



**Asia-Pacific  
Economic Cooperation**

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**2019/EPWG/DIA/010**

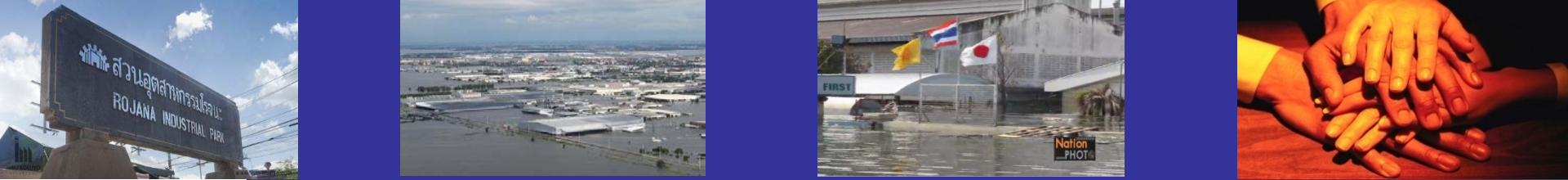
Agenda Item: 8.1

**Regional Resilience Enhancement Through  
Establishment of Area Business Continuity  
Management at Industry Complexes in Thailand**

Submitted by: Japan



**APEC Resilience Week  
Taipei, Chinese Taipei  
30 September - 2 October 2019**



# Regional Resilience Enhancement through Establishment of Area-BCM at Industry Complexes in Thailand

**The APEC Resilience Week**  
**September 30<sup>th</sup>, 2019**

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Nagoya Institute of Technology

# AGENDA

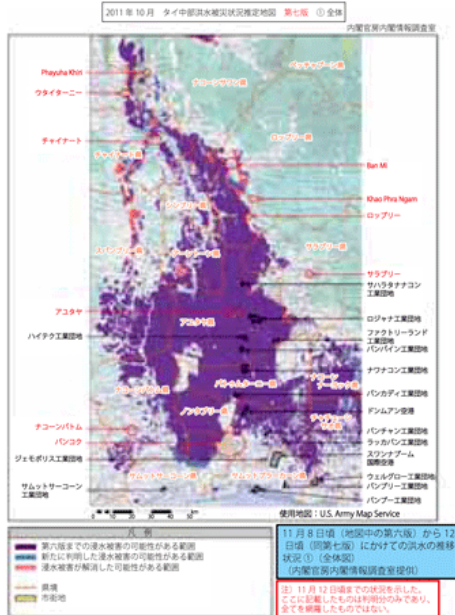
1. Overview of our Area-BCM project
2. Related case studies in Japan
  - Case 1: Kyoto BCP
  - Case 2: Timeline Approach
  - Case 3: JICA's Area-BCM
3. Our goals and challenges

# 1: Overview of our Area-BCM project

# Project Background

Resilience enhancement of local industries as a sustainable platform for well-being of people

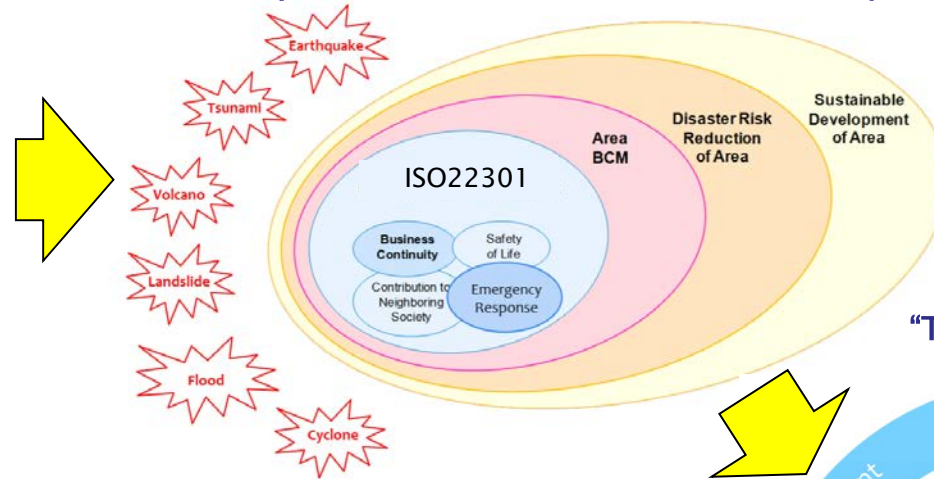
2011 Southern Thailand flood  
as a trigger event for Area-BCM



資料：経済産業省「タイの洪水の推移状況について（11月17日時点版）」  
（2011年11月18日）。

<http://www.meti.go.jp/report/tsuhaku2012/2012honbun/html/i2310000.html>

Limitation of individual BCMs with ISO22301  
and necessity for Area-BCM for sustainable development\*



“To be” of Area-BCM\*



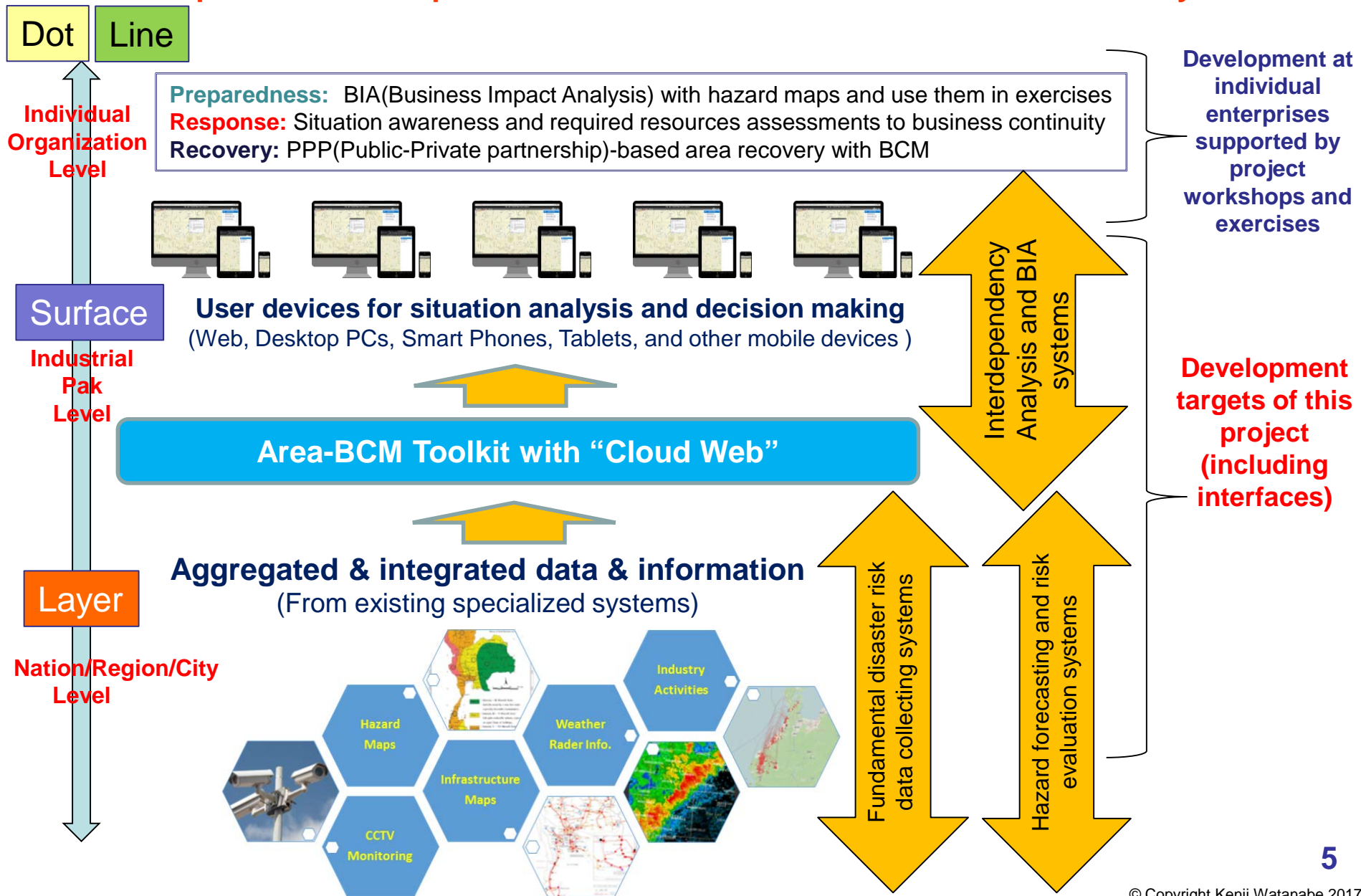
The scope of our project includes disaster impacts of urban floods in the Bangkok and surrounding areas where socio-economic functionalities have been concentrated, and chain repercussions of disaster impacts in important production & logistics facilities in Thailand spread through global supply chains.

We position those factors as our emerging disaster risks to be cared of and establish risk management operations with the Area-BCM framework.

\* Planning Guide for Area Business Continuity[Area BCM Toolkits] JICA et.al

# Introduction: Project Concept Overview-1

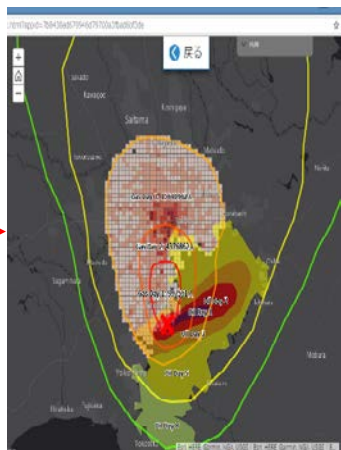
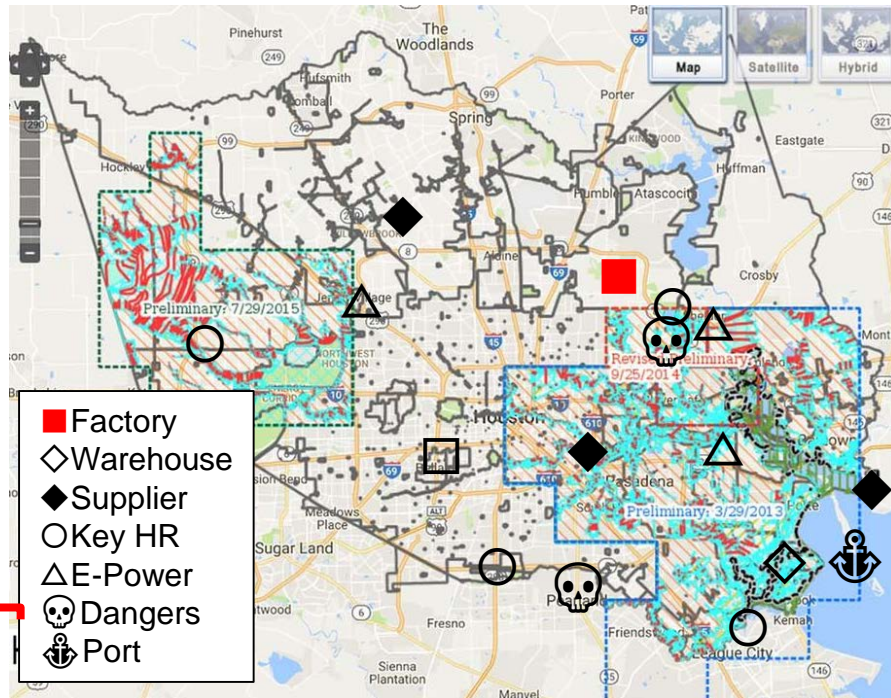
## Conceptual relationship between Area-BCM Tool-Kit and individual BCM systems





# Introduction: Project Concept Overview-2

## GIS-based BIA system for preparedness/response/recovery



### 【INPUT】

#### ①Flood Risk Information

- Weather, rain, water monitoring/forecasting data

#### ②Resources for business continuity

- Location data of factory, warehouse, office
- Information on residence, commute route of employees assigned to critical operations

#### ③External critical resources (Life-lines)

- Location data on power grid, road, gas/water pipeline, ports, major suppliers, service providers

### 【PROCESS(BIA)】

- Business impact analysis to set RTO(Recovery Time Objective)
- Early warning for chain hazards (environmental)
- Coordination with stakeholders in public/private sectors to time-line activities.

### 【OUTPUT】

- Increase feasibility of shared activities by drills and exercises
- Realize sustainable community with resilient well-being

**Preparedness:** Evaluation of disruptions

- ROI simulation of solutions
- Create scenario injections

**Response:**

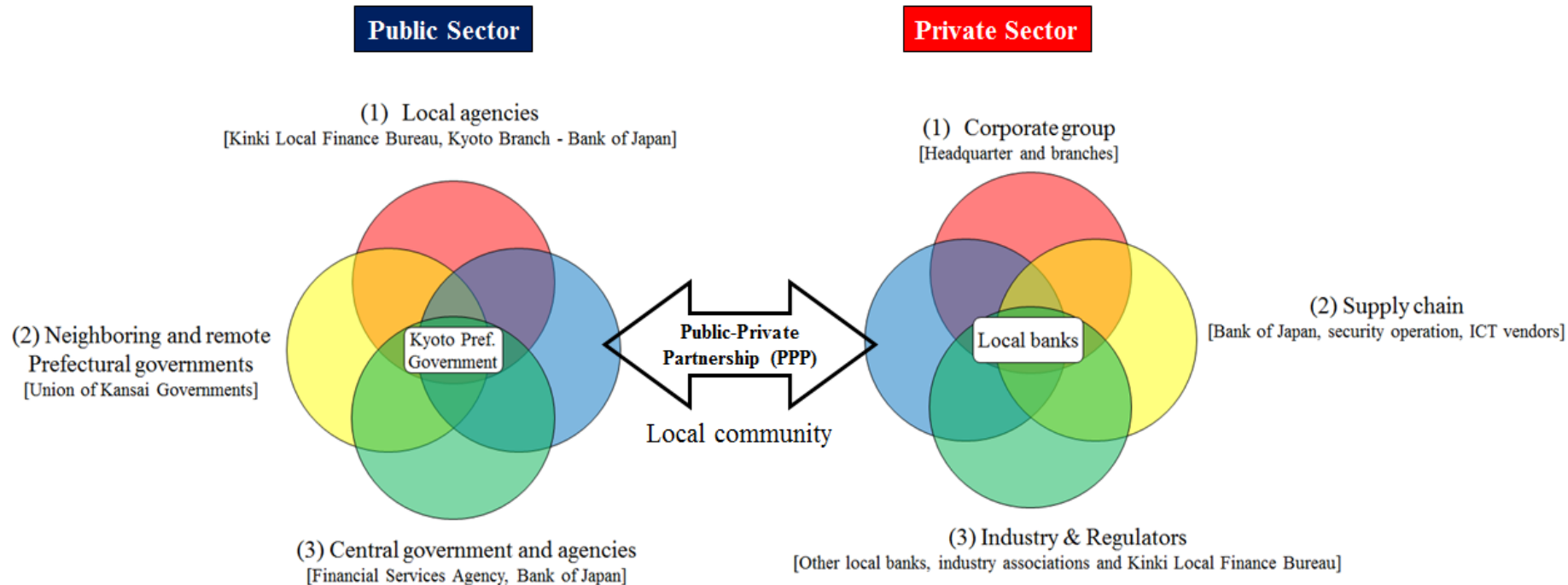
- Situation awareness and decision making

**Recovery:**

- Recovery estimations and process coordination
- City planning

# Goal: PPP-based resilience enhancement structure

Joint-efforts to keep well-being of their citizens/customers even in the disaster situations



Feasible PPP based on;

- Shared recognition of the local risks
- Shared objectives to keep well-being of citizens even in the disaster situations
- Shared merits to overcome each limitation to resume critical social function
- Trust-building efforts through continuous discussions and exercises

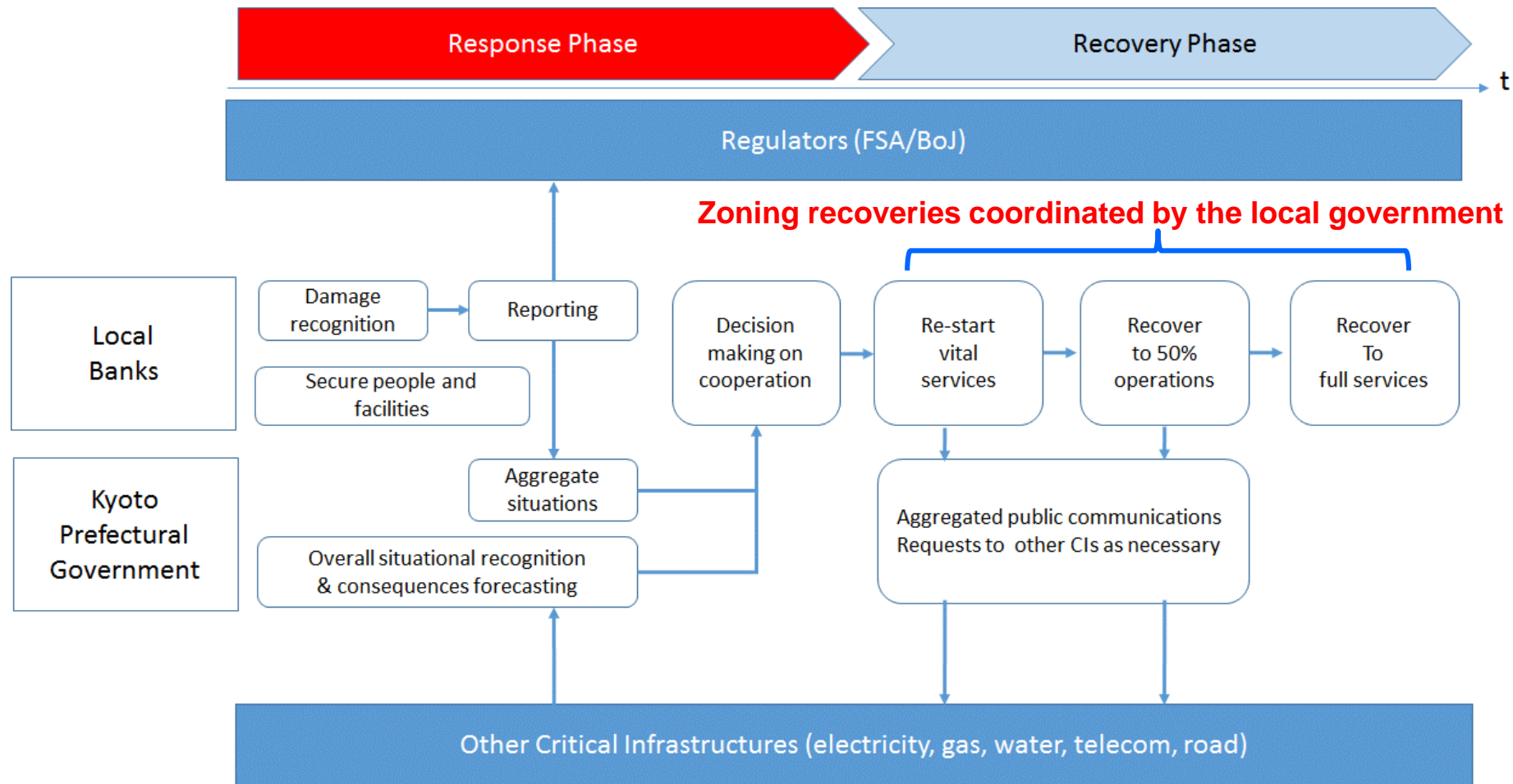


## 2: Related Case Studies in Japan

## CASE 1: Kyoto BCP

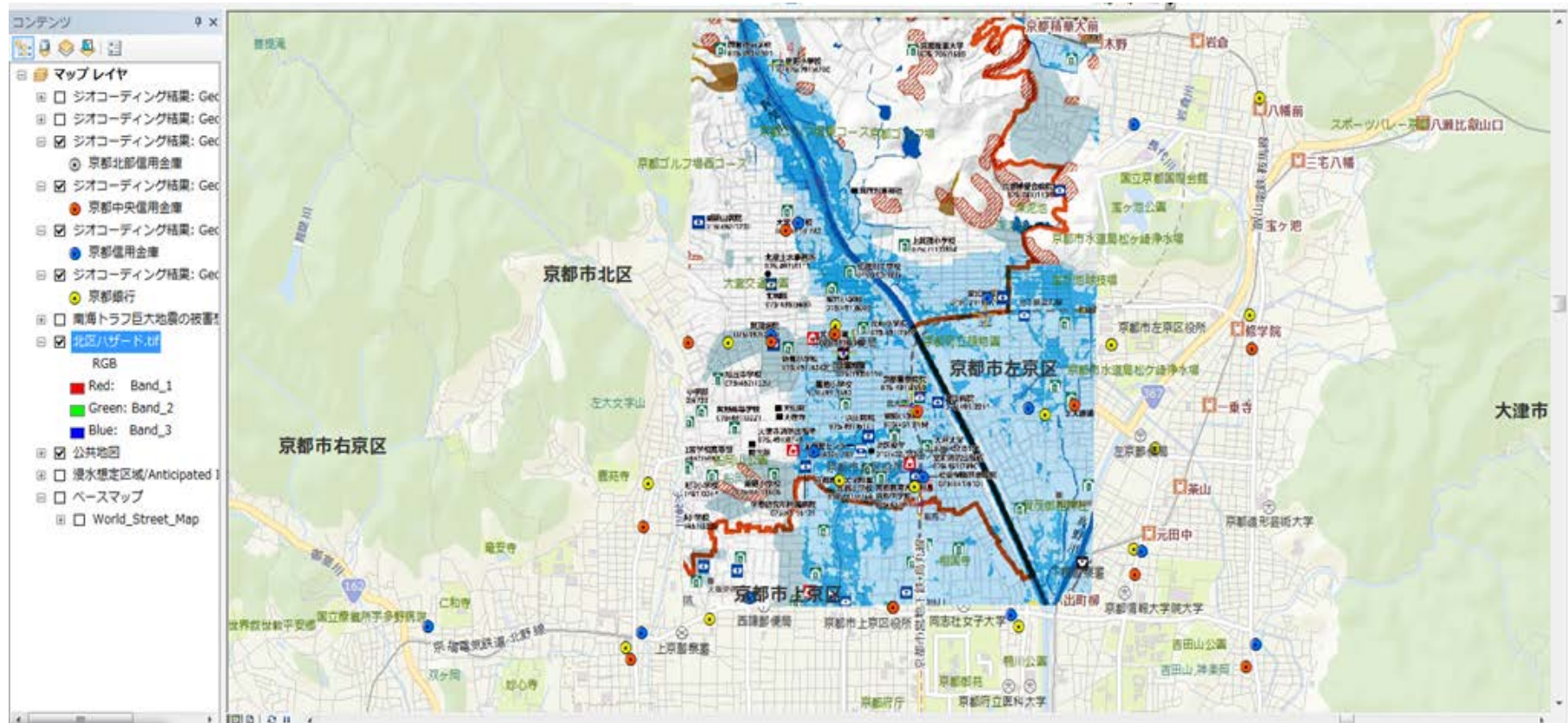
# Conceptual operation flows under the on-going discussions

## Optimizing recovery operations with coordinating internal/external resources



## Web-GIS based DSS for Area-BCM in banking services

### Flexible usage for Preparedness/Response/Recovery phases



**Preparedness:**

**Response:**

**Recovery:**

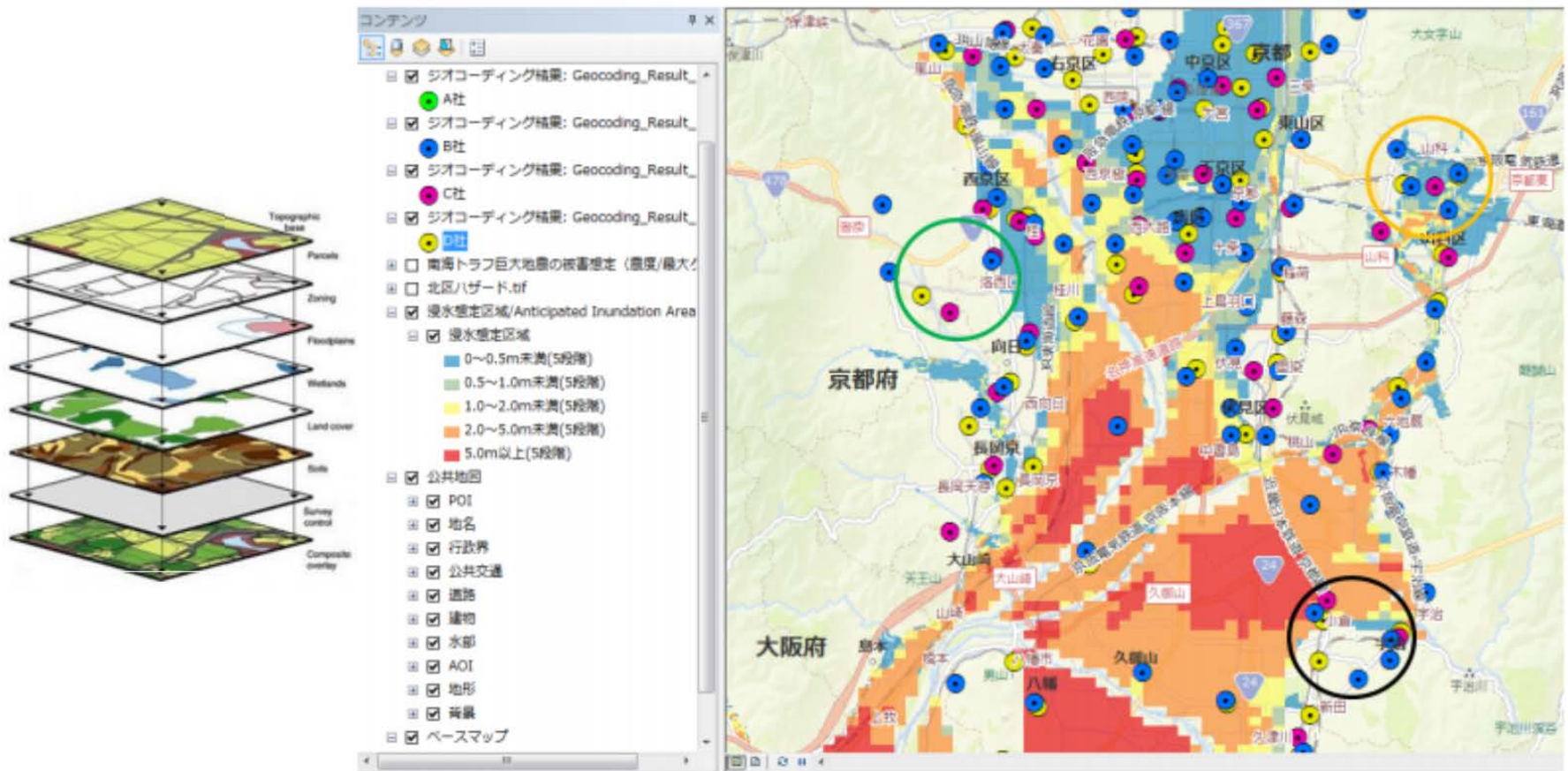
Damage simulation with hazard maps and use them in exercises

Situation awareness and required resources assessments (tangible/intangible)

PPP-based cross-banks recovery with “zoning optimization”

## Aggregated data feed as one of GIS layers for DM HQ

To define required resources for recovery and to coordinate other CIs



## CASE 2: Timeline-based area emergency response



# Tentative definition of Timeline-based disaster management

Implemented in US disaster management activities and now in Japan

Predetermined action plans for disaster management to dynamically mitigate disaster impact

and

shared & coordinated among stakeholders  
(national/local governments, CIs, enterprises, schools,  
local residents, and commuters)

# Timeline-based inter-organizational disaster management

## Pre-determined shared timeline-based activities among stakeholders



※タイムラインに関わる関係機関、防災行動は多岐にわたりますが、本イメージ図は国土交通省の対応や広域避難と交通サービスに重点を置いて整理したものであり、時間軸の設定、対応の実施などにあたっては、今後の検討、調整が必要になります。また、赤字は特に対応強化の必要と考えられる項目です。

# Timeline and ESF(Emergency Support Functions) Implemented among governmental sectors (US Government)

Emergency Support Function (ESF)	Incident Command (IC)				Operations Section							Planning Section				Logistics Section						Admn & Finance Section					
	IC/EOC / Vol. EOC Mgr.	Public Info Desk	Voice of Vashon	CCT	Operations Coordinator	Fire & Rescue Branch	Medical Branch	CERT Unit	Utilities Branch	Public Works Branch	Public Safety Branch	Public Health Branch	Planning Coordinator	Situation Branch	Message Center Branch	NERO Branch	Logistics Coordinator	Supply Branch	Transportation Branch	ARES Branch	Emergent Volunteers Branch	Mass Care Branch	Animal Care Branch	Admn/Finance Coord.	Accounting Branch	Legal Branch	Recovery Branch
ESF 1-Transportation						S				S								S	P		S						
ESF 2-Communications	S		S			P		S							P	S		S		P	S						
ESF 3-Public Works & Engineering									S	P																	
ESF 4-Fire Fighting						P		S			S																
ESF 5-Emergency Management	P	S			S								S				S						S				
ESF 6-Mass Care & Shelter									S					S				S	S		S	P	S				
ESF 7-Logisitics Management & Resource Support															S			P	P		S				S		
ESF 8-Medical Services & Public Health				S		P	P	S				S									S						
ESF 9-Search & Rescue						P	S	S			S																
ESF 10-Hazardous Materials						P		S			S																
ESF 11-Community Food & Water									S					S				S	S		S	P					
ESF 12-Energy & Utilities									P																		
ESF 13-Public Safety & Security											P																
ESF 14-Long Term Recovery (Pending Plan)																										P	
ESF 15-Public Information	S	P	S	S										S	S												
ESF 16-Volunteers & Donations																		S			P				S		
ESF 17-Animal Care												S											P				
ESF 18-Administration and Finance																		S	S		S				P	P	

Figure 2 – Emergency Support Function Assignment Matrix

P = Primary  
S = Support

## CASE 3: JICA Area-BCM

# Area-BCM Project for ASEAN countries by JICA

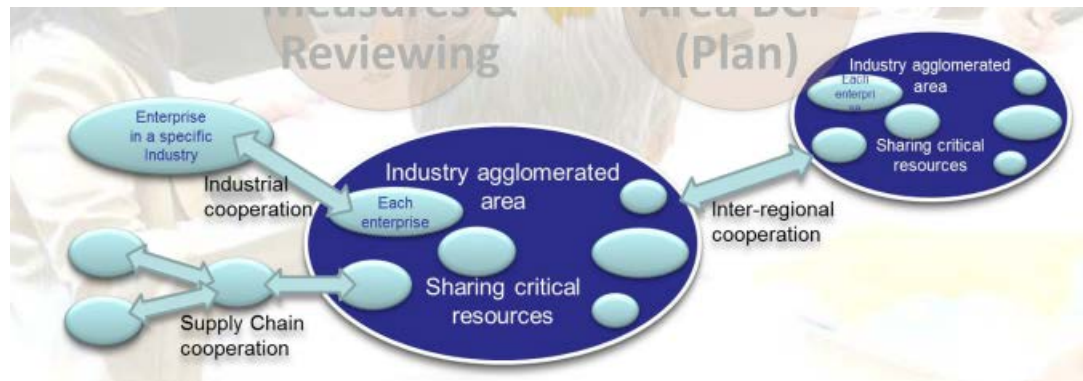
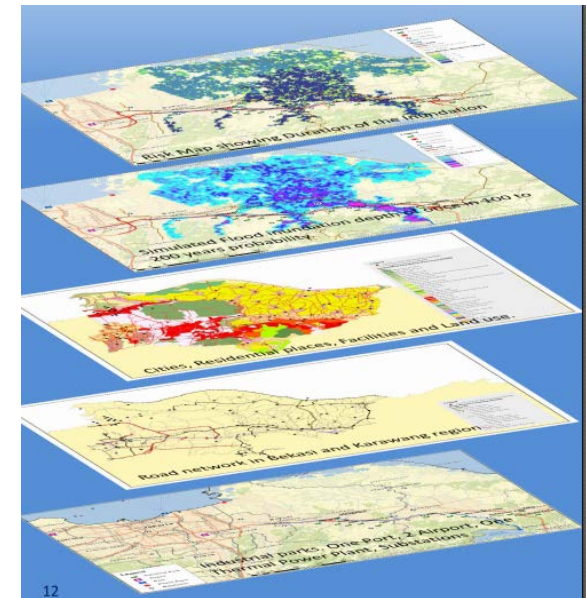
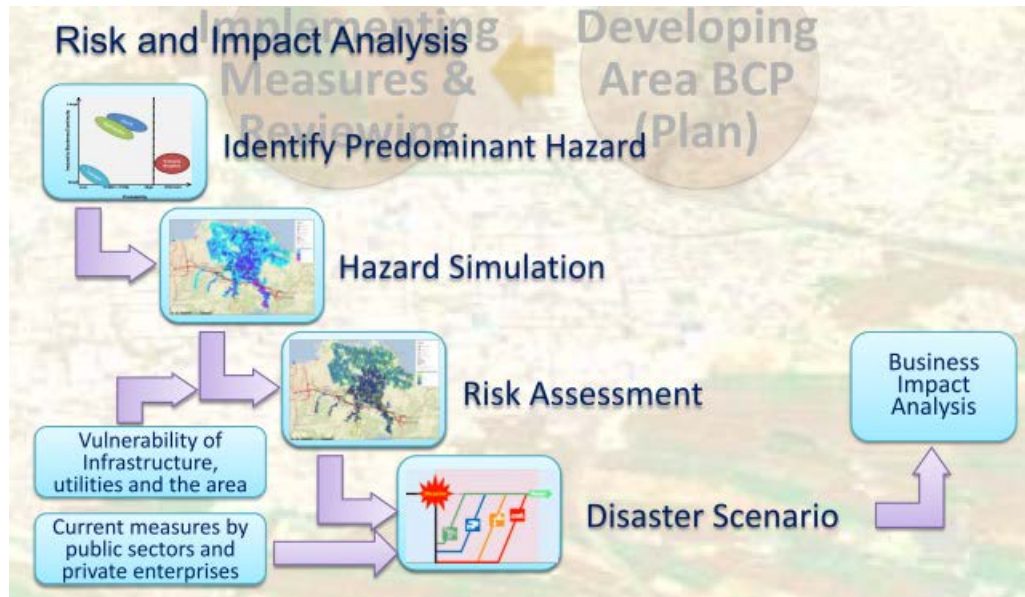
Started with industry complexes and strong interests recognized

Area-BCM Project for ASEAN countries by JICA (Japan International Cooperation Agency)  
with AHA Centre (ASEAN Coordinating Centre for Humanitarian Assistance on disaster management)

- 3 pilot sites selected and several workshops have been initiated in Indonesia, Philippines, and Viet Nam and now in Thailand.
- Shared regional risks among local stakeholders and discusses impacts of the realization of the risks.
- Several tools have been developed such as “Guide Book”, “Risk Assessment Reports” (for Cavite/Laguuna, Bekasi/Karawang, Hai Phong), and “Country Reports” (for Brunei, Cambodia, Singapore, Malaysia, Lao PDR, Myanmar, Philippines, Indonesia, Thailand, and Vietnam)

# CASE 3 Area-BCM Project for ASEAN countries by JICA

JICA is providing professional disaster and impact analysis tools to be shared and several workshops executed

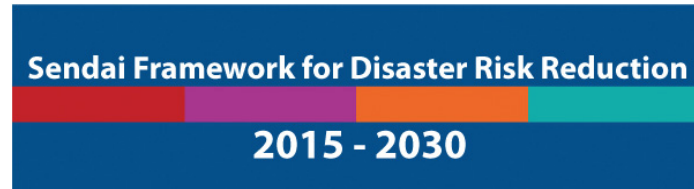




## 3: Our goals and challenges

# Long-term Goals: UN & UNDRR actions-focused

High-level Project Targets focus on SDGs and SFDRR(Sendai Framework for Disaster Risk Reduction)



Make cities and human settlements inclusive, safe, resilient and sustainable



■ Because we could not completely prevent disasters.....

## Priorities for Action 4 :

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



Promote inclusive and sustainable economic growth, employment and decent work for all



■ In order to realize the above actions, we need.....

## Priorities for Action 3 :

Investing in disaster risk reduction for resilience



Take urgent action to combat climate change and its impacts



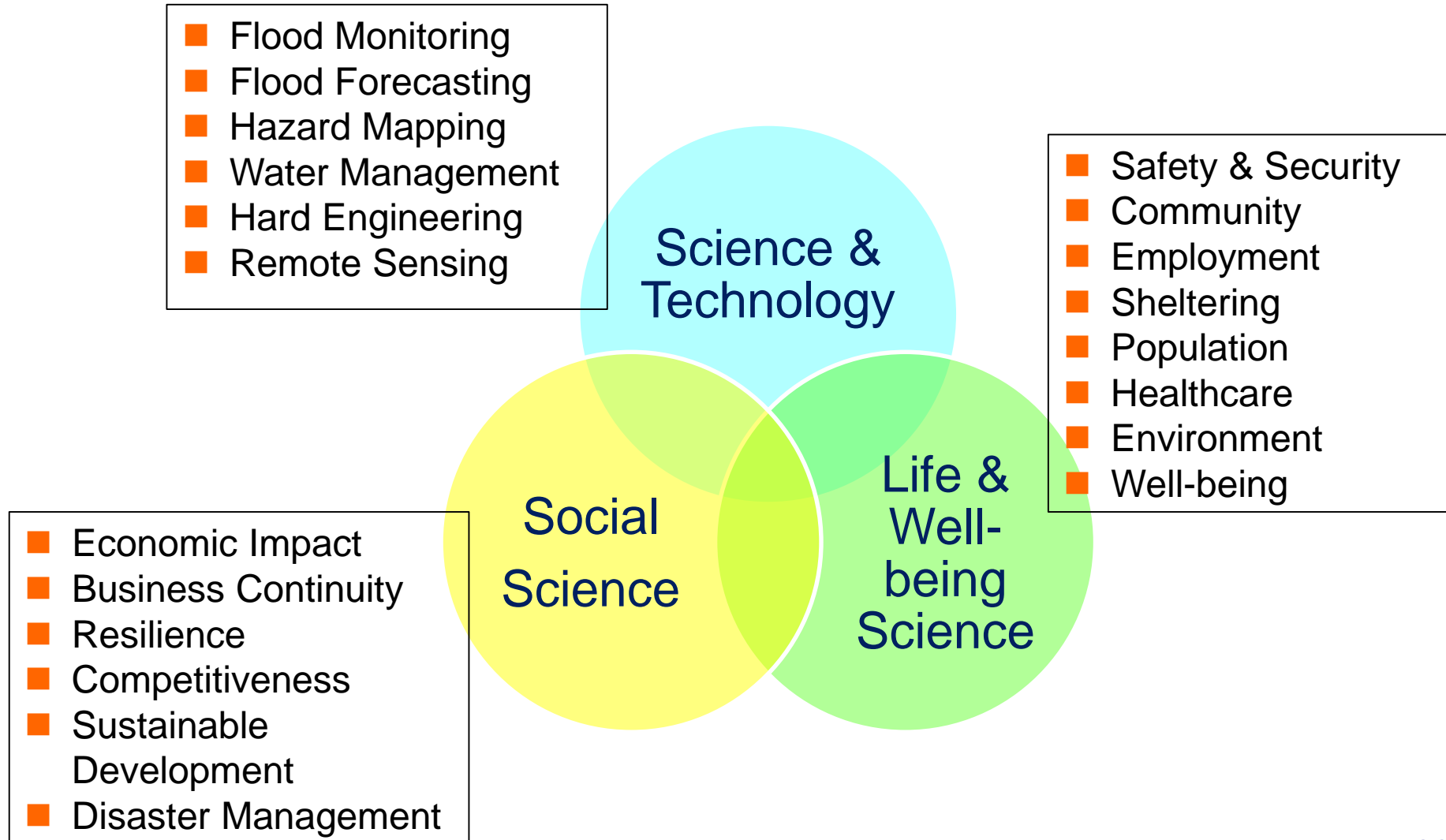
■ And, in order to make investment decisions.....

## Priorities for Action 1 :

Understanding disaster risks

# Approach: Expanding Scope of Flood Management

Impact areas of flood are expanding and multidisciplinary approach is required



# Regional Resilience Enhancement through Establishment of Area- BCM at Industry Complexes in Thailand: Overview ( Thailand- Japan Joint Team)

## Research Item 0 □ Community Research

Clarification of relationship changes between enterprises and community by disasters  
and providing fundamental information

## Research Item 1 □ Disaster Risk Analysis and Assessment

- Data definition/ acquisition and analysis/ assessment
- Development of analysis/ assessment framework for important risk factors

Defining functional specifications and  
development of GIS- based tool- kit

## Research Item 2 □ Business Impact Analysis ( BIA)

- Structural clarification and evaluation of the existing BIA frameworks
- Development of BIA framework and evaluation sheets

Defining functional specifications and  
development of GIS- based tool- kit

## Research Item 3 □ Establishment and expansion of operational structure for Area- BCM

**Module** □ □ □  
Establishment  
of operational  
structure

Input to ISO/ TC292

Development of establishment and expansion plans  
based on stakeholders and needs identifications

Development of training and exercise program through workshops  
and implementation into the pilot site

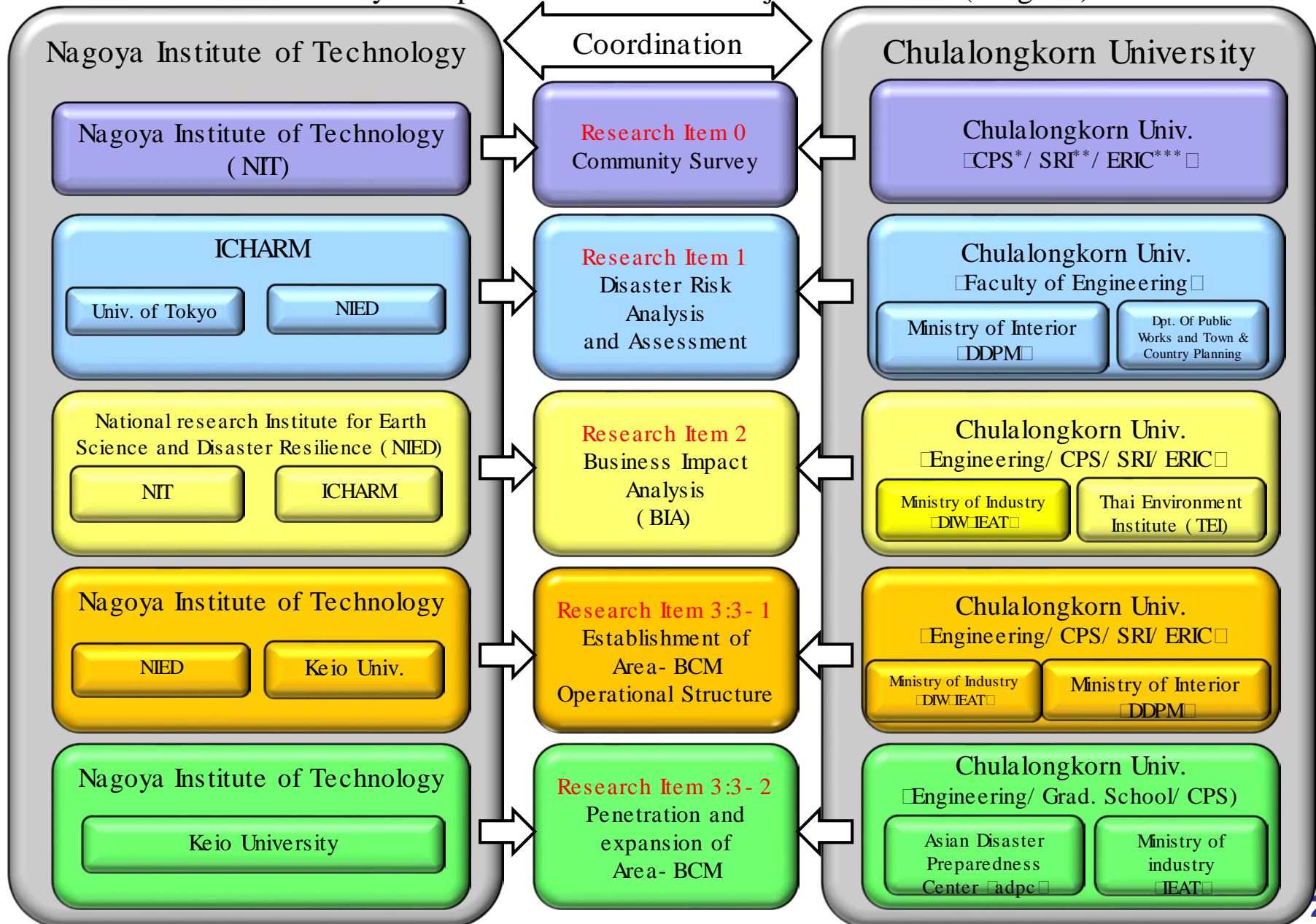
Implementation of training and exercise program into other sites and  
preparations for sustainable expansion to other areas  
including ASEAN countries

**Module** □ □ □  
Penetration  
into and  
expansion to  
other areas

**Project Objective** □ Establishment of a platform for sustainable economic growth through  
disaster resilience enhancement at industry complexes in Thailand

# Regional Resilience Enhancement through Establishment of Area- BCM

## at Industry Complexes in Thailand: Project Structure (Original)



\*College of Population Studies \*\*Social Research Institute \*\*\*Environment Research Institute