

Understanding of TDA through activities of TC21, and future challenges

- Study of the key words through technical survey in Tacloban city, Philippines -

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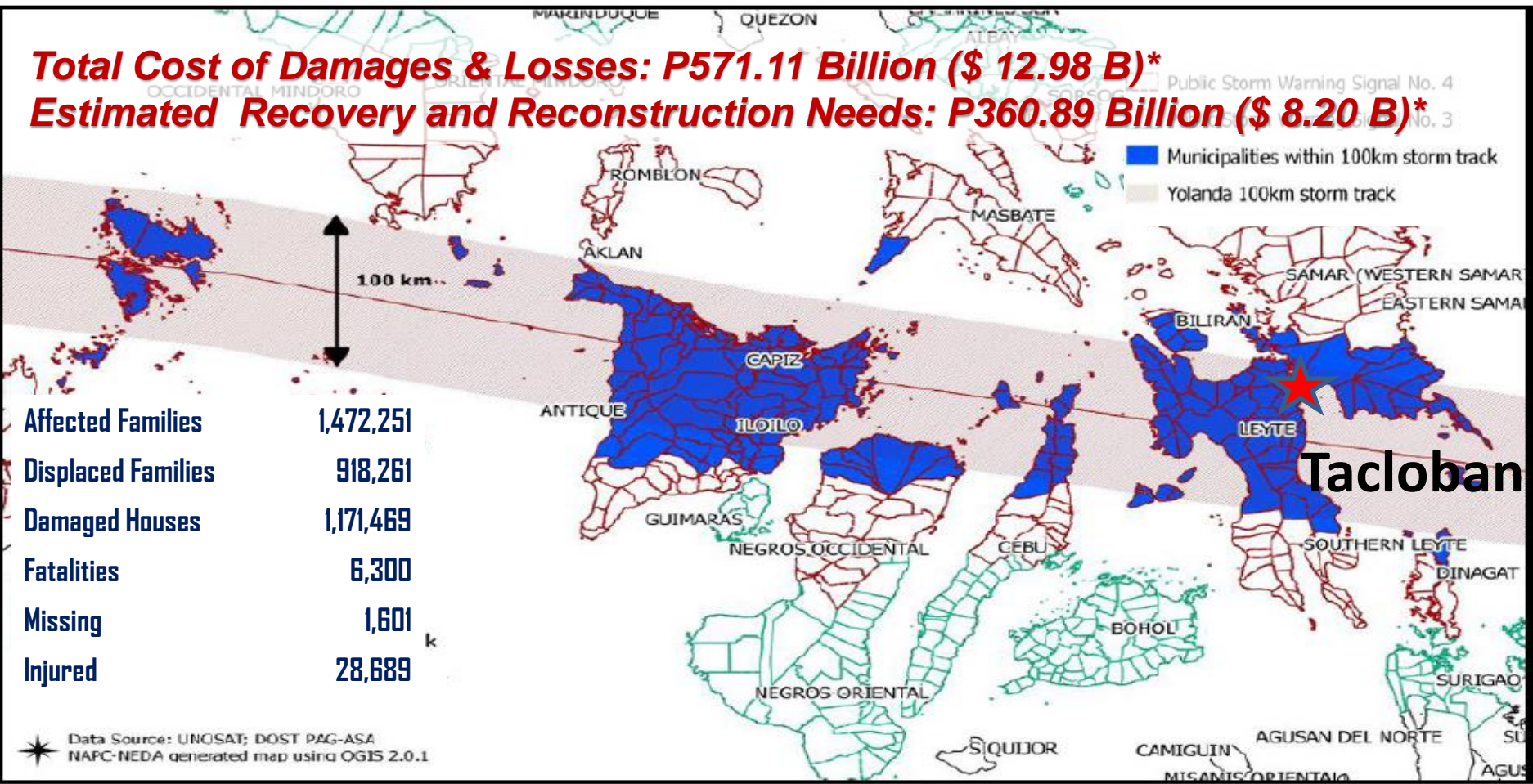


Disaster

Slide made by DPWH June 2016

Effects of Super Typhoon Haiyan (Yolanda) – November 2013

Total Cost of Damages & Losses: P571.11 Billion (\$ 12.98 B)*
Estimated Recovery and Reconstruction Needs: P360.89 Billion (\$ 8.20 B)*



Republic of the Philippines
Department of Public Works and Highways
Effects of Super Typhoon Haiyan (Yolanda) – November 2013

Tacloban City: Before

Tacloban City: After



Vulnerability 'Root causes'

- Informal settlers
- Lack of preparedness: awareness program and training

For example warning for 'storm surge' was issues. However, people did not know what 'storm surge' is. (DPWH: Mr.Ted Jopson, Ms.Rowena Purificaion)

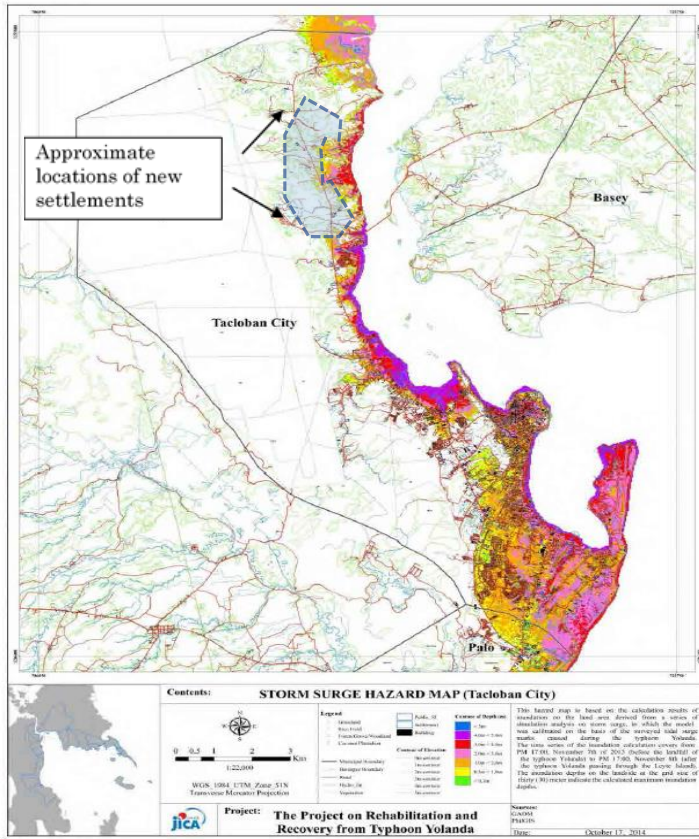


Water front of Tacloban (Photo taken by TC21 in November, 2016)



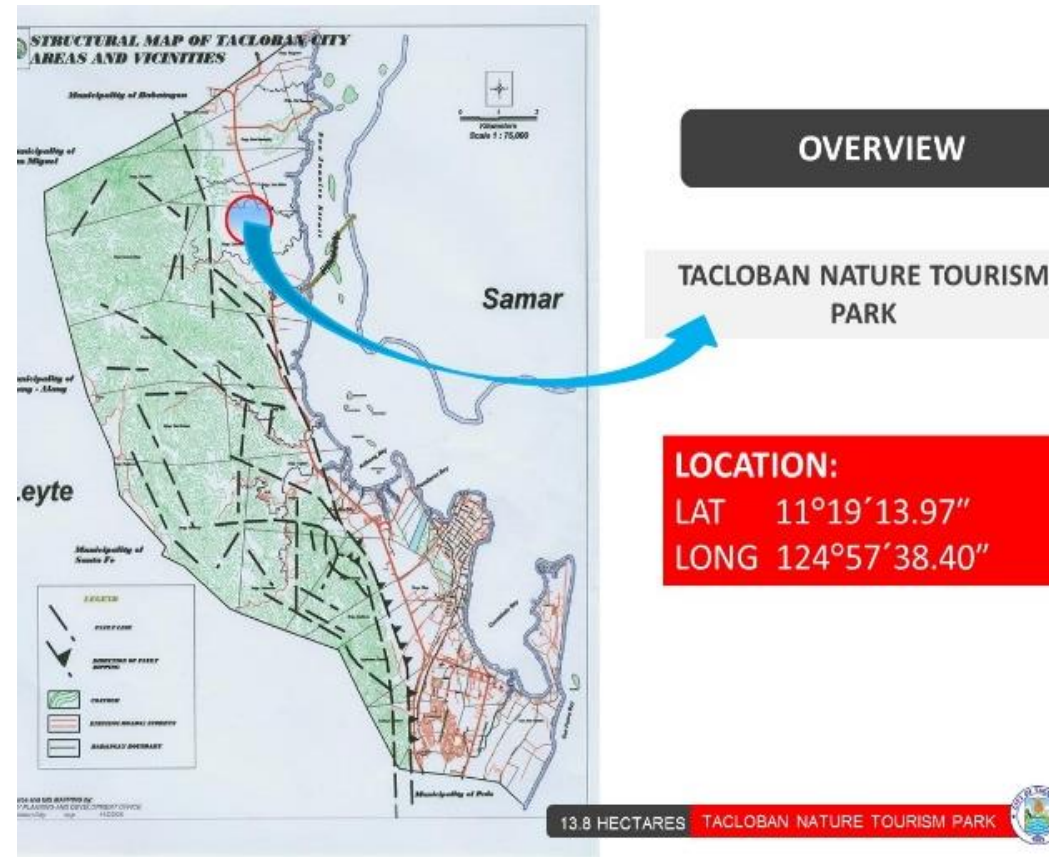
Water front of Tacloban (Before Yolanda, slide by DPWH)

'Science-based' Recovery plan: An example of livelihood development



出所：JICA 調査団

図 2.2-1 高潮ハザードマップ (タクロバン)



Hazard map for planning the recovery and development area for tourism

The new settlement and development is selected in a safe area which was decided based on the risk assessment.

Left figure: Texts are added to the figure in JICA's report on "Emergency Assistance in Philippines for Relief and Recovery from Typhoon Yolanda, 2015") Right figure: Slides made by City of Tacloban

'TDA' of regional recovery

Housing and schools at the new settlement area (Photos by TC21)



TILAPIA FISH POND



GREEN HOUSE NURSERY



Tourism, agribusiness, and fishery related businesses are being developed, considering the skills and cultural background of the affected communities.

Slides made by City of Tacloban

13.8 HECTARES TACLOBAN NATURE TOURISM PARK



Subsidy program is develop to help informal settler move to the safe areas.

'Scientific knowledge-based'

City has made the recovery plan based on scientific data, advices, and options

Planning and implementation of DRR **City**

• Risk assessment
• Prevention measures

Flood and landslide analysis
*National Science institutions:
Mines and Geoscience bureau*

Storm surge analysis
*Donners and private sectors:
JICA etc.*

Prevention measures and sustainable development

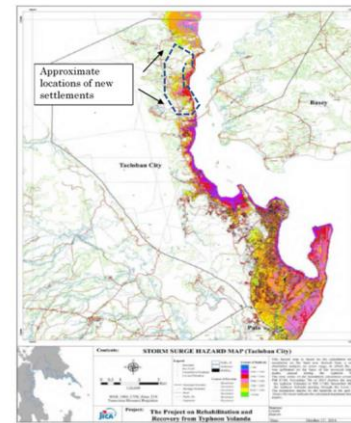
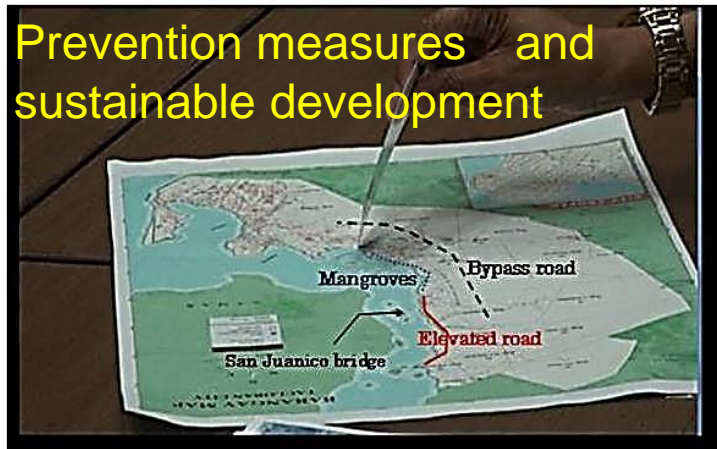
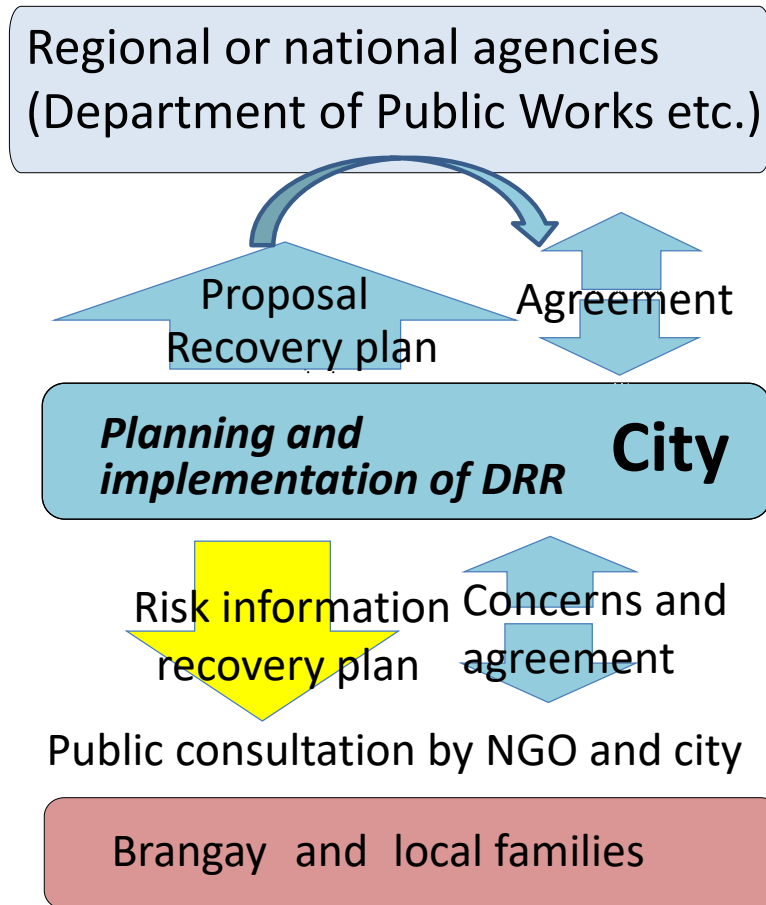


図 2.2-1 高潮ハザードマップ (タクロバン)

'Decision-making process'

The city makes the preliminary plan and explain it to the local stakeholders and residents through public consultation. After reaching the consensus of the majority, the draft plan will be prepared.



City is the main actor

Leadership

**Transparency
and trust**

TDA and the main actor

Leadership of the main actor is critical in implementing TDA. The city was empowered with **resources and authority** underlain with **trust** so that they took lead in the recovery project while collaborating with Donor, DPWH, DOST, communities, and private sectors.

Excerpts from Sendai Framework

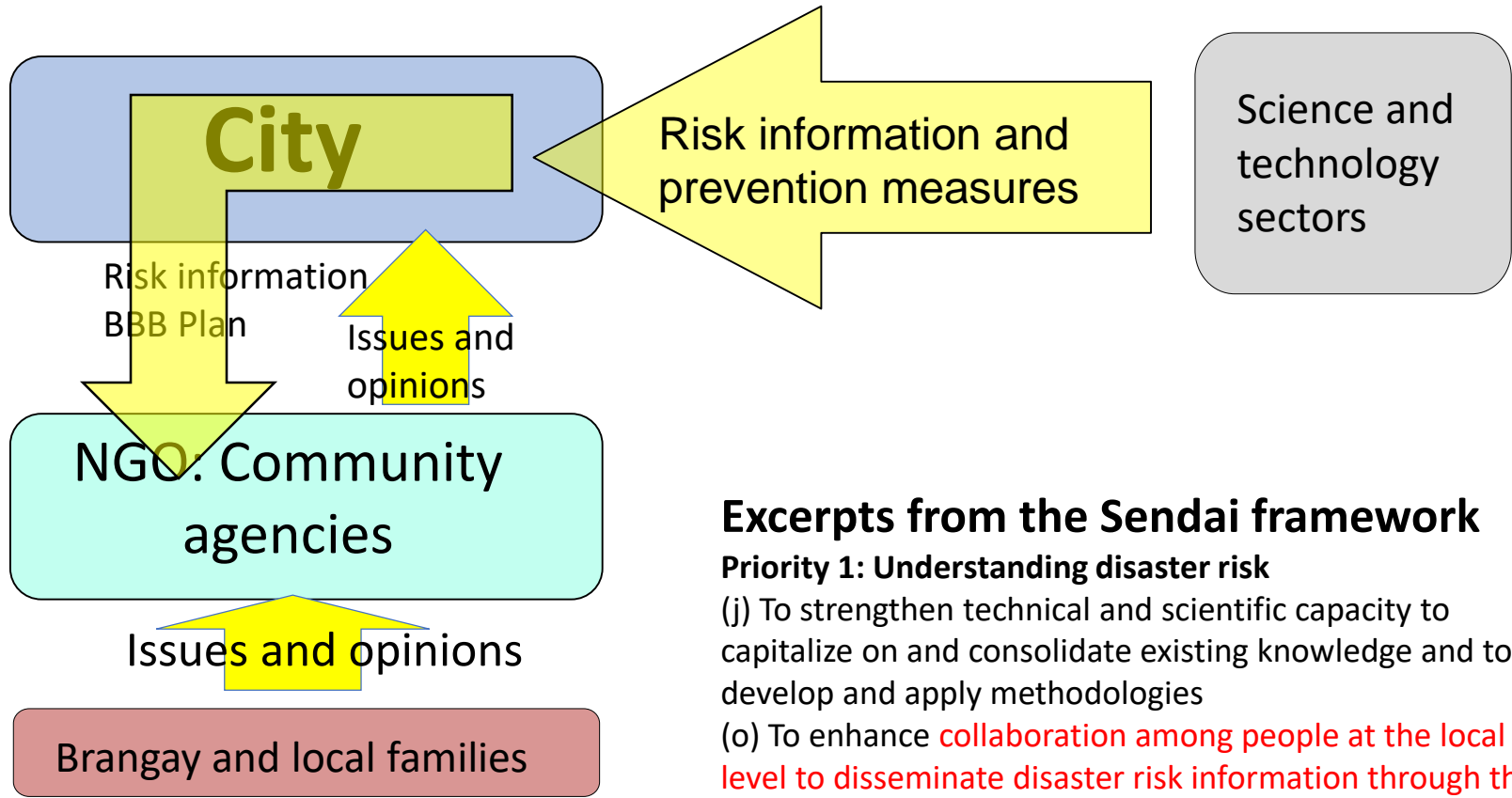
III. Guiding principles

(f) While the enabling, guiding and coordinating role of national and federal State Governments remain essential, **it is necessary to empower local authorities and local communities** to reduce disaster risk, including through resources, incentives and decision-making responsibilities, as appropriate;

'Knowledge-flow'

In the case of public consultation

City, NGO, and DPWH are working together to make easy-to-understand explanation of the risk, prevention plan, and development plan.



Excerpts from the Sendai framework

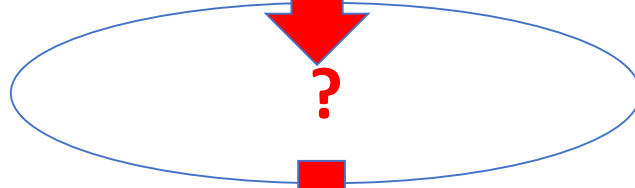
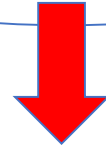
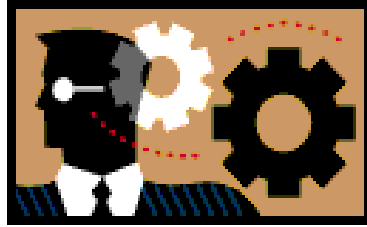
Priority 1: Understanding disaster risk

(j) To strengthen technical and scientific capacity to capitalize on and consolidate existing knowledge and to develop and apply methodologies

(o) To enhance **collaboration among people at the local level to disseminate disaster risk information through the involvement of community-based organizations and nongovernmental organizations.**

'Knowledge-flow'

Technology (scientists and engineers)



Humanware
Social capital
Governance
Institutional framework
Capacity building
etc

Future work

TC21 will continue working together to assess the actual cases of DRR and generate easy-to-understand fact notes that will help understand the way to build resilience by holistic and transformative process.

Prospective output

- Indonesia : Tsunami EWS; Prevention + preparation
- Vietnam : Coastal erosion; Prevention
- Pakistan : Earthquake; Recovery, Prevention, Preparation
- Nepal : Earthquake; Recovery,
- Taiwan : Typhoon: Prevention + recovery
- Philippines : Typhoon: Prevention + recovery



Hope to see you in Tokyo



CECAR (Civil Engineering Conference in the Asian Region) is a major activity of ACECC (The Asian Civil Engineering Coordinating Council) held on a triennial basis, and started in 1998.

Transparency

Plan for the public consultation must be explain in a rational and fair manner which requires that the plan be based on scientific knowledge. Consequently, public transparency is acquired.

Resilience

In addition to the DRR awareness program and public consultation, various social activities are performed by the city and the local community. Consequently, sound social capital is formed which in turn strengthens the resilience.