



# **Building Resilient Infrastructure through Public Private Partnerships (PPPs): *Contracts and Procurement* *Case of Japan***

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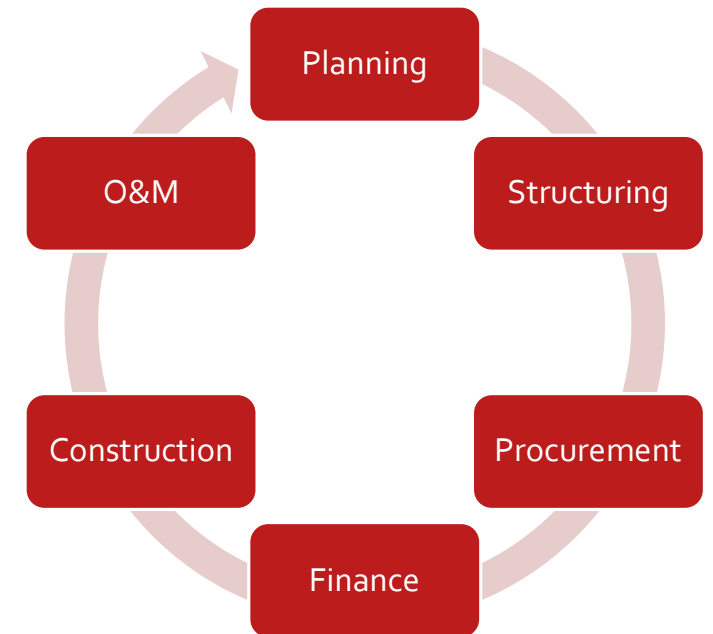


# **1 . Approaches to Resilient Infrastructure under PPPs**

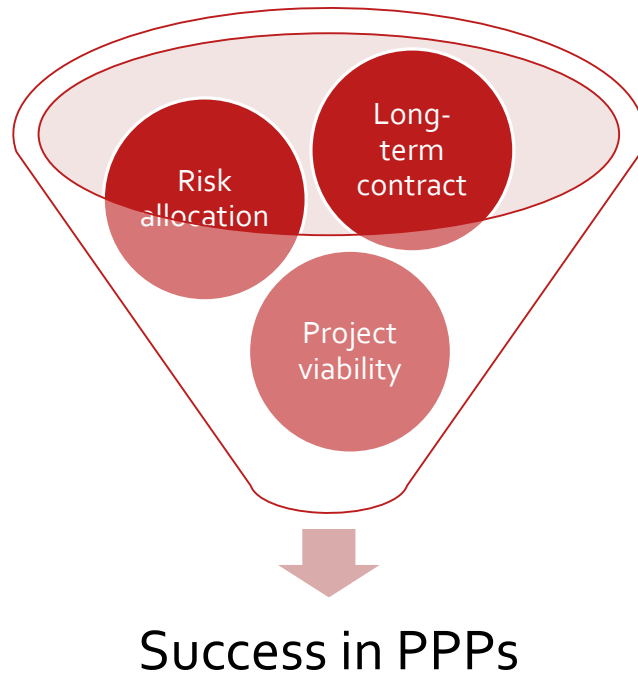
# Basic Approaches to Resilient Infrastructure under PPPs

- What is “Resilient Infrastructure under PPPs”?
  - It aims to mainstream Disaster Risk Management (DRM) considerations at all stages of the PPP lifecycle, from project planning, construction to operation.
- Why important?
  - **Disaster risk is one of the project risk that would affect the project’s feasibility and bankability.** The risk cannot be eliminated, and it needs to be understood, contractually allocated, and managed by the public and the private sectors.
  - Disaster risk, same as the other project risks, should be allocated to the party that is best placed to manage them in a cost-effective manner.
  - Through utilizing the private sector’s expertise in managing disaster risk in an efficient and effective manner, **Value for Money (VfM)\*** of a project is expected to improve.

\*VfM: Reduction in costs or increases in quality of service



# Key Challenges



## 1. Allocation of disaster risk between the public and private sectors

- Natural disasters are normally categorized under force majeure (FM) and it is considered that neither the public or the private sector is responsible for FM events.
- The questions are a) what is a boundary of natural hazards considered FM or not, and b) how to identify responsibility sharing between the public and private at natural disaster events, and c) what are the relief measures to be considered.

## 2. Management of long-term contracts under uncertainty

- PPP contracts are typically long-term ones and furthermore, infrastructure assets could last more than PPP contracts period.
- It is critical to incorporate DRM into project design, construction, operation and maintenance to ensure sound and long-term implementation of PPP projects.

## 3. Project economics and cost implications for PPP commercial viability

- A thorough examination is required to determine costs associated with investments in DRM and cost allocation between both parties, and these need to be carefully considered in early development stages.

# Key Considerations

1. Policy and legal frameworks

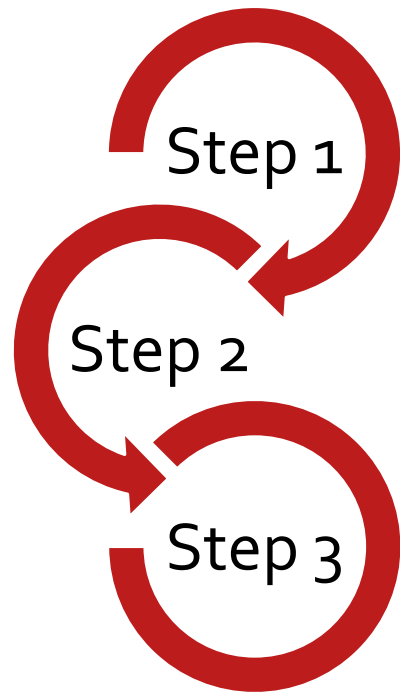
2. Project structuring and contract design

3. Procurement, monitoring and contract management

4. Disaster risk financing tools

## **2 . Project Structuring and Contract Design**

# Steps to Determine Disaster Risk Allocations



## **Step 1: Identify key risks to be addressed**

- Assess site-specific disaster risks
- Consider potential risk reduction measures- e.g. engineering designs

## **Step 2: Establish clear definition for risks and hazard events**

- Determine which hazards to be specified in a contract
- Establish a definition of Force Majeure

## **Step 3: Allocate risks to the public and the private sectors**

- Consider the factors affecting risk allocation
- Determine cost allocation and compensation/relief for the private operator



# International Examples of Definition of Force Majeure

## **UNCITRAL: Legislative Guide on Privately Financed Infrastructure Projects**

- The United Nations Commission on International Trade Law (UNCITRAL) defines Force Majeure as risk that the project may be disrupted by unforeseen or extraordinary events outside the parties' control.

## **World Bank: Guidance on PPP Contractual Provisions**

- Force Majeure refers to events that occur outside either entity's control. Neither entity is better placed to manage the risk of such occurrences or their consequences, and therefore such risk will be shared.



## **Key features of Force Majeure events**

- Unpredictability/ Un foreseeability
- Un controllability
- (Materiality)

# Evolution of FM clause in Japan- Case of Sendai City

- The definition of FM for PPP projects has been gradually clarified through the disaster events.
  - At the early stage, the definition of FM simply lists examples of disaster types, so that it was not clear for both parties to determine to what extent damages would be covered by the FM clause.
  - In 2005, Miyagi Earthquake occurred and damaged 90% of the ceiling of the indoor pool built and operated under PPP, injuring 35 people. The investigation committee concluded that the risk management between the public and private was not clear enough.
  - In the PPP contract of the Astronomical Observatory project built after the Miyagi Earthquake, numerical definition was given and boundary of responsibility assumed by the private operator was made clear. (An earthquake of seismic intensity 4 or lower or a lightning strike due to a faulty lightning protection system is considered not FM) .
  - In the PPP contract developed even later than the above, not only were the numerical criteria was used for determining FM, but the surrounding conditions were also taken into consideration in defining FM (see the next slide)



to 3.1 Sendai Astronomical Observatory



# Scope of FM- Case of Sendai School Meal Supply Center Project

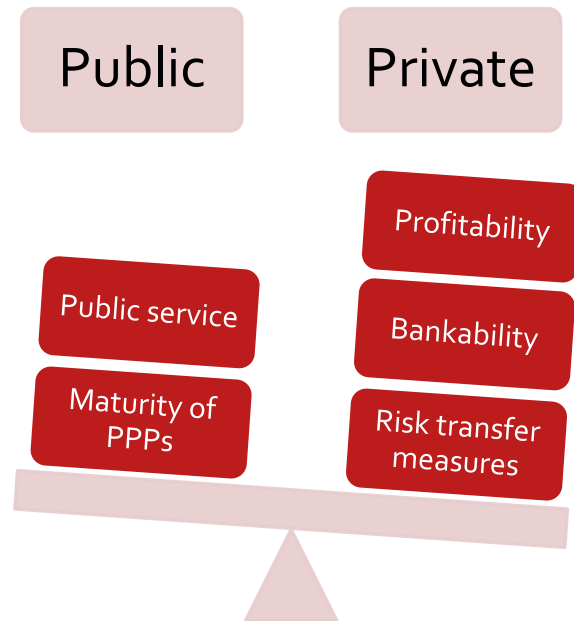
Classification	Scope of FM
Earthquake	It shall be regarded as FM if the earthquake has a <b>measured Seismic Intensity of 6.5 or higher</b> , has a Japan Meteorological Agency Seismic Intensity scale of 7, has a surface horizontal acceleration of approximately 500 gal, occurs rarely, is bigger than the Great Hanshin-Awaji Earthquake and has damaged more than <b>half of the surrounding buildings that were built around the same time under similar conditions equally or more severely than the building of the project.</b>
Storm	It shall be regarded as Force Majeure if the wind pressure on each part of the building exceeds the reference <b>wind speed of 30 meters per second</b> (average wind speed in 10 minutes at 10 meters above the ground), which is defined in the Building Standard Law, and the same time, <b>more than half of the surrounding buildings that were built around the same time under similar conditions have been damaged equally or more severally than the building of the project.</b> Although localized seismic singularity and phenomena such as downburst shall be regarded as Force Majeure, the private operators have to prove these phenomena to contracting authority.
Snowfall	For heavy snow, the private operator can estimate whether the amount of snow will eventually exceed the design load if it was left alone and can prevent damages resulting from heavy snow by removing the snow as needed or taking other measures. Therefore, <b>it shall not be regarded as Force Majeure even if the amount of snow has exceeded the design load.</b>

# Cost Allocation and Compensation/ Relief Measures

If the damages caused by disaster events that are not categorized as FM should be covered by private operator, and the damages fallen under FM clause will be shared between the public and private in accordance with the cost allocation and compensation clauses.

- **Cost allocation**
  - The private contractor continues to be paid as if it is performing in full; or
  - The private contractor is paid an adjusted amount to cover debt service costs; or
  - The private contractor is not to be paid at all. This will in part depend on the availability of insurance.
- **Compensation/ relief measures for private operators**
  - Exemption period for performance of services; and/or
  - Compensation for Services during the exemption period; and/or
  - Changes in contract terms (e.g. extension of the contract period); and/or
  - Contract cancellation

# Considerations for Determining Risk Allocation



## 1. Importance of the project as public services

- Whether the service cannot be stopped and the public intervention is necessary.

## 2. Project profitability

- Whether the project can expect upside of earning and absorb more risks/costs.

## 3. Bankability and available private finance and maturity of PPP market

- Maturity of PPP market. Whether the market players are familiar with disaster risks and have appetite for taking those risks?

## 4. Availability of risk transfer measures and the costs

- Availability of insurance at reasonable cost. Total value for money and commercial viability need to be taken into account.
- For case of Japan, private operators have a growing interest in earthquake insurance, but the supply capacity and the number of insurance companies that can underwrite earthquake insurance in the reinsurance market has grown sluggishly, resulting in a supply shortage and high insurance premium.

## ***Reference: Insurances Used for PPPs in Japan***

### **a. Construction insurance and fire insurance**

- Damages caused by winds and floods are covered by common construction insurance, fire insurance, and other types of insurance to compensate for property damage. In many PPP projects, it is mandatory to obtain such property insurances, however, fire, explosion or other damages caused by earthquakes are usually not covered.

### **b. Earthquake provision attached to fire insurance**

- Earthquake and Tsunami can be covered by adding an earthquake provision to the fire insurance.

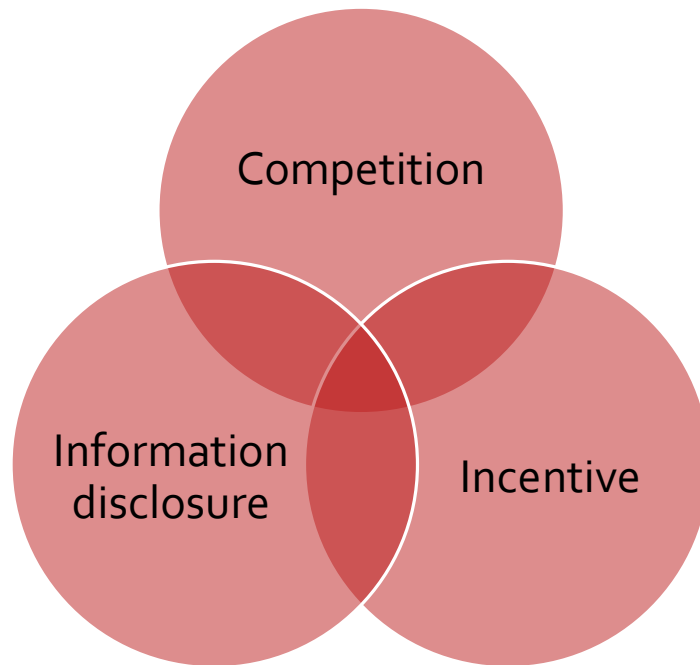
### **c. Advanced Loss of Profits insurance**

- It covers profit loss caused by business interruption due to disasters or suspension of provision of basic infrastructure service.

# **3 . Procurement, Monitoring and Contract Management**

# Procurement

Procurement, monitoring and payment mechanisms are vehicles to incentivize the private sector mainstreaming DRM measures.



## **1. DRM specifications for securing minimum standards**

- Including DRM related specifications in design level, operation level, maintenance level
- Setting clear performance requirements

## **2. Evaluation criteria on DRM**

- Using resilience-oriented evaluation criteria for bid proposals

## **3. Disclosure of disaster-related information**

- Proper disclosure of the information held by public entities and past disasters as to minimize uncertainties



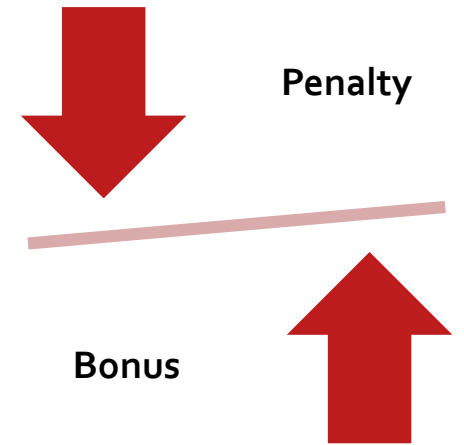
# Monitoring and Payment Mechanism

## 1. Payment reduction as a penalty

- If services have not been provided in accordance with the DRM related specifications or proposals, a reduction in the availability payment is considered as to encourage the appropriate performance of services.

## 2. Bonus payment

- On the contrary to the item above, if a service is maintained or quickly restored through the private operator's efforts at disaster events, additional points /payments can be added on as bonus.

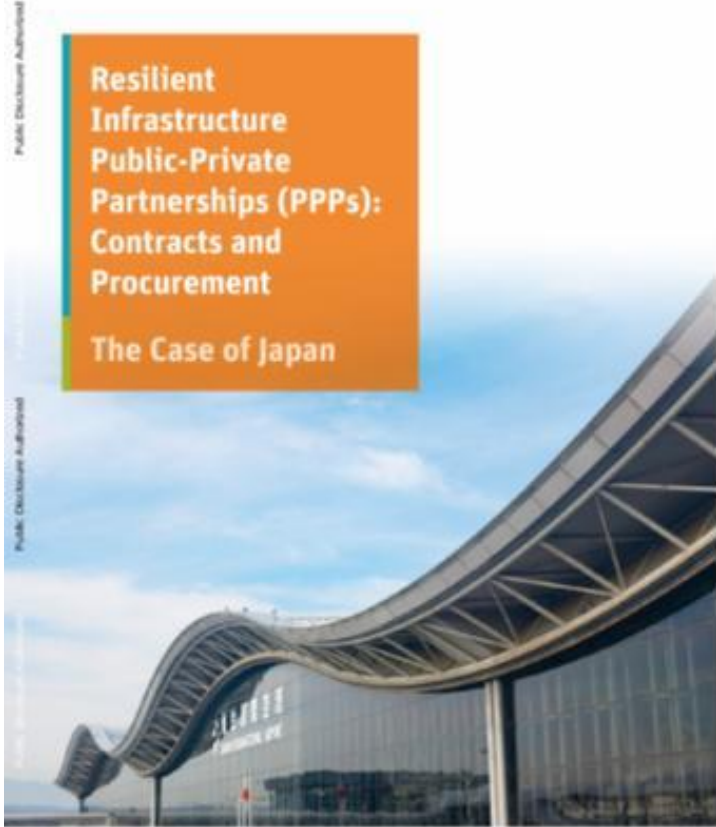


### The School Meal Supply Center (Sendai):

When the Great East Japan Earthquake struck the area in 2011, the School Meal Supply Center at Sendai responded quickly and was restored more than 2 months faster than other similar facilities operated by Sendai City. This was mainly owing to independent actions for recovery taken by the private operator that were not restricted to administrative budgetary burden procedures, while the private operator had the flexibility to procure materials required for recovery by using its supplier network. In addition, the economic incentives such as payment mechanism is considered to positively affect the speedy recovery.

# References

- The Case of Japan: Full report is available at <https://openknowledge.worldbank.org/handle/10986/29208>
- The Case of India (Country Brief): <http://pubdocs.worldbank.org/en/230011532671561538/India-PPP-Country-Brief-drmhubtokyo.pdf>
- Solutions Brief: to be published in September, 2019



# Thank you!

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