

Seminar series of SAPI

Target audience group: D = Decision maker, P = Practitioner of DRM, T = Technician of particular areas

1.Seminar on Disaster Risk Management in Japan: Target = D, P

- introduction of geological background, history of DRM, system, rolls and responsibilities of entities
- discussion about advantages and disadvantages of the both systems in Japan and Colombia

2.Seminar on Disaster Risk Reduction in Japan: Target = D, P

- Investment in measures to reduce various types of disaster risks
- Emergency response and preparations
- Rehabilitation and reconstruction

3.Seminar on Societal Resilience to Disaster: Target = D, P

- **Risk awareness raising**
- **Civic participation on DRR**
- **Private sector participation, BCM**
- **Area BCM**

4.Workshop on SFDRR: Target = D, P

- Outline and difference from HFA
- Target and Indicators
- Implementation and challenges

5.Seminar on River Law of Japan: Target = D, P, T

- Outlines of the law
- Essential features
- Relevant law on urban flood prevention

6.Seminar on climate change adaptation in Japan: Target = D, P, T

- Basic concept of CCA
- Technical guides
- Case study of assisting developing countries, Indonesia

7.Workshop on flood risk assessment: Target = P, T

- Introduction of Integrated Flood Management
- Open source and open data
- Process of flood risk assessment
- Tutorial of the process
 - Scoping
 - DEM
 - Scenario flood hydrograph
 - Flood hazard simulation
 - Risk assessment

8.Seminar on construction regulation: Target = P, T

- Building code
- Restriction in disaster zones

9.Seminar on sediment disaster prevention law: Target = D, P

10.Seminar on active volcanic zones law: Target = D, P

11.Seminar on Space Technology for DRM: Target = P, T

12.Workshop on Open Data for Resilience Initiative: Target = P, T

13..and more

Societal Resilience to Disaster

Break down

1. Risk awareness raising
 - Promotion of Efforts for Disaster Risk Reduction
 - Disaster Statistics and Analysis
 - White Paper on Disaster Risk Management
 - Education about DRR
 - Successive communication of the lessons learned from generation to generation
 - Community based Disaster Risk Management
2. Civic participation on DRR
 - Environment for Volunteer Activities
 - Example of NPO activities
 - Promotion of CSR activities of private enterprises
3. Private sector participation, BCM
 - Promotion of Business Continuity Plans (BCP) and Business Continuity Management (BCM)
 - Encouraging the Evaluation of Corporate Disaster Risk Reduction Activities
 - Inadequacy of independent BCM, lessons from mega scale disasters
4. Area BCM
 - New initiative of Area BCM
 - Definition of Area BCM
 - Steps of Area BCM
 - Case studies of Area BCM
 - Standardization of Area BCM

Promotion of Efforts for Disaster Risk Reduction

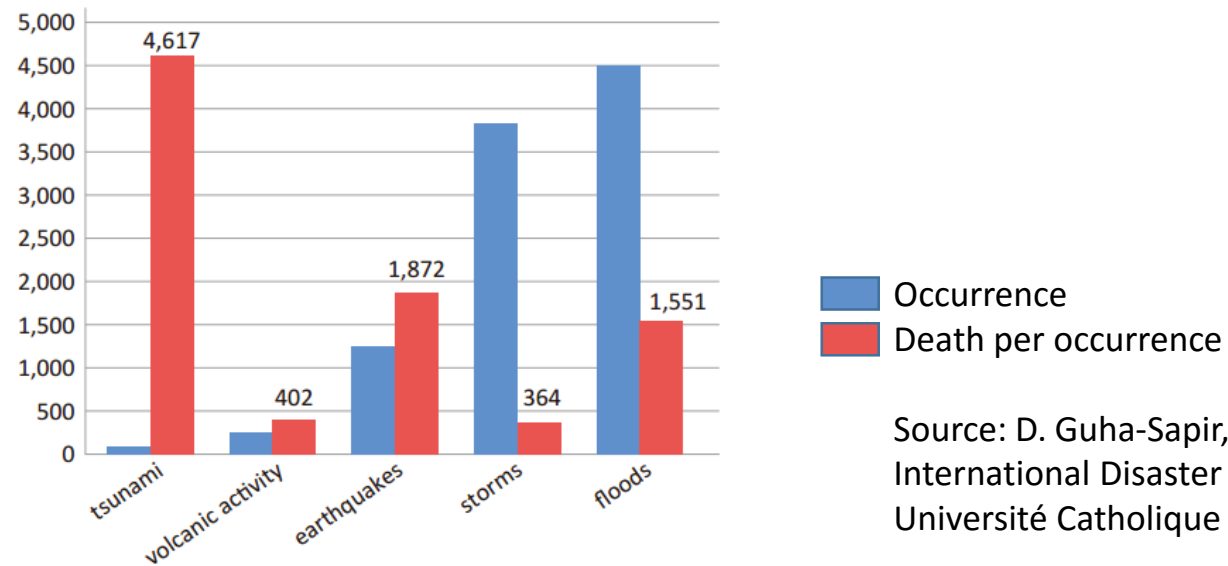
In order to improve the disaster resilience of the community and to reduce disaster damages, there must be close cooperation among individuals, families, local community, businesses and relevant entities, to build momentum for a nationwide movement. The Government has designated the 1st day of September as the “Disaster Preparedness Day” and the week including this day as the Disaster Preparedness Week, and carries out various events to raise awareness and readiness about the disaster. Disaster drills and “disaster reduction fairs” are held in various parts of Japan.

In 2011, the Act on Promotion of Tsunami Countermeasures was enacted, and November 5th was designated as the “Tsunami Preparedness Day.” On or around this day, many events are held across Japan featuring Tsunami as the theme, including drills and public lectures.

With the aim of protecting the precious lives of the people around the world by raising awareness of precautionary measures against tsunami, Japan together with many countries has proposed that the UN designate the 5th of November of every year as “World Tsunami Awareness Day”. The resolution has been adopted by consensus at the 70th UN General Assembly plenary session on December 22, 2015.

Promotion of Efforts for Disaster Risk Reduction

Compared to other natural disasters, tsunamis are relatively rare natural disasters. However, once they occur, they cause enormous damage. In 100 years, 58 tsunamis have claimed more than 260,000 lives; averaging more than 4,600 deaths per occurrence. This rate is much higher than any other natural disaster including storms (such as tropical cyclones), floods and earthquakes.



Source: D. Guha-Sapir, R. Below, Ph. Hoyois - EM-DAT: International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium.

Promotion of Efforts for Disaster Risk Reduction

The importance of investing in Disaster Risk Reduction

At the time of the Sumatra earthquake, Male Island, the capital and largest island of the Republic of Maldives, was also hit by a tsunami that was estimated to be as high as three meters. Nonetheless, seawalls and offshore breakwaters which had been built with Japan's assistance protected the island,. While the city of Male was flooded, no one was killed and there was no major damage. No houses were swept away. Male Island is only one meter or so above sea level and has a flat landscape, where, in the past, the seacoast was protected simply by off shore coral reefs. These factors caused the island to suffer from periodic flooding due to tidal waves. For example, the cyclone of 1987 flooded one-third of the island, paralyzing the capital city. After numerous field surveys and technical guidance, Japan decided to provide assistance through a fifteen year project to establish measures against coastal flooding. As a result, the entire Male Island is now protected by sea walls approximately six-kilometer in circumference. One local resident reportedly said, "Without Japan's assistance, Male Island would have disappeared." Furthermore, President Gayoom of the Republic of the Maldives also commented, "The seawalls built for Male Island through Japan's assistance saved the people of Male from disaster."



Promotion of Efforts for Disaster Risk Reduction



Good practices to protect the precious lives of the people

The proposed date of “World Tsunami Awareness Day” is based on an anecdote and example of a good practice known in Japan as “Inamurano-hi” (the burning of rice sheaves) which took place on the 5th of November 1854. Japan suggested this date, because it is intended to serve to protect the precious lives of people, and thus it should be associated with an example of “traditional, indigenous and local knowledge and practices” such as “Inamura-no-hi.” With this aim, Japan is keen on promoting efforts for disaster risk reduction such as hazard map, signboard, early warning, evacuation drill, construction of hills, walls and embankments, etc.

Promotion of Efforts for Disaster Risk Reduction

Examples of DRR Promotion

Other than the Disaster Preparedness Day and Disaster Preparedness Week, about 70 organizations that are relevant to disaster prevention have been implementing promotion activities such as "Disaster Prevention Fair" and "disaster prevention poster contest". In addition, including the Cabinet Office, a number of ministries and agencies such as the Ministry of Land, Infrastructure and Transport, the Fire and Disaster Management Agency, Ministry of Education, Culture, Sports, Science and Technology are carrying out promotion activities to raise risk awareness and to make DRR efforts more active.



DRR Magazine



Community Bulletins



DRR Study Tour

Disaster Statistics and Analysis

It is important to continuously evaluate DRR efforts and its effectiveness for promoting societal resilience to disaster. The evaluation is based on appropriate statistics and standardized method of analyzing the data.

As a member of international partnership, in accordance to the SFDRR global targets and Indicators, Japan is one of the leading countries where reliable disaster statistics and analysis exist.

The Ministry of Land, Infrastructure and Transport, has jurisdiction to organize of these statistics and the basic data of disaster management such as documentation on disaster recovery measures of public works facility for various types of classification and national fund burden rate of the measures, other materials of determining value, etc. of other ministries and agencies competent in these and closely related.

The Ministry of Health, Labor and Welfare is responsible to take statistics of industrial accident, whereas the Ministry of Economy, Trade and Industry is taking role for the technological disaster statistics.

The Cabinet Office with support from Bureau of Statistics under the Ministry of Internal Affairs and Communications integrates all the statistics relating to disasters and reflects it into various analysis and strategy formulation.

One of the procedures of disaster statistics and analysis is the evaluation of SFDRR Indicators that respect the seven (7) global targets of DRR. Japan's disaster database can fulfill the suggested basic set of requirements for recording and reporting disaster loss to monitor the Targets.

SFDRR 2015-2030

Expected outcome, goal and seven global targets

Outcome over the next 15 years:

The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries

Goal:

Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience

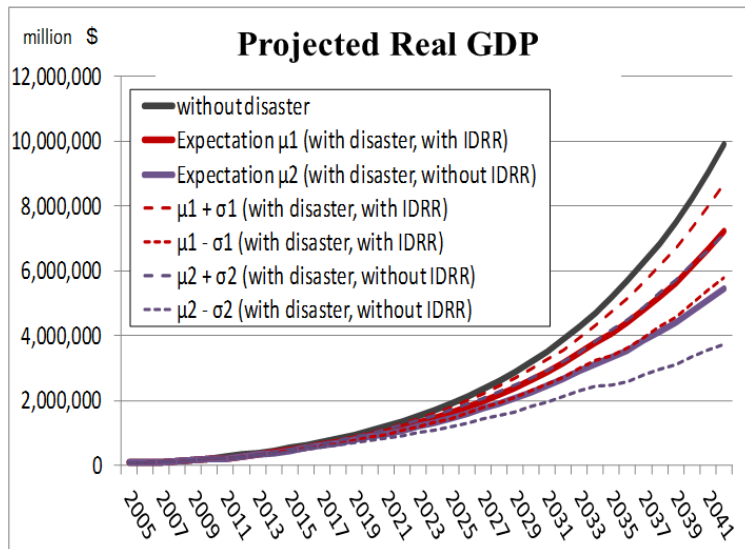
Seven global targets:

- (a) Substantially reduce global disaster mortality by 2030, aiming to lower average per 100,000 global mortality between 2020-2030 compared to 2005-2015.
- (b) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 between 2020-2030 compared to 2005-2015. 7
- (c) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030.
- (d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.
- (e) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020.
- (f) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030.
- (g) Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030.

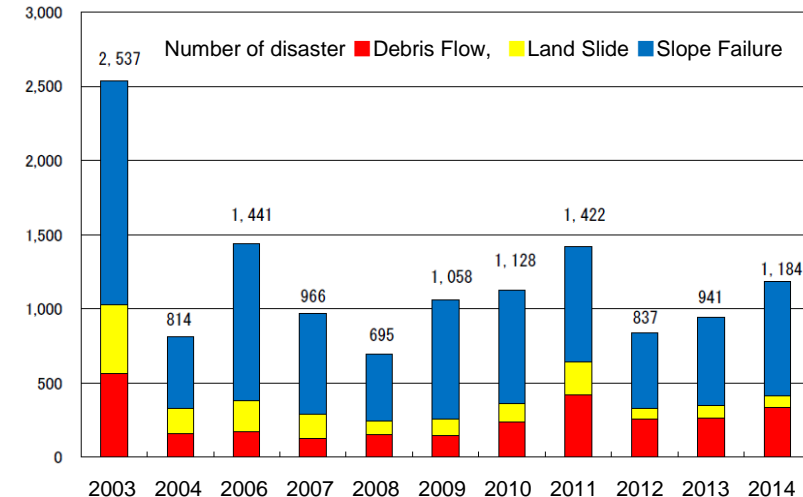
Disaster Statistics and Analysis

Appropriate disaster statistics and analysis enables clear projection of future disaster risks and its consequences. As an example, dynamic stochastic macroeconomic model of income distribution and growth, named “DR²AD Model” can visualize Economic growth under long-term disaster risk with or without DRR investment.

Disaster statistics however in many developing countries is not systematically obtained as public resource. For hydro-meteorological hazard and disaster, in particular, many small to medium scale disaster cases are ignored in reporting, recording and analyzing.

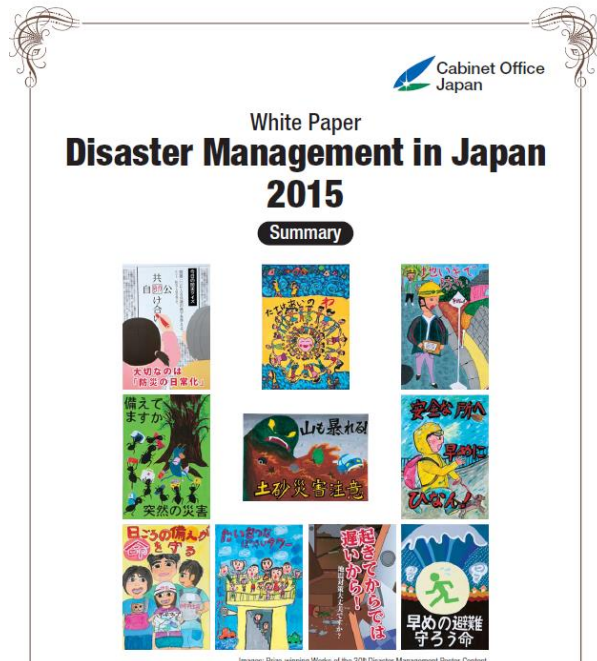


Expected GDP with and without DRR investment (Case of Pakistan)



Example of Japan’s sediment disaster statistics including small to medium events which even didn’t affect human casualty. It is essential data to improve alert system and formulate strategic disaster prevention planning.

White Paper on Disaster Risk Management



Cabinet Office
Japan

White Paper
Disaster Management in Japan
2015
Summary

共自防公
大切なのは
防災の日業化

備えて
ますか

山は暴れる
土砂災害注意

安全な所へ
避難


日本の備え
命を守る

避難の
準備は
進んで
いますか

早めの避難
守ろう命

Images: Photo-sharing Works of the 3DP Disaster Management Poster Contest

"The White Paper on Disaster Management is one of Japan's most noteworthy initiatives in the field of disaster risk reduction and management. Few countries publish such comprehensive reports on a regular basis. Other countries can learn from Japan's example and adapt this model to their own needs."
- Ms. Margareta Wahlstrom, the Special Representative of the United Nations Secretary-General for Disaster Risk Reduction/ Head of the United Nations Office for Disaster Risk Reduction (UNISDR)



http://www.bousai.go.jp/kaigirep/hakusho/pdf/WPDM2015_Summary.pdf



JICA assists developing countries to compile disaster statistics through such as “Disaster White Paper in Thailand”

In order for knowing our current capacity of disaster risk management, it is essential to regularly evaluate the activities and systems of DRM and then reflect the lessons on improvement of the systems.

The Japanese Government, in accordance with the Disaster Countermeasures Basic Act, **annually submits to the National Diet a report**, the White Paper, which includes over view of disasters occurring in Japan, various statistical data and disaster risk management measures taken by the Government.

As the keyword of better risk governance is “accountability” and “transparency”, the White Paper is one of the best tool to convince people, including politicians in particular, about how important the risk reduction effort is.

White Paper on Disaster Risk Management

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Education about DRR

Education about disaster reduction is quite important for enabling individuals to have correct understanding about natural disasters, and be able to act on their discretion to prevent and reduce damages from a disaster. In the Great East Japan Earthquake, a case of an elementary school was reported to have safely evacuated based on their daily education of the past disasters and training about evacuation. Thus, importance is recognized to enhance education and training at schools and in local communities so that people are nurtured to be equipped with correct understanding about prevention and escape from the disaster.

In order for school children to be able to learn and acquire knowledge and practical skills about disaster reduction, Fire and Disaster Management Agency has compiled “Challenge! Disaster Reduction 48,” a textbook for school teachers and leaders. Ministry of Education, Culture, Sports, Science and Technology (MEXT) compiled a “Guide to Make a Disaster Reduction Manual for Schools (Earthquake and Tsunami),” and “Development of a Disaster Reduction Education to Nurture Power to Live On,” demonstrating the direction of the school education in disaster reduction, and to enhance the disaster education at school.

Further, in order to enhance the disaster reduction education in local communities and schools nationwide, the Cabinet Office is carrying out a campaign “Disaster Reduction Education Challenge Plan” to nurture positive environment for more proactive disaster reduction education by picking up active local groups, schools and individuals who demonstrated better disaster reduction plans and actions, give support to them, and publicize the achievements (including education methods, materials used, precautions, contacts), through the Office’s web site, intending that such plans and programs be widely recognized and utilized throughout the nation .

Education about DRR

Outside the school systems, Fire and Disaster Management Agency offers an internet program called “Disaster Reduction / Crisis Management e-College” on the web, directed to local residents, professional / voluntary firefighters and local government employees, so that local ability to manage disaster be enhanced. In addition, the Cabinet Office and the Disaster Management Promotion Council invite the public participation in the award for posters to raise awareness of disaster reduction.



“e-college” of Disaster Management, produced by Fire and Disaster Management Agency



Disaster Management Poster contest, produced by Cabinet Office



Catering Lectures on DRM, produced by MLIT

Education about DRR



“Tokyo Bousai”

A bright yellow handbook with a cute rhino on the cover. He’s wearing a helmet, carrying a backpack and has a pensive, cautious look on his face. Open the cover and you’ll find the following statement: “It is predicted that there is a 70 percent possibility of an earthquake directly hitting Tokyo within the next 30 years. Are you prepared? This is Tokyo Bousai, the Tokyo Metropolitan Government’s disaster preparedness guide.

The book consists of three components: The actual book, a foldable disaster prevention map showing important emergency facilities nearby and a digital resource, with quizzes that raise disaster preparedness and provide additional up-to-date information. Every Tokyo ward has its own corresponding map, and on the back of the guide there is a checklist of important items needed in the aftermath of a disaster, an evacuation flow-chart, as well as contact information and Twitter handles for major relief organizations.

It is predicted that there is a 70 percent possibility of an earthquake directly hitting Tokyo within the next 30 years. Are you prepared?



Successive communication of the lessons learned from generation to generation

In the Great East Japan Earthquake, a case of a village resident who escaped the tsunami disaster as the house was built in the area higher than a stone monument on which the inscription read “Do not build a house lower than this point”. With such lesson in mind, the Disaster Countermeasures Basic Act was revised to make it an obligation of local residents to record and transcend lessons from disasters experience.



Successive communication of the lessons learned from generation to generation

In Kobe City, Hyogo Prefecture, “Disaster Reduction and Human Renovation Institution” was established in memory of the Great Hanshin-Awaji Earthquake, and is engaged in activities to pass the lessons from the Earthquake disaster on to the younger generations through reproduction of the big Earthquake by audio-visual and model construction.

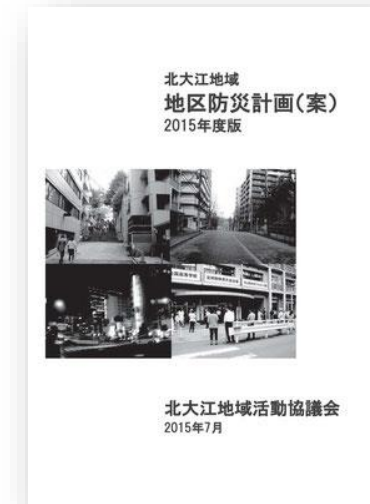
The library is a fascinating repository of the heart-wrenching and uplifting stories of one of the defining events in local history; a repository for collecting, preserving, and providing public access to books, papers, photographs, videos, and other documentation or items related to the Great Hanshin–Awaji Earthquake of 1995. The library is a great place for visitors to Kobe to learn about a vital chapter of local history.



Community based Disaster Risk Management

In order to encourage and promote proactive disaster risk management activities among residents (including both individual and corporate citizenships) in a given area based on the spirit of self-help and mutual help, and to enhance the disaster management capabilities of the area in a bottoms-up manner, it is stipulated that a community disaster risk management plan, featuring the community level disaster risk management activities, may be prescribed in the municipal disaster risk management plan.

In developing a community disaster risk management plan, more active and proactive participation of the area residents is necessary at an early stage of such development. As such, it is stipulated that the area residents may jointly make a proposal (proposed plan) to the municipal disaster risk management council that a community disaster risk management plan be stipulated in the municipal disaster risk management plan.



Environment for Volunteer Activities



Upon the Great Hanshin-Awaji Earthquake occurring, there was an outpouring of 1.3 million volunteers for assistance activities, from both within and outside the afflicted areas. In the following disasters, lots of volunteers have rushed to aid and comfort the victims and assist in the recovery and reconstruction of disaster-stricken regions.

The government has designated each January 17 as “Disaster Reduction and Volunteer Day,” and the week from January 15 to January 21 as “Disaster Reduction and Volunteer Week.” During this one-week period, seminars, lectures, exhibitions and other events are held to promote the volunteer and autonomous disaster reduction activities when disasters occur. These events take place throughout Japan, with the close cooperation of national and local governments, local public corporations and other relevant entities.

Environment for Volunteer Activities

To provide a supportive environment for disaster reduction volunteer activities, the Cabinet Office provides information that volunteers can use in their efforts, as well as facilities for the exchange of information and views. The Cabinet Office also provides local governments receiving volunteer assistance with information and expertise, and promotes wide area collaboration among volunteer activities when disasters strike.

Disaster Countermeasures Basic Act had stipulated improvement of the environment of the volunteers' disaster reduction activities as one of the issues that national and local governments have to consider. However, in recent disasters including Great East Japan Earthquake, many volunteers have proactively worked hard and played important roles. Such roles are expected to grow even further in the anticipated large-scale disasters occurring.

As such, the new version of the Basic Act in 2013 clearly defined that, the national and local public entities must work closely with volunteers while respecting their autonomy, in view of the importance of volunteers' work.



Example of NPO activities

In 2013, Flood Fighting Act was revised so that private corporation, residents' association and NPOs (non profit organizations), etc. also is able to participate in the flood-fighting activities, which previously has been limited to a professional, such as a fire brigade.

Recently, various entities have been formally registered as flood-fighting cooperation organizations and participated in installation such as flood storage in the river area and flood-fighting activities. The registration process was simplified and financial support system was also established.



Example of NPO activities

According to Japan Voluntary Organizations Active in Disasters (JVOAD), as of 4th May 2016, 144 supporting groups against Kumamoto earthquake, the first shake was occurred on 14th April 2016, are conducting activities in the field.

In the affected areas, case of volunteers gathered in the over excess or shortage is likely to occur in some of the shelter places. Taking advantage of the lessons of the Great East Japan Earthquake, it is necessary to smoothly proceed with the sharing activity information of each organization, cooperating with the victims and the support from local governments.

JVOAD is working as a coordinator for sharing information of disaster volunteer groups from around the country for victims of Kumamoto earthquake.



Promotion of CSR activities of private enterprises

CSR is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.

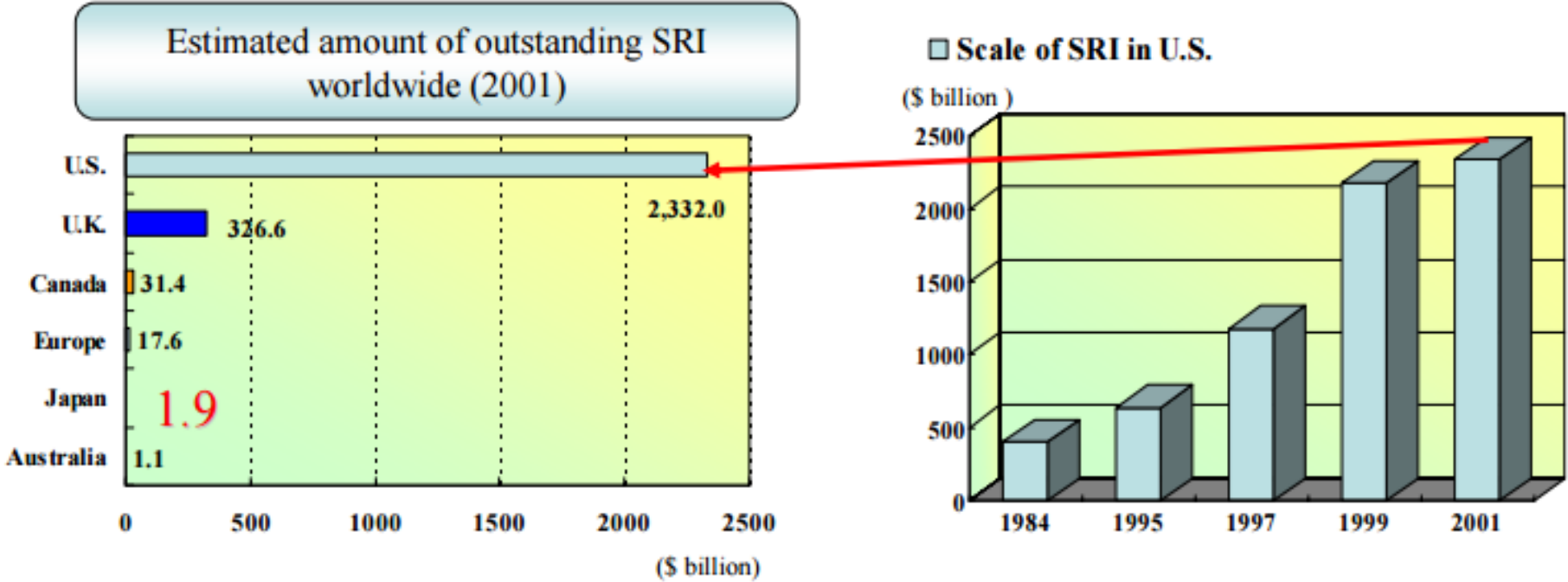
The speed at which various private companies have expanded the CSR activities at the time of Kumamoto earthquake has risen much faster level than when the Great East Japan Earthquake. The number of participating enterprises is also very large.

The Ministry of Economy, Trade and Industry is promoting to make coordination platform such as “CSR Forum Japan” in order to facilitate communication between the various stakeholders with respect to disclosure of CSR activities and corporate accounting.



Promotion of CSR activities of private enterprises

Scale of Socially Responsible Market (SRI) in U.S.



Source: Social Investment Forum, etc.

Promotion of Business Continuity Plans (BCP) and Business Continuity Management (BCM)

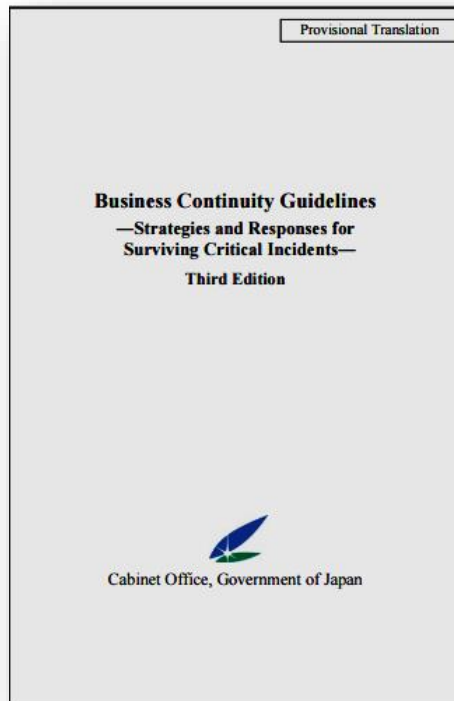
When earthquakes and other disasters cause enterprise activities to stagnate, such stagnation impacts not only individual companies, but also employment levels and the overall economy of the stricken region. Through trade and commerce with businesses in other areas, the economic damage can affect other regions as well. In this context, promoting the formulating and implementation of Business Continuity Plans (BCPs) and the Business Continuity Management (BCM) stipulating management strategies in normal time are extremely vital for ensuring the continuation of business in the event of a disaster. BCPs and BCMs are quite important as they can **ensure the stability of Japan's society and economy** while creating an image of reliability of Japanese companies abroad.

In 2005 the Japanese government, through a special committee of the Central Disaster Management Council, drew up and began circulating a set of “**Business Continuity Guidelines**,” and revised it in 2009 and in 2013. The government sets a target of convincing almost **all large companies and 50% of medium-sized companies to draft BCPs**.

The government also developed and released an **English version of the Business Continuity Guidelines to promote BCPs and BCMs to Japanese companies and business partners abroad**.

Promotion of Business Continuity Plans (BCP) and Business Continuity Management (BCM)

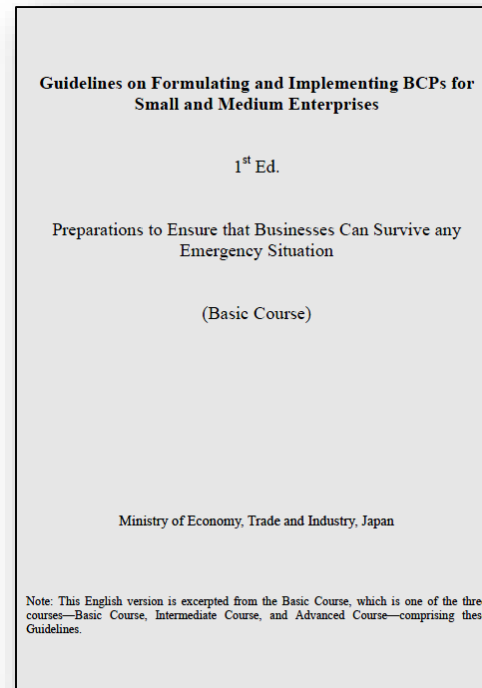
Business Continuity Guidelines



Outline of These Guidelines

- Targets of these Guidelines
- Purpose of these Guidelines
- Incidents covered by these Guidelines
- Status of these Guidelines
- Composition of these Guidelines

Guidelines on Formulating and Implementing BCPs for Small and Medium Enterprises



Encouraging the Evaluation of Corporate Disaster Risk Reduction Activities

For private enterprises, recognizing the role of companies in the event of a disaster (ensuring the safety and security of employees, preventing secondary disasters, maintaining business continuity, contributing to and living in harmony with local communities) and working to promote **disaster management activities** is of crucial importance.

To encourage companies to engage in disaster management activities, markets and local communities must give appropriate recognition to enterprises that take an active part in these activities.

The government is disseminating information for this purpose. It has prepared a self-evaluation table entitled “**Business Measures for Disaster Management,**” as well as “**Disclosure on Disaster management Measures: Explanations with Cases.**” Using an evaluation system based on the items in the self-evaluation table, the Development Bank of Japan (DBJ) has developed a lending facility with a rating system for operations that promote disaster management. The DBJ is implementing this system as an **incentive to encourage companies to conduct disaster management activities.**

Inadequacy of independent BCM, lessons from mega scale disasters

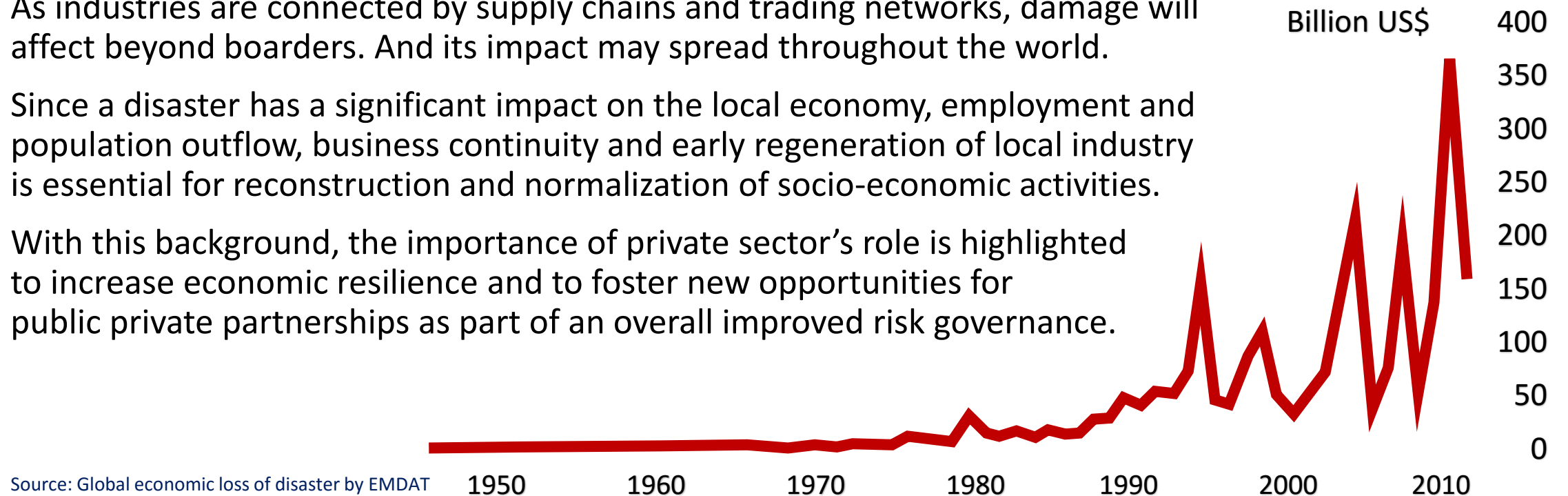
When we examine recent disasters, the scale of those is intensifying due probably to the Climate Change as well as to Rapid Urbanization, Industrial Agglomeration and unmanaged development.

The economic loss of the world in recent years is remarkably increasing.

As industries are connected by supply chains and trading networks, damage will affect beyond borders. And its impact may spread throughout the world.

Since a disaster has a significant impact on the local economy, employment and population outflow, business continuity and early regeneration of local industry is essential for reconstruction and normalization of socio-economic activities.

With this background, the importance of private sector's role is highlighted to increase economic resilience and to foster new opportunities for public private partnerships as part of an overall improved risk governance.



Source: Global economic loss of disaster by EMDAT

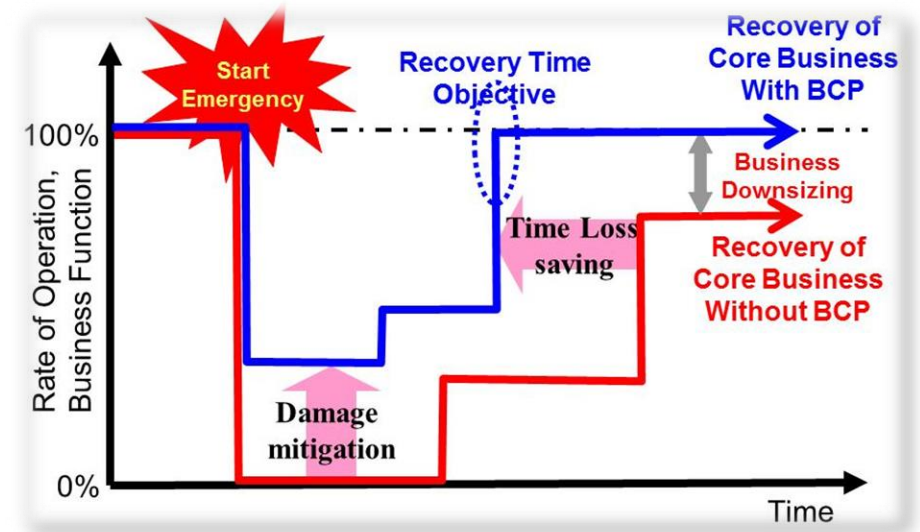
Inadequacy of independent BCM, lessons from mega scale disasters

The private sector's role, in reducing damages from disasters and in quick restoration of business operation, is nowadays highlighted in various occasions such as UNISDR 3rd WC in Sendai, where we have adopted the SFDRR.

The Business Continuity Management System of individual business organization is standardized as ISO22301 and introduced in many private and governmental organizations. In Japan, more than 50% of major companies have started the BCMS implementation.

BCM refers to any effort that aims to achieve business continuity by doing whatever necessary to protect company's production, information, equipment, and employees.

BCMS is standardized as ISO22301 and disseminated in many business enterprises around the world. In Great East Japan Earthquake, however, the efficacy of prearranged Business Continuity Plans (BCP) in private enterprises becomes insufficient due to disruption of common resources such as energy, water, transportation and communications.



Inadequacy of independent BCM, lessons from mega scale disasters



However, we learned from the recent cases that when a major disaster occurs, the damage extends to roads, power supplies and other infrastructure as well. Disruption of those common resources often becomes bottlenecks for effective business continuity in widespread area. Therefore, efforts of individual companies, even if BCMS are prepared, are not enough to achieve the desired level of business continuity.

Thus, a new concept of area-wide business continuity management is required. JICA, in 2013, proposed the concept as Area Business Continuity Management.

New initiative of Area BCM

Centrally to Internal resources, such as company's buildings, facilities, parts and raw materials, the External resources, such as energy, water and transportation infrastructures, are managed normally by public sector and not controllable by private enterprises. The external resources are also distributed not only for business purposes but also for securing community life.

	Human	Substance	Finance	Information
Internal Resources	Managers, Workers, Employees,	Buildings and facilities, Equipment, Parts and raw materials, fuels, Value chains, etc.	Money and Assets, Account system, Contract, Insurance, etc.	Computer systems, Operation data, Business documents, Archives, etc.
External Resources	Public officers, Public workers	Energy (Electricity, Gas, etc.), Water (Supply, Sanitary and sewerage), Transportation (Road & Rail, Port & Airport, etc.), Food and medical supplies, Logistic services, Accommodation, etc.	Capital, Transaction system, Stock market	Internet, Tel and Fax, Communication system

Therefore, in case of emergency that imposes limited allocation of those resource, collaborative efforts are required between the private sector, public sector and the local community to maintain the critical external resources.

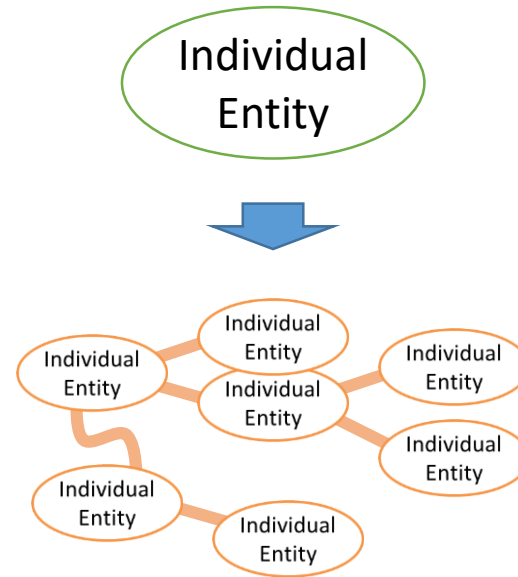
New initiative of Area BCM

Private sector's view points necessary for area wide scale of disaster

- Each enterprise is one of the members of the local community
- Companies are affected by disaster along with the community in a region
- It is expected to take a role as noble **Cooperate Citizenship** that is beyond the concept of CSR (Cooperate Social Responsibility)
- Business continuity of local enterprises can sustain the long term reconstruction and development of the locality
- Each enterprise benefits from social infrastructures (essential resources such as energy, transportation, services) and environment (water, air, land, nature)
- Key action that should be taken in the normal state is to share the information about BCPs which have different interests

New initiative of Area BCM

It was expected to have a common protocol to enhance the resilience of the local community that corresponds to the interdependency in this networking world



Individual Resilience by each BCM

- Company, Group of companies
- National and local governments
- Public organization
- NPO, NGO

Cooperated Resilience by BCMs

- Supply chains
- Government administrations
- Industry associations
- Economic organizations

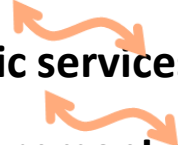
Societal Resilience by Area BCM

- Local society
- Public Private Coordination
- Unified actions

Cooperate Citizenship

Public services

Government admins



Definition of Area BCM

The required elements of the new concept are:

1 **Private Public Coordination**, as essential framework of area-wide disaster management system

2 **Probabilistic Analysis of Risks and Impacts**, which is the bases of understanding weakness of industry in an area of concern and formulating area-wide plan of DRM

3 **Management of Critical External Resources**, which aims to effectively manage the common business resources such as energy, water and transportation infrastructures considering the area-wide availability

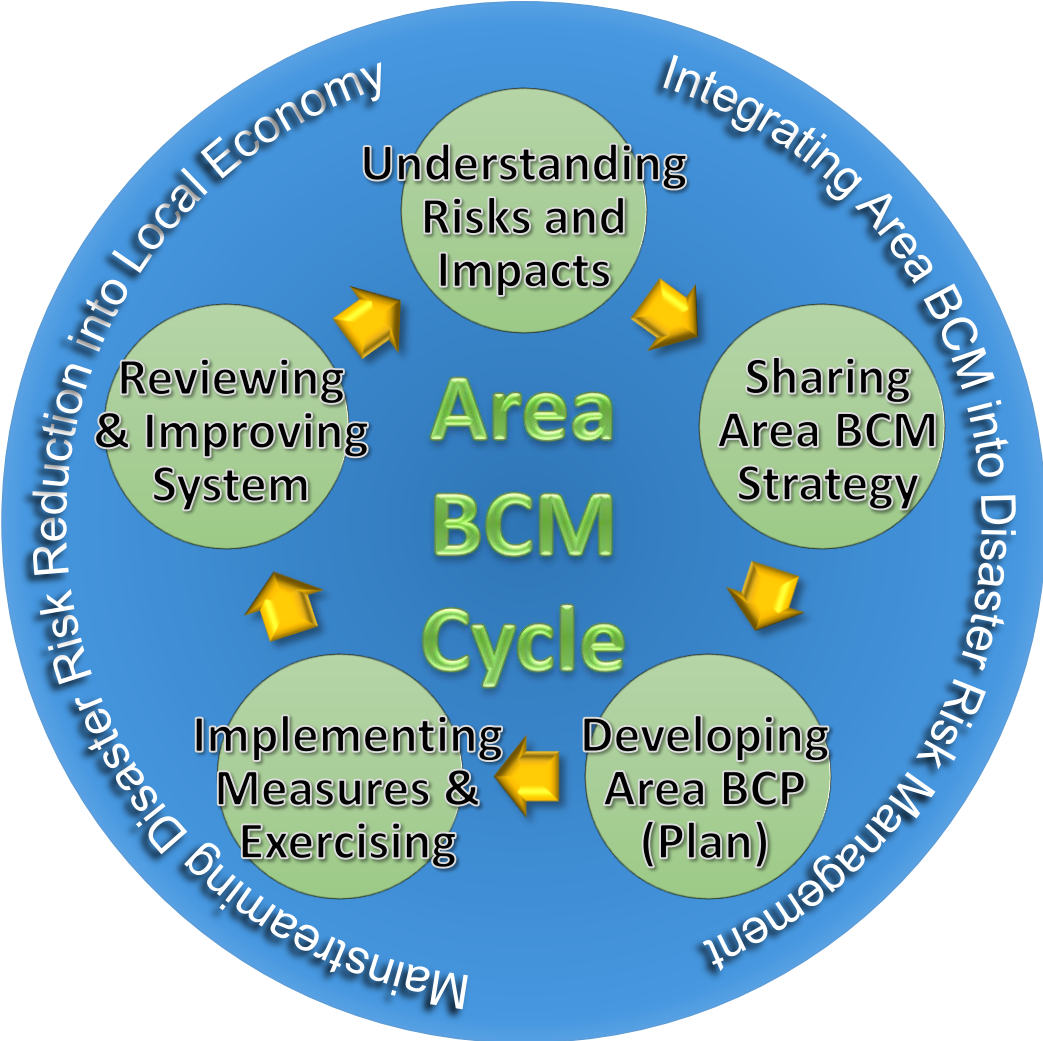
4 **Area-wide Scalability of Management**, which can flexibly expand the management scale based on variable scenarios of disaster and changing situation



Definition of Area BCM

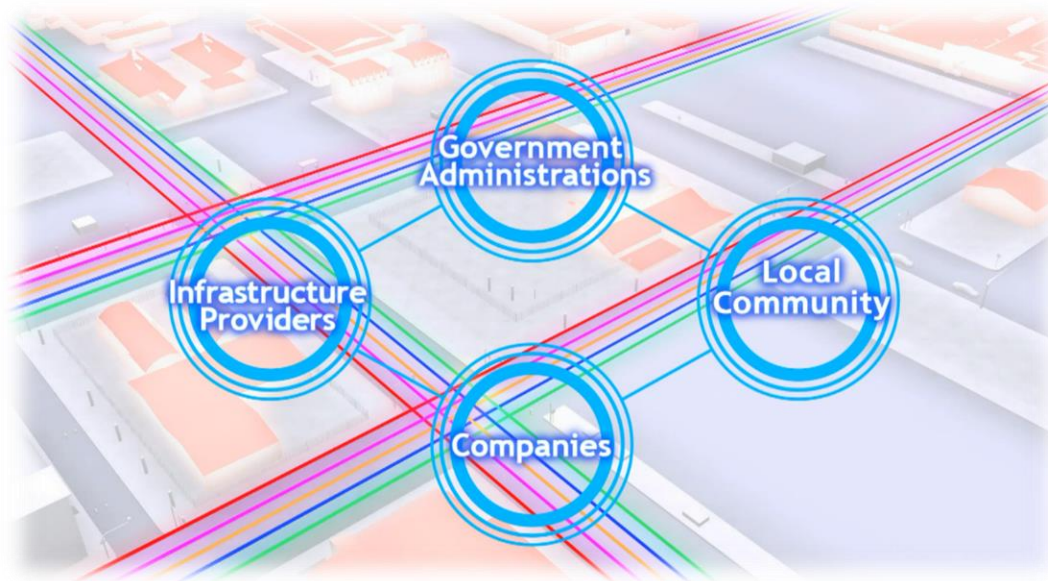
Area BCM is a cyclic process of understanding risks and impacts, determining common strategy of risk management, developing the Area BCP, implementing the planned actions and monitoring to continuously improve the Area BCM System.

Area BCP then designates a framework and direction of coordinated damage mitigation measures and recovery actions of stakeholders in order for business continuation of the industrial area as a whole, which may, as a result, improve the resilience of local economy to disasters.



Definition of Area BCM

Scalable Cross Sector Coordination Framework of Risk Management for Business Continuity

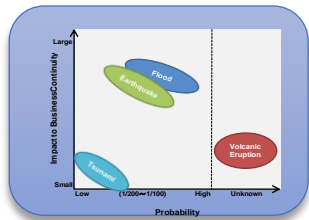


Coordinating stakeholders include individual enterprises, industrial area managers, local authorities and administrator of the infrastructures as well as communities.

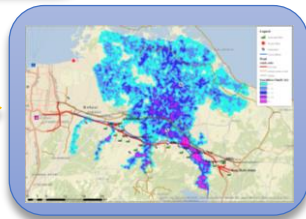
Steps of Area BCM

1. Understanding Risks and Impacts

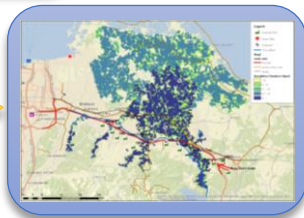
One of the essential processes is to make risk and impact analysis based on scientific and standardized methodology.



Identify Predominant Hazard



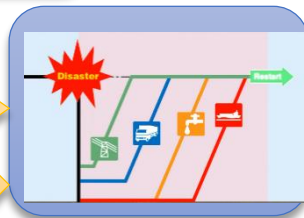
Hazard Simulation



Risk Assessment

Vulnerability of Infrastructure, utilities and the area

Current measures by public sectors and private enterprises



Disaster Scenario

Business Impact Analysis

It includes identification of the predominant hazard in the area of concern, detail simulation of the specific hazard, disaster risk assessment based on the vulnerability of infrastructure, utilities and facilities and formulation of disaster scenario in which the current capacity of measures taken by both public and private sectors.

The scenario will be the bases of each organization's Business Impact Analysis as well as the area-wide analysis of economic impact.

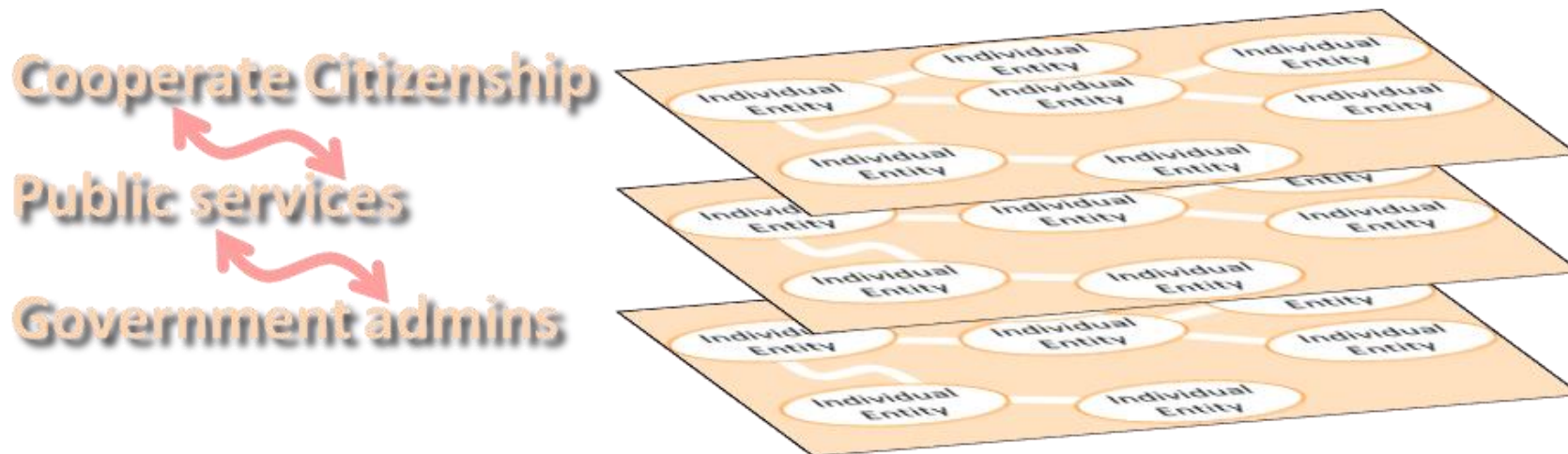
Steps of Area BCM

2. Sharing Area BCM Strategy

Then next step is to **share the risk and impact information** among all stakeholders. Then they discuss the strategy and direction of area-wide impact mitigation and quick restoration.

The geographical scope of a particular Area BCM depends on local condition or the size of stakeholder's coordination so that an industrial park, an industrial agglomerated area or even a nation can be its scope.

Coordination hub should be established with the most important and authoritative positions of local and national government as well as the management organization of an industrial cluster in consideration of different types of cooperation. Public Private Cooperation is an essential framework of sharing the strategy and roles in area-wide disaster management where public sector plays a role mainly as coordinator while private sector as operator of actions. The coordination structure of Area BCM should be organized in such a way as to be able to expand when needed through the damage prospect, critical resource's condition and changing hazard.



Steps of Area BCM

3. Developing Area BCP (Plan)

The contents of the Area BCP ranges from the organizational structure, industry status, hazard, risk and business impact, challenges, direction and actions to be taken, evaluation and continuous improvement of the Area BCM system in the end.



Steps of Area BCM

4. Implementing Measures & Exercising

The measures should be balanced in all the stages of DRMC, with combined tactics and multi-scheme implementation, considering that the DRMC consists of Prevention and Mitigation, Preparedness and Response and Rehabilitation and Reconstruction.

The stakeholders should have opportunities to select single or mixed measures considering balanced combination of tactics; 1) Strengthening existing area-wide capacity of risk reduction or damage mitigation, by infrastructure improvement for example, 2) Preparing alternative measures, such as second line of transportation, networking of power distribution and ground water extraction facilities for example, and 3) Making temporary back-up, such as emergency batteries and temporary accommodation facilities for example.

The parties should also discuss about schemes (practical method) of implementing those measures varies from; 1) Cooperation with other stakeholders to share essential resources for business continuation of the area, by controlling or adjusting the logistics flow on the congested transportation for example, 2) Making new investment for area-wide resilient development, by constructing common facilities for accommodation cum emergency operation for example, and 3) Transferring the risk, by mutual insurance or public compensation for example.

Steps of Area BCM

5. Reviewing & Improving System

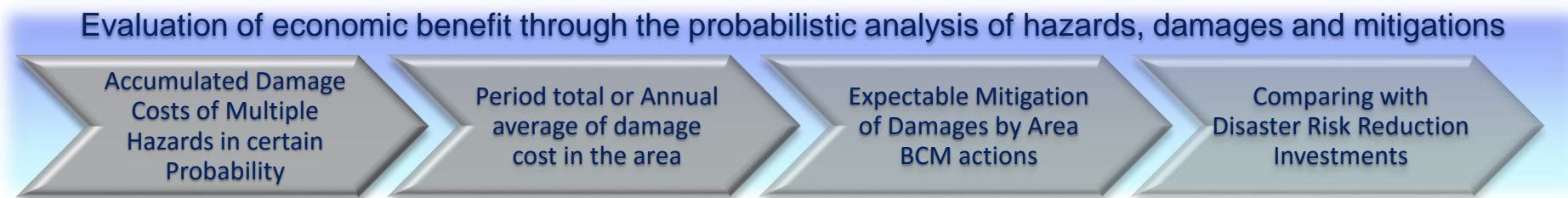
The Area BCM System has its own improving mechanism that monitor the activities of all stakeholders and feedback the lessons to the revised plan.

The system, by repeating the process, also needs to continuously address different types of hazards and different scenarios of risks and impacts in order for enhancing the resilience of local economy.

As one of the advantageous features of Area BCM, through the analysis of multiple hazards with respective probabilities, it can estimate future damage cost in certain period of years, or even indirect economic loss if there would be sufficient data of damage and impact relations.

The accumulated damage cost and losses will be reduced if effective mitigation efforts were made by Area BCM actions.

Then it will be compared with the investment cost for disaster risk reduction in order to evaluate the economic benefit and to find the desirable disaster management investment.

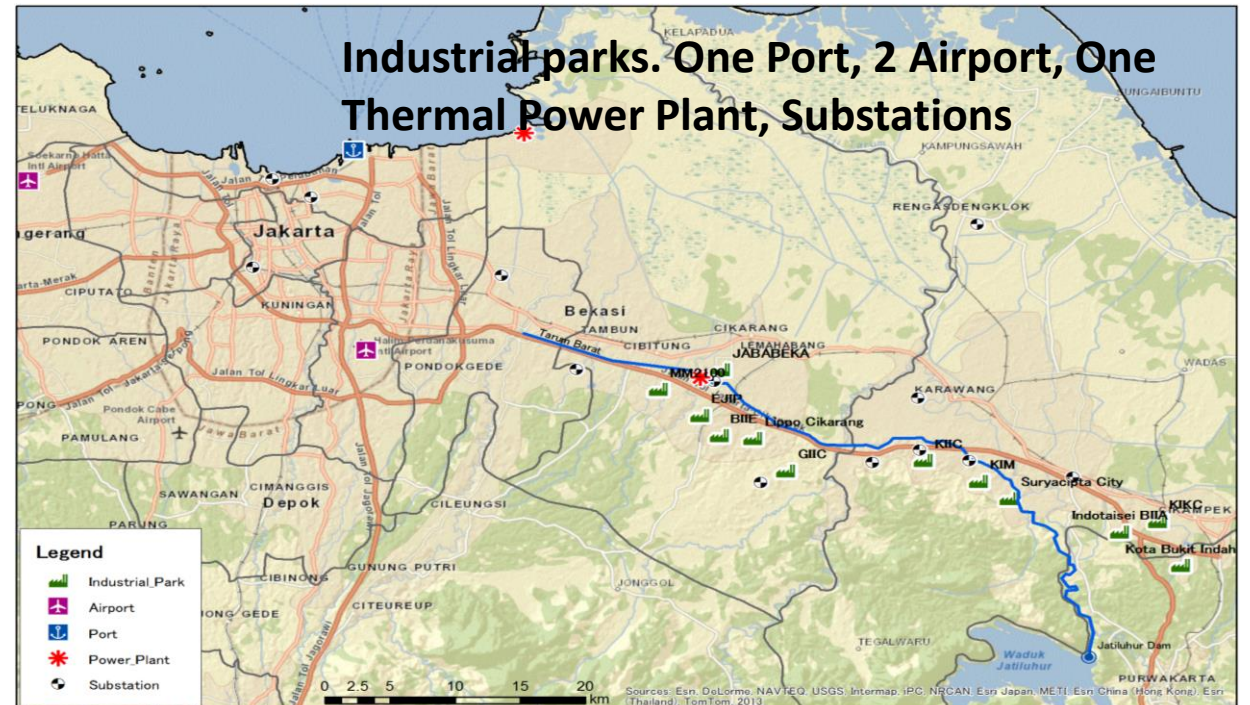


Case study of Area BCM

Bekasi - Karawang Industry area, Indonesia

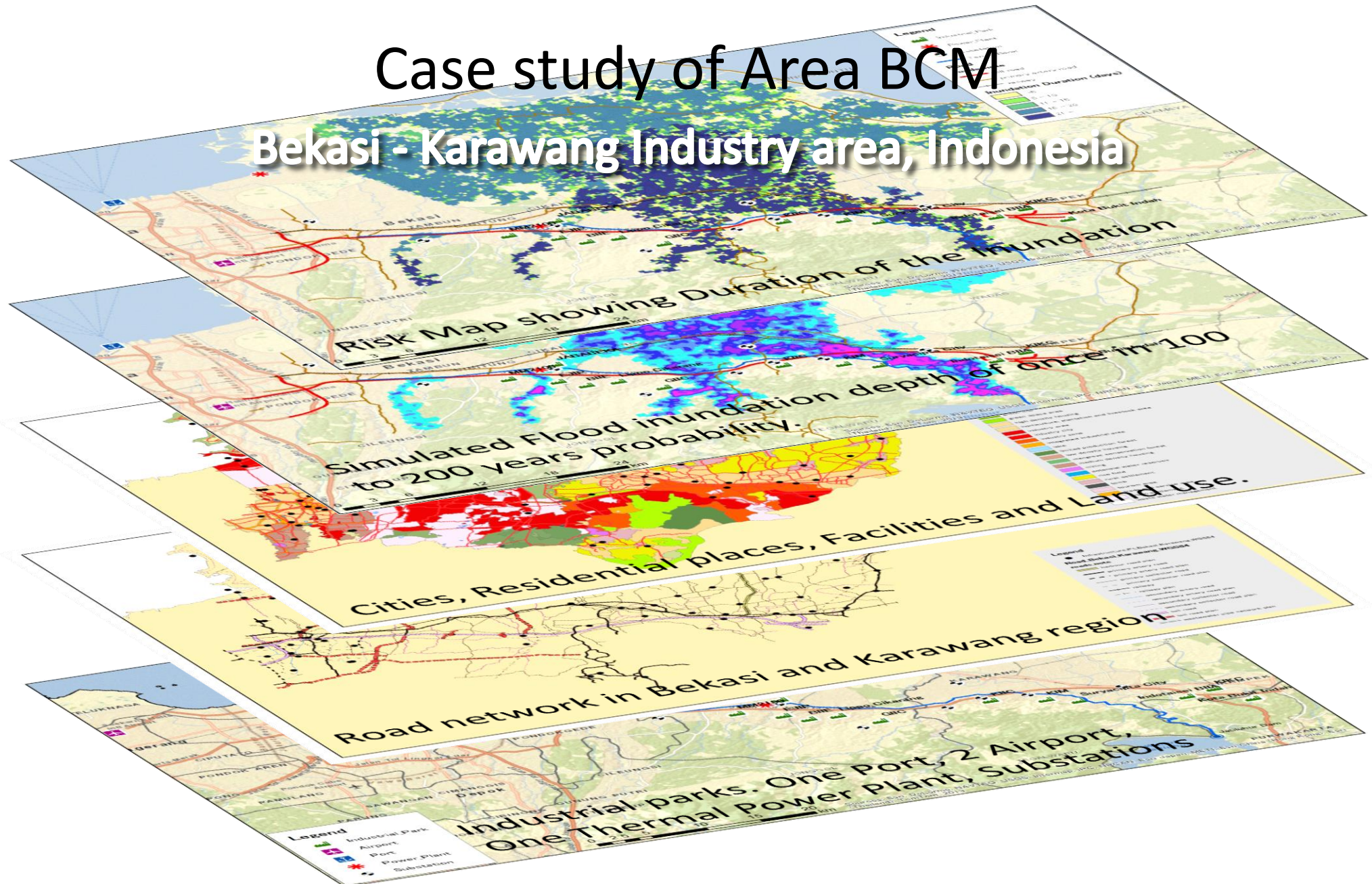
As a pilot case study, the new concept of Area BCM is applied in three industrial agglomerated areas in Indonesia, the Philippines and Vietnam.

Bekasi – Karawang Industry Area of Indonesia is one of that pilot areas. The Probabilistic analysis of multi hazards, including flood, earthquake, tsunami and volcanic eruption, proved that Flood inundation is the dominant hazard that affect much in this area and then detail simulation of the flood inundation was conducted. Through the output, all stakeholders understood the distribution of inundation, depth and its duration, overlaid with their facilities and common infrastructures.



Case study of Area BCM

Bekasi - Karawang Industry area, Indonesia



Case study of Area BCM

Disaster Scenario for BIA, Bekasi - Karawang Industry area, Indonesia

Buildings in industrial park

- Karawang City and surrounding area is inundated more than 2 weeks.
- Industrial parks however are not inundated, facilities are not damaged.

Electric power and Lifelines

- Two Substations in Karawang are inundated over 2m depth and stop the operation for two weeks.
- Some of base stations of telephone and mobile phone stop the operation because of the shortage of electric power.

Transportation infrastructure

- Freeway is closed both in west and east of Industry Park for more than 2 weeks.
- Primary Road in Karawang City is closed for more than 2 weeks.

Workers of Industrial Parks

- Many employee will be absent because of the inundation of their houses.
- Traffic condition becomes worse and induces the workers staying home.



Stakeholders are formulating BCP for strengthening transportation networks, alternative port development, power sub stations protection, backup of business resources, environment of stranded workers, etc. The Area BCM System is established and expanding its scope.



Case study of Area BCM

Some good practices of Area BCM in Japan are:

Otemachi Marunouchi Yurakucho Area (Central Tokyo)

- Disaster risk management council is formulated in PPP
- Stranded workers sheltering, emergency resource management, information sharing, coordinated exercise, ...

Kashima Industrial Complex

- Factory directors round-table
- Enhanced communication, quick Information sharing, ...

Akemi Industrial Park (Aichi prefecture)

- Joint disaster management plan
- Quick evacuation, effective coordination, joint exercise, ...

Industrial associations in areas of Kanagawa and Niigata (remote places)

- Alternate production consignment agreement to make effective business continuation

Case study of Area BCM

Otemachi Marunouchi Yurakucho Area (central Tokyo)



Target area of 120 ha

Over 290,000 workers in 4,000 companies

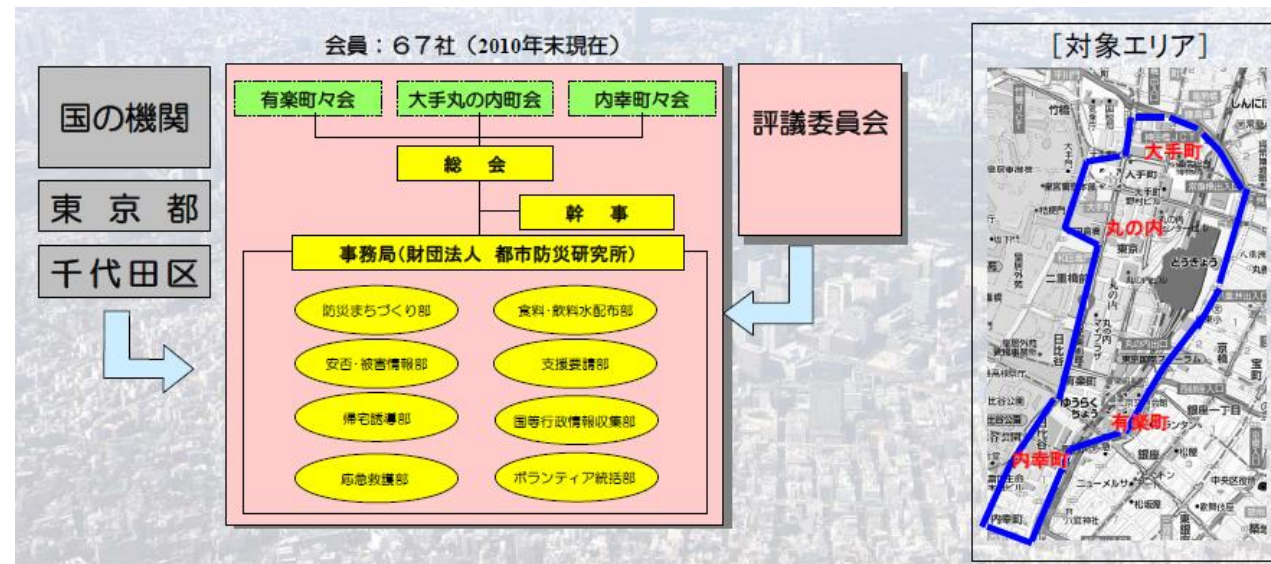
91 groups of business and land owners

Symbolic business center of Japan since Meiji era

Case study of Area BCM

Otemachi Marunouchi Yurakucho Area (central Tokyo)

The Council (Tokyo Station disaster risk management Tonarigumi) is established in 2004, continuously managing risk reduction through consideration if disaster strikes, of long commute times, congestion and confusion for citizens to move, aiming to find ways to secure safety and peace of a locality around Tokyo Station as the typical urban city. They also study how to realize safety as a local town, gathered volunteers of the district within the company, brainstormed the knowledge, and do necessary activities.



Case study of Area BCM

Otemachi Marunouchi Yurakucho Area (central Tokyo)



Examples of actions:

- Stranded workers shelter
- Spaces, electricity, sanitary, mat and blanket, ...
- Information dissemination
- Experienced the GEJE when 1,500 people sheltered, now the capacity is more than 5,000
- Participatory exercise of sheltering every year
- Stockpiling foods and goods
- Emergency power management
- Generators to share electricity
- Multi source Fuel system
- Redundant electric supply network
- Water resource management
- Emergency goods storage
- Water Recycling system
- Emergency wells and purifying filter

What are the Benefits of Area BCM?

Area BCM unifies the efforts of stakeholders of the area, directs them toward a common goal, and allows the area to achieve restoration and reconstruction quickly, efficiently and effectively. It also makes each Business Continuity Manager consider how to secure the availability of business resources and to cooperate with other partners by sharing the information among relating parties of the area and clients of each enterprise through enhanced communication. The coordination between major enterprises and Small Medium Enterprises is beneficial particularly to SMEs since they are quite vulnerable against disruption of businesses and less capable of implementing measures of DRR by own efforts only.

Coordination through supply chain is also enhanced by preparing alternative supply chain network. Moreover, cross industries cooperation by Area BCP/BCM can further promote the cooperation among line industry.

Each organization's effort is geared up due to increasing responsibility under the coordination of the Area BCM. Even a company who had no BCP/BCM yet may start establishing its own BCP/BCM.

Not only planning the BC but also training and practicing the actions, the coordinated framework will facilitate each participating organization to do so.

Public sector is also encouraged to invest more robust infrastructure.

The combination of different schemes will add more redundancy to the area's resilience.

The Area BCM, the enhancement of resiliency may attract other enterprise for newly settling in the target area. The increased resilience of the area would also reflect to the asset value as for investment environment which could pull down the disaster insurance cost of enterprises.

Enhanced continuity of the business in the area as a result could foster the local economy and employment, which may have huge impact to the nation.

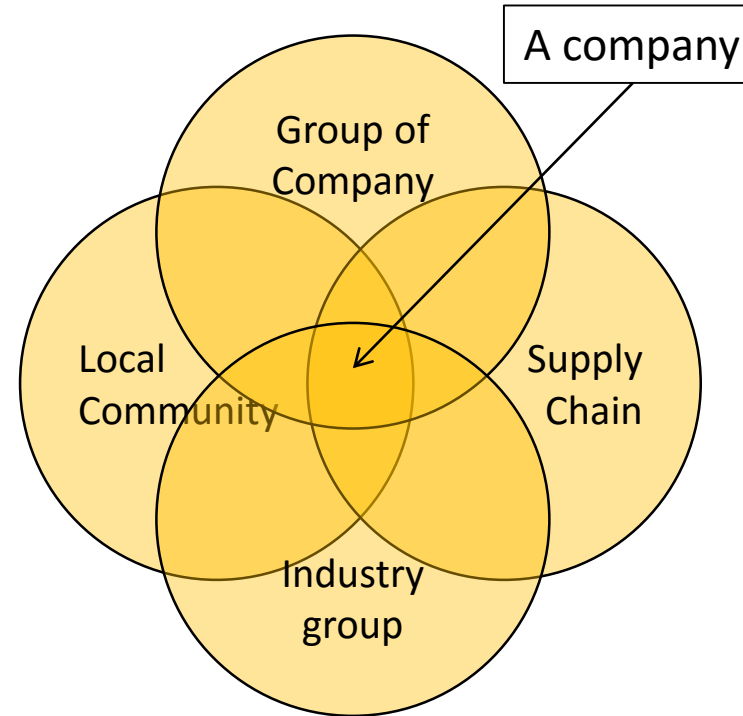
What are the Benefits of Area BCM?



Standardization of Area BCM

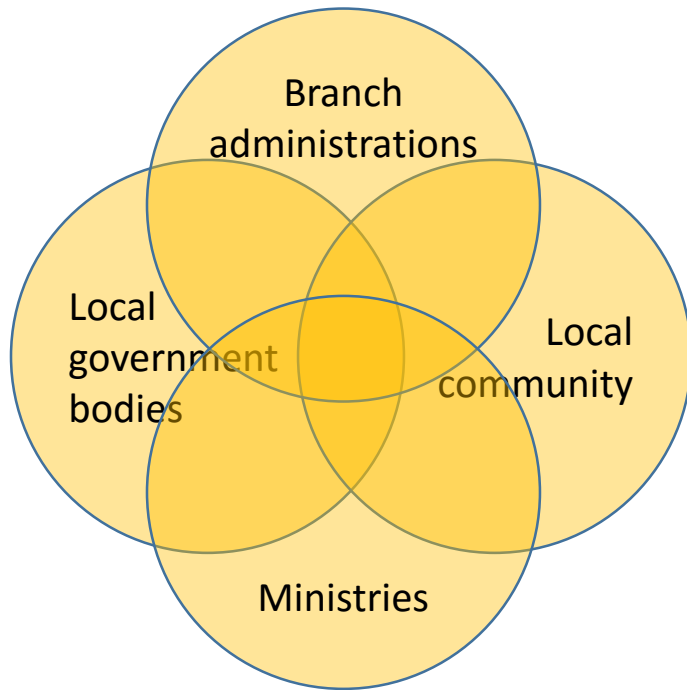
The most fundamental question is how to generate the coordination between all stakeholders?
How effectively we can promote the private sector's participation?

Private sector seeks for more effective standard or prototype to follow in order to positively participate into DRR process .



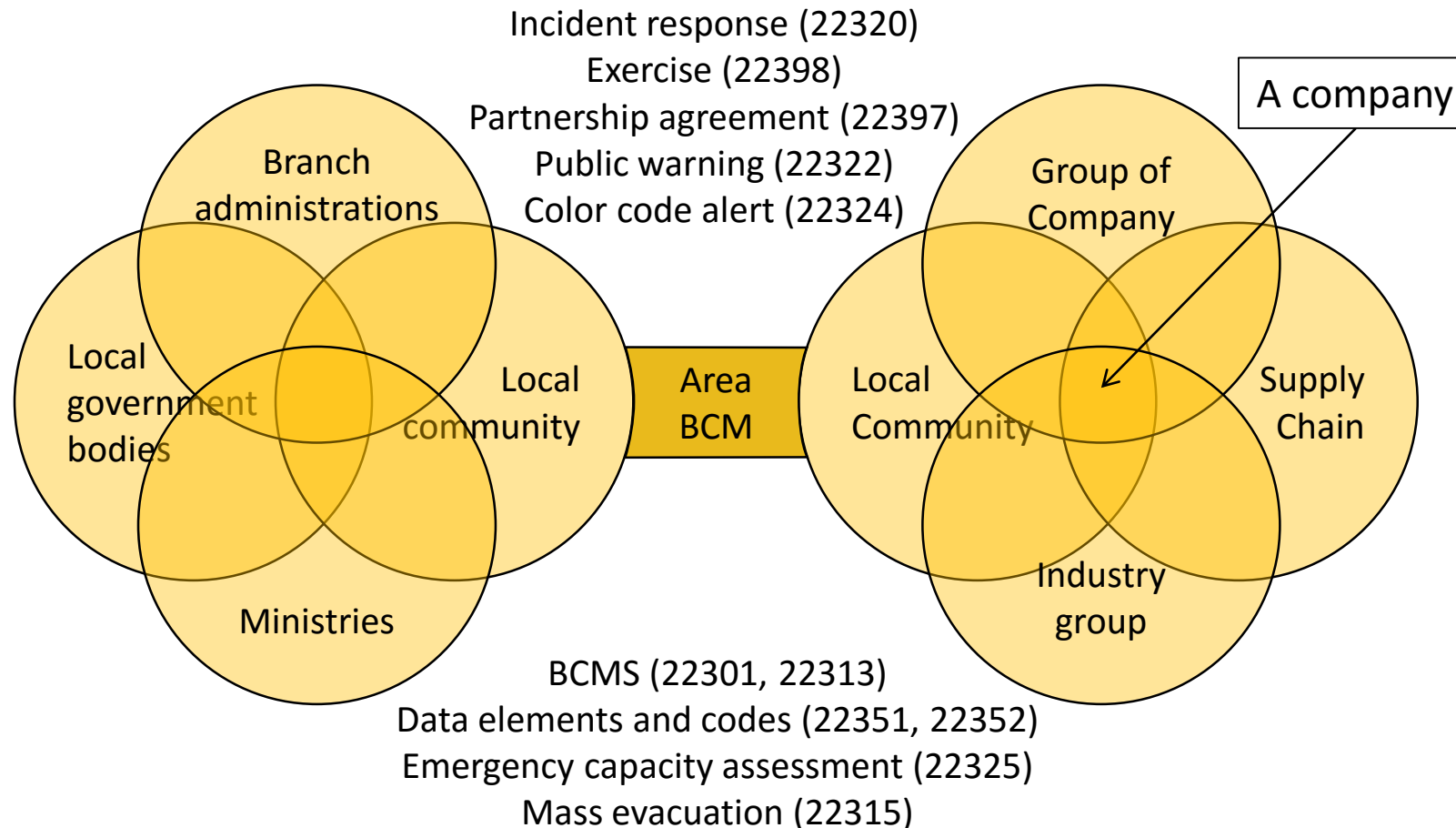
Standardization of Area BCM

Public sector also seeks to establish standard protocol for effective disaster management (public services) coordinating various entities



Standardization of Area BCM

We need to have a common methodology that all public and private stakeholder can accord with.



ISO223XX Families for Social Security

There is an effort by researchers in Japan that aims to establish international standard of coordinated type of BCM based on the Area BCM.

