



**Asia-Pacific
Economic Cooperation**

2017/SOM3/EPWG/021

Agenda Item: 8

Enhancing Rural Disaster Resilience Through Effective Infrastructure Development

Purpose: Information

Submitted by: Japan



**12th Emergency Preparedness Working Group
Meeting
Ho Chi Minh City, Viet Nam
21-22 August 2017**

12th Emergency Preparedness Working Group Meeting
Ho Chi Minh, Vietnam
21 August 2017

**Agenda Item 8: Project of Enhancing Rural
Disaster Resilience through Effective
Infrastructure Investment**

Asian Disaster Reduction Center, ADRC

Natural disaster affecting infrastructure

Case : Major damages on transport infrastructures by the Kumamoto Earthquakes, 2016

Expressway	Five damaged locations on a bridge, one collapsed, many cracks on the road
National routes 57 & 325, and prefectural road	<u>National Route 57</u> was blocked due to massive landslides Tunnels, roads, bridges were damaged along the Kumamoto-Takamori road, including collapse of Aso-Ohashi Bridge and Minami-Aso Bridge dropped along the National Route 325.
JR Kyushu Shinkansen	All cars of a 6-car train run off the rail around the Kumamoto station Rails and station buildings were damaged
Minami-Aso Railway	Damage on bridges, Cracks of Tunnels, and railways buried due to landslides at around the Tateno district
JR Hohi Line	Tateno and Akamizu area was blocked due to large-scale sediment influx .
Aso-Kumamoto Airport	Severe damages on the airport buildings



Photo: Kumamoto Prefecture

Damages on infrastructure could bring about indirect damages to people's life and industries in the affected areas leading to delay in recovery and reconstruction

Purpose and components

- **Promoting quality infrastructure investment to enhance disaster resilience in the APEC region**, in particular, **in rural and non-metropolitan areas**.
- By focusing particularly on **“Rehabilitation and Build Back Better (BBB)”**, as well as on prevention and mitigation, preparedness, response, defined in the APEC DRR Framework.

- 1: Identifying the **best practices** and challenges of rural infrastructure BBB
- 2: Organising **a workshop in Vinh in September**, back to back SDMOF
- 3: Compiling **a case book** for promoting effective and resilient infrastructure investment

Annual schedule of the project implementation

Timing	Tasks
February	EPWG: Discussion on the concept of the project: Infrastructure BBB
March 13-14	Kick off meeting in Kobe
August 21th	EPWG: Preparation for the workshop and SDMOF
September 20th	Workshop back to back SDMOF
December	Case book publication
February	EPWG : Report about the project

Project Kick Off Meeting

MARD team headed by Mr. Van Phu Chinh, Director General, and Department of Natural Disaster Prevention & Control, Directorate of Water resources, together with international experts and ADRC colleagues discussed concept of infrastructure BBB on 13th and 14th March, 2017 in Kobe, Japan

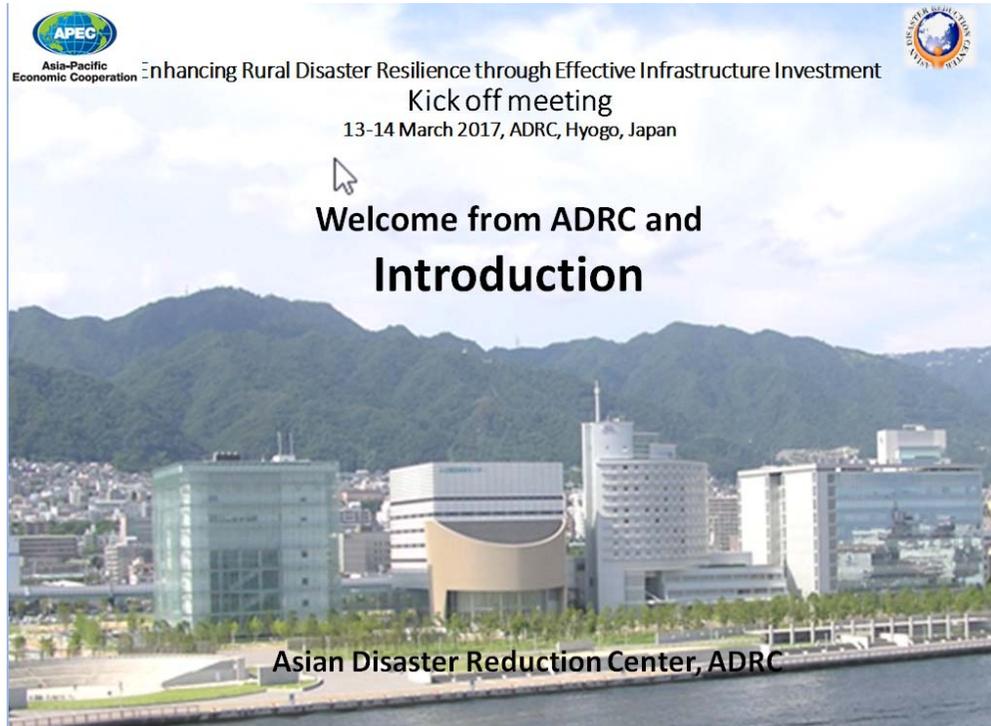
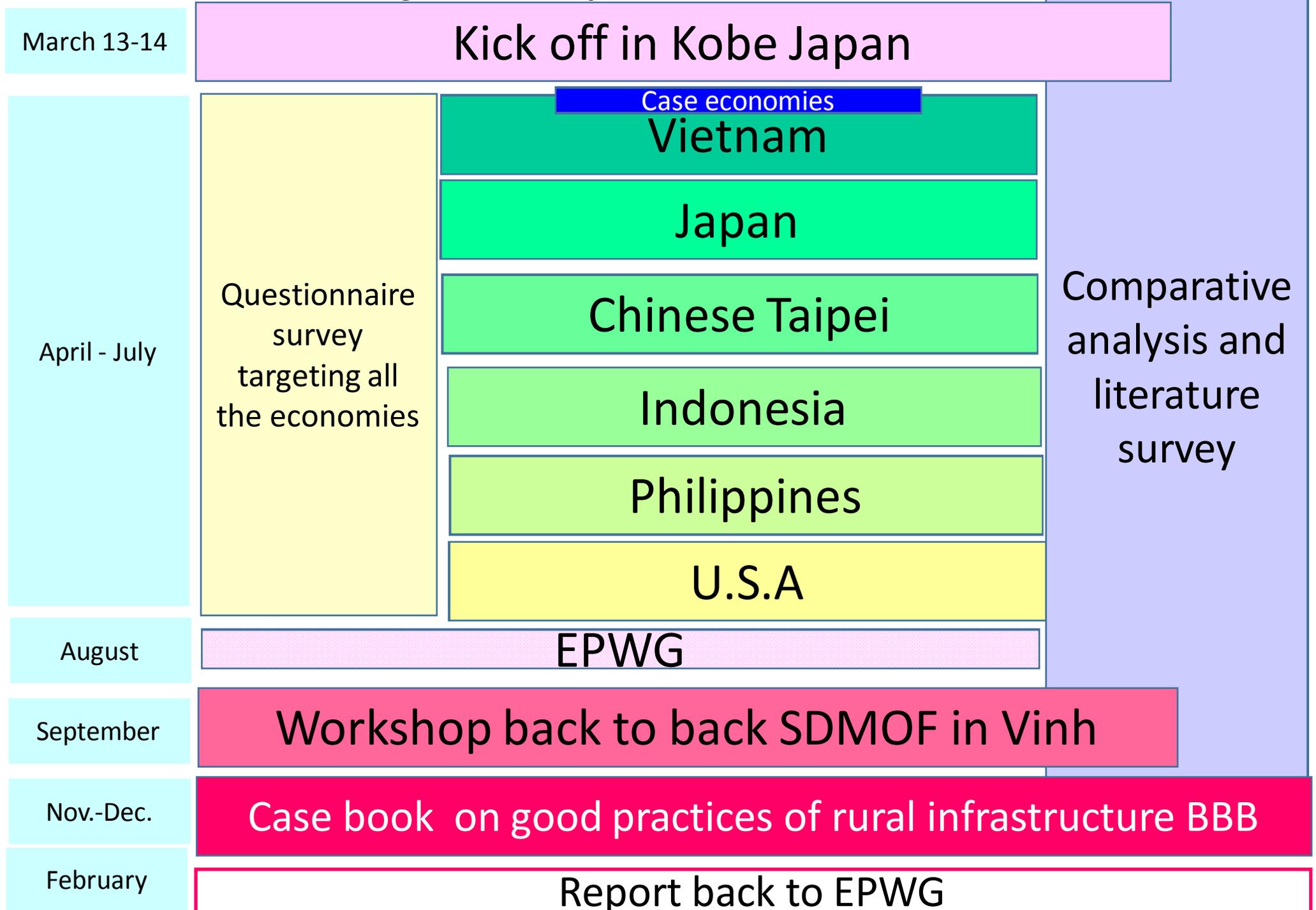


Photo: Study visit to a Rokko Sabo works project site



Photo: Hyogo Prefecture DRM center

Project Implementation



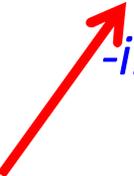
Concept of Build Back Better ***Infrastructure BBB for APEC economies ?***

Definition of BBB in the report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction established by the UN General Assembly

The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures

*-into the restoration of physical infrastructure and societal systems, and
-into the revitalization of livelihoods, economies and the environment.*

Focus of this project



Concept of Build Back Better
Redefining BBB for APEC economies

Value added of APEC and focus of the case analysis

- BBB focusing on **local industries and economy**
Infrastructure BBB **bridging rural products to regional and international markets** by enhancing connectivity and facilitating supply chain and global value chain
- BBB focusing not only on individual projects but **from wider scope of economic development planning** of the affected area
- **Collaboration with the private sector** as user and provider of infrastructure
- Identification of BBB adapted to the reality of each APEC economy
- Post disaster DRR policies **facilitating critical infrastructure investments**

Questionnaire on Infrastructure BBB

1. BBB, DRR policies and infrastructure development policies

Q1: Is the concept of BBB well understood and integrated in DRR policies and infrastructure development policies in your economy?

Q2: Key policies, plans, and rules referring to BBB of infrastructure

Q3: Is the concept of BBB well shared with local governments as well as ministries in charge of development of infrastructure?

Q4: Collaboration for BBB of infrastructure” with the private sector including
-local industries that use infrastructure for their business, and
-those providing infrastructure and relevant services

2. Good practices of infrastructure BBB in your economy

3. Challenges in promoting BBB of infrastructure

- Insufficient funding available to afford more resilient infrastructure
- Participation of the private sector is limited
- Need for immediate recovery without discussing and planning BBB sufficiently
- Land acquisition
- Consensus building
- Selecting right solution for each location with different climate/geological conditions, for example
- Achieving equality of access to better infrastructure among the affected and the non-affected areas
- Others

Diverse cases of infrastructure BBB for discussion

BBB Types	Cases
0. Immediate recovery	ex. The Great East Japan Earthquake, immediate roads networks clearing and recovery operation
1. Instauration of disaster resistant infrastructure /Enhancing capacity of the existing structure	<ul style="list-style-type: none"> -Earthquake resistant, water-resistant, anti-tsunami structure -Instauration of emergency power supply -Introduction of structure facilitating smooth recovery -Increasing redundancy by installing alternative facilities
2. Upgrading functions of the affected infrastructure	<ul style="list-style-type: none"> -Use of cutting edge technology vs. technology more adapted to diverse conditions, less costly structure for maintenance - Realizing further links with local industrial clusters
3. Redefining and diversifying the function of the damaged infrastructure	<ul style="list-style-type: none"> - Use of environmentally friendly structure, Plant Back Better -Improving scenic beauty - Infrastructure serving also as tourist destination
4. Planning & designing of recovery	<ul style="list-style-type: none"> -Relocation of the affected with infrastructure to less dangerous areas -Wider scope of planning and vision making for increasing resilience of infrastructure such as transport networks in region
5. Governance and finance mechanism facilitating infrastructure BBB	<ul style="list-style-type: none"> - Special fund facilitating immediate recovery - Effective organization for smooth BBB -Collaboration with the Private sector
7. More effective and safer implementation of BBB works	ex. Use of unmanned machine
6. Installing facilities to support evacuation Alternative/second best solution	- Evacuation route, tsunami tower, and so on
8. Other	Training, feedback

Challenges facing infrastructure BBB

- *Insufficient fiscal resources/financing and affordability of sufficiently resilient infrastructure*
- *Initial cost vs. lifecycle cost*
- *Needs of immediate recovery vs. consensus building among stakeholders, absence of planning*
- *Availability of land for redesigning infrastructure*
- *Inequality of access to better infrastructure*
- *Build first, before discussing BBB*

APEC Workshop

Enhancing Rural Disaster Resilience through Effective Infrastructure Investment

Build Back Better of infrastructure supporting industries in region

20th September 2017, Vinh City, Viet Nam

9:00 – 9:20	Welcome and opening
9:20 – 9:30	Introduction by organizer, ADRC
Session 1: Infrastructure recovery: Challenges facing case economies	
10:00 – 12:00	-Reports from the experts studying good practices of infrastructure BBB in six case economies including <i>Chinese Taipei, Indonesia, Japan, Philippines, USA and Vietnam</i> -Comments and discussion
Session 2: Key elements for infrastructure BBB- Exploring solutions together with diverse stakeholders	
14:00 – 16:20	-Inputs from participating economies, for comparison - Discussion on better solutions for infrastructure BBB together with representatives from the private sector, aid agency and local governments .
16:20- 16:30	Closing

Cám ơn nhiều
Thank you very much

