Weather events—including hurricanes, heat waves, floods, and droughts—jointly cause more economic damage and loss of life than any other type of disaster. In response to demand from partner countries, the Hub has increasingly provided technical and analytic support to hydromet modernization and development of climate products to ensure climate and disaster resilient outcomes. As of February 2018, the Hub has a portfolio of nearly US\$ 20 million in TA projects to help vulnerable countries manage weather and climate change related challenges.

**Urban Resilience:** Global targets for climate change adaptation, mitigation, and poverty reduction are all impossible to meet without municipalities becoming much better at creating resilient urban environments. Along with addressing the challenges of disaster and climate risks, the additional complication of rapid urbanization in developing countries requires substantial and well-planned infrastructure investments to meet resource demands and enhance economic growth. Cities need to be prepared for, and adapt to, changing conditions, as well as withstand and recover rapidly from disruptions related to natural disasters and climate change. To address these challenges, the Hub has supported a portfolio of US\$22 million in TA projects to help developing countries strengthen urban resilience.

## **BOX 2: FOCUS ON PROGRESS OF MAINSTREAMING DRM IN THE WORLD BANK AND THE ROLE OF THE HUB**

The Hub has helped the World Bank increase its capacity to support developing countries in mainstreaming DRM and aligns well with the Bank's growing DRM agenda. World Bank commitments under the IDA18 replenishment, the Climate Change Action Plan (2016), and new operational requirements demonstrate the growing importance of DRM. Analysis shows the Hub's grant activities are contributing to some of the key targets within the Climate Change Action Plan, notably related to hydromet and early warning systems.

Additionally, the Hub's activities are also contributing to the World Bank's aim to double its program for urban resilience by 2021. Housed within GFDRR's Secretariat, the Hub sits under both the World Bank's Sustainable Development (SD) and Global Themes Vice Presidential Units, which include key global practice (GPs) areas for mainstreaming DRM activities (e.g. Social, Urban, Rural, and Resilience (SURR); Finance, Competitiveness, and Innovation (FCI); Water; Energy; Agriculture; Social Protection).

The Hub's position within GFDRR has helped it to engage with World Bank staff and projects critical for mainstreaming DRM across GPs, particularly through the Knowledge Program activities. Moreover, the Hub has facilitated coordination with other Government of Japan (GoJ) supported development programs within the World Bank, such as the Tokyo Development Learning Center (TDLC) and Global Infrastructure Facility (GIF).

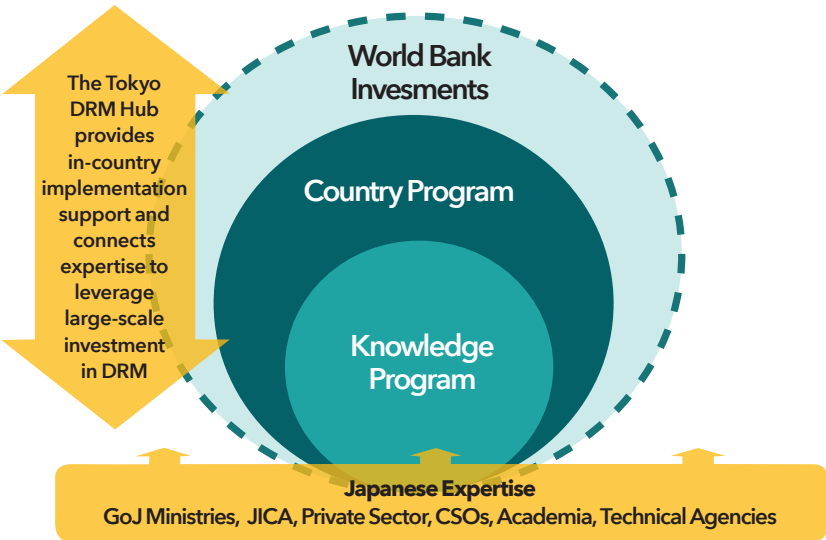
### 3. OVERVIEW OF 2017-18 ACTIVITIES

The Hub works through two interdependent work streams: (i) the **Country Program**; and (ii) the **Knowledge Program**.

Through the **Country Program**, the Hub provides TA grants to support preparing and implementing DRM operations financed through the World Bank. Activities focus on capacity building, analytical work, and co-financing support for disaster and climate resilience in country. Japanese and international experts are integrated into operations per needs on the ground (see Figure 1). Grant proposals under the Country Program are submitted by the Hub to MoF for approval, following an internal review and consultation with Japanese organizations<sup>6</sup> in country.

The **Knowledge Program** implements activities to link Japanese and global knowledge, expertise, and technology with the World Bank’s developing country partners, particularly those supported through the Country Program. Activities include development of sector-specific knowledge products, and dissemination to support mainstreaming DRM, knowledge exchanges and outreach activities with World Bank global solutions groups (see Figure 2).

**FIGURE 1: PROGRAM OPERATING MODEL**



**FIGURE 2: KNOWLEDGE PROGRAM FOCUS AREAS**



The next two sections highlight the progress and achievements of each sub-program.

<sup>6</sup> JICA and Embassies of Japan.

### 3.1 Country Program

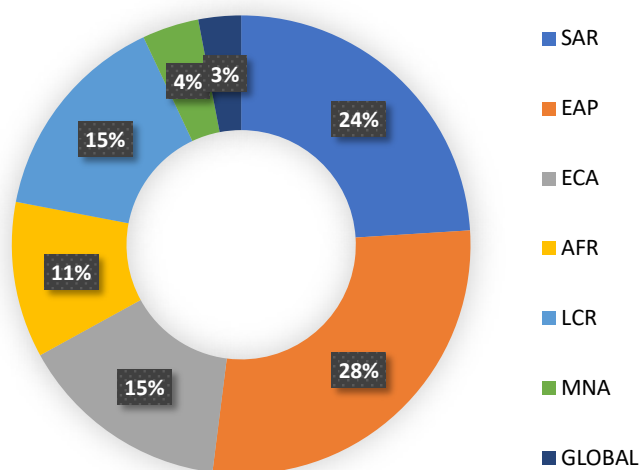
During 2017-2018, the Hub developed and launched thirteen new projects (as of February 1, 2018), which expands the Program’s geographic reach to 55 countries.

These new TA projects are supporting activities that target countries with some of the highest risk to natural hazards including **Indonesia, Vietnam, Tajikistan, Dominican Republic, Honduras, India, and Bangladesh**, among others. Importantly, grant activities are addressing the natural hazards that are the greatest risk to the client countries being flooding the hazard most frequently targeted, followed by multi-hazard, earthquakes, and hydromet events. A profile of all active projects is included in the **2017-2018 Program Profiles Report**.

As of February 2018, there have been 43 projects awarded through the Country Program (US\$61.1 million). Of these, five Country Program activities have closed. The current unallocated balance for the program is US\$12.4 million (as of February 1, 2018), which will be allocated to **eight pipeline TA projects** by the end of the reporting period (March 31, 2018).

Figure 3 shows the distribution of approved project allocations by region. The distribution follows the approved Work Plans 2014-18, and reflects the continued global reach of the program, with more than 50 percent share of resources in the East Asia and Pacific (EAP) and South Asia (SAR) regions.

**FIGURE 3: CUMULATIVE COUNTRY PROGRAM FUNDING DISTRIBUTION BY REGION**



After four years of operation, the Program has delivered valuable technical advice, knowledge, and expertise to developing countries to raise awareness on DRM and translate this into policy dialogue. Having reached a certain point of maturity, 18 Country Program activities are now in final stages of implementation and have led to country-level DRM policy outcomes. Specific examples of these outcomes are highlighted on Annex 1 as “Results Stories” and on the 2017-18 Country Program Profiles annex document.

The diversity of government counterparts engaged is significant, and reflects the cross-sector reach and influence of the program. While many projects are specifically supporting disaster management agencies (often at a high level of government), the portfolio has built partnerships with city authorities, public works departments, water authority and education ministry counterparts.

With regards to Japanese engagement in these projects - whether through the engagement of the services of expert consultants or the transfer of knowledge through other exchange modalities -the opportunities have been many. JICA has consulted on many aspects of the portfolio, and increasingly World Bank TTLs are also taking their own initiative to reach Japanese experts, supported by the Hub. Table 2 (right) provides an overview of Japanese engagement at the project level.

**TABLE 2: COUNTRY PROGRAM OVERVIEW: MAINSTREAMING STATUS AND JAPANESE PARTNERSHIPS**

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
<b>AFR</b>					
1. Chad, Ethiopia, Niger, Senegal, Zambia: Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	X				<ul style="list-style-type: none"> <li><input type="checkbox"/> Presented main findings and recommendations from Japanese case studies on hydromet services and lessons for developing countries at an international conference in Singapore, InterMET Asia 2017 (April 2017).</li> <li><input type="checkbox"/> Organized a regional Africa Hydromet Forum on hydromet services and early warning systems in September 2017 and shared key messages, main findings and recommendations from case studies on Japanese hydrological and meteorological services, and lessons for developing countries.</li> </ul>
2. DR Congo: Improving the Democratic Republic of Congo's Capacity to Manage, Monitor, and Respond to Natural Hazards in the Region of Goma			X	X	<ul style="list-style-type: none"> <li><input type="checkbox"/> Technical collaborations between the Goma Volcano Observatory and the Universities of Tohoku and Hokkaido continue to inform TA activities.</li> </ul>
3. Ghana, Togo: Strengthening Flood Management in the Volta Basin	X				<ul style="list-style-type: none"> <li><input type="checkbox"/> Technical training courses in hydrology, meteorology, and DRR delivered by Kobe and Kyoto universities, MLIT and Japan Met Office in Kansai.</li> </ul>
<b>EAP</b>					
4. Cambodia: Strengthening Financial Planning and Rural Infrastructure for Disaster Resilience in Cambodia	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> A MoU between Cambodia, Lao PDR, Myanmar, Japan, and WB on the establishment of the working group for the development of the Southeast Asia Disaster Risk Insurance Facility (SEADRIF).</li> <li><input type="checkbox"/> Participation in TDD for Resilient Transport in Tokyo</li> </ul>
5. Cambodia, Lao PDR, Myanmar: Developing Strategic Plans for Disaster Risk Financing, Risk Reduction and Hydromet Services in Southeast Asia	X			X	<ul style="list-style-type: none"> <li><input type="checkbox"/> A MoU between Cambodia, Lao PDR, Myanmar, Japan, and WB on the establishment of the working group for the development of the Southeast Asia Disaster Risk Insurance Facility (SEADRIF).</li> <li><input type="checkbox"/> Participation in TDD for Resilient Transport in Tokyo and for the Emergency Preparedness in Tokyo and Yokohama.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
6. Federated States of Micronesia, Fiji, Marshall Islands, Samoa, Tonga, Tuvalu, Vanuatu: Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	X			X	<ul style="list-style-type: none"> <li><input type="checkbox"/> JICA continues to collaborate with the Task team facilitating training courses on hydromet in Fiji on analysis and application of Himawari-8 Data, and maintenance and calibration of instruments, as well as other trainings in Samoa.</li> <li><input type="checkbox"/> The Hub is facilitating collaboration and coordination with JICA on Hydromet and Early Warning in the Pacific including a joint training program on multi-hazards early warning systems.</li> </ul>
7. Indonesia: Investing in Urban Resilience and Emergency Preparedness in Indonesia		X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Benefiting from Japanese expertise and experience such as Special Assistance for Project Formulation (SAPROF) report methodology and JICA's Climate Change assessment report.</li> <li><input type="checkbox"/> Collaboration with Japanese experts such as ICHARM, MLIT, JWA and Japanese cities to determine appropriate opportunities on Urban Flood Risk Management, Dam Safety and Resilience, and EP&amp;R.</li> </ul>
8. Marshall Islands, Samoa, Vanuatu: Disaster Risk Management in the Sustainable Energy Industry in the Pacific	X			X	<ul style="list-style-type: none"> <li><input type="checkbox"/> A knowledge exchange event on Business Continuity Planning of the power utilities between power utilities in PICs and utilities in Japan will be organized as part of the project activities.</li> </ul>
9. Myanmar: Building Resilience of Urban and Road Infrastructure in Myanmar		X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Coordination with JICA for the preparation and implementation of the various investments including the Floods and Landslides Emergency Recovery Project.</li> </ul>
10. Philippines: Enabling Scaled up Risk Reduction Investments in the Philippines	X	X			<ul style="list-style-type: none"> <li><input type="checkbox"/> Coordination and cooperation with JICA in mobilizing Japanese experts on building regulations and engineering to project counterpart agencies.</li> <li><input type="checkbox"/> Good practice and guidance from the GFDRR/Tokyo Hub-supported program "Building Regulation for Resilience" for the revisions of national building code of the Philippines.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
11. Vietnam: Supporting Resilience of Critical Infrastructure Investments in Vietnam	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Consultation with JICA, MLIT and EoJ for the proposal formulation resulted in positive future collaborations.</li> <li><input type="checkbox"/> Complementarity between the TA and the on-going JICA-funded technical assistance on coastal risk management and railway infrastructure.</li> <li><input type="checkbox"/> Coordination with JICA to leverage Japanese expertise on landslide risk reduction.</li> </ul>
12. Vietnam: Strengthening the Institutional Capacity of the Government of Vietnam on Flood Risk Management and Recovery Preparedness	X		X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Leveraging the experience from the Integrated Flood Management Plan (IFMP) and information collection and investigation on the integrated management of catchment-scale sediment movement implemented by JICA.</li> </ul>
<b>ECA</b>					
13. Armenia: Armenia National Disaster Risk Management Program	X	X			<ul style="list-style-type: none"> <li><input type="checkbox"/> One expert from the National Research Institute for Earth Science and Disaster Resilience (secondment from MLIT) helped the DRM Hub connect not only DRM experts but also appropriate level of people at the Cabinet Office who lead disaster drill exercises at national level to provide advice to the task team during implementation of TA activities.</li> <li><input type="checkbox"/> Armenia has drafted a law to convene a nation-wide disaster simulation drill and to designate a national day on disaster preparedness modelled after Japan's experience.</li> </ul>
14. Kyrgyz Republic: Strengthening Disaster Risk Management in Kyrgyz Republic			X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Director of Emergency Management from Sendai City presented their work on BCP development to inform Biskek City's BCP development process [in country deployment of Japanese experts]</li> <li><input type="checkbox"/> Consultant (Japanese) hired to ensure that Japanese lessons learned are incorporated in the development of BCP in Biskek City.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
15. Serbia: Scaling up resilient infrastructure through Serbia National DRM Program	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The task team closely coordinates with EoJ and JICA in Serbia which fully support this TA and the National DRM Program and agreed to cooperation activities with Japanese stakeholders.</li> <li><input type="checkbox"/> This project was established during the reporting period. As it is still in initiation stage, no activities have yet been conducted on the ground in partnership with Japanese stakeholders.</li> </ul>
16. Serbia, Albania, Bosnia and Herzegovina: Strengthening the Integration of Disaster Risk Management and Climate Resilience in Trade, Competitiveness, and Roads in the Western Balkans Region		X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Japanese Embassies and JICA representatives fully support this project and agreed to facilitate cooperation activities with Japanese stakeholders.</li> <li><input type="checkbox"/> This project was established during the reporting period. As it is still in initiation stage, no activities have yet been conducted on the ground in partnership with Japanese stakeholders.</li> </ul>
17. Tajikistan: Strengthening Disaster Resilience in Tajikistan	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The team is collaborating very closely with JICA in the implementation of TA activities.</li> </ul>
18. Turkey: Building Resilience in Turkey	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Country-level close collaboration with JICA in the area of DRM through meeting between representatives from JICA and World Bank in Ankara to discuss ways of further partnership on DRM in Turkey.</li> <li><input type="checkbox"/> A study tour to Japan planned in partnership with JICA for a technical delegation of Ministry of National Education to learn Japanese good practices on DRM and school safety agenda.</li> </ul>
19. Uzbekistan: Strengthening Disaster Resilience in Uzbekistan		X			<ul style="list-style-type: none"> <li><input type="checkbox"/> The team is collaborating very closely with JICA in the implementation of TA activities.</li> </ul>



COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
<b>LAC</b>					
20. Brazil: Implement a pilot of Agriculture Drought Monitoring and Prediction	X				<ul style="list-style-type: none"> <li><input type="checkbox"/> The International Centre for Water Hazard and Risk Management (ICHARM) will be involved to develop the pilot proposed.</li> </ul>
21. Brazil: Innovation in DRM Decision Making in Brazil	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Technical Trainings in Japan on Transit Oriented Development (Recife Municipality) and Resilient Transport.</li> <li><input type="checkbox"/> Overall collaboration with JICA in Brazil by joint meetings, workshops and guidance from technical experts.</li> </ul>
22. Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua Panama: Strengthening Disaster Risk Management and Resilience of Central American municipalities	X		X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Country level close coordination with JICA and EoJ.</li> <li><input type="checkbox"/> TDD on Integrated Urban Water Management in Japan organized by TDLC in cooperation with the GoJ, MLIT, the Water and Water Resource Bureau, the Japan Water Agency, and the City of Yokohama.</li> </ul>
23. Commonwealth of Dominica: Reducing Debris Flow Risk for Infrastructure Resilience		X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The project is collaborating with JICA's Technical Assistance in Dominica focusing on river control and debris countermeasures. JICA has agreed on sharing their outputs/deliverables to World Bank task team to leverage development outcomes.</li> <li><input type="checkbox"/> With MLIT's support, the team visited Tachiaragawa Sabo/Steel Slit dam in Kanagawa where the team had a technical knowledge exchange session with engineers from Kanagawa municipalities and construction firms.</li> </ul>
24. El Salvador: Mainstreaming Disaster Risk Management in El Salvador's Education Sector		X			<ul style="list-style-type: none"> <li><input type="checkbox"/> Coordination with JICA in El Salvador to identify the challenges and opportunities on national seismic risk mitigation.</li> </ul>
25. Honduras, Nicaragua: Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Honduras and Nicaragua	X				<ul style="list-style-type: none"> <li><input type="checkbox"/> Opportunities for collaboration between the government of Nicaragua and ICHARM (International Center for Water Hazard) are currently being explored.</li> <li><input type="checkbox"/> The Task team maintains a very close country-level coordination with JICA.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
26. Dominican Republic: Mainstreaming Disaster Risk Management in school infrastructure management in Dominican Republic	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The TA will leverage on the achievements of the JICA program, in particular the updating of the seismic building code.</li> <li><input type="checkbox"/> Close coordination with the local agency of JICA as means to leverage their current and past activities and partnerships. The project will seek synergies with on-going capacity-building activities JICA is offering to MoE in terms of seismic engineering.</li> </ul>
27. Peru: Mainstreaming Disaster Risk Management in Peru's Education Sector		X			<ul style="list-style-type: none"> <li><input type="checkbox"/> TA benefitted from the expertise and knowledge fostered at CENAPRED (seismic research center) in Peru with assistance of JICA.</li> <li><input type="checkbox"/> TA undertook partnership with the Japan-Peru Center for Earthquake Engineering Research and Disaster Mitigation (CISMID) from the National Engineering University.</li> <li><input type="checkbox"/> TA is legally closing during the reporting period.</li> </ul>
<b>MENA</b>					
28. Egypt: Strengthening Disaster Risk Management (DRM) in Egypt	X		X		<ul style="list-style-type: none"> <li><input type="checkbox"/> TA grant legally closed during the reporting period.</li> </ul>
29. Tunisia: Streamlining DRM in Municipal Investment and Urban Planning	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Country -level close coordination with JICA is being furthered by the Task Team during missions.</li> </ul>
30. Lebanon, Jordan, Palestine, Egypt, Tunisia and Morocco: Women for Resilience (W4R)		X	X	X	<ul style="list-style-type: none"> <li><input type="checkbox"/> A keynote address by EoJ in Morocco during the Grand Finale Event in Casablanca.</li> </ul>
<b>SAR</b>					
31. Afghanistan: Strengthening Early Warning and DRM Capacity in Afghanistan	X			X	<ul style="list-style-type: none"> <li><input type="checkbox"/> Consultation with JICA and EoJ in Afghanistan during preparation and periodic implementation support and technical assistance, especially on the hydromet road-map.</li> <li><input type="checkbox"/> A dam safety workshop for Afghan officials in December 2017 to learn the linkage between hydromet and water resources considering accelerated dam development in Japan.</li> <li><input type="checkbox"/> Follow up technical support provided by CTI Engineering International through VC meetings.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
32. Afghanistan, Bangladesh, Bhutan, India and Nepal: Promotion of Resilient Infrastructure	X	X			<ul style="list-style-type: none"> <li><input type="checkbox"/> Water utilities' BCP and asset management for transport shared with the Chittagong water utility key sections by the Bureau of Waterworks Tokyo Metropolitan Government.</li> <li><input type="checkbox"/> TKX on resilient transport supported by MLIT, Iwate Reconstruction Bureau, Hyogo Prefecture, Kyoto University, Nippon Expressway Company (NEXCO), and Japan Bosai Platform.</li> </ul>
33. Bangladesh, India, Nepal: Promotion of Resilient Infrastructure Phase 2	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Collaboration with EoJ and JICA having diverse DRM related project portfolio.</li> <li><input type="checkbox"/> Conducting Japanese case studies to capture best practices in EP&amp;R, BCP for Water Supply/Sanitation, Dam, and Railways sectors.</li> <li><input type="checkbox"/> Planning to organize an international workshop on resilient water supply and sanitation utilities services.</li> <li><input type="checkbox"/> Workshops, TDD and/or TKX on resilient infrastructure planned in cooperation with Tokyo DRM Hub.</li> </ul>
34. Bangladesh: An Integrated Approach to Enhance Urban Resilience in Dhaka	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> A Knowledge Exchange, a joint World Bank-JICA integrated Urban Resilience DRM exchange, is envisioned for FY19 as part of the project.</li> <li><input type="checkbox"/> Japanese expertise on Vulnerability Assessment (seismic evaluation), Retrofitting Works, and Seismic Isolation Technique is being mobilized through Tokyo DRM hub.</li> </ul>
35. Bhutan: Hydromet Services and Disaster Resilience Regional Project	X		X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The project has benefitted from Japan's knowledge and best practices on early warning through Hub's Hydromet KP knowledge products and case studies.</li> </ul>
36. India: Multi-hazard Risk and Governance Assessments in India	X		X		<ul style="list-style-type: none"> <li><input type="checkbox"/> The Bank team closely coordinates with the Embassy of Japan and JICA in New Delhi, and will share information and updates on the implementation of the Project.</li> <li><input type="checkbox"/> Several Japanese experts such as MLIT, MEXT, Tokyo Metropolitan Government (TMG), and other research agencies and academic institutions (i.e. Ibaraki University and National Institute of Environmental Science (NIES), etc.) as well as JICA, have been already identified for knowledge exchange and training activities.</li> </ul>
37. India: Strengthening India DRM Service Delivery	X	X			<ul style="list-style-type: none"> <li><input type="checkbox"/> Review and providing guidance on dam safety by JWA in consultation with Central Water Commission (CWC) of India and Uttarakhnad Electricity Corporation (UJVLN), in country deployment of Japanese experts.</li> <li><input type="checkbox"/> The search and rescue training facilitated by the Fire and Disaster Management Agency (FDMA), Hyogo Prefecture, and Kobe City.</li> </ul>

COUNTRY/GRANT NAME	TACKLING CLIMATE RISKS	QUALITY INFRASTRUCTURE	URBAN RESILIENCE	RESILIENCE IN FRAGILE AND POST-CONFLICT STATES	JAPANESE PARTNERS/ENGAGEMENT DURING 2017-18
38. Nepal: Disaster-Linked Social Assistance Delivery Support System Development in Nepal			X	X	<ul style="list-style-type: none"> <li><input type="checkbox"/> Leveraging Japanese expertise through Knowledge Program on Adaptive Social Protection.</li> <li><input type="checkbox"/> Partnership with CITYNET Yokohama and Yokohama City Government officials who conducted a DRM training for Engineers in Kathmandu [in country deployment of Japanese experts.]</li> </ul>
39. Pakistan: Technical Review and Capacity Building Program on Climate Induced Risks in Pakistan	X		X	X	<ul style="list-style-type: none"> <li><input type="checkbox"/> Country-level close collaboration with JICA in DRM.</li> <li><input type="checkbox"/> Planned partnership with ICHARM on integrated flood risk management in Sindh.</li> </ul>
40. Pakistan: Seismic Risk, Resilient Infrastructure, and Disaster Risk Financing in Pakistan		X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Continuous consultation with JICA to create synergy and integrated impacts with JICA's ongoing engagements towards improving DRM capacity in Pakistan.</li> </ul>
41. Sri Lanka: Support Risk Sensitive Infrastructure Planning in Colombo Megapolis Region and Scaling of Spatial Data Platform	X	X			<ul style="list-style-type: none"> <li><input type="checkbox"/> Several knowledge sharing sessions on risk sensitive infrastructure planning with ICHARM</li> <li><input type="checkbox"/> Planning the partnership with JAXA for the flashflood mapping using the satellite imagery.</li> <li><input type="checkbox"/> Close coordination with JICA for the data and information exchange related to Megapolis region.</li> </ul>
Global					
42. Paraguay, Serbia, Peru, Kenya, Laos: Resilient Transport Infrastructure Program (Paraguay, Serbia, Peru, Kenya, and Laos)	X	X	X		<ul style="list-style-type: none"> <li><input type="checkbox"/> Working with Tokyo DRM hub for multiple GP training on resilient transport and taking advantage of synergies with the Hub's work on Mainstreaming Road Geohazard Risk Management.</li> </ul>
43. Jamaica, India: Operationalizing Building Regulation for Resilience (BRR)					<ul style="list-style-type: none"> <li><input type="checkbox"/> Coordination with JICA and EoJ in Jamaica and India.</li> <li><input type="checkbox"/> Leveraging Japanese expertise through the JICA's flagship report "Building Regulation for Resilience, Managing Risks for Safer Cities" (2016).</li> <li><input type="checkbox"/> A workshop on Japan's experience in mortgage incentive mechanisms that support improved structural safety, energy efficiency and accessibility for persons with disabilities.</li> <li><input type="checkbox"/> Planning TDD with Japanese experts on seismic risk for Government counterparts of 12 countries in March 2018.</li> </ul>

## 3.2 Knowledge Program

Under the Knowledge Program, the DRM Hub connects developing countries with the knowledge, expertise, and technology solutions needed to build resilience to disaster and climate risk. To achieve this, the DRM Hub (i) develops knowledge products to meet developing country demand for expertise, best practices, and solutions in DRM, and (ii) conducts knowledge exchanges, including Technical Deep Dives (TDDs), to build the capacity and awareness of client officials and World Bank teams to prepare and implement high-quality DRM investments.

The Hub's approach ensures the high-potential demand from developing countries for mainstreaming meets the high-quality supply of Japanese and global expertise. The products and knowledge exchanges are targeted at helping developing country officials, World Bank Task Teams, and other development professionals understand options available and best apply them.

The Hub's Knowledge Program is designed around four focus areas:

- 1- Resilient Infrastructure:** Support developing countries to plan, design, construct, finance, operate, and maintain disaster risk-informed infrastructure.
- 2- Urban Resilience:** Support urban areas to prepare for, adapt to, withstand, and recover rapidly from natural disasters that uniquely affect urbanizing and urbanized areas.
- 3- Science and Technology for Resilience:** Support developing countries to assess disaster risks quickly and accurately and access the information and tools needed to make critical risk-informed investments.
- 4- Disaster Risk Governance and Inclusion:** Support developing countries to improve the effectiveness of their DRM frameworks, financing mechanisms and integrate vulnerable groups.

In 2017, in response to demand from client countries and World Bank operational teams, the Hub launched two new knowledge projects advancing the areas of Emergency Preparedness and Response (EP&R) and Resilient Industries (Business Continuity Planning).

The *"Learning from the Japanese Experience in Emergency Preparedness and Response (EP&R)"* Knowledge project aims to harness Japanese knowledge and expertise on emergency management to enhance the understanding and practice of effective, high-functioning capacity emergency preparedness and response (EP&R) systems. The *"Resilient Industries"* Knowledge project will establish a World Bank Group framework on industrial resilience and competitiveness through a partnership between the Finance, Competitiveness, and Innovation (FCI) GP and the Tokyo DRM Hub.

In 2017-18, Knowledge Program activities demonstrated how specialized DRM expertise available in Japan can contribute to mainstreaming DRM in developing countries through World Bank investments.

Notable engagements included:

- In April 2017, in response to a request from a World Bank task team working on upgrading aging dam infrastructures in India, the Program supported technical assistance from the Japan Water Agency (JWA) and MLIT. Activities helped India to develop a seismic event response system, a manual, and training program for Ichari Dam in Uttarakhand and Maithon Dam in Jharkhand State. The manual and training program will be disseminated across 250 dams in India by the government's Central Water Commission.
- Recognizing the importance of expanding resilient infrastructure to other sectors, the Hub formalized a partnership with the World Bank's Transport team establishing a collaborative *"Resilient Transport Partnership Program"* which will inform current and future World Bank transport investments. Within this context, in May 2017, the World Bank Resilient Transport Community of Practice (CoP) and the Tokyo DRM Hub convened clients and TTLs from 16 countries

together with experts from Japan and New Zealand for a Technical Knowledge Exchange (TKX) on Resilient Transport at the Hub. The aim of the TKX was to connect current and future World Bank transport investments with the information, tools, and technical expertise that exist in Japan and other countries in resilient transport.

- In July 2017, based on a request from a World Bank task team working on a World Bank investments project for metro line development in Lima, Peru and Quito, Ecuador, the Program enabled Nippon Koei and Japan Railways Research Institute to undertake a consultancy to strengthen the project's seismic resilience. Through this engagement, Japanese experts reviewed the project's seismic and emergency exit design, as well as shared their experiences in seismic standards of underground metro structures. The result was a unique and practical contribution from Japan to strengthen resilience in the World Bank metro investments (US\$500 million) in these South American cities.
- In August and September 2017, the Hub, in collaboration with CITYNET Yokohama organized a Technical Knowledge Exchange (TKX) on Emergency Preparedness and Response in Tokyo and Yokohama. World Bank clients from 5 countries and TTLs learned about the disaster preparedness and response systems in Japan, presented their own country cases, and developed actions plans for improving their emergency management systems. As a result of the TKX, Bolivia and Nepal have requested new World Bank investments and Indonesia is now implementing a Hub TA (US\$2.5 million) on emergency preparedness.
- In November 2017, the Hub presented and arranged key sessions at the World Bosai Forum held in Sendai organized by Tohoku University in partnership with the International Disaster and Risk Conference (IDRC) in Davos, Switzerland. The World Bank teams discussed why mainstreaming disaster risk management was important in strengthening resilience and what were some of the good practices and lessons learned from efforts they have been engaged.
- In December 2017, the Hub and World Bank Water Global Practice, in partnership with CTI Engineering International Co., Ltd. (CTII) and Japan Water Agency (JWA) organized the joint workshop on Enhancing Dam Safety and Hydromet Services in Afghanistan and showcased Japanese good practices and lessons applicable to Afghanistan context.
- In January 2018, a Brown Bag Lunch (BBL) on Nature-Oriented and Traditional Riverbank Protection from Japan was organized by the Nature-Based Solutions COP and the Hub, at the World Bank's Headquarters. Dr. Hirotada Matsuki, Ministry of Land, Infrastructure, Transport, and Tourism (MLIT) of Japan presented key case studies on the use of traditional riverbank protection methods, including groynes and weirs, in Japan, Lao PDR, and Vietnam, and showed how the application of these techniques has met various policy needs, including for flood risk management and environmental preservation.

Table 3 (right) provides an overview of Knowledge Projects under implementation, indicating key technical areas of focus, key outputs being delivered at the request of World Bank clients, Japanese partners helping deliver products that meet the technical standards and specifications needed, and linkages to World Bank operations.

**TABLE 3: KNOWLEDGE PROGRAM OVERVIEW: MAINSTREAMING STATUS AND JAPANESE PARTNERSHIPS**

KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
<b>FOCUS AREAS: RESILIENT INFRASTRUCTURE</b>					
1. <b>Integrating Japan's Experience into the Global Program for Safer Schools</b>	Connect Japan's experience and technical knowledge with the World Bank's Global Program for Safer Schools to make school facilities, and the communities they serve, more resilient to natural hazards	Operational Guidance Roadmap, Risk Identification Platform	Civil society, Others (Development partners)	MEXT, MLIT, JICA	Dominican Republic DPL with a CAT DDO (P159351); India Uttarakhand Disaster Recovery Project (P146653); Kyrgyz Republic Disaster Risk Management Project (P118783); Nicaragua Second Education Support Project (P161029)
2. <b>Roads, Landslides, and DRM</b>	Build a knowledge base on landslides and practical interventions in developing countries by taking stock of the hazards faced and solutions applied in Japan	Toolkit, Case Studies, Operational Manual, Workshops	National and Sub-national government, DRM or Civil Protection Agency, and Academia	MLIT, JICA, International Sabo Association, Sabo and Landslide Technical Center, Hirotsaki University, Japan Landslide Society	India: Uttarakhand Disaster Recovery project (P146653)
3. <b>Resilient Rails Development and Operations</b>	Address a knowledge gap by synthesizing good-practice in resilience in all phases of rail project development, providing just-in-time support on immediate and critical issues for metro projects in India, Peru, and/or Ecuador	Guidance notes, Case studies, Knowledge Exchange, Just-in-time operational supports	National and Sub-national government, DRM agency, Rail operators	MLIT, Japan Railways Research Institute	Peru Lima Metro Line 2 Project (P145610);  Quito Metro Line One (P144489)  Upgrading and Greening the Rio de Janeiro Urban Rail System Additional Financing (P125630)

KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
<p>4. <b>Resilient Water Supply and Sanitation Services</b></p>	<p>Develop a knowledge product on emergency preparedness and business continuity planning (BCP) of water and sanitation services by leveraging Japanese and global expertise, knowledge, and experience on resilient design, operation, and maintenance (O&amp;M) of water and wastewater infrastructure and assets</p>	<p>Case studies, Knowledge Exchange</p>	<p>National and Sub-national government, DRM agency, Water Utilities</p>	<p>MLIT, MHLW, Japan Water Works Association, Municipalities (Sendai, Tokyo, Fukuoka, Kobe, Kumamoto, and Hiroshima), Academia (the University of Tokyo, Tohoku University)</p>	<p>Danube Water Program (P128416)</p> <p>South Asia Resilient Infrastructure Country Program (P153443)</p>
<p>5. <b>Dam Safety and Disaster Resilience</b></p>	<p>Focusing on dam safety and resilience to geophysical hazards, facilitate knowledge exchange among 12 countries from the EAP Region and compile three individual country case studies as part of the global assessment (Japan, Lao, and Myanmar)</p>	<p>Case Studies, Knowledge Exchange</p>	<p>National and Sub-national government, DRM agency</p>	<p>MLIT, MAFF, METI, JICA, Japan Water Agency, Japanese Commission on Large Dams (JCOLD), Consultants (Nippon Koei, Myanmar Koei International, CTI International), Japan Dam Engineering Center (JDEC)</p>	<p>Vietnam Dam Rehabilitation and Safety Improvement Project (P152309);</p> <p>Indonesia Dam Operational Improvement and Safety Project (P096532);</p> <p>Indonesia Dam Operation, Rehabilitation &amp; Safety Improvement Project (P156386);</p> <p>Myanmar Agricultural Development Support Project (P147629)</p> <p>India Dam Rehabilitation and Improvement Project (P089985)</p> <p>Afghanistan Irrigation Rehabilitation Development Project (P122235)</p>



KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
6. <b>Resilient Infrastructure PPPs - Contracts and Procurements</b> <i>(implemented with GIF)</i>	To develop a knowledge project that assists policy makers, project developers, and financiers with resilient infrastructure PPP project preparation.	Case studies, Technical Guides, Knowledge dissemination	National and Sub-national government, PPP practitioners	Cabinet Office, MLIT, Japanese PPP practitioners (Maeda corporation, Mizuho Bank Ltd., Anderson Mori & Tomotsune LPC, Kyoritsu Insurance Brokers of Japan), Academia (Tokyo City University)	Supporting Resilience of Critical Infrastructure Investments in Vietnam (Hub TA)
7. <b>Infrastructure Prioritization Framework and Resilience</b> <i>(implemented with PPP CCSSA)</i>	Provide a tool designed to inform upstream infrastructure project selection that considers, amongst other factors, resilience to hydrological, meteorological, and geophysical hazards in developing countries	Knowledge notes, Case studies, Knowledge exchange and dissemination	National and Sub-national government, municipalities	MLIT, Kyoto University	Supporting Resilience of Critical Infrastructure Investments in Vietnam (Hub TA)
<b>FOCUS AREAS: URBAN RESILIENCE</b>					
8. <b>Integrated Urban Flood Risk Management</b>	Engage relevant Japanese expertise and capture how Japan has adapted and currently applies river basin management approaches to reduce flood risk.	Knowledge Notes, Knowledge Exchange	National and Sub-national government, DRM or Civil Protection Agency, Civil Society, and Academia	MLIT, JICA, ICHARM	Vietnam: Strengthening Institutional Capacity on Flood Risk Management and Recovery Preparedness (Hub TA);  Developing Strategic Plans for Disaster Risk Financing, Risk Reduction and Hydromet Services in Southeast Asia (Hub TA)

KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
9. <b>Building Regulation for Resilience</b>	Capture relevant Japanese expertise, particularly how the country improved building regulation compliance rates during its high economic growth period in the 1960-80s when its building supply increased sharply	Knowledge Notes, Communication materials, Capacity Building Program	National and Sub-national government, DRM or Civil Protection Agency, Civil Society, Academia	MLIT, JICA, Japan Housing Finance Agency (JHF), Building Center of Japan (BCJ), Academia (Building Research Institute (BRI), National Institute for Land and Infrastructure Management, Association of Living Amenity, Yokohama City, GRIPS, Architectural Institute of Japan (AIJ), Chiba, Kyoto, Kwansai, and Kinki Universities)	Operationalizing Building Regulation for Resilience in Jamaica and India (Hub TA);  India: Andhra Pradesh Disaster Recovery Project (P154847);  India Uttarakhand Disaster Recovery Project (P146653)
<b>FOCUS AREA: SCIENCE AND TECHNOLOGY FOR RESILIENCE</b>					
10. <b>Modernized Hydro-Meteorological Services</b>	Draw on lessons learned from Japan's experience in building modern services in this area, and connect developing countries with this applied knowledge	Knowledge Notes, Operational Guidance	National government, Sub-national government, and DRM agencies	JMA, MLIT, JICA, Cabinet Office	Myanmar Ayeayawady Integrated River Basin Management Project (P146482);  South East Asia Disaster Risk Management Project (P149149)  Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Honduras and Nicaragua (P155112)
11. <b>Seismic Risk Identification and Decision Making</b>	Develop guidance materials for developing countries on key technical methodologies for assessing earthquake risk and public policy and management decision-making based on learning from Japan	Guidance note, Knowledge Exchange	National and Sub-national government, DRM or Civil Protection Agency, and Academia	Urban Bureau, MLIT, Tokyo Metropolitan Government, Saitama City Government	Armenia National Disaster Risk Management Program (Hub TA);  Strengthening Disaster Resilience in Uzbekistan (Hub TA)

KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
12. <b>Information &amp;</b>	Leverage Japanese and global best practices to pilot a toolkit for practitioners to identify, prepare, appraise, and implement solutions for specific disaster types and DRM needs, based on empirical case studies of ICT use for DRM in Japan	Toolkits, Knowledge Management and Notes	National governments, sub-national governments, and DRM agencies	MIC, JBP	Innovation in DRM Decision Making in Brazil (Hub TA);  Strengthening Disaster Resilience in Tajikistan (Hub TA)
<b>FOCUS AREA: DISASTER RISK GOVERNANCE AND INCLUSION</b>					
13. <b>Social Risk Management &amp; DRM</b>	Build and strengthen connections between social protection systems and DRM demands in vulnerable countries to reduce social risks from disasters	Toolkits, Training and Knowledge Exchange	National governments, sub-national governments, DRM agencies, civil society, and academia	Cabinet Office, MHLW, Japan National Council of Social Welfare	Nepal Earthquake Housing Reconstruction Project (P155969)
14. <b>Empowering the Elderly, Women, and People with Disabilities for Resilience</b>	Strengthen community-driven preparedness and longer-term resilience in developing countries where elders, women, and PWD play a leading role by leveraging Japanese expertise and experience in this area	Operational Toolkit, Impact Evaluation	Sub-national government, Civil Society, Academia, and Other: Disaster-affected communities	Tokyo University, NGO	Philippines National Community Driven Development Program (P127741)
15. <b>Resilient Cultural Heritage and Tourism</b>	Capture Japanese expertise in DRM-based cultural heritage to inform World Bank projects and improve their integration of best practices in strengthening and safeguarding cultural heritage sites	Knowledge Notes, Knowledge Exchange	National and Sub-national government, DRM or civil protection agency, cultural heritage authorities and organizations, civil society, and academia	Institute of Disaster Mitigation for Urban Cultural Heritage at Ritsumeikan University (R-DMUCH), National Institute for Cultural Heritage (CH-DRM Network), Kyoto City	Enabling Scaled up Risk Reduction Investments in the Philippines (Hub TA);  Strengthening Disaster Resilience in Uzbekistan (Hub TA)

KNOWLEDGE PROJECT	OBJECTIVE	EXPECTED/DELIVERED OUTPUTS	AUDIENCE	JAPANESE PARTNERS	LINKAGE TO WORLD BANK OPERATIONS
16. <b>Resilient Industries &amp;</b>	Establish a WBG framework on industrial resilience and competitiveness through a partnership between the Finance, Competitiveness and Innovation (FCI) GP and the DRM Hub	Case studies, framework development, pilot implementation, Knowledge Exchange	National and Sub-national government, DRM or Civil Protection Agency, Academia and Private sectors in targeted industries exposed to disaster risks	Embassy of Japan JICA Cabinet office Development Bank of Japan Academi Private sectors	Bangladesh - An Integrated Approach to Enhance Urban Resilience in Dhaka (Hub TA);  Strengthening Disaster Risk Management in the Kyrgyz Republic (Hub TA)
17. <b>Learning from the Japanese Experience in Emergency Preparedness and Response (EP&amp;R)</b>	Harness Japanese knowledge and expertise on emergency management to enhance the practice of effective, high-functioning capacity emergency preparedness and response (EP&R) systems	Knowledge Notes, Toolkits, Knowledge Exchange	National and Sub-national government, DRM or Civil Protection Agency, Civil Society and Academia	CITYNET JICA Cabinet Office MLIT Municipalities (e.g., Yokohama City) Japan Water Agency, among others	Bangladesh Urban Resilience Project (P149493);  Bhutan: Hydromet Services and Disaster Resilience Regional Project (P154477)

### 3.3 Role of the Tokyo DRM Hub in Knowledge Program Activities

The Hub has continued to be effective in connecting Japanese DRM expertise and solutions to developing countries by mobilizing Japanese DRM expertise from the public sector, civil society organizations (CSOs), and academia to beneficiary countries.

Through Knowledge Program activities, developing countries have accessed Japanese expertise and best practices, including from the Cabinet Office; the Ministry of Land, Infrastructure, Transport and Tourism (MLIT); the Ministry of Internal Affairs and Communications (MIC); the Ministry of Education, Culture, Sports, Science and Technology (MEXT); Japan Meteorological Agency (JMA); the International Centre for Water Hazard and Risk Management (ICCHARM); Japan Water Agency (JWA); prefectural and municipal governments; Japan Bosai Platform; Kobe University; Kyoto University; and University of Tokyo; among others.

The Tokyo DRM Hub has competently built up an impressive network of Japanese experts, and developed a strong operational-level cooperative partnership with JICA to enable it to play a 'connector' role with client countries (See Box 3).

The private sector plays an integral role in helping developing countries build resilience through providing technologies and innovative services. As developing countries begin to implement DRM reforms and investments, the Tokyo DRM Hub endeavors to target the Japanese private sector, which is known for its comparative advantages in offering technology and infrastructure solutions at greater investment scale. In the last year, the DRM Hub engaged 40 private sector consultants/ experts through various knowledge exchanges, including TDDs, TKXs, Workshops, Expert deployment, and Exposure Visits. Some of the private sector companies that were actively engaged included Nippon Koei, NEC, Plus Arts, Kokusai Kogyo, Mizuho Bank, and many others.

#### BOX 3: EXAMPLES OF COORDINATION AND COLLABORATIONS WITH JICA

Many examples demonstrate the deepening partnership between JICA and the World Bank, enabled by the Hub.

**EAP and SAR:** During April 3 - 7, 2017, the Tokyo DRM Hub and TDLC, in cooperation with JICA and the Government of Japan, organized an EAP and SAR Regional Workshop and Exposure Visits on regional dam safety and disaster resilience. Approximately 60 participants from Afghanistan, China, India, Indonesia, Laos, Myanmar, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam as well as international experts from Japan, Australia, New Zealand, and South Korea shared their good practices and lessons learnt during the workshop.

**High Level Dialogue:** On July 20 and 21, 2017, the Japan International Cooperation Agency (JICA) and the World Bank Group (WBG) held the Fourth JICA-WBG High-Level Dialogue at the World Bank headquarters in Washington, D.C. JICA and WBG share a commitment to supporting developing countries in their investments in infrastructure and resilience toward the Sustainable Development Goals (SDGs). The purpose of the HLD meeting was to agree on specific actions and areas of collaboration that leverage the mutual strengths of the two institutions for maximum impact and results. Among other things, JICA and the WBG agreed to strengthen their collaboration in Tokyo (through the DRM Hub and TDLC) by continuous information exchange to foster: (i) Participation in Knowledge Exchange events such as Technical Deep Dives and International Conferences and Events; (ii) Exchange and build on knowledge outputs, such as Technical Notes and new research; (iii) Collaboration in city partnership initiatives such as "City Partnership Program (CPP)" by WB and "Sustainable City Platform Program" by JICA; (iv) Collaboration with JICA training courses on the development of knowledge from experiences of local governments in Japan and the identification of Japanese expertise.

### BOX 3: CONTINUED

**JICA's Training on Gender and Diversity in Disaster Risk Reduction:** From October 10-29, 2017, JICA convened 16 officials and NGO representatives from Bangladesh, Bhutan, Cambodia, Colombia, Iraq, and Nepal JICA to participate in its training course on Gender and Diversity in Disaster Risk Reduction. As a part of the training, the World Bank's Disaster Risk Management Hub in Tokyo was invited by JICA to participate and share the Hub's views and experiences on social inclusion and DRM at the concluding public seminar and clients' action planning presentations in Sendai.

**Joint World Bank- JICA Seismic Portfolio Review:** At the 3rd High-level Dialogue in Tokyo, JICA and the WBG agreed to conduct a joint seismic and tsunami portfolio review under the "DRR and Resilient and Sustainable Cities" thematic session. The Hub team and JICA conducted this review that is expected to aid future collaboration on seismic and tsunami risk projects between the institutions by highlighting opportunities to build on previous investments, technical assistance, and capacity building.

## 3.4 Complementarity between Country and Knowledge Program Activities

To date, there are several examples that clearly showcase synergy between the Country Program and Knowledge Programs [See Box 4]. There is specific complementarity between the issues addressed by Country Program projects and the focus areas of the Knowledge Program. Detailed lines of connection between the Knowledge Program and Country Program are detailed below:

- Knowledge products being used to inform World Bank operations. The Building Regulations for Resilience Program used Program funding to develop a flagship report and a building regulation capacity assessment. These products are highly valuable to this activity as they provide the analytical platform to inform TA at the country-level. This analytical work is applicable to TA being implemented in two countries (Jamaica and India), with potential to scale up to additional engagements including Kenya, Sri Lanka and Maldives. Few more countries are under the discussion in Africa, East Asia and the Pacific.
- Knowledge products capturing lessons for Country Program activities. For example, knowledge gained and lessons learned from the Safer Schools Program operations, including TA funded by the Program in Peru, was drawn upon to develop a 'Roadmap for Safer Schools.' The Roadmap, funded under the Knowledge Program, provides operational guidance, organized in a series of steps, for World Bank teams implementing Safer Schools projects in Armenia, El Salvador, Indonesia, Jamaica, Kyrgyz Republic, Mozambique, Nepal, Samoa, Tonga, Vanuatu, Peru, and Turkey.
- Knowledge Exchanges influencing ongoing and planned TA. Knowledge exchange events organized by the Tokyo DRM Hub, such as TDDs and TKXs, and knowledge sharing forums, such as CoPs are influencing ongoing Country Program operations and have the potential to influence new business [See Box 5]. For example, the Tokyo DRM Hub conducted a Resilient TKX event in Tokyo. Developing country partners and task teams from 16 countries attended (representing more than US\$4 billion in World Bank support for government-led investments). This event helped to generate substantial interest by beneficiary countries in adaptation and resilience work in the transport sector.

#### **BOX 4: COUNTRY AND KNOWLEDGE PROGRAM COLLABORATION - RESILIENT TRANSPORT PARTNERSHIP -STAKEHOLDERS CONVENE IN JAPAN TO SHARE KNOWLEDGE ON RESILIENT TRANSPORT SYSTEMS**

The Japan-World Bank Program has been at the forefront of expanding the World Bank's efforts in building resilient transport. In 2017, a newly established community of practice brought together the Knowledge and Country Program engagements and generated new value in the proposition.

In May 2017, the Tokyo DRM Hub and the Resilient Transport Community of Practice hosted a week-long technical knowledge exchange (TKX) that convened developing country partners and World Bank project leads from 16 countries. In Japan, the challenges and lessons learned from large-scale disasters have been the driving force to continuously review and enhance the regulations, institutional frameworks, financing, staff capacity, and technology of advancing resilience in transport. The exchange tapped into this experience by inviting speakers from the public sector, private sector, academia, and civil society to share their lessons learned in relation to each of the life-cycle phases.

The Resilient Transport TKX also served as a platform for the launch of the new Road Geohazard Risk Management Handbook developed under the Knowledge Program of the DRM Hub, Tokyo. The tool was presented alongside case studies of its application across federal, state, and municipal levels in Brazil and Serbia. The handbook itself urges a shift away from traditional and reactive approaches toward a multi-dimensional geohazard risk management approach.

One that proactively incorporates people, the environment, hydrology, geology, and transportation infrastructure and can result in 60-70 percent life-cycle cost savings. The Road Geohazard Risk Management Toolkit also will be used for the Hub's Resilient Transport Infrastructure Country Program. The toolkit currently is assisting Kenya, Lao PDR, Paraguay, Serbia, and Sri Lanka to increase the resilience of their transport sector interventions, primarily focusing on roads.

Furthermore, the Tokyo DRM Hub is developing a Guidance Note and a case study on Japan to capture best practices in developing and operating resilient rails. With the Resilient Transport CoP, the Japan Program will continue to connect current and future World Bank transport investments with the information, tools, and technical expertise that exist in Japan and in many countries in resilient transport through its Country and Knowledge Programs.

#### **BOX 5: FOCUS ON TECHNICAL KNOWLEDGE EXCHANGES**

In 2017-18, the DRM Hub continued to focus on knowledge exchanges to ensure that developing country officials and World Bank teams have the capacity and connect to the technical expertise they need to prepare and implement high-quality DRM solutions. The Hub conducted a variety of knowledge exchanges as workshops and exposure visits for the clients, including regional workshop for EAP and SAR countries on dam safety and disaster resilience and for Peru and Ecuador clients on seismic resilience and underground metro structures, exposure visit on strengthening flood forecasting in the Volta basin for Ghana, Togo, and Volta Basin Authority officials, and for Vietnamese delegates on Japanese disaster risk finance and insurance and public asset management systems.



## BOX 5: CONTINUED

Experts from Japan have been deployed to client countries for knowledge and solutions, including participation of Sendai City officials in a Business Continuity Planning (BCP) Workshop in Bishkek, Kyrgyz Republic. Yokohama City, Yokohama CITYNET Office, and the DRM Hub jointly worked with Kathmandu Metropolitan City (KMC) to explore capacity building opportunities for KMC engineers for strengthening their structural and seismic engineering skills.

Case studies, best practices, and lessons from Japan, as captured by the knowledge programs of the DRM Hub were showcased at the world events in the past year, including third edition of World Reconstruction Conference(WRC3) held in Brussels, World Bosai Forum in Sendai, and Africa Hydromet Forum in Ethiopia.

Continuing with the Technical Deep Dive (TDD) series from 2016, organized in partnership with TDLC, the Hub conducted the Resilient Cultural Heritage and Sustainable Tourism TDD in Tokyo and Kyoto in April 2017, bringing together clients and World Bank teams from nine countries. On a similar concept, a Technical Knowledge Exchange (TKX) on Resilient Transport was held in May 2017 in Tokyo, convening 16 countries and experts from Japan and New Zealand and a TKX on Emergency Preparedness and Response was held in August-September 2017 in collaboration with CITYNET Yokohama, bringing together clients and TTLs from 5 countries and experts from Japan and Canada. Participants noted the following:

“Japan’s disaster management system is a premier example of an effective and organized emergency preparedness system, thanks to experiences and lessons learned over the years that illustrate and confirm its relevancy at a global level. The site visits in Tokyo and Yokohama showcased the great planning, organization, and development of preparedness and response measures Japan advances in case of natural disasters. In addition, Japan’s community trainings and disaster preparedness drills are certainly excellent examples of collective public awareness raising exercises for the population.” - Ms. Flavia Rodriguez Gantier, Ministry of Public Works, Services and Housing of Bolivia.

“ The new National Strategy on Disaster Risk Management recently approved by the Armenian Government - and initiated by the Ministry of Emergency Situations of Armenia and supported by the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries (administered by GFDRR) and UNDP - is centered on a risk-informed approach in line with the Sustainable Development Goals as well as priorities set by the Sendai Framework for Disaster Risk Reduction. Both the Strategy and its formulation process are unprecedented in the Southern Caucasus. This process benefitted from the participation of local, interagency and international stakeholders within the framework of National DRR Platform, thanks to an innovative methodology used for examining the country’s DRM capacity. ” - Mr. Davit Tonoyan - Minister of Emergency Situations at Global Platform for Disaster Risk Reduction, 24-26 May 2017, Cancun, Mexico.



### 3.5 International Events and Visibility

In 2017-2018, the Program promoted partnerships and collaboration through several wide-ranging international events, bringing together hundreds of representatives from government, development partners, academia, the private sector, and civil society to find solutions for climate and disaster risk. Notably, the Tokyo DRM Hub facilitated collaboration between Japanese government agencies, private sector, and academia and the World Bank to jointly organize important events aimed at the international DRM community.

Specific examples of high-level visibility and representation include the annual International Conference on Sustainable Development through Quality Infrastructure Investment (Tokyo, February 2017), the UNSIDR Global Platform (Cancun, May 2017), the World Reconstruction Conference (Brussels, June 2017), the International Symposium on World Tsunami Awareness Day (Tokyo, October 2017), and the World Bosai Forum (Sendai, November 2017). These degrees of visibility reflect the importance given to the Program as platform for sharing experience and building good practice and lessons.

Throughout the reporting period, the Hub's activities were featured on over 50 outlets in Japan and internationally, such as Japan's NHK, Prevention Web, as well JICA and the World Bank's internal and external websites. To date, visitors to the DRM Hub website up to January 2018 surpassed 200,000 since the Program's launch, with over 80,000 visiting the site in the last 12 months.

## 4. RESULTS REPORTING

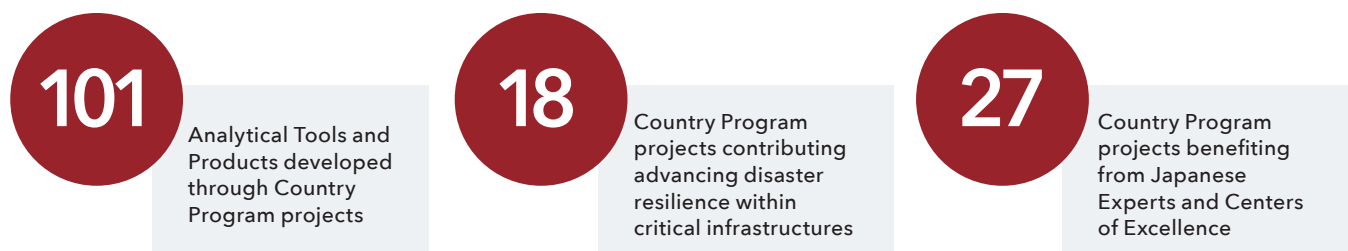
The DRM Hub monitors Program results against the Sendai Framework for Disaster Risk Reduction Priority for Action, the GFDRR Pillar for Action, and the Program Framework Results Indicators. An overview of key results from the Program's two Sub-Programs - the Knowledge and Country Programs - are described below.

### 4.1 Country Program Results

#### 4.1.1 Progress Against Program Results

With the Program approaching its fourth year of implementation, significant improvements were made in the quality and quantity of results achieved during the 2017 - 2018 reporting period. With more than 50% of the 43 ongoing Country Program technical assistance (TA) grants (or country projects) now being under implementation for more than one year, the Country Program portfolio results demonstrated maturity, in terms of its depth and scale of activities and outputs delivered in country. Figure 5 provides a snapshot of key Program Results against the Program Results Indicator<sup>7</sup> relevant to the Country Program.

**FIGURE 4:** COUNTRY PROGRAM RESULTS SNAPSHOT DURING 2017 - 2018



#### **Analytical Tools and Products**

More than 100 tools and products that strengthen DRM mainstreaming were reported across the 43 ongoing projects. Some examples include:

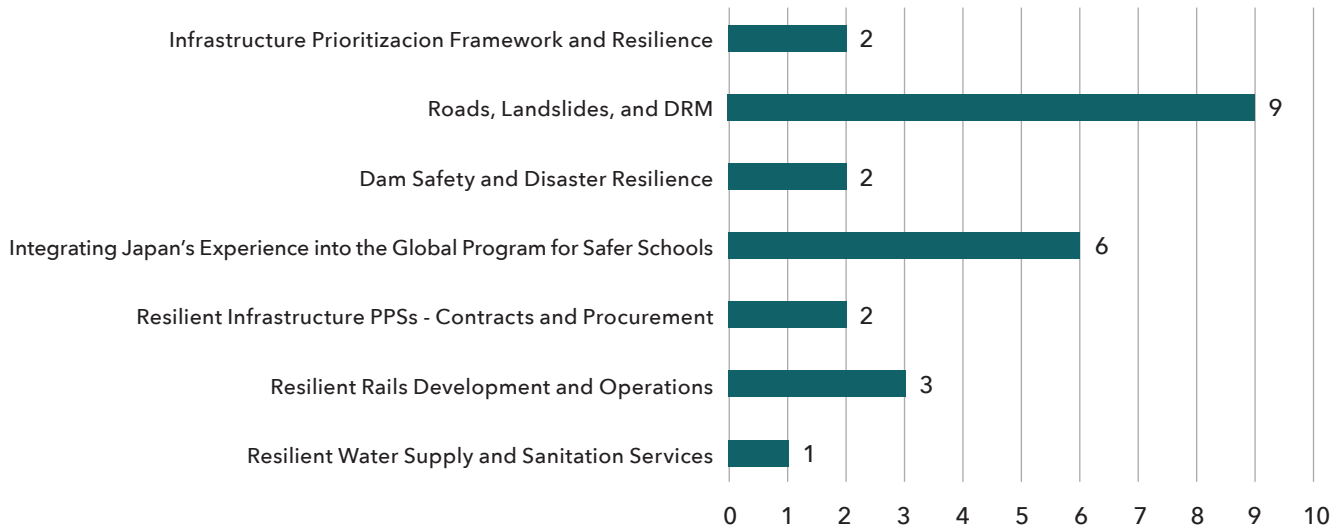
- “Recommendations Report for Infrastructure Rehabilitation in Tajikistan” and “Impact of Climate Change on Glacial Contribution to River Runoff in Tajikistan”, Tajikistan
- Key Agricultural Product Risk Assessment (KAPRA) study, Turkey
- Porto Alegre Living with Floods: A Social Perspective from Natural Hazards Exposure Report, Brazil
- New methodologies and tools for building inspection for schools, El Salvador
- Risk Profile and Geonode Platform, Afghanistan
- GLOF identification for planning hydropower development in the Himalayas: the case study of Uttarakhand in India.
- Sediment yield study to assess landslide risk and sustainable sediment management practices: case study of Koshi Basin in Nepal.

#### **Critical Infrastructure**

Infrastructure Resilience continues to be the one of the major thematic focus for TA grants within the Country Program Portfolio. Within Resilient Infrastructure Focus Area, Road, landslide and DRM and Safer Schools are the top two areas of work supported by the TA grants.

<sup>7</sup>Japan-World Bank Program for Mainstreaming DRM in Developing Countries Operations Manual, January 16, 2015; updated in 2016 and 2017

**FIGURE 5: FOCUS AREAS OF COUNTRY PROGRAM PROJECTS ON CRITICAL INFRASTRUCTURE**



**Japanese Expertise and Centers of Excellence**

By March 2018, **27** out of the 43 ongoing Country Program projects benefited from Japanese Centers of Excellence. **Three** country projects invited Japanese experts to speak at their workshops and / or join technical missions in country through TA grants in FY17. **Seven**<sup>7</sup> Country Program projects had Japanese experts in Japan or in their respective countries provide input, coordination support, and technical advice through meetings and/or video conferences. **Nine**<sup>9</sup> country projects benefited from highly specialized, single or multi-country technical training and site visits to Japan. **21** county projects<sup>10</sup> have participated in TDDs and Knowledge Exchange events in Japan, which include majority of the projects that have been implemented for more than one year.

The DRM Hub serves a critical role in identifying and connecting country projects with relevant expertise and initiatives relevant to the project activities. In this regard, the DRM Hub works closely with brokering relationships between the World Bank task teams and various Japanese Stakeholders including JICA and Embassy of Japan in country, Japanese national and subnational government, academia, research institutions, and the private sectors during the proposal development and project implementation stage. While most of engagement of Japanese experts in country TA projects occur in Japan, through TDDs and training events, during this reporting period, DRM Hub contributed to 3 successful deployment of Japanese Experts to support implementation of the TA grants in countries, including India, Kyrgyz Republic, and Nepal.

**4.1.2 Progress Against Sendai Priority for Action and GFDRR Pillars of Action and Work Plan Targets**

Table 4 summarizes the outputs delivered by the Country Program projects. Through the TA grants, the Program continues to support countries deliver critical outputs that advances efforts towards achieving the Sendai Priority for Action, which aligns with the GFDRR Pillars of Action.

Review of results reported by the country projects during this reporting period indicate that the country projects continue to demonstrate very strong performance in **GFDRR Pillar 1 - Risk Identification and Sendai Priority 1 - Understanding Risk**, exceeding all targets set forth in the 2017 - 2018 Work Plan.

<sup>8</sup> 5 out of 7 were in FY17

<sup>9</sup> 6 out of 9 were in FY17

<sup>10</sup> 18 of 21 were in FY17. Many projects attended multiple TDDs across multiple years.

Significant progress from FY16 was seen in this reporting period for **GFDRR Pillar 3: Preparedness and Sendai Priority 4 - Enhancing Disaster Preparedness for Effective Response and “to Build Back Better” in Recovery, Rehabilitation and Reconstruction**. Several TA grants supported advancing preparedness in country, particularly in strengthening Contingency planning and emergency preparedness services - many of which were supported by Japanese knowledge and expertise in implementing these efforts, as seen in the deployment of Sendai City’s Director of Crisis Management to support Bishkek City, Kyrgyz Republic’s Government Continuity Plan development.

Additionally, steady outputs were reported under **GFDRR Pillar 2 - Risk Reduction and Sendai Priority 2 - Strengthening Disaster Risk Governance**. TA grants continued to strengthen mainstreaming of DRM within policies and strategies. Policy outcomes to be highlighted include: establishment of National Disaster Risk Management Day in Armenia, building code update to integrate DRM in the Philippines, and informing implementation of newly established public asset management law in Vietnam to include financial risk management perspectives against natural disasters. Furthermore, land-use planning initiatives increased significantly, particularly in achievement efforts towards resilient transport and building regulation through close connection with their respective Knowledge projects.

Additionally, GFDRR Pillar 4 - Financial Protection and Sendai Priority 3 - Investing in Disaster Risk Reduction for Resilience continues to show good performance. While the Program was unable to fully achieve all targets set forth in the 2016 - 2017 Work Plan, in partnership with the Ministry of Finance, Japan and the Disaster Risk Financing and Insurance (DRFI) Program (Finance, Competitiveness and Innovation GP), the Country Program TA grants supported meaningful advancements in supporting countries and regions strengthen sovereign disaster risk financing strategies, particularly in Southeast Asia, the Pacific, South Asia, and in Latin America. The Program expects that these successful partnerships will continue both through the Country TA grants, as well as through the DRM Hub’s partnership with the Ministry of Finance, Japan.

Integrating DRM within building code implementation is an area that may require improvement moving forward. While the numbers of TA grants that have advanced in these areas have steadily increased from last year, the rate of growth was below what was planned in the 2017 - 2018 Work Plan. With close linkage to the Urban Resilience thematic area, the DRM Hub will continue to monitor closely urban resilience TA grants, to provide effective support through training, knowledge exchange, and / or expert deployment that can advance these targets within relevant the TA grants.

**TABLE 4: SUMMARY OF OUTPUTS DELIVERED BY COUNTRY PROJECTS**

Sendai Priority for Action	GFDRR Pillar of Action	Output Indicators	Achieved Annual Report (2016 - 17)	Target Work Plan (2017-18)	Actual Annual Report (2017-18)
<b>Priority 1:</b> Understanding Risk	<b>Pillar 1:</b> Risk Identification	Data platforms established	5	10	<b>10</b>
		Risk assessments conducted	15	20	<b>24</b>
		Hazard mapping conducted	8	11	<b>14</b>
<b>Priority 2:</b> Strengthening Disaster Risk Governance to Manage Disaster Risk	<b>Pillar 2:</b> Risk Reduction	Policies and legal frameworks strengthened	13	15	<b>15</b>
		Building code implementation strengthened	3	7	<b>5</b>
		Land use planning systems strengthened	0	5	<b>5</b>
		Risk reduction investment strategies informed	7	14	<b>14</b>
<b>Priority 3:</b> Investing in Disaster Risk Reduction for Resilience	<b>Pillar 4:</b> Financial Protection	Sovereign disaster risk financing strategies strengthened	5	8	<b>7</b>
		Catastrophe risk markets strengthened	0	1	<b>2</b>
<b>Priority 4:</b> Enhancing Disaster Preparedness for Effective Response and “to Build Back Better” in Recovery, Rehabilitation and Reconstruction	<b>Pillar 3:</b> Preparedness	Forecasting services strengthened	4	7	<b>8</b>
		Early warning systems strengthened	3	8	<b>11</b>
		Contingency planning and emergency preparedness services strengthened	2	6	<b>13</b>

### 4.1.3 Progress Against GFDRR Activities and Outcomes

#### Activities

During this reporting period, the 43 country projects conducted a total of **156 trainings, workshops and conferences**, that were informed by and/or led to the development and dissemination of **101 analytical products and tools**, engaging more than **15,785 people that were trained** on various topics related to DRM.

Table 5 summarizes the Country Project activities that were reported during 2017 – 2018 reporting period by the GFDRR Pillar of Action 1 through 4. The findings illustrate that trainings, workshops and conferences were key activities to deliver efforts under Risk Reduction and Risk Identification. Risk Identification efforts were informed by various analytical products and tools. Preparedness was implemented through engagement of many people in training activities for DRM.

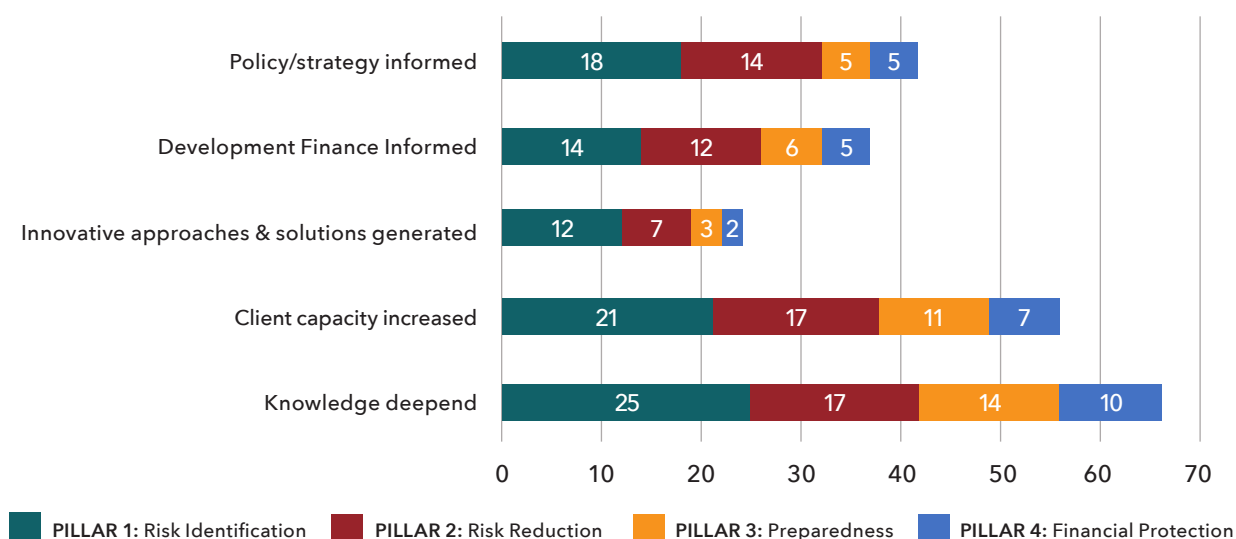
**TABLE 5: COUNTRY PROJECT ACTIVITIES AGAINST GFDRR PILLARS, 2017-18**

GFDRR Pillar of Action	Trainings, Workshops and Conferences	Analytical Products and Tools	People trained on Disaster Risk Management
<b>PILLAR 1:</b> Risk Identification	<b>57</b> (37%)	<b>56</b> (55%)	<b>167</b> (1%)
<b>PILLAR 2:</b> Risk Reduction	<b>62</b> (40%)	<b>26</b> (26%)	<b>367</b> (2%)
<b>PILLAR 3:</b> Preparedness	<b>22</b> (14%)	<b>11</b> (11%)	<b>15,201</b> (96%)
<b>PILLAR 4:</b> Financial Protection	<b>15</b> (10%)	<b>8</b> (8%)	<b>50</b> (0.3%)
<b>TOTAL</b>	<b>156</b>	<b>101</b>	<b>15,785</b>

#### Outcomes

The 43 Country Program projects reported significant outcomes that were achieved during 2017 – 2018 reporting period. These Outcomes derived from the various activities are organized by the GFDRR Pillar of Action 1 through 4 in below Figure 6.

**FIGURE 6: COUNTRY PROJECT OUTCOMES AGAINST THE GFDRR PILLARS, 2017-18**



## 4.2 Beneficiaries and World Bank Investments Leveraged

After four years of implementation, the Program has achieved great success in terms of influencing World Bank DRM investments. The Hub’s support helps prepare developing countries to access larger investments in DRM from the World Bank and other development partners, while providing key entry points to enhanced resilience options in existing investments. To date, the Hub’s US\$61.1 million in Country Program projects are connected to a World Bank lending portfolio worth an estimated **US\$6.3 billion in DRM informed investments**.

Most notably, the active multi-sector country program portfolio of **43 technical assistance projects** is benefitting approximately **10.8 million people** in **55 countries** to build disaster and climate resilience (See Table 6).

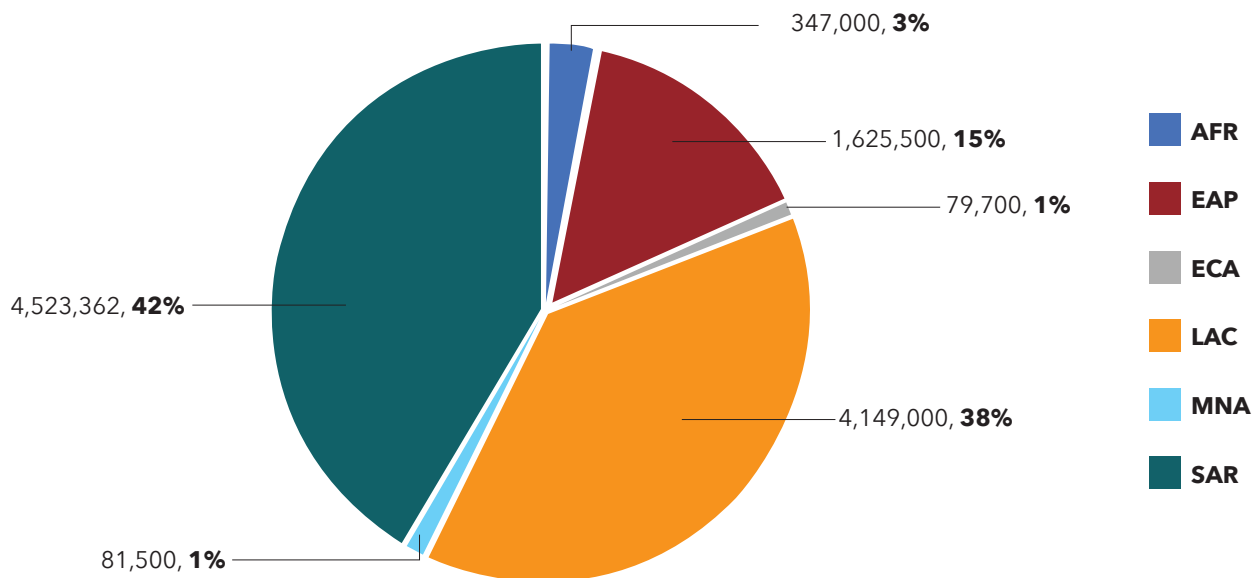
### 4.2.1 Program Beneficiaries

The number of beneficiaries for each grant is defined as people (in communities, cities, countries, regions, and/or households) benefitting or receiving support that can be attributed to the grant TA project. The estimated number of beneficiaries for each grant project was calculated utilizing the global INFORM model<sup>11</sup> and number of indirect beneficiaries reported by World Bank Task Team Leaders.

**TABLE 6: COUNTRY PROGRAM PROJECT BENEFICIARIES IN 2017-18**

Regions	Number of Beneficiaries (People)
AFR	347,000
EAP	1,625,500
ECA	79,700
LAC	4,149,000
MNA	81,500
SAR	4,523,362
<b>TOTAL</b>	<b>10,806,062</b>

**FIGURE 7: COUNTRY PROGRAM PROJECT BENEFICIARIES IN 2017-18**



<sup>11</sup>The INFORM model provides a risk profile for every country, which consists of a value between 0-10 for the INFORM Risk Index and all its underlying dimensions, categories, components and indicators. All the results are comparable within and between countries. For more information, please refer to the 2017-18 Program Profiles Report.

## 4.2.2 World Bank Investments Leveraged

Table 7 outlines the World Bank resilience investments leveraged from the Program's technical and knowledge support. Note, this table captures only World Bank resilience investments leveraged by the Program, and not investments mobilized by other sources (e.g. other development banks or private sector). Please see the 2017-18 Program Profiles Report for individual grant reporting and each project's specific effect on World Bank investment leveraging and number of beneficiaries.

**TABLE 7: WORLD BANK INVESTMENT LEVERAGING IN 2017-18**

Country	Country TA Grant Name	TA Grant Amount (US\$ million)	Investments Leveraged	Total Amount Leveraged (US\$ million)	Source of Finance
AFR					
Democratic Republic of Congo (DRC)	Improving the Democratic Republic of Congo's Capacity to Manage, Monitor, and Respond to Natural Hazards in the Region of Goma	2.0	DRC - Goma Airport Safety Improvement Project (P153085, US\$52 million)	52	World Bank
Regional (Ghana, Togo)	Strengthening Flood Management in the Volta Basin	1.5	Greater Accra Clean, Resilient and Inclusive Development Project (P164330, US\$100 million)	100	World Bank
EAP					
Cambodia	Strengthening Financial Planning and Rural Infrastructure for Disaster Resilience in Cambodia	1.3	Cambodia Southeast Asia Disaster Risk Management Project (P160929, US\$60 million)	60	World Bank
Indonesia	Investing in Urban Resilience and Emergency Preparedness in Indonesia	2.5	Dam Operational Improvement and Safety Project Phase 1,2 (P096532 P161514, US\$175 million)	175	World Bank
Philippines	Enabling Scaled up Risk Reduction Investments in the Philippines	2.03	Second Disaster Risk Management Development Policy Loan with a CAT-DDO (P155656, US\$500 million)	500	World Bank
Vietnam	Supporting Resilience of Critical Infrastructure Investments in Vietnam	1.20	Central Highlands Connectivity Improvement Project (P159238, US\$150 million), Vietnam - Emergency Natural Disaster Reconstruction Project (P163146, US\$118 million)	268	World Bank
	Strengthening the Institutional Capacity of the Government of Vietnam on Flood Risk Management and Recovery Preparedness	2.50			
Regional (Marshall Islands, Samoa, Vanuatu)	Disaster Risk Management in the Sustainable Energy Industry in the Pacific	0.3	Regional Sustainable Energy Industry Development Project (P152653, US\$5.66 million)	5.66	World Bank



Country	Country TA Grant Name	TA Grant Amount (US\$ million)	Investments Leveraged	Total Amount Leveraged (US\$ million)	Source of Finance
ECA					
Tajikistan	Strengthening Disaster Resilience in Tajikistan	1.25	Strengthening Critical Infrastructure against Natural Hazards (P158298, US\$50 million)	50	World Bank
Turkey	Building Resilience in Turkey	1.5	Education Infrastructure for Resilience (EU Facility for SuTP) (P162004, US\$158 million), National Disaster Risk Management Project - Safer Schools (P157683, US\$300 million)	458	World Bank
Uzbekistan	Strengthening Disaster Resilience in Uzbekistan	1.25	Uzbekistan Medium-Size Cities Integrated Urban and Territorial Development Project (P162929, US\$90 million)	90	World Bank
Regional (Albania, Bosnia and Herzegovina, Serbia)	Strengthening the Integration of Disaster Risk Management and Climate Resilience in Trade, Competitiveness, and Roads in the Western Balkans Region	1.0	Western Balkans Trade and Transport Facilitation (P162043, US\$50 million)	50	World Bank
LAC					
Peru	Mainstreaming Disaster Risk Management in Peru's Education Sector	1.4	US\$20 million program to make 373 school facilities disaster resilient, benefitting 278,000 students.	20	Government of Peru
Brazil	Innovation in DRM Decision Making in Brazil	1.26	Manaus Urban Resilience (P165676, US\$160 million)	160	World Bank
Regional (Honduras, Nicaragua)	Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Honduras and Nicaragua	1.45	Nicaragua: Support to the implementation of the National Water Resources Plan (P164286, US\$50 million), Disaster Risk Management Project (P131094, US\$30 million), Nicaragua Disaster Risk Management and Climate Resilience Project (P162418, US\$50 million)	130	World Bank

Country	Country TA Grant Name	TA Grant Amount (US\$ million)	Investments Leveraged	Total Amount Leveraged (US\$ million)	Source of Finance
Regional (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panamá)	Strengthening Disaster Risk Management and Resilience of Central American municipalities	2.0	GT: Urban Infrastructure and Violence Prevention (P143495, US\$45 million), Guatemala DRM Development Policy Loan with CAT DDO II (P159710, US\$145 million), Disaster Risk Management Project (P131094, US\$30 million)	220	World Bank
SAR					
Afghanistan	Strengthening Early Warning and DRM Capacity in Afghanistan	2.5	Citizens' Charter Afghanistan Project (P160567, P163468, US\$228 million), Trans- Hindukush Road Connectivity Project (P145347, US\$250 million), Irrigation Restoration and Development Project (P122235, US\$98 million), Afghanistan Rural Access Project (P125961, US\$125 million)	701	World Bank
Bhutan	Hydromet Services and Disaster Resilience Regional Project	2.3	Hydromet Services and Disaster Resilience Regional project (P154477, US\$3.8 million)	3.8	World Bank
Bangladesh	An Integrated Approach to Enhance Urban Resilience in Dhaka	0.5	Bangladesh Urban Resilience Project (P149493, US\$173 million)	182	World Bank (Additional parallel financing by JICA)

Country	Country TA Grant Name	TA Grant Amount (US\$ million)	Investments Leveraged	Total Amount Leveraged (US\$ million)	Source of Finance
India	Strengthening India DRM Service Delivery	2.0	India National Cyclone Risk Mitigation Project (P092217, US\$255 million), India: National Cyclone Risk Mitigation Project (I) Additional Financing (P148870, US\$104 million), Bihar Kosi Flood Recovery Project (P122096, US\$220 million), Tamil Nadu and Puducherry Coastal Disaster Risk Reduction Project (P143382, US\$236 million), Uttarakhand Disaster Recovery Project (P146653, US\$250 million), Odisha Disaster Recovery Project (P148868, US\$153 million), India: Bihar Kosi Basin Development Project (P127725, US\$250 million), National Cyclone Risk Mitigation Project-II (P144726, US\$308 million), Jhelum and Tawi Flood Recovery Project (P154990, US\$250 million)	2,026	World Bank
Nepal	Disaster-Linked Social Assistance Delivery Support System Development in Nepal	1.5	Earthquake Housing Reconstruction Project (P155969, US\$200 million), MDTF Funding for Earthquake Housing Reconstruction Project (P162067, US\$10 million), NP: Additional Financing Earthquake Housing Reconstruction (P163593, US\$300 million)	510	World Bank
Sri Lanka	Support Risk Sensitive Infrastructure Planning in Colombo Megapolis Region and Scaling of Spatial Data Platform	0.5	Climate Resilience Improvement Project Additional Financing (P157392, US\$42 million)	42	World Bank

Country	Country TA Grant Name	TA Grant Amount (US\$ million)	Investments Leveraged	Total Amount Leveraged (US\$ million)	Source of Finance
Regional (Afghanistan, Bangladesh, Bhutan, India, Nepal)	Promotion of Resilient Infrastructure	1.0	AF On-Farm Water Management (OFWM) (P120398, US\$41 million), Nepal: Power Sector Reform and Sustainable Hydropower Development (PSRSHD) (P150066, US\$20 million), UT1 - Upper Trishuli Hydro Project (P154109, US\$100 million), BD Chittagong Water Supply Improvement and Sanitation Project (P103999, US\$170 million), BD Dhaka Water Supply and Sanitation Project (P093988, US\$149 million)	480	World Bank
Global					
Global: Ethiopia, India, Jamaica	Operationalizing Building Regulation for Resilience (BRR)	1.0	Jamaica Disaster Vulnerability Reduction Project (P146965, US\$30 million)	30	World Bank
<b>Total</b>				<b>US\$ 6.3 billion</b>	

## 4.3 Knowledge Program Results

### 4.3.1 Progress Against Program Results and Work Plan Targets

Knowledge Program advanced significantly during 2017 – 2018 reporting period, with a significant progress made in capturing Japanese lessons learned and good practices in Resilient Infrastructure, as well as convening decision-makers and technical officers from developing countries and World Bank task teams to Japan to engage in thematic TDDs, knowledge exchange events, and training programs.

Table 8 provides a snapshot of key Program Results against the Program Results Indicator relevant to the Knowledge Program and achievements against 2017 – 2018 Work Plan Targets.

**TABLE 8: KNOWLEDGE PROGRAM RESULTS SNAPSHOT 2017 – 2018: ACHIEVEMENTS AGAINST WORK PLAN TARGETS**

	Targets in 2017 - 2018 Work Plan	Achievements in 2017 - 2018	Description
Knowledge Products	Produce at least <b>10</b> knowledge products, including knowledge notes, operational guidance, case studies, etc.	<b>Eight</b> <sup>12</sup> knowledge products, including Japan Case Study Reports, Solutions Briefs, and technical deep dive (TDD) and knowledge exchange (TKX) reports	Resilient Water Supply and Sanitation Services - the Case of Japan [ <b>Report</b> ] [ <b>Solutions Brief</b> ] [with Water GP and GSURR]  Hydromet Services TDD Summary Report [ <b>Report</b> ] [with GSURR and Water GP]  Resilient Transport TKX Summary Report [ <b>Report</b> ] [with Transport GP and GSURR]  Resilient Infrastructure PPPs: Contracts and Procurement - the Case of Japan [ <b>Report</b> ] [ <b>Solutions Brief</b> ] [with GIF and PPIAF]  Resilient Industries [ <b>Project Brief</b> ] [with the Finance, Competitiveness and Innovation (FCI) Global Practice]  Building Regulation for Resilience [ <b>Solutions Brief</b> ]
Japanese Expert Deployment	Connect Japanese experts with at least <b>four</b> major policy events or operational conferences	<b>Four</b> deployments of Japanese Expertise related to Knowledge Program areas	Sendai City to Bishkek City, Kyrgyz Republic, Rising Awareness for Government Continuity Planning Workshop (May 2017) [Emergency Preparedness]  Nippon Koei and Japan Railways Research Institute to Ecuador Peru, Knowledge Exchange Workshop on Seismic Resilience and Underground Metro Structures (July 2017) [Resilient Rails]  JWA to Kerala, India, International Dam Safety Conference (January 2018) [Dam Safety]  Sendai City to Frankfurt, Germany SPL South-South Learning Forum (February 2018) [Social Protection]

<sup>12</sup> Two upcoming products are in final stage of development: one TDD Summary Report (Resilient Cultural Heritage and Sustainable Tourism Technical Deep Dive) is in final stage of design, one TKX Summary Report (Emergency Preparedness and Response Technical Knowledge Exchange) is under peer review.

	Targets in 2017 - 2018 Work Plan	Achievements in 2017 - 2018	Description
World Bank or Global Development Publication	Facilitate or contribute to at least <b>two</b> major World Bank or global development publication	Contributed to <b>three</b> major global World Bank publication	Integration of the case studies into the World Bank's Global Study on Resilient Water Supply and Sanitation Services [Water Supply and Sanitation]  Integration of the case studies into the World Bank's Global Dam Safety Study [Dam Safety]  Integration of the Japan's best practices on building regulations into Doing Business Report 2018 (November 2017) [Building Regulations for Resilience]
Technical Deep Dives	Conduct at least <b>two</b> Technical Deep Dives (TDDs) in collaboration with TDLC, with a focus on resilient infrastructure and urban resilience	<b>Five</b> Technical Deep Dives and Knowledge Exchanges  <b>Two</b> of which were in collaboration with TDLC	Dam Safety and Disaster Resilience - East Asia & Pacific (EAP) and South Asia (SAR) Regional Workshop and Exposure Visit (April 2017) [with Water GP]  Cultural Heritage and Tourism Technical Deep Dive (April 2017) [with TDLC]  Resilient Transport Technical Knowledge Exchange (May 2017) [with Transport GP]  Emergency Management Technical Knowledge Exchange (August 2017) [with GP SURR]  Seismic Risk and Resilience Technical Deep Dive (March 2018) [with TDLC]
Knowledge exchanges and engagements	Organize over <b>25</b> operational knowledge exchanges, workshops, and public seminars.	<b>32</b> engagements in operational knowledge exchanges, workshops, review committees, forums, conferences, and seminars.	In addition to Japanese Expert Deployment and TDD's described above, various knowledge exchanges and engagements were facilitated by the Tokyo DRM Hub. 32 is inclusive of all knowledge exchanges and engagements that took place in 2017 - 2018 reporting period.

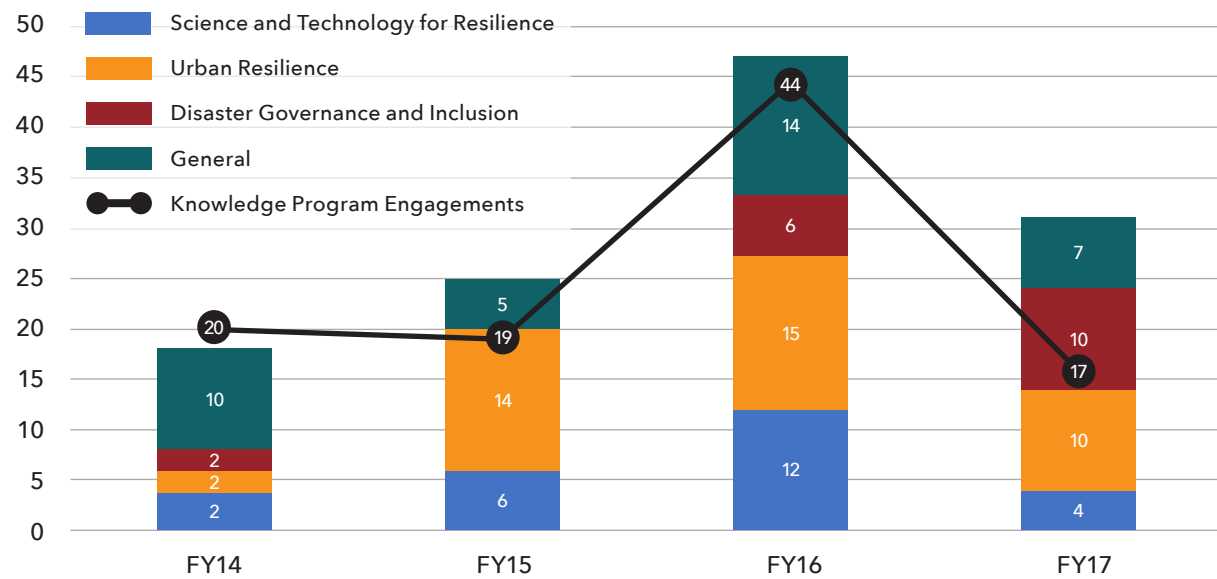
### 4.3.2 Progress Against GFDRR Activities and Outcomes

#### Activities

##### Trainings, Workshops, and Conferences

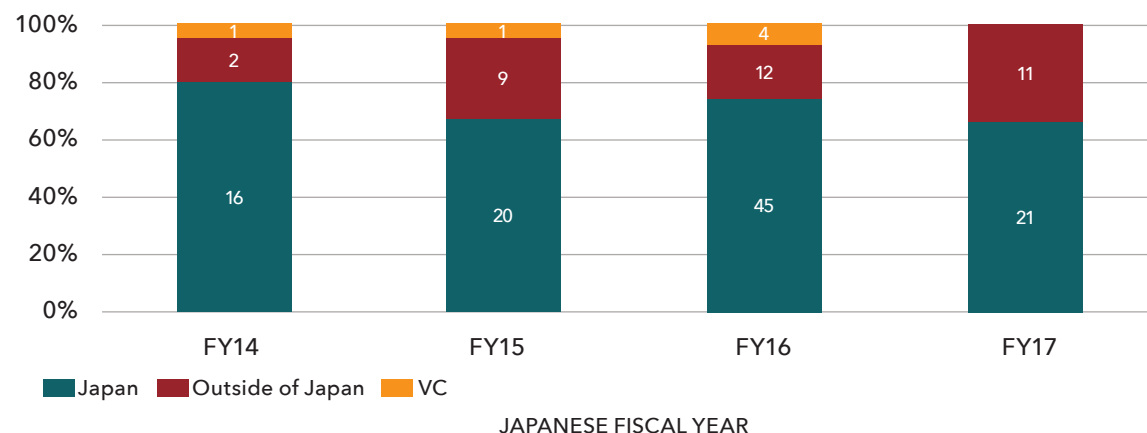
**32** engagements were facilitated by the DRM Hub during the 2017 - 2018 (FY17) reporting period including **15** engagements related to Country Program (i.e. country specific trainings in Japan, deployment of Japanese experts to workshops in client countries, showcasing lessons learned from country programs in international forums, etc.) and **17** engagements related the Knowledge Program (TDD, thematic knowledge exchange events, review meetings for knowledge products, etc.). Although the total number of engagements decreased from the previous reporting period (FY16), the proportion of engagements related to the Country Program increased demonstrating more engagements and linkages made from the DRM Hub activities to Country Program projects.

**FIGURE 8: NUMBER OF ENGAGEMENTS BY KNOWLEDGE PROGRAM FOCUS AREA**



Furthermore, as illustrated below in Figure 9, the location of engagements is gradually shifting beyond Japan; more than 30% of engagements facilitated by the DRM Hub in FY17 took place outside of Japan - including engagement of Japanese experts at high level events at the World Bank, sharing Japan DRM Knowledge Products in international workshops<sup>13</sup>, and country level deployment of experts<sup>14</sup>.

**FIGURE 9: NUMBER AND TYPE OF ENGAGEMENTS**

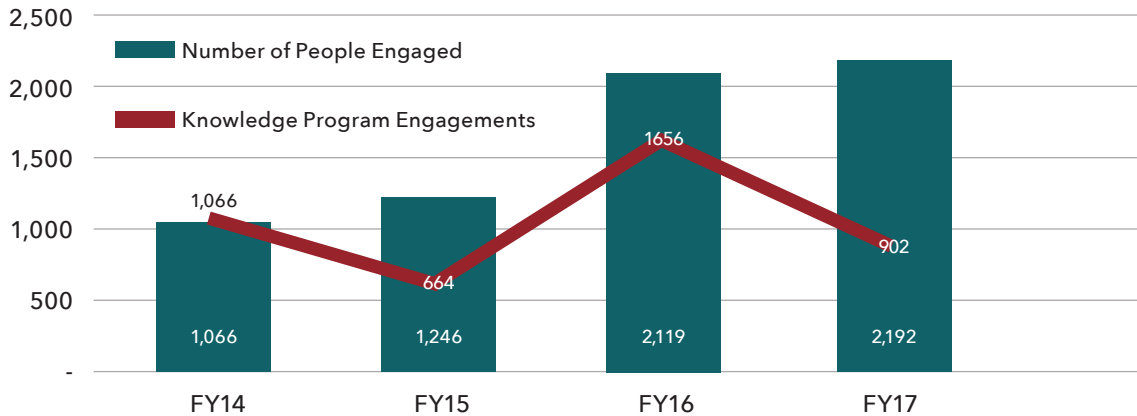


## People Engaged

Despite the decrease in the number of engagements in FY17, the total number of people engaged through engagements facilitated by DRM Hub increased. The proportion of people engaged for Knowledge Program decreased, while those engaged for Country Program related engagements increased (See Figure 10).

These trends demonstrate that the Japan Program activities are: 1) increasing efficiency - by reaching more people with fewer engagements; and 2) expanding reach outside of Japan - by increasing engagement with Country Projects.

**FIGURE 10: NUMBER OF PEOPLE ENGAGED BY JAPANESE FISCAL YEAR**



## Type of People Engaged

In FY17, there was a significant increase of number of client country stakeholders engaged through efforts supported by the Tokyo DRM Hub. The number of Japanese stakeholders engaged decreased significantly because until FY 16, many of the engagements facilitated by the Tokyo DRM were public seminars that were targeted towards Japanese stakeholders. Instead, in FY 17, building on the advice from the Program Steering Committee, the Program focused on implementing TDD, knowledge exchanges, and training for client country stakeholders.

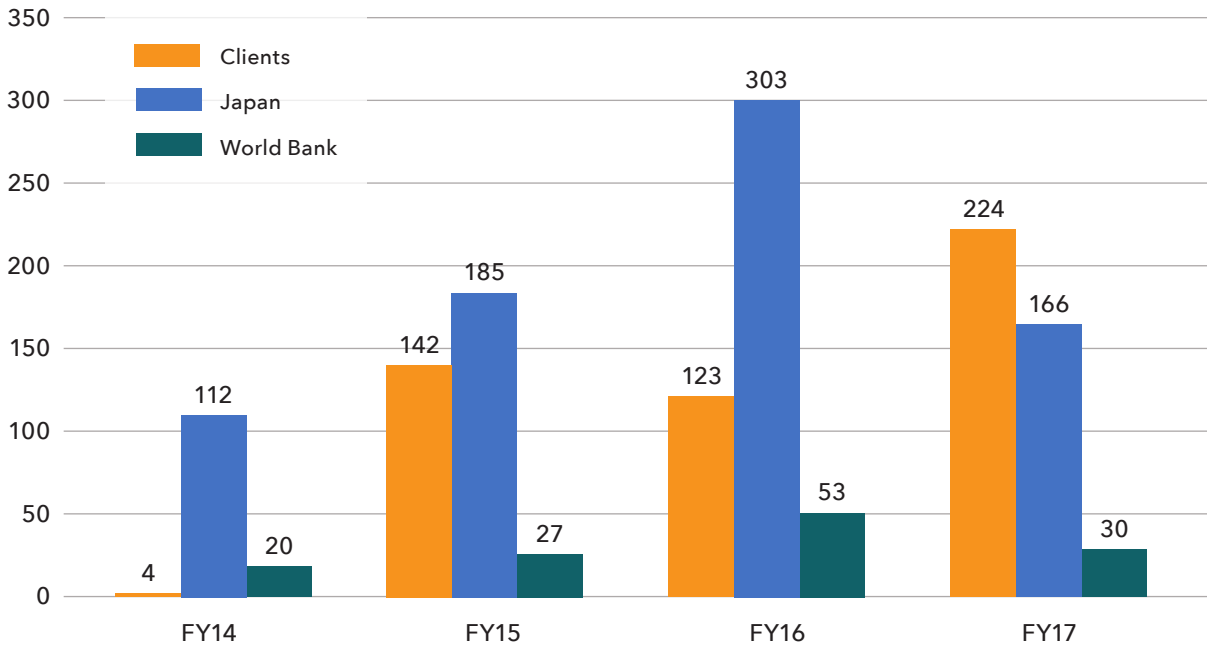
As a result, the Program was able to engage more than 220 people from client countries across 32 engagements. Number and type of people engaged by year is illustrated below in Figure 11.

<sup>13</sup>These include: Africa Hydromet Forum in Ethiopia, Resilient Road Workshop in Vietnam; World Reconstruction Conference in Belgium; and the 9th Meeting of the High-Level Experts and Leaders Panel on Water and Disasters (HELP) in China

<sup>14</sup>These include: South-South Learning Forum in Frankfurt on Social Protection; International Dam Safety Conference in India; Engineers Training for Safe Construction in Nepal; Knowledge Exchange Workshop on Seismic Resilience and Underground Metro Structures in Peru; and Rising Awareness for Government Continuity Planning Workshop in Kyrgyz Republic



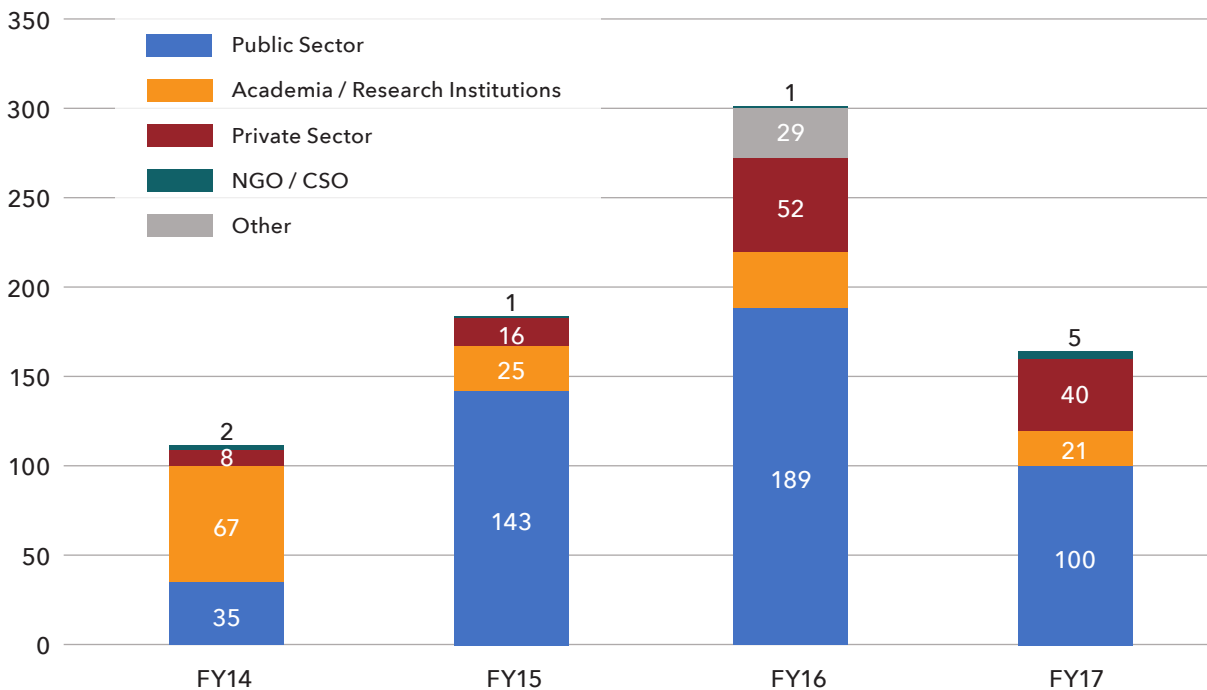
**FIGURE 11: NUMBER OF CLIENT COUNTRY, JAPANESE, AND WORLD BANK STAKEHOLDERS PARTICIPANTS BY JAPANESE FISCAL YEAR**



### Engagement of Japanese Stakeholders

As shown in Figure 12 below, the total number of Japanese stakeholder engaged decreased during this reporting period. However, the nature of contribution, partnership, and collaboration with Japanese stakeholders have transformed and deepened significantly.

**FIGURE 12: NUMBER AND TYPE OF JAPANESE STAKEHOLDERS ENGAGED**

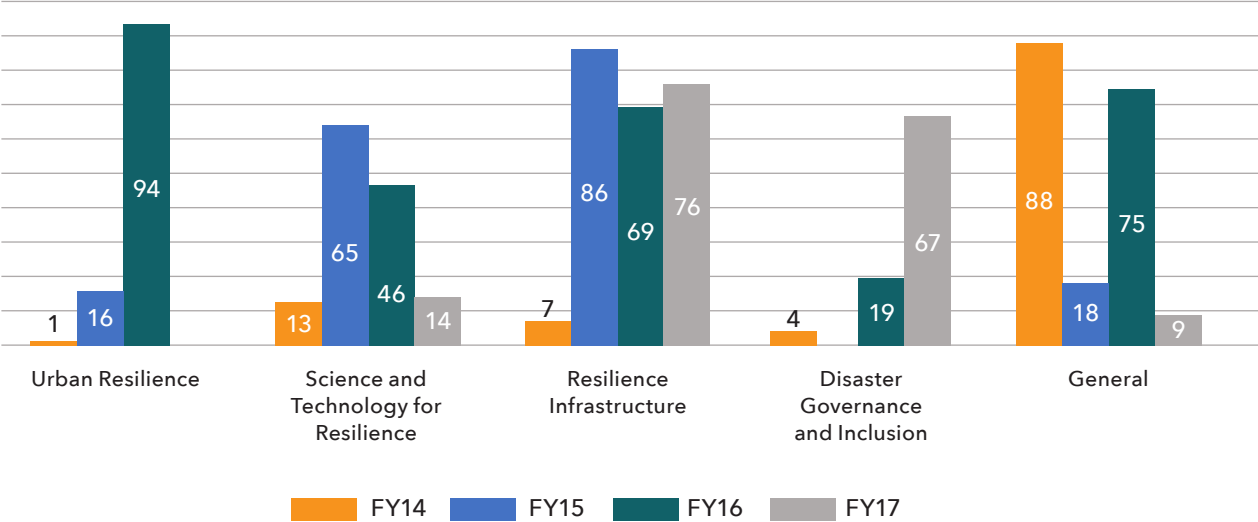


During 2017 - 2018 reporting period, the Program increased partnership with Japanese experts particularly in the areas of Resilient Infrastructure and Disaster Governance and Inclusion (Figure 13). In FY 17, the Tokyo DRM Hub successfully identified and connected demand DRM knowledge and expertise from task teams and client country governments with unique Japanese DRM expertise in areas of: Resilient Rails, Dam Safety, and Business Continuity Planning (BCP) which led to successful deployment of Japanese experts.

DRM Hub continued to partner with Japanese national and local government agencies, academia, civil society organizations, and private sector stakeholders to design and implement TDDs and Technical Knowledge Exchanges. In addition to inviting Japanese experts as resource persons, in FY17, some of the exchanges were co-hosted with Japanese partners. For example, the Emergency Management Technical Knowledge Exchange was co-hosted with CITY NET Yokohama.

Targeted single country and/or multi-country trainings also took place in FY17, whereby Japanese Universities, research institutions, technical consulting firms were not only design and implementation of the training in Japan but also encouraged to continue with the follow ups in country. For example, Kobe and Kyoto Universities engaged for the design and implementation Volta Basin Flood Monitoring and Forecasting Training are continuing to support the World Bank Task Team on providing technical support for activities under the current TA grant activities in Ghana, but also in discussion on how they may be able to support the design and implementation of a new World Bank investment in Togo.

**FIGURE 13: JAPANESE STAKEHOLDER ENGAGEMENT BY KNOWLEDGE PROGRAM FOCUS AREA**



## ANNEX 1: RESULT STORIES

### RESULT STORY: The Philippines integrates disaster risk reduction into cultural heritage

A 7.2 magnitude earthquake and a Category 5 typhoon (Haiyan) struck the Philippines in 2013. As a result, several centuries-old heritage structures (administrative buildings, churches, and other historically valuable public facilities) were either fully destroyed or severely damaged. In recognition of these irreplaceable losses, the Philippines Department of Tourism sought the World Bank's technical assistance to improve the resilience of heritage structures so that their multi-faceted value and contribution to local economic development would not be compromised by natural disasters. As a result, the "Enabling Scaled up Risk Reduction Investments in the Philippines" technical assistance project has advanced four years of work for the Government of the Philippines that led to the inclusion of a risk perspective in the conservation guidelines for cultural and historical heritage structures, a notable innovation in disaster risk management.

Japan-World Bank Program on Mainstreaming DRM in Developing Countries' financing has supported the Department of Tourism to assess and develop different options to reduce the vulnerability of 16 selected cultural heritage structures to multiple natural hazards, in three pilot locations: Intramuros Manila and the provinces of Cebu and Bohol. This involved detailed multi-hazard vulnerability assessments of selected cultural heritage structures leading to specific recommendations, conceptual designs, and cost estimates for structural strengthening and restoration.

This innovative solution goes beyond traditional DRM initiatives, which usually focuses on strengthening public facilities such as schools and hospitals, not historical or cultural assets. The Department of Tourism and cultural agencies, including the Intramuros Administration, the National Commission for Culture and the Arts, and the National Museum, together with international and national experts mobilized by the World Bank, undertook site surveys, data collection, and the multi-hazard vulnerability assessment. Stakeholder workshops and training activities helped develop and disseminate the initiative's methodology, which is planned for adoption in the forthcoming Philippine Conservation Guidelines. Without this initiative, risk reduction would be absent from these standards.

Through public and private resources, additional locations in the Philippines will begin to integrate risk reduction into conservation of cultural heritage sites.

"We will apply the methodology to conduct multi-hazard vulnerability assessments in other tourism and priority cultural heritage sites in the country. Our ultimate goal is to be more prepared before the next disaster strikes by investing in risk reduction measures and strengthening our cultural heritage sites for sustainable tourism in the Philippines." – Rolando Canizal, Philippine Tourism Undersecretary

### RESULT STORY: Brazil steps onto the path of resilience

Brazil saw a turning point this past year when DRM gained significant status as a national priority. The country experiences frequent small-scale disasters that cause significant damage and losses when aggregated as a whole—averaging \$200 million each month for the past decade.

The effort for this change began in 2011, when unusually high rainfall and subsequent floods and landslides in Rio de Janeiro's mountainous region claimed over 1,000 lives and shifted the government's position on managing disaster risks. The World Bank immediately entered discussions with authorities at the national, state, and municipal levels to engage Brazil in DRM. Yet, only in 2016-2017 did the Brazilian government begin to actively move toward improved access, availability, and use of disaster loss information to inform policies.

The government—in collaboration with Santa Catarina Federal University and the Japan-World Bank Program on Mainstreaming DRM in Developing Countries—launched a major initiative to assess data quality, to correct data errors, and to collect new information from 22,810 reports related to disaster events between 1995 and

2014. The results indicated staggering average monthly economic losses (\$200 million) and, beginning in 2000, increasingly frequent and intense natural disasters and associated losses. Given the largely unregulated growth of cities, limited urban planning, and the effects of climate change, this upward trend drew high-level attention.

Through the Japan DRM Program, the World Bank supported the state of Santa Catarina to develop a state-level catastrophe model, the first of its kind. The initiative aimed to identify flood asset exposure risks and to empower the State government and its institutions to include DRM practices and information in daily operations and decision-making processes. It also used a methodological approach to ensure replicability in other Brazilian states or municipalities.

The complementary work of the World Bank and the Government of Brazil over the last six years has nurtured momentum for generating DRM knowledge. With this new access to and availability of quality information and the evidence needed to build local capacity for better managing disaster risks, Brazil has started to proactively use data and information to integrate resilience measures in policies and investments.

“Thanks to the technical assistance provided by the Japan-World Bank Program for Mainstreaming DRM in Developing Countries, dialogue between national and state civil defense was strengthened thereby broadening the DRM knowledge base and helping the government better address the risk reduction needs of the poor in Santa Catarina State. In addition, the catastrophe model delivered to the state will help the government better address disaster risks in its strategic development plans.” – Fabiano De Souza, Deputy Secretary of Civil Defense, State of Santa Catarina

### **RESULTS STORY: Bangladesh pursues a holistic approach to urban resilience in growing cities, with growing risk**

Nearly 15 million people—three times the population of Norway—live in the city of Dhaka. One-third Dhaka’s residents are poor and its annual immigration is about 350,000. Overall, Bangladesh is highly vulnerable to earthquakes and tropical cyclones and lacks land-use planning. This combination has inhibited emergency service delivery from keeping pace with rapid growth and demand.

In 2013, Rana Plaza in Dhaka collapsed, killing over 1,000. The tragedy brought attention to Bangladesh’s high earthquake risk and the poor construction quality of its swiftly-growing cities (Dhaka and Sylhet). This triggered a three-year process; GFDRR and the World Bank worked with over 40 stakeholders from ministries and agencies to pursue a holistic approach to urban resilience.

Enabled by the “An Integrated Approach to Enhance Urban Resilience in Dhaka” technical assistance project, this exercise laid the foundation of a \$173 million World Bank Urban Resilience Program that aimed to provide a comprehensive multi-sectoral approach to urban resilience in Bangladesh. The program activities focused on: (i) assessing vulnerability of essential infrastructure, public facilities, and lifelines to better guide future infrastructure and retrofitting investments; (ii) equipping national and local disaster risk management agencies with relevant response resources, including emergency operation centers, communication systems to exchange information across agencies, search and rescue equipment, and related training; and (iii) improving construction practices by integrating disaster risk into development planning.

By providing better access to improved emergency preparedness and response services, as of 2017, the Urban Resilience Program has benefitted approximately 17 million people living in the cities of Dhaka and Sylhet. Additionally, the Japan-World Bank Program for Mainstreaming DRM in Developing Countries has played a key role through the Urban Resilience Program, in establishing a coordination strategy with the Japanese Cooperation Agency to support Bangladesh in its new approach to urban resilience, and ensure financing of complementary activities.

“Bangladesh needs to enhance resilience to earthquakes and other disasters in the major cities to protect lives

and accelerate development gains. The projects launched today underscore a long-term partnership among JICA, the World Bank and the government to improve disaster preparedness in Bangladesh.” –AHM Mustafa Kamal, Honorable Minister of Planning, Government of Bangladesh

## **RESULTS STORY: Making Development More Resilient through Risk Information in Afghanistan**

With support from the Japan-World Bank Program for Mainstreaming DRM in Developing Countries, in close cooperation with the Afghanistan National Disaster Management Agency, the “Establishing Critical Risk Information (ECRI)” technical assistance project has produced a comprehensive multi-hazard risk assessment at the national level, including in depth assessments for selected geographic areas.

The Afghanistan multi-hazard risk assessment and disaster profile are enabling the World Bank to respond to client demand through innovation working across sectors to achieve development outcomes. The risk information produced through the risk assessment and communicated through Open Data platforms is enabling the World Bank to take a programmatic approach and coordinate interventions within and across sectors, as well as between development partners, already partnering with transport, education, energy, and social protection.

Very importantly, these tools are now being used by government counterparts to mainstream disaster and climate considerations into their budget and planning processes. Notable examples of how the ECRI is informing current and planned World Bank investments across multiple sectors include:

- The Education Quality Reform in Afghanistan Project: This new education project, currently under preparation, sets out to support reforms and results outlined in the National Education Strategic Plan, including school construction. The ECRI will inform and support an assessment of the existing portfolio of schools in Afghanistan to identify vulnerabilities and areas for improvement to strengthen the overall resilience of schools to natural hazards.
- The Trans-Hindukush Road Connectivity Project for Afghanistan aims to improve road transport connectivity across the Hindukush mountain range. The ECRI is informing a risk assessment of two transport corridors, including the Salang Pass, to identify vulnerabilities and risk mitigation measures.
- The Citizens' Charter Afghanistan Project is a National Priority Program (NPP). The Citizens Charter is the first ever inter-ministerial, multi-sectorial NPP in Afghanistan, where Ministries will collaborate on a single program using a programmatic approach, including rural development, education, health and agriculture and irrigation. Community Development Councils (CDCs) will be linked to sub-national government to improve communications and coordination from the community to the district, provincial and national levels, which will increase Government visibility and accountability. ECRI is informing a review and update of infrastructure designs and site selection, training of engineers and CDCs and strengthened awareness of natural hazards.
- The Irrigation Restoration and Development Project provides support for the rehabilitation of irrigation systems covering about 300,000 hectares of irrigated areas; the design and construction of a limited number of multi-purpose small dams and appurtenances; and establishment of hydro-meteorological facilities and services. The ECRI will inform the assessment of new irrigation schemes and dams as well as support a national roadmap on hydromet services and early warning.

“This is a critical time for the disaster risk reduction (DRR) agenda in Afghanistan as we work towards building core disaster risk capacity and implementation with government institutions and other stakeholders. The World Bank, Global Facility for Disaster Reduction and Recovery (GFDRR) and the Government of Japan are key partners to the Government in this effort as they bring not only their expertise in this sector, but also their generous support to the Afghan people.” Wais Ahmad Barmak, Minister of State for Disaster Management and Humanitarian Affairs, Government of Afghanistan

## ANNEX 2: COUNTRY PROGRAM PROJECTS AND ALIGNMENT WITH THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION'S PRIORITIES FOR ACTION

Project Name	Country supported	Priority 1. Understanding disaster risk	Priority 2. Strengthening disaster risk governance to manage disaster risk	Priority 3. Investing in disaster risk reduction for resilience	Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction
Strengthening Early Warning and DRM Capacity in Afghanistan	Afghanistan	X	X	X	X
Promotion of Resilient Infrastructure	Afghanistan	X	X	X	
Strengthening the Integration of Disaster Risk Management and Climate Resilience in Trade, Competitiveness, and Roads in the Western Balkans Region	Albania	X		X	
Armenia National Disaster Risk Management Program	Armenia	X	X	X	X
An Integrated Approach to Enhance Urban Resilience in Dhaka	Bangladesh	X	X	X	X
Promotion of Resilient Infrastructure	Bangladesh	X	X	X	
Promotion of Resilient Infrastructure Phase 2	Bangladesh	X	X	X	
Hydromet Services and Disaster Resilience Regional Project	Bhutan	X	X		X
Promotion of Resilient Infrastructure	Bhutan	X	X	X	
Strengthening the Integration of Disaster Risk Management and Climate Resilience in Trade, Competitiveness, and Roads in the Western Balkans Region	Bosnia and Herzegovina	X			
Innovation in DRM Decision Making in Brazil	Brazil	X	X	X	
Developing Strategic Plans for Disaster Risk Financing, Risk Reduction and Hydromet Services in Southeast Asia	Cambodia	X	X	X	X
Strengthening Financial Planning and Rural Infrastructure for Disaster Resilience in Cambodia	Cambodia	X	X	X	X
Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	Chad	X	X	X	X

<b>Project Name</b>	<b>Country supported</b>	<b>Priority 1. Understanding disaster risk</b>	<b>Priority 2. Strengthening disaster risk governance to manage disaster risk</b>	<b>Priority 3. Investing in disaster risk reduction for resilience</b>	<b>Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction</b>
Reducing Debris Flow Risk for Infrastructure Resilience	<b>Commonwealth of Dominica</b>	X	X	X	
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>Costa Rica</b>	X	X	X	X
Mainstreaming Disaster Risk Management in school infrastructure management in Dominican Republic	<b>Dominican Republic</b>	X	X	X	
Improving the Democratic Republic of Congo’s Capacity to Manage, Monitor, and Respond to Natural Hazards in the Region of Goma	<b>DRC</b>	X	X	X	X
Women for Resilience (W4R)	<b>Egypt</b>	X	X	X	
Strengthening Disaster Risk Management (DRM) in Egypt	<b>Egypt</b>	X	X	X	X
Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	<b>Ethiopia</b>	X	X	X	X
Mainstreaming Disaster Risk Management in El Salvador’s Education Sector	<b>El Salvador</b>	X		X	
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>El Salvador</b>	X	X	X	X
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Fiji</b>	X		X	X
Strengthening Flood Management in the Volta Basin	<b>Ghana</b>	X	X		X
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>Guatemala</b>	X	X	X	X

<b>Project Name</b>	<b>Country supported</b>	<b>Priority 1. Understanding disaster risk</b>	<b>Priority 2. Strengthening disaster risk governance to manage disaster risk</b>	<b>Priority 3. Investing in disaster risk reduction for resilience</b>	<b>Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction</b>
Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Honduras and Nicaragua	<b>Honduras</b>		X		X
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>Honduras</b>	X	X	X	X
Multi-hazard Risk and Governance Assessments in India	<b>India</b>	X	X	X	
Strengthening India DRM Service Delivery	<b>India</b>	X	X	X	X
Operationalizing Building Regulation for Resilience (BRR)	<b>India</b>	X	X	X	X
Promotion of Resilient Infrastructure	<b>India</b>	X	X	X	
Promotion of Resilient Infrastructure Phase 2	<b>India</b>	X	X	X	
Investing in Urban Resilience and Emergency Preparedness in Indonesia	<b>Indonesia</b>	X	X	X	X
Operationalizing Building Regulation for Resilience (BRR)	<b>Jamaica</b>	X	X	X	X
Women for Resilience (W4R)	<b>Jordan</b>	X	X	X	
Resilient Transport Infrastructure Program	<b>Kenya</b>	X	X	X	
Strengthening Disaster Risk Management in Kyrgyz Republic	<b>Kyrgyz Republic</b>	X	X	X	X
Developing Strategic Plans for Disaster Risk Financing, Risk Reduction and Hydromet Services in Southeast Asia	<b>Lao PDR</b>	X	X	X	X
Resilient Transport Infrastructure Program	<b>Lao PDR</b>	X	X	X	
Women for Resilience (W4R)	<b>Lebanon</b>	X	X	X	
Disaster Risk Management in the Sustainable Energy Industry in the Pacific	<b>Marshall Islands</b>	X	X	X	X



<b>Project Name</b>	<b>Country supported</b>	<b>Priority 1. Understanding disaster risk</b>	<b>Priority 2. Strengthening disaster risk governance to manage disaster risk</b>	<b>Priority 3. Investing in disaster risk reduction for resilience</b>	<b>Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction</b>
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Marshall Islands</b>	X		X	X
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Micronesia</b>	X		X	X
Women for Resilience (W4R)	<b>Morocco</b>	X	X	X	
Building Resilience of Urban and Road Infrastructure in Myanmar	<b>Myanmar</b>	X	X	X	X
Developing Strategic Plans for Disaster Risk Financing, Risk Reduction and Hydromet Services in Southeast Asia	<b>Myanmar</b>	X	X	X	X
Disaster-Linked Social Assistance Delivery Support System Development in Nepal	<b>Nepal</b>		X		X
Promotion of Resilient Infrastructure	<b>Nepal</b>	X	X	X	
Promotion of Resilient Infrastructure Phase 2	<b>Nepal</b>	X	X	X	
Strengthening Climate Information and Early Warning Systems to Support Climate-Resilient Development in Honduras and Nicaragua	<b>Nicaragua</b>		X		X
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>Nicaragua</b>	X	X	X	X
Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	<b>Niger</b>	X	X	X	X
Seismic Risk, Resilient Infrastructure, and Disaster Risk Financing in Pakistan	<b>Pakistan</b>	X	X	X	
Technical Review and Capacity Building Program on Climate Induced Risks in Pakistan	<b>Pakistan</b>	X			

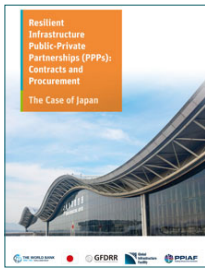


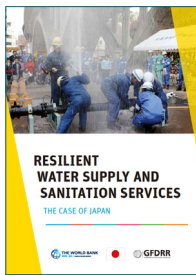
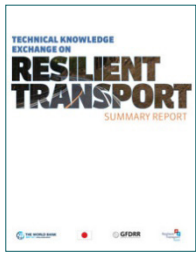
<b>Project Name</b>	<b>Country supported</b>	<b>Priority 1. Understanding disaster risk</b>	<b>Priority 2. Strengthening disaster risk governance to manage disaster risk</b>	<b>Priority 3. Investing in disaster risk reduction for resilience</b>	<b>Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction</b>
Women for Resilience (W4R)	<b>Palestine</b>	X	X	X	
Strengthening Disaster Risk Management and Resilience of Central American municipalities	<b>Panama</b>	X	X	X	X
Resilient Transport Infrastructure Program	<b>Paraguay</b>	X	X	X	
Mainstreaming Disaster Risk Management in Peru's Education Sector	<b>Peru</b>	X	X	X	
Resilient Transport Infrastructure Program	<b>Peru</b>	X	X	X	
Enabling Scaled up Risk Reduction Investments in the Philippines	<b>Philippines</b>	X	X	X	X
Disaster Risk Management in the Sustainable Energy Industry in the Pacific	<b>Samoa</b>	X	X	X	X
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Samoa</b>	X		X	X
Resilient Transport Infrastructure Program	<b>Serbia</b>	X	X	X	
Scaling up resilient infrastructure through Serbia National DRM Program	<b>Serbia</b>	X	X		
Strengthening the Integration of Disaster Risk Management and Climate Resilience in Trade, Competitiveness, and Roads in the Western Balkans Region	<b>Serbia</b>	X			
Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	<b>Senegal</b>	X	X	X	X
Support Risk Sensitive Infrastructure Planning in Colombo Megapolis Region and Scaling of Spatial Data Platform	<b>Sri Lanka</b>	X			
Strengthening Disaster Resilience in Tajikistan	<b>Tajikistan</b>	X	X	X	X



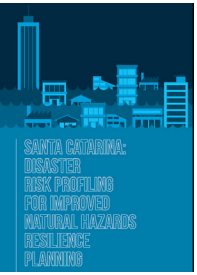
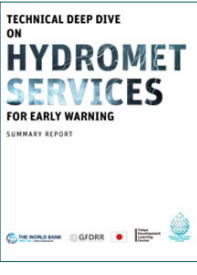
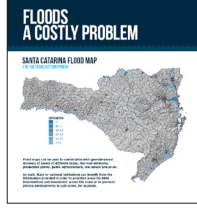
Project Name	Country supported	Priority 1. Understanding disaster risk	Priority 2. Strengthening disaster risk governance to manage disaster risk	Priority 3. Investing in disaster risk reduction for resilience	Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction
Strengthening Flood Management in the Volta Basin	<b>Togo</b>	X	X		X
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Tonga</b>	X		X	X
Streamlining DRM in Municipal Investment and Urban Planning	<b>Tunisia</b>	X	X	X	X
Women for Resilience (W4R)	<b>Tunisia</b>	X	X	X	
Building Resilience in Turkey	<b>Turkey</b>	X	X	X	
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Tuvalu</b>	X		X	X
Strengthening Disaster Resilience in Uzbekistan	<b>Uzbekistan</b>	X	X	X	X
Disaster Risk Management in the Sustainable Energy Industry in the Pacific	<b>Vanuatu</b>	X	X	X	X
Scaling-up risk reduction and risk financing in the Pacific Island Countries -Pacific Resilience Program (PREP)	<b>Vanuatu</b>	X		X	X
Strengthening the Institutional Capacity of the Government of Vietnam on Flood Risk Management and Recovery Preparedness	<b>Vietnam</b>		X		X
Supporting Resilience of Critical Infrastructure Investments in Vietnam	<b>Vietnam</b>	X	X	X	
Africa Hydromet Technical Assistance, Capacity Building and Knowledge Exchange Program	<b>Zambia</b>	X	X	X	X


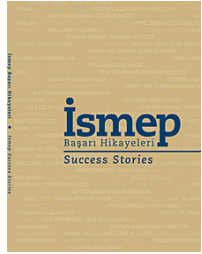
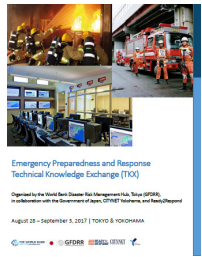
## ANNEX 3: KNOWLEDGE PROGRAM PROJECTS AND ALIGNMENT WITH THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION'S PRIORITIES FOR ACTION

PROJECT NAME	COUNTRY SUPPORTED	PRIORITY 1. Understanding disaster risk	PRIORITY 2. Strengthening disaster risk governance to manage disaster risk	PRIORITY 3. Investing in disaster risk reduction for resilience	PRIORITY 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction
Integrating Japan's Experience into the Global Program for Safer Schools Project	<b>Global</b>	x	x	x	x
Operationalizing Japanese Expertise and Lessons Learned in Hydrological and Meteorological Services in World Bank Client Countries	<b>Global</b>	x	x	x	x
Resilient Infrastructure: Roads, landslides and DRM	<b>Global</b>	x		x	x
Community Resilience: Social risk management and disaster risk management	<b>Global</b>		x		x
Seismic Risk Identification and Decision-making	<b>Global</b>	x	x	x	x
Leveraging Japanese Experience for Building Regulation for Resilience	<b>Global</b>	x	x	x	x
Smart DRM: ICT readiness and application for DRM	<b>Global</b>	x	x	x	
Empowering elders, women, and people with disabilities for resilience	<b>Global</b>	x	x	x	
Learning from and Operationalizing Japanese Experience in Comprehensive Flood Risk Management for Reducing Urban Flood Risk	<b>Global</b>	x	x	x	
Dam Safety and Disaster Resilience	<b>Global</b>	x	x	x	
Resilient Infrastructure - PPP Contracts and Procurement	<b>Global</b>	x	x	x	
Resilient Water Supply and Sanitation Services	<b>Global</b>	x	x	x	
Climate and Disaster Resilient Rails Development	<b>Global</b>	x	x	x	
Infrastructure Prioritization Framework and Resilience	<b>Global</b>	x	x	x	
Learning from Japanese Experience in Disaster Risk Management for Cultural Heritage and Tourism	<b>Global</b>	x	x	x	x
Learning from the Japanese Experience in Emergency Preparedness and Response (EP&R)	<b>Global</b>	x	x		x
Business Continuity Planning for Climate Resilient Industries	<b>Global</b>	x	x	x	x

## ANNEX 4: DRM HUB KNOWLEDGE PRODUCTS AND PUBLICATIONS

Focus Area	DRM Hub Program	Publication Title	Type of the Product	Language	Publication
RESILIENT INFRASTRUCTURE	Resilient Infrastructure PPPs: Contracts and Procurements	Resilient Infrastructure PPPs: Contracts and Procurements – the case of Japan	Report	English	
	Resilient Infrastructure PPPs: Contracts and Procurements	Resilient Infrastructure PPPs: Contracts and Procurements – the case of Japan	Brief	English	
	Resilient Water Supply and Sanitation Services	Resilient Water Supply and Sanitation Services: The case of Japan	Solutions Brief	English	
	Resilient Water Supply and Sanitation Services	Resilient Water Supply and Sanitation Services: The case of Japan	Report	English	
	Roads, Landslides, and DRM	Technical Knowledge Exchange on Resilient Transport	Summary Report	English	

Focus Area	DRM Hub Program	Publication Title	Type of the Product	Language	Publication
URBAN RESILIENCE	Building Regulation for Resilience	Transforming Disaster Experience into a Safer Built Environment: The Case of Japan	Brief	English	
SCIENCE AND TECHNOLOGY FOR RESILIENCE	Country Program	Afghanistan Disaster Risk Info GeoNode	Guide/Tool	English	
	Country Program	Santa Catarina: Disaster Risk Profiling for Improved Natural Hazards Resilience Planning	Report	English	
	Hydromet	Technical Deep Dive on Hydromet Services for Early Warning	Summary Report	English	
	Hydromet	Floods A Costly Problem	Technical Note	English	

Focus Area	DRM Hub Program	Publication Title	Type of the Product	Language	Publication
DISASTER RISK GOVERNANCE AND INCLUSION	Country Program	Disaster risk profile: Afghanistan	Guide/Tool	English	
	Emergency Management	Istanbul seismic risk mitigation and emergency preparedness project (ismep): success stories	Report	English Turkish	
	Resilient Cultural Heritage and Sustainable Tourism	Resilient Cultural Heritage and Sustainable Tourism Technical Deep Dive (TDD)	Summary Report	English	<b>FORTHCOMING</b>
	Emergency Management	Emergency Preparedness and Response Technical Knowledge Exchange (TKX)	Summary Report	English	

## ANNEX 5: KNOWLEDGE EVENTS AND COMMUNICATIONS HIGHLIGHTS

The Hub serves a knowledge center to connect and share Japanese experience and expertise in DRM with development professionals, including at the World Bank, and developing countries. In 2017-18, the Hub engaged DRM communities and other stakeholders through over 31 knowledge exchange events. During the 2017-18 period, the Hub continued to increase the visibility of the Program and these activities through innovative communication tools and outreach. Highlights include:

### APRIL 2017

- **Technical Knowledge Exchange on EAP and SAR Regional Dam Safety and Disaster Resilience**

During April 3 - 7, 2017, the Tokyo DRM Hub organized an EAP and SAR Regional Workshop and Exposure Visits in cooperation with the Government of Japan, including the Ministry of Finance (MOF), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Ministry of Agriculture, Fishery, and Forestry (MAFF), Japan Water Agency (JWA) and Japan International Cooperation Agency (JICA). The Program has also benefited from the support of Gunma Prefecture, Japan Dam Engineering Center (JDEC), Japan Commission on Large Dams (JCOLD), Tokyo Electric Power Company (TEPCO), Nippon Koei, University of South Australia, and the World Bank's Tokyo Development and Learning Center (TDLC).<sup>2</sup>

<http://www.worldbank.org/en/events/2017/04/03/technical-knowledge-exchange-on-eap-and-sar-regional-dam-safety-and-disaster-resilience>

- **Resilient Cultural Heritage and Sustainable Tourism Technical Deep Dive**

From April 10-15, 2017, the DRM Hub and the TDLC conducted a five-day TDD in coordination with City of Kyoto, UNESCO, Ritsumeikan University, UNWTO, and Cultural Affairs Agency, and discussed deeply on the resilience of cultural heritage assets against natural and human-made disaster. Approximately 45 participants from about 9 countries including Albania, Bhutan, China, Myanmar, Nepal, Philippines, Saudi Arabia, Tanzania and Uzbekistan presented and actively shared their challenges and experiences on cultural heritage resilience and sustainable tourism through presentations, site visits, and action plan discussions in Tokyo and Kyoto.

<http://www.worldbank.org/en/events/2017/04/10/resilient-cultural-heritage-and-sustainable-tourism-technical-deep-dive>

### MAY 2017

- **Memorandum of Understanding (MoU) on the establishment of a country-led Regional Technical Working Group on Disaster Risk Finance and Insurance**

On May 5, 2017, the Ministry of Economy and Finance in Cambodia, Ministry of Finance in Lao PDR, Ministry of Planning and Finance in Myanmar, and Ministry of Finance in Japan signed a Memorandum of Understanding (MoU) on the establishment of a country-led Regional Technical Working Group on Disaster Risk Finance and Insurance. This new Working Group will work toward developing the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), a regional catastrophe risk pool to provide rapid response financing in the immediate aftermath of a disaster.

<http://www.worldbank.org/en/events/2017/05/05/southeast-asian-countries-reach-milestone-agreement>



- **Technical Knowledge Exchange on Resilient Transport TKX**

On May 8 – 12, 2017, the World Bank Resilient Transport Community of Practice (CoP), GFDRR, and the DRM Hub convened clients and TTLs from 16 countries together with experts from Japan and New Zealand for a Technical Knowledge Exchange (TKX) on Resilient Transport at the Hub. The aim of the TKX was to connect current and future World Bank transport investments with the information, tools, and technical expertise that exist in Japan and other countries in resilient transport. A wide range of practitioners from Japan and across the globe – including national and local governments, the private sector, academia, and civil society organizations – shared good practices and lessons learned on how they have increased the resilience of transport networks.

<http://www.worldbank.org/en/news/feature/2017/06/26/sharing-resilient-transport-knowledge-across-sectors-and-regions>

- **Sendai City's Participation in Business Continuity Planning Workshop in Kyrgyz Republic**

On May 11, 2017, The DRM Hub coordinated the participation of Sendai City officials in a Business Continuity Planning (BCP) Workshop in Bishkek, Kyrgyz Republic. Organized by the ECA Kyrgyz DRM team, in collaboration with the city's Mayor and the World Bank Country Management Unit, the workshop aimed to share the best international practices and standards, engage municipal managers and senior officials in a project to develop the continuity plan, and define an initial list of priorities of critical functions and services that the Bishkek city administration delivers

<http://www.worldbank.org/en/events/2017/05/11/sendai-citys-participation-in-business-continuity-planning-workshop-in-kyrgyz-republic>

## **JUNE 2016**

- **Lessons Learned: Japan's Contributions to the World Reconstruction Conference 3**

On June 6-8, 2017, more than 800 participants from civil society, national and local governments, academia, the private sector and international organizations from around the world gathered in Brussels for the Third Edition of the World Reconstruction Conference (WRC3) . The Japanese delegation played a central role in this conference, headlining several sessions to discuss and share lessons learned from the country's extensive experience in disaster recovery as well as best practices captured by Knowledge Programs of the DRM Hub.

<http://www.worldbank.org/en/news/feature/2017/06/27/lessons-learned-japans-contributions-to-the-world-reconstruction-conference-3>

## **JULY 2016**

- **Strengthening Structural and Seismic Engineering in Nepal**

Yokohama City, Yokohama CITYNET Office, and the DRM Hub jointly worked with Kathmandu Metropolitan City (KMC) to explore capacity building opportunities for KMC engineers as part of the DRM Hub's Country Program. Together, they are conducting a series of nine trainings on structural and seismic engineering, engaging city officials and experts from Yokohama City in this effort. At the fifth training, organized by KMC on July 26-28, 2017, key engineers from municipalities in the Kathmandu Valley, as well as those from nine emerging municipalities from around the country participated and enhanced their skills.

<http://www.worldbank.org/en/events/2017/07/26/strengthening-structural-and-seismic-engineering-in-nepal>

- **Knowledge Exchange Workshop on Seismic Resilience and Underground Metro Structures**

Tokyo DRM Hub provided a just-in-time support to the Bank's Lima Metro Line 2 (P145610) in coordination with the Quito Metro Line 1 (P144489) team. As part of the contract, Nippon Koei and Japan Railways Research Institute provided a seismic and emergency exits design review, as well as a workshop on standards with international experts. The Tokyo DRM Hub and WB Peru Office organized a knowledge exchange workshop on seismic resilience and underground metro structures on July 18-19, 2017. The event was a great occasion for clients and partners in Lima and Quito to gain valuable new insight into the development of resilient subway projects. In particular, Japanese delegates shared their experience in seismic standards of underground metro structures, design and construction, as well as emergency preparedness and response planning including emergency exit designs and evacuation protocols.

<http://www.worldbank.org/en/events/2017/07/18/knowledge-exchange-workshop-on-seismic-resilience-and-underground-metro-structures>

- **First Regional Technical Working Group (RTWG) Meeting: Southeast Asia Disaster Risk Insurance Facility (SEADRIF)**

The First Regional Technical Working Group (RTWG) on Disaster Risk Finance and Insurance (DRFI) was held from July 27th - 28th 2017 in Tokyo, Japan with participation from Ministry of Finance representatives from Cambodia, Lao PDR, Myanmar and Japan. With the support of the World Bank, the RTWG on DRFI was launched on May 5, 2017, with an aim to jointly conduct the feasibility and preparatory work toward the establishment of Southeast Asia Disaster Risk Insurance Facility (SEADRIF) - a regional catastrophe risk pool, proposed as a reinsurance-based disaster liquidity facility, providing participating countries with immediate financing for response in the aftermath of a natural disaster.

<http://www.worldbank.org/en/events/2017/05/05/southeast-asian-countries-reach-milestone-agreement>

- **Feature Story: Making Development More Resilient through Risk Information in Afghanistan**

With support from the Japan-World Bank Program for Mainstreaming DRM in Developing Countries (Japan Program), and in close cooperation with the Afghanistan National Disaster Management Agency, the Establishing Critical Risk Information (ECRI) Project has produced a comprehensive multi-hazard risk assessment at the national level, including in depth assessments for selected geographic areas.

<http://www.worldbank.org/en/news/feature/2017/07/06/making-development-more-resilient-through-risk-information-in-afghanistan>

## **AUGUST 2016**

- **Technical Knowledge Exchange on Emergency Preparedness and Response (EP&R)**

On August 28 - Sep 3, 2017, the World Bank Ready2Respond (R2R) Community of Practice (CoP), City Resilience Program (CRP), Global Facility for Disaster Reduction and Recovery (GFDRR), and the World Bank Disaster Risk Management Hub in Tokyo, in collaboration with CITYNET Yokohama, convened clients and TTLs from 5 countries together with experts from Japan and Canada for a Technical Knowledge Exchange (TKX) on Emergency Preparedness and Response in Tokyo and Yokohama.

<http://www.worldbank.org/en/news/feature/2017/10/12/sharing-japanese-expertise-in-emergency-preparedness-and-response-systems-at-national-and-local-levels>

- **Visit of Vietnamese Delegates to Japan to Learn from Japanese Disaster Risk Finance and Insurance and Public Asset Management Systems**

As part of the World Bank's effort to support the Government of Vietnam in dealing with these challenges and strengthen financial risk management of public assets against natural and climate disasters, the Disaster Risk Financing and Insurance Program (DRFIP) organized a knowledge exchange and exposure visit to Japan. Between July 31 and August 4, 2017, leaders and practitioners from the Vietnamese Ministry of Finance, Office of the Government, National Assembly, visited Japan to share their knowledge and experiences with high-level Japanese officials and practitioners. Financial support for the visit came from the Program for Sovereign Disaster Risk Financing & Insurance in Middle Income Countries sponsored by the State Secretariat for Economic Affairs (SECO) of Switzerland and the Japan-World Bank Mainstreaming Disaster Risk Management Program.

<http://www.worldbank.org/en/news/feature/2017/08/30/building-knowledge-connections-vietnamese-delegates-visit-japan-to-learn-from-japanese-disaster-risk-finance-and-insurance-and-public-asset-management-systems>

## **SEPTEMBER 2016**

- **DRM and Cultural Heritage Workshop and Symposium in Kyoto**

The DRM Hub, through the Japan World-Bank Program for Mainstreaming DRM, organized the Resilient Cultural Heritage Knowledge Program Kick-Off Workshop on the sidelines of the UNESCO Chair on Disaster Risk Management of Cultural Heritage International Symposium" Working Internationally toward the Integrated Protection of Cultural Heritage from Disasters" at Ritsumeikan University (R-DMUCH) in Kyoto.

<http://www.worldbank.org/en/events/2017/09/16/drm-and-cultural-heritage-workshop-and-symposium-in-kyoto>

- **Feature story: Improving the Seismic Resilience of Dams in India - A Case of Maithon Dam, Jharkhand State**

<http://www.worldbank.org/en/news/feature/2017/09/05/improving-the-seismic-resilience-of-dams-in-india-a-case-of-maithon-dam-jharkhand-state>

## **OCTOBER 2017**

- **Resilience Dialogue Series**

The Resilience Dialogue series was launched in 2011 when major development and humanitarian partners meeting at the World Bank agreed to institutionalize a series of events on the margins of the WBG-IMF Annual and Spring Meetings to monitor progress on the resilience agenda. With 11 successful events and dozens of high-level participants from country governments and major development agencies, the Resilience Dialogue series brings awareness and focused policy advocacy to issues within the field of disaster risk management, including financing, partnerships, innovation, technology, preparedness, institutional capacity and more. This event of the Resilience Dialogue series took an in-depth look at the role that quality infrastructure, including nature based solutions, will play in protecting communities from compounding climate and disaster risk.

<http://www.worldbank.org/en/events/2017/10/13/resilience-dialogue-the-disaster-that-never-happened>

- **DRM Hub's Contribution to Africa Hydromet Forum**

During September 12-15, 2017, the inaugural AMCOMET Africa Hydromet Forum, co-hosted by the African Union Commission and the Federal Democratic Republic of Ethiopia, brought together over 500 experts from governments, public and private sectors, regional entities, academia, development agencies, civil society and over 30 high level representatives from ministries responsible for meteorology, hydrology and disaster risk management and executive management from regional organizations. The Forum provided a platform to position Hydromet strengthening as a pillar of Africa's climate resilient development and adaptation planning. Delegates shared best practices and lessons from the implementation of existing strategies and proposed concrete actions to address the weather, water, and climate challenges facing Africa. During the Forum, the DRM Hub showcased and disseminated knowledge products on the Japanese experience on modernization of Hydromet services developed by the DRM Hub.

<https://www.gfdr.org/en/event/amcomet-africa-hydromet-forum-2017>

- **DRM Hub's Contribution to JICA's Training on Gender and Diversity in Disaster Risk Reduction**

To close its training course on Gender and Diversity in Disaster Risk Reduction in Disaster Risk Reduction, JICA invited the World Bank's Disaster Risk Management Hub in Tokyo to speak and participate at the concluding public seminar and clients' action planning presentations at JICA Tohoku on October 25-27, 2017 in Sendai. In total, 16 officials and NGO representatives from Bangladesh, Bhutan, Cambodia, Colombia, Iraq, and Nepal participated in the JICA's training course, which took place on October 10-29, 2017.

<http://www.worldbank.org/en/events/2017/10/25/drm-hubs-contribution-to-jicas-training-on-gender-and-diversity-in-disaster-risk-reduction>

## **NOVEMBER 2016**

- **Strengthening Flood Forecasting in the Volta Basin: Science Cooperation with Kobe and Kyoto Universities on Flood Forecasting**

From Nov 6-17, 2017, the DRM Hub in partnership with Kobe and Kyoto Universities invited twelve technical experts from Ghana, Togo, and the Volta Basin Authority (VBA) working on strengthening flood forecasting in the Volta Basin to participate in a ten-days science cooperation and learning event in Japan. The participants had the opportunity to see, learn, and experience first-hand cutting-edge Japanese technologies, research, good practices, and lessons learned related to weather and hydrological observation, flood forecasting, and flood risk management through lectures and field based exercises.

<http://www.worldbank.org/en/news/feature/2017/11/06/strengthening-flood-forecasting-in-the-volta-basin>

- **World Bank Tokyo DRM Hub's Contributions to World Bosai Forum**

More than 900 participants from national and local governments, academia, private sector, international organizations, and civil society from around the world gathered in Sendai, Japan from 26-28 November 2017 for the "World Bosai Forum (WBF): International Disaster Risk Conference". The World Bank Tokyo DRM Hub organized a session on "Engineering a Solution for Disasters: The Promise of Resilient Infrastructure." Through this session, Mr. Francis Ghesquiere, Manager of Global Facility for Disaster Reduction & Recovery (GFDRR), Ms. Jolanta Krystin-Watson, WB Lead DRM Specialist, and Mr. Kiyoshi Murakami, Deputy Mayor of Rikuzentakata City discussed why mainstreaming disaster risk management was important in strengthening resilience and what were some of the good practices and lessons learned from efforts they have been engaged.

<http://www.worldbank.org/en/news/feature/2017/11/26/world-banks-participation-at-world-bosai-forum-in-sendai>

## **DECEMBER 2017**

- **Afghanistan Delegation - Dam Operations and safety**

Nine experts and leaders working in Afghanistan on dam operation and safety, and hydromet data collection and analysis participated in a 10-day program organized by the World Bank Water Global Practice and the DRM Hub, in partnership with CTI Engineering International Co., Ltd. (CTII) and Japan Water Agency (JWA). The workshop showcased Japanese good practices and lessons learned that may be applicable to their efforts under ongoing World Bank financed initiatives on dam safety and hydromet modernization through the Irrigation Restoration and Development Project (IRDP) and Strengthening Early Warning Systems and DRM Capacity in Afghanistan Project.

<http://www.worldbank.org/en/events/2017/12/04/afghanistan-dam-safety-and-hydromet-services-workshop-in-tokyo>

- **DRM Hub's Contribution to the International Council on Monuments and Sites (ICOMOS)' General Assembly and Scientific Symposium**

The International Council on Monuments and Sites (ICOMOS), a global non-governmental organization associated with UNESCO and dedicated to promoting the conservation, protection, and enhancement of cultural sites, celebrated its 19th General Assembly and Scientific Symposium on December 11-15, 2017 in New Delhi, India. During the Scientific Symposium, the Tokyo DRM Hub team presented the paper Connecting Developing Countries and International Experts for More Resilient Cultural Heritage in Development Projects: Lessons from a World Bank Technical Deep Dive, sharing the experiences and lessons learned from the Resilient Cultural Heritage and Tourism Program, specially the TDD delivered in Tokyo and Kyoto in April 10-14, 2017.

<http://www.worldbank.org/en/events/2017/12/11/drm-hubs-contribution-to-the-international-council-on-monuments-and-sites-icomos-general-assembly-and-scientific-symposium>

## **JANUARY 2018**

- **Belgrade Technical Knowledge Exchange on Resilient Transport**

On January 22 - 26, 2017, building on the first Resilient Transport Technical Knowledge Exchange (TKX) that took place in Tokyo in May 2017, the second Resilient Transport TKX was organized in Belgrade, Serbia in partnership with the Belgrade country office, World Bank's Resilient Transport Community of Practice (CoP), and GFDRR. With the objective of further building the resilient transport community to influence Bank TAs and operations, 11 country delegations and a total of 65 participants attended the workshop. The Task teams and clients from Serbia and Peru conducting climate vulnerability analysis for the transport sector funded by the Japan World Bank Program for Developing Countries (GLOBAL: Resilient Transport Infrastructure Program) showcased the outcome of their work and lessons learned at the opening session of this event.

<https://www.gfdr.org/en/event/belgrade-tkx>

## **MARCH 2018**

- **Technical Deep Dive on Seismic Risk and Resilience**

From Mar 12-16, 2018, the World Bank's DRM Hub and TDLC are organizing a Technical Deep Dive (TDD) in Tokyo, Sendai, and Kobe on Seismic Risk and Resilience, in collaboration with the Building Regulation for Resilience, Climate Change Mitigation and Development KSB. The TDD aims to help developing countries integrate seismic risk more effectively into their development planning and investments. This TDD will engage government officials (e.g., policymakers, ministries of planning, DRM, construction, seismic agencies) and World Bank team leaders representing Bangladesh, India, Nepal, Tonga, Samoa, Solomon Islands, Myanmar, Philippines, Indonesia, Peru, Ecuador, and Lebanon.

## ANNEX 6: FINANCIAL REVIEW

	Indicative Budget Allocation	Commitment to Date	Percentage Committed
	(Tranches 1-5)		
	(A)	(B)	(B/A)
<b>Country Program</b>	<b>73.5</b>	<b>67.1</b>	<b>91%</b>
AFR – Sub-Saharan Africa	7.0	6.5	93%
EAP – East Asia and the Pacific	20.0	17.5	87%
ECA – Europe and Central Asia	13.0	10.5	81%
LCR – Latin America and the Caribbean	11.0	9.0	82%
MNA – Middle East and North Africa	3.0	2.7	90%
SAR – South Asia	17.5	18.9	108%
Global	2.0	2.0	100%
<b>Knowledge Program</b>	<b>11.5</b>	<b>9.7</b>	<b>84%</b>
Resilient Infrastructure	3.5	3.0	84%
Urban Resilience	2.0	1.3	65%
Science and Technology for Resilience	1.5	1.4	93%
Disaster Risk Governance and Inclusion	2.0	2.2	110%
Hub Program Support	2.5	1.8	72%
<b>Japan's Membership Contribution to GFDRR</b>	<b>5.0</b>	<b>5.0</b>	<b>100%</b>
<b>Program Management and Administration<sup>1</sup></b>	<b>9.0</b>	<b>9.0</b>	<b>100%</b>
<b>World Bank Fee<sup>2</sup></b>	<b>1.0</b>	<b>1.0</b>	<b>100%</b>
<b>Total</b>	<b>100.0</b>	<b>91.8</b>	<b>92%</b>

<sup>15</sup> Period from Program Commencement (February 2014) to Date (projected as of February 2018). This includes approved and submitted projects.

<sup>16</sup> Program Management and Administration funding supports Secretariat activities related to the management of this programmatic trust fund. Activities include: evaluating activity proposals and allocating funds to implementing units; work program planning, monitoring and evaluation; developing and implementing Program-specific management tools, procedures and systems; negotiating the replenishment / expansion of existing programs; program level resource related planning and budgeting; and donor relationship management activities.

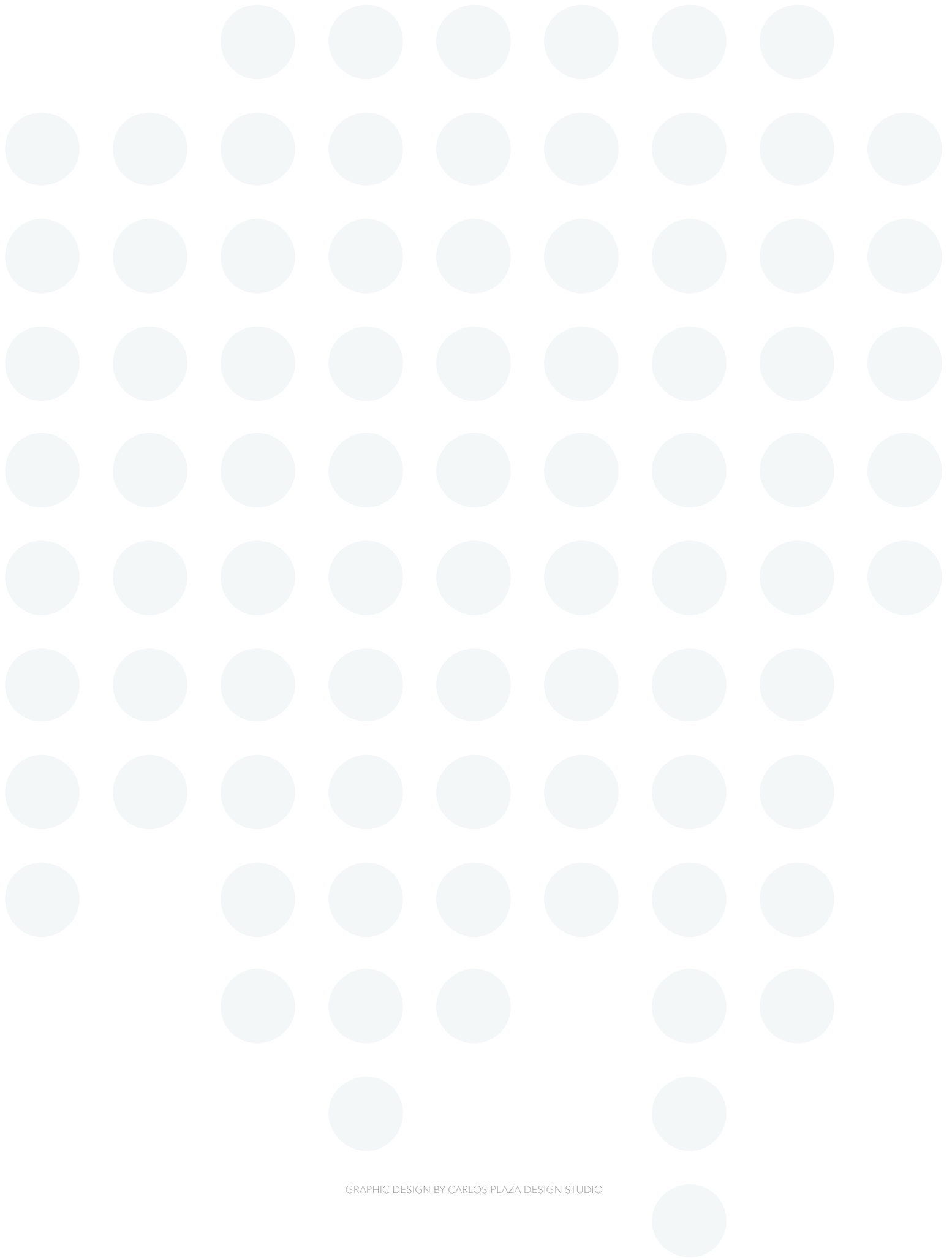
<sup>17</sup> The World Bank Fee supports enabling services provided by World Bank central units (e.g. Legal, Human Resources, and Trust Fund Accounting Services). These include: controls as transactions are processed, investing of funds, compliance checks and quality assurance, and accounting and financial reporting. The Fee also covers process-related activities undertaken by managing units and these activities include: issuing trust fund policies, including those addressing cost recovery and fees; clearance of trust fund and partnership proposals; preparation of legal agreements; advisory services; donor relations, including negotiating framework agreements; and trainings

## **ANNEX 6: FINANCIAL REVIEW**

<b>AFR</b>	Africa Region
<b>Cat DDO</b>	Catastrophe Deferred Drawdown Option
<b>CCAP</b>	Climate Change Action Plan
<b>CoP21</b>	2015 United Nations Climate Change Conference aka the 2015 Paris Climate Conference
<b>DAIS</b>	Data Integration & Analysis System
<b>DFID</b>	United Kingdom Department for International Development
<b>DRFI</b>	Disaster Risk Financing and Insurance
<b>DRM</b>	disaster risk management
<b>EAP</b>	East Asia and Pacific Region
<b>ECA</b>	Eastern and Central Asia
<b>EWS</b>	Early Warning Systems
<b>GDP</b>	Gross domestic product
<b>GFDRR</b>	Global Facility for Disaster Reduction and Recovery
<b>GIF</b>	Global Infrastructure Facility
<b>GP</b>	Global Practice
<b>GSURR</b>	Social, Urban, Rural, and Resilience Global Practice
<b>GTIDR</b>	Transport & ICT Global Practice
<b>GWADR</b>	Water Global Practice
<b>ICHARM</b>	The International Centre for Water Hazard
<b>ICR</b>	Inclusive Community Resilience
<b>ICT</b>	Information and Communications Technology
<b>JBP</b>	Japan Bosai Platform
<b>JICA</b>	Japan International Cooperation Agency
<b>JMA</b>	Japan Meteorology Agency
<b>JST</b>	Japan Science and Technology Agency
<b>JWA</b>	Japan Water Agency
<b>LAC</b>	Latin America and Caribbean Region
<b>M&amp;E</b>	Monitoring & evaluation
<b>MDTF</b>	Multi-Donor Trust Fund
<b>MEXT</b>	Ministry of Education, Culture, Sports, Science, and Technology, Japan
<b>MHLW</b>	Ministry of Health, Labor and Welfare, Japan
<b>MIC</b>	Ministry of Internal Affairs and Communications, Japan
<b>MLIT</b>	Ministry of Land, Infrastructure, Transport, and Tourism, Japan
<b>MNA</b>	Middle East and Africa Region
<b>MoF</b>	Ministry of Finance, Japan
<b>NGO</b>	Non-government organization



<b>NMHS</b>	National meteorological and hydrological services
<b>PCRAFI</b>	Pacific Catastrophe Risk Assessment and Financing Initiative
<b>PDNA</b>	Post-disaster needs assessment
<b>PIC</b>	Pacific Island Country
<b>PPIAF</b>	Public-Private Infrastructure Advisory Facility
<b>PREP</b>	Pacific Resilience Program
<b>SAR</b>	South Asia Region
<b>SDG</b>	Sustainable Development Goals
<b>TA</b>	Technical Assistance
<b>TDD</b>	Technical Deep Dive
<b>TDLC</b>	Tokyo Development Learning Center
<b>TKX</b>	Technical Knowledge Exchange
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>UNISDR</b>	United Nations Office for Disaster Risk Reduction
<b>UR</b>	Understanding Risk
<b>WBG</b>	World Bank Group
<b>WCDRR</b>	Third UN World Conference on Disaster Risk Reduction
<b>WMO</b>	World Meteorological Organization



GRAPHIC DESIGN BY CARLOS PLAZA DESIGN STUDIO