Results of Taipei City Government & citizens working to promote self prevention

Hydraulic Engineering Office, Public Works Department
Deputy Director Wu, Chiou-Shiang
1. Regional environment
2. New thinking on disaster prevention
3. Community promotion of disaster prevention
4. Results & benefits
5. Conclusion
Introduction

1. Regional Environment

- Local environment
  - Surrounded by mountains on North, East, & South sides
  - Tamsui & Xindian River flows thru South & West side
  - Keelung & Jingmei River runs thru the middle & South side
  - Area: km²
    ✓ 55% hillside
    ✓ 45% flat land

- Hydrological environment
  - Average annual rainfall: 2,400mm
  - Average annual rainfall days: 165
  - Rivers’ steep slope flows are highly concentrated
2001 Typhoon Nari disaster

- Max hourly rainfall: 148.5mm/hr
- Flooded area: 43km²

Depth 0.5m~1.0m

Nanhu Bridge

Flooding in MRT

Keelung River
Regional Environment

2012 Saola & 2015 Soudelor

2012 Typhoon Saola Tamsui River

2015 Typhoon Soudelor Tamsui River

2012 Typhoon Saola Xindian River

2015 Typhoon Soudelor Xindian River
Regional Environment

6/17/2016 torrential rain

- Max rainfall: **114 mm/hr.**
  - Jiuzhuangli Neighborhood: **32 mm/10mins**

- Taipei City rain gutter maintenance standard:
  - 78.8 mm/hr.
  - 13.1 mm/10mins

7/22/2019 torrential rain

- Max rainfall: **136.5 mm/hr.**
  - 30.5 mm/10mins

06/02/2017 torrential rain

<table>
<thead>
<tr>
<th>項次</th>
<th>河川</th>
<th>監測站名稱及3級警戒水位(公尺)</th>
<th>達3級警戒時間</th>
<th>達高灘地時間</th>
<th>最高水位(公尺)</th>
<th>發生時間</th>
<th>水位上升速率(公尺/小時)</th>
<th>蘇拉颱風最高水位(公尺)</th>
<th>蘇迪勒颱風最高水位(公尺)</th>
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<tbody>
<tr>
<td>1</td>
<td>基隆河</td>
<td>南湖大橋6.4(高灘地7.6)</td>
<td>12:30</td>
<td>13:10</td>
<td>8.02</td>
<td>13:50</td>
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<td>7.57</td>
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<td>2</td>
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<td>撫遠抽水站(基6堤外停車場6.25)</td>
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<td>-</td>
<td>6.01</td>
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<td>2.14</td>
<td>6.04</td>
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<td>3</td>
<td>基隆河</td>
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<td>13:30</td>
<td>4.72</td>
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<td>2.9</td>
<td>4.76</td>
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</table>

6/2~3 24hr rainfall map

基隆市基金一路上淹水，一輛計程車險遭滅頂，幸好乘客與司機緊急從車窗爬出。（民衆提供）
Facing the challenge of climate change
Flood symbiosis, flood resilience
Flood warning, disaster self-prevention

Dense urban development
runoff increases & subsequent drainage expansion is difficult to carry out

Increase in extreme rainfall events

Yuanshanzi Flood Diversion Project

7/22/2019 Zhongxiao E. Road section 4

2015 Typhoon Soudelor Tamui River
New thinking on disaster prevention

Public-private cooperation, community disaster self prevention

Self help → help others → public help = 7:2:1

Storm experience center
Water Control Experience Park

Riverside volunteers
Promotion process

3. Community promotion of disaster prevention

- Disaster prevention community team composition & training meeting
  - Promote idea of Disaster Prevention Community
    - Environmental diagnosis & discussion of disaster prevention issues
      - Organization establishment, task division, & operation
  - Select communities to conduct visits and exchange experiences based on merit
    - Disaster prevention & rescue training courses
      - Record & produce work
  - Training of disaster prevention individuals
    - Disaster prevention relief drills
Understand disaster prevention community

Listen & watch carefully to understand the disaster prevention community

Know what to do next

This is just the beginning, the team will accompany you in the future

Those who know how to give are the most blessed

Everyone is responsible for protecting their home & neighborhood
Everyone looks for trouble!
Open your eyes and look for it. Where is the danger in the community?
Understanding the community and environmental inspection

Who is faster than me?
Open your eyes, get moving, where do I live?
Mark the environment map (home and disaster site)

Share!
I know all the community dangers. Let me tell them to you
Share environmental map marking results

Use technology to produce real-time environmental survey videos
Use your head
Think about how to prevent disasters
Research disaster countermeasures

Must know
What do I do when disaster strikes?
Refuge center

Share!
I know all the countermeasures, let me share them with you
Share discussion results
Train disaster prevention personnel
Join a community organization

Be prepared for changes in disaster prevention and relief projects
You can’t predict disasters
What should I do when disaster strikes?
Home Disaster Prevention Course
(Fire, Earthquake)

Learn to save yourself and others
Follow me to do this, it’s not hard to save yourself and others
CPR, AED, dressing, fire extinguisher

Backpack and maps are essential
Be prepared during ordinary times & don’t panic when a disaster occurs
Introduction of disaster prevention backpack and map

Emergency CPR, AED
Community promotion of disaster prevention

Disaster prevention map

臺灣市 松山區 中華里 簡易水災疏散避難路線地圖

災害通報單位
市民災害電話：1999
消防局 電話：119
警察局 電話：110
松山區災害應變中心
姓名電話：02-87878787
災害電話：02-66150119
災害事務
電話：0936-719193

防災資訊網
臺南市防災資訊網
www.eoc.gov.taipei/EOC/

避難原則
水災：奉獻避難或預先撤離
地震：

避難收容處所

<table>
<thead>
<tr>
<th>名稱</th>
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<th>容納人數</th>
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<td>02-25850192</td>
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<td>02-25850192</td>
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<tr>
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</tbody>
</table>

圖例

- 災區 Village Boundary
- 水災疏散避難方向 Evacuation Shelter
- 戶內疏散避難所 Indoor Evacuation Shelter
- 户外疏散避難所 Outdoor Evacuation Shelter
- 水災疏散避難所 Evacuation Shelter

重要地標 Landmark

- 警察局 Police Department
- 消防局 Fire Department
- 急救責任醫院 Designated Hospital
Heping Neighborhood Chungyuan self help association providing hot meals for victims

Zhonghua neighborhood providing Jixing transportation to assist evacuations

Kuoyang Tire Co. assists in setting up flood gates in Dahu Neighborhood

ASUS providing venues and Tzu Chi providing tents in Yide Neighborhood

Characteristics of Taipei City Disaster Prevention Community

Community promotion of disaster prevention

MOU corporate cooperation
Community promotion of disaster prevention

Walk around & take a look

Teach others & learn from others

Visit to Meizhou community to learn environmental disaster prevention operations

Commander Wu of Yilan’s Meizhou Disaster Prevention Team sharing his experience

Visit to Taoyuan Shulin Neighborhood’s lotus flood ponds
### Ten situational exercises

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<th>演練項目</th>
<th>演練狀況</th>
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<tr>
<td>平時減災</td>
<td>【演練狀況一】</td>
<td>平時減災：清溝、巡勘、發防汛檢核表，落實自主防災檢查</td>
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<td>災前整備</td>
<td>【演練狀況二】</td>
<td>災前整備：自主防災社區動員整備與任務說明</td>
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<td>【演練狀況三】</td>
<td>災前整備：里長進行警報發布與提醒住戶豪雨預備</td>
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<td>災中應變：防水閘門的操作、沙包的堆疊</td>
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<td>【演練狀況七】</td>
<td>災中應變：部分路段已開始積淹水，疏散引導居民，強制撤離</td>
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<td>【演練狀況八】</td>
<td>災中應變：避難收容處所開設，地震發生，民衆暈倒，急救</td>
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<td>【演練狀況九】</td>
<td>災後復原：發電機、抽水機操作</td>
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<td>【演練狀況十】</td>
<td>災後復原：解除豪雨特報，收容民衆返家，環境清潔及復原</td>
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</table>
Must keep up disaster prevention drills in case of emergencies

Self disaster prevention community prepare before disaster

Erecting flood gates

Removal of fallen trees
Community promotion of disaster prevention

Ten situational exercises:
well executed self-disaster prevention ensures a safe home

ditch cleaning and normal preparation
Prepare before disaster
Collect sandbags
Response team established
Operating flood gates
Stacking sandbags
Evacuation
Shelters open
Earthquake response
CPR, AED
Clearing fallen trees
Operating generators & pumps
Shelter residents going home
3 independent and resilient flood communities: Zhonghua, Heping, and Yide neighborhoods
7 care and counseling communities: Dahu, Guangneng, Jiangshan, Fu'an, Fuzhou, Xingwang, Zhongzheng neighborhoods
4 Results and benefits

Build information platform

Taipei City Disaster Prevention Community Characteristics

Website and QR code of "Taipei Flood Resilient Community Portal"

https://sites.google.com/g.ntu.edu.tw/taipei-fdrc
Dahu Neighborhood builds a community info website: "Dahu community network".

Disaster mitigation and response during normal times, refer to information during emergency situations.

Water information related to disaster resilient communities.

Flood rescue operation mechanism, community disaster prevention map.

Strengthen disaster reduction during normal times, pre-disaster preparation, response during disaster, and post-disaster recovery.

Acquire disaster prevention knowledge, reduce property losses caused by disasters.

https://sites.google.com/a/g.ntu.edu.tw/fdrc-dahu/home

Dahu community disaster prevention Information site URL and QR code
Guangneng Neighborhood response team

Police & Fire units

Disaster Shelter

Results and benefits

Police & Fire Contact Information

Disaster evacuation map

Flood evacuation map

English evacuation map
Joint disaster prevention drill

- Improve community resilience and disaster prevention
- 5/28/2020 Dahu Neighborhood participated in the "Taipei Disaster Prevention and Resilient Community Shelter and Operation Workshop"
- Joint disaster prevention drills with Tzu Chi Charity Foundation, Taipei Neihu District Office, and Neihu Lekang Neighborhood

Deputy Mayor Huang takes a group photo with Dahu Neighborhood

Tzu Chi introduces shelter  Everyone assembles  Dahu Neighborhood assembles  Deputy Mayor Huang issued a certificate of appreciation to Dahu Neighborhood
Dahu neighborhood using Line to issue information

Results and benefits

6.11.2019
torrential rain
Typhoon Hagby

Results and benefits

monitor water conditions

8/3 Typhoon Hagby

Dahu Neighborhood

Neighborhood

26
4 Results and benefits

Dahu 8/22 prepares For Typhoon Bavi

Checking flood gates

Work division before the disaster

Closing flood gate

Placing sandbags
4 Results and benefits

8/27 torrential rain inspection

Yide Neighborhood inspection protect residents

Zhonghua Neighborhood Inspection of stagnant water

Inspecting Dagou Creek in Dahu
4 Results and benefits

Participate in the Water Resources Department evaluation and become an indicator community
Assist the central and local governments in joint flood control

Explanation and teaching of evaluation system content

7/5 Taoyuan Intensive Training Camp Agenda
Share information

Disaster prevention is more important than disaster relief, and disaster prevention is better than disaster preparation. Promote independent disaster prevention, joint learning and water symbiosis.

Typhoon rain strikes one after another. Public-private cooperation is the best disaster prevention for all.

A 3-minute promotional video for disaster prevention
https://youtu.be/AmDBBImqTME
THE END

Thank you!