Natural Disaster Response (Damage Caused by Storm and Flood)

Purpose: Information
Submitted by: Korea
Natural Disaster Response
(Damage caused by storm and flood)

August 10 2018

Ministry of the Interior and Safety
1. Natural Disaster Management (Policy & Response)

2. Case Study: Typhoon ‘Prapiroon’

3. Future Directions for Improvement
Activities for mitigating, preparing, responding and recovering from disasters

- Activities to reduce and prevent disaster risks
- Activities to prepare actions needed to be taken in case of disasters
- Activities to recover from damages done by disasters and restore pre-disaster status
- Activities to respond to disasters, including emergency relief, rescue and first aid measures

“Mitigation, preparedness, response and recovery are cyclically related. Activities and results of each step influence the next step”
Mitigation

Adjustments to disaster prevention performance targets

- Considering the changes to recent rainfall patterns, ‘disaster prevention performance targets’ are adjusted upwards, i.e., the volume of rainfall that can be handled by small streams and sewage pipes on a local level is increased

  * The maximum hourly rainfall is revised upwards from 72.6mm to 74.6mm → suggestions are made to adjust disaster prevention performance targets on a local level → disaster prevention plans are currently prepared and relevant facilities are provided to meet the adjusted targets

Improvements to prior consultations on examination of factors influencing disaster

- Prior consultations on examination of factors influencing disaster, which used one-size-fits-all standards, will be based on more detailed standards that takes into account each project’s size and type (from October 2018)

<table>
<thead>
<tr>
<th>Project type</th>
<th>Present</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>Prior Consultations on Examination of factors</td>
<td>Small-scale pre-disaster impact assessment</td>
</tr>
<tr>
<td>planning</td>
<td>influencing disaster</td>
<td>(surface area is larger than or equal to 5,000 m² but smaller than 50,000 m², length is longer than or equal to 2km but shorter than 10 km)</td>
</tr>
<tr>
<td>Development project</td>
<td>(surface area is 5,000 m² or larger, length is 2 km or longer)</td>
<td>pre-disaster impact assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(surface area is 50,000 m² or larger, length is 10 km or longer) (quantitative and engineering evaluation and earthquake risk evaluation is improved)</td>
</tr>
</tbody>
</table>

- Prior consultations on examination of factors influencing disaster was introduced in August 2005 to allow prediction and analysis of disaster risks that may arise from development projects, from as early as the project planning stage
## Adjustment to the criteria for special weather report

The following adjustments are made to reflect recent trend in torrential rain:

<table>
<thead>
<tr>
<th>Types</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy rain watch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 hours</td>
<td>-</td>
<td>60mm</td>
</tr>
<tr>
<td>6 hours</td>
<td>70mm</td>
<td>-</td>
</tr>
<tr>
<td>12 hours</td>
<td>110mm</td>
<td>110mm</td>
</tr>
<tr>
<td>Heavy rain warning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 hours</td>
<td>-</td>
<td>90mm</td>
</tr>
<tr>
<td>6 hours</td>
<td>110mm</td>
<td>-</td>
</tr>
<tr>
<td>12 hours</td>
<td>180mm</td>
<td>180mm</td>
</tr>
</tbody>
</table>

* Shorter threshold time period is expected to prevent and mitigate potential damages from heavy rain.
Response

- New regulations for prevention of vehicle submersion are being formed to allow towing and emergency traffic control in riverside areas.
  - Revisions to the Disaster and Safety Management Act are underway:
    - (Present) human → (Future) human, automobile, and ship damage

**Ranking and controlling areas prone to vehicle submersion (243 areas)**

- Controlling criteria by rank: Grade 1 (2 areas, heavy rain advisory), Grade 2 (40 areas, heavy rain watch), Grade 3 (201 areas, heavy rain warning)
1 Disaster Management Policy & Response System

Recovery

- Increase public responsibilities in disasters in private sectors
  - For retaining walls and embankments in steep slopes of private properties prone to landslides, the government provides assistance* for safety inspection and emergency follow-up procedures
    * Relevant regulations are introduced to allow government assistance steep slopes within private properties (criteria for steep slope disaster risks evaluation, ‘18.1)
  - From 2018, disaster management funds can be used to recover private property damages if certain conditions are met

- Increased assistance to disaster recovery
  - Financial assistance to disaster recovery is gradually adjusted upwards and the recovery assistance takes more damage characteristics into account
    * Recovery grant for damaged fruits and vegetables is based on more reasonable cost, and flood insurance products cover not only houses and greenhouses as it did before but also other properties
  - Problems with the designation of special disaster area are addressed
    - As only cities, counties and districts were eligible to be designated as special disaster areas, small towns and villages were unable to receive any assistance even if they suffered huge damages.
      (before) municipal-level (city(si), county(gun), district(gu)) → (after) submunicipal-level (town(eup), township(myeon), neighborhood(dong)
2. Emergency briefing (June 29, 16:00)

2. Central Disaster and Safety Countermeasures HQ (July 1, 15:00)

3. End of emergency (July 4, 18:00)

- Types of Disaster: Typhoon
  - Lowest Pressure: 975 hPa
  - Diameter: 270 km
  - Highest Wind Speed: 32 m/s
  - Maximum Rainfall: 314 mm
Case Study: Typhoon Prapiroon

Standard Procedure

Situation Monitoring

Typhoon
Heavy rain

Situation
Management

Situation
estimation

Situational awareness

Request/Support

Declaration of National Disaster Situation

RUN

Central Disaster and Safety Countermeasures Headquarters

Declarations

Central Disaster and Safety Countermeasures Headquarters

Central Accident settlement headquarters

Local disaster and safety countermeasures headquarters

Central Safety Management Committee

CHAIRMAN: PRIME MINISTER
SECRETARY: MINISTER of the Interior and Safety (MOIS)

Emergency Restoration

Disorganization of CDSCH

Situation termination

Occurrence of Typhoon / heavy rain & Initial response

Running

Settlement & Restoration

Leading by MOIS
Case Study: Typhoon Prapiroon

Situation analysis and emergency meeting

7th Typhoon Prapiroon’s path (as of 10 PM, June 30)

- Analysis of similar typhoons in the past
  - Bolaven in 2012 (Aug 20-29)
    - 11 dead, KRW 636.4 billion property damage
  - Gonpas in 2010 (Sep 1-3)
    - 18 dead, KRW 167.4 billion property damage

Emergency meeting
Case Study: Typhoon Prapiroon

Central Disaster and Safety Countermeasures HQ

National Disaster Response System

Central disaster and safety countermeasures HQ

- Director: Prime Minister (catastrophic disaster)
- Director: Minister of the Interior and Safety

Central Accident Response HQ

City and Province Disaster and Safety Countermeasures HQ

Town/Village Disaster and Safety Countermeasures HQ

Local Accident Response HQ

Central Accident Response Support HQ

Integrated Support HQ

City and Province Emergency Rescue Control HQ

Metropolitan Rescue HQ

Local Rescue HQ

Central Emergency Rescue Control HQ

On-site command post

(land: firefighting, sea: coast guard)

Support

Central agencies and relevant organizations

National administrative agencies and relevant organizations
Case Study: Typhoon Prapiroon

Disaster Support System (13 collaboration functions)
(Domestic) Take anticipatory measures for climate change

- Update laws and regulations (i.e. adjust the current disaster prevention criteria to reflect climate change such as an increasing trend in torrential downpours

  * The current criteria, based on past statistical data, cannot reflect unusual weather conditions such as heavy rain

(International) Enhance international collaboration in disaster safety efforts

- Improve disaster mitigation capability by sharing disaster information and collaborating with neighboring countries

  * In particular, considering typhoon paths are very subject to change, information sharing with neighboring countries is essential from the early developmental stage
Thank you!