



Climate adaptation in Tainan Creating a Sponge City

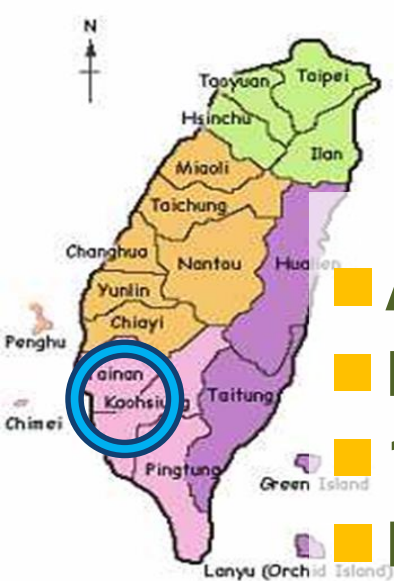


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2016.07.06

About Tainan



- **Area:** 2,192km² (Bonn, 141Km²); 37 districts
- **Population:** 1.88 million people (Bonn, 324 thousand)
- **1,280,000 motorcycles and 656,000 cars**
- **Livable city full of culture, ecology and economy**

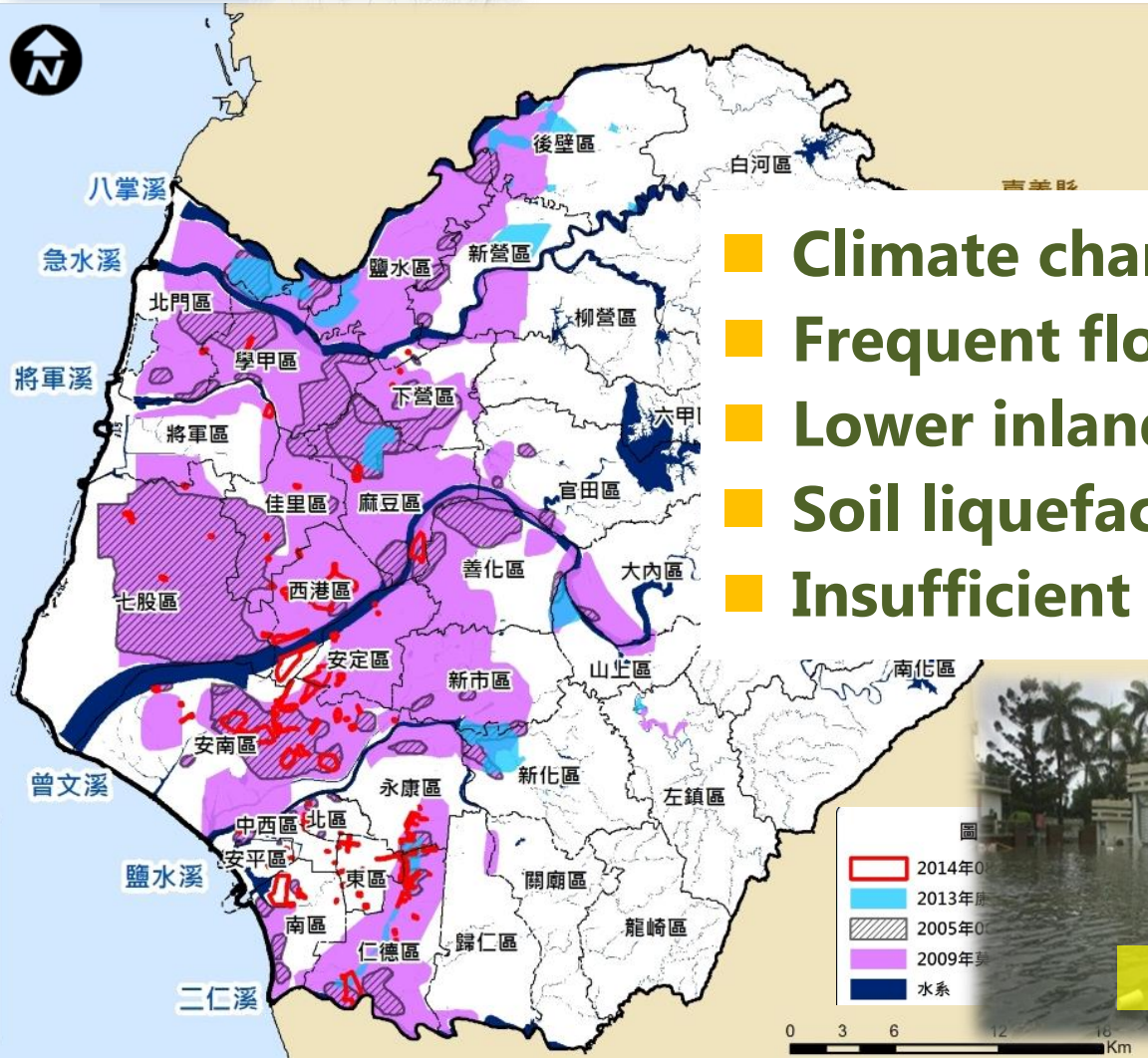


Tainan city's aerial view.



Challenges

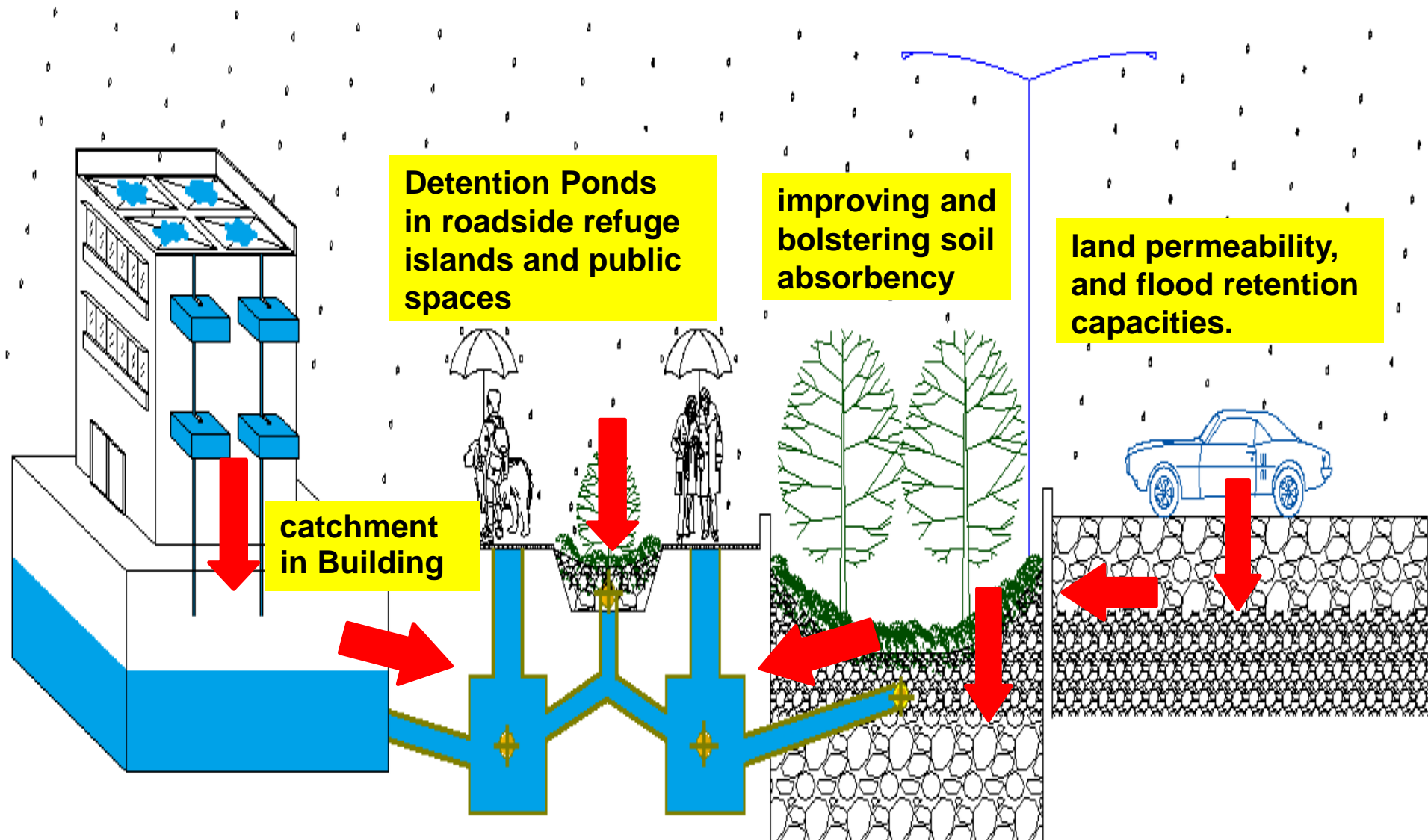
Taijiang Inland Sea



- Climate change and global warming
- Frequent flooding
- Lower inland sea terrain
- Soil liquefaction and fragility
- Insufficient rainwater sewer



Urban planning and Drainage



Create sponge city with zero surface runoff

**Retention Pond Setup
in public open spaces**



**Retention Ponds
embedded in roadside
refuge islands**



**Public rainwater
regulation pools**



Green roof setup



Setup of floodgate



Legal grounds greening



Community resilience

Mobile app

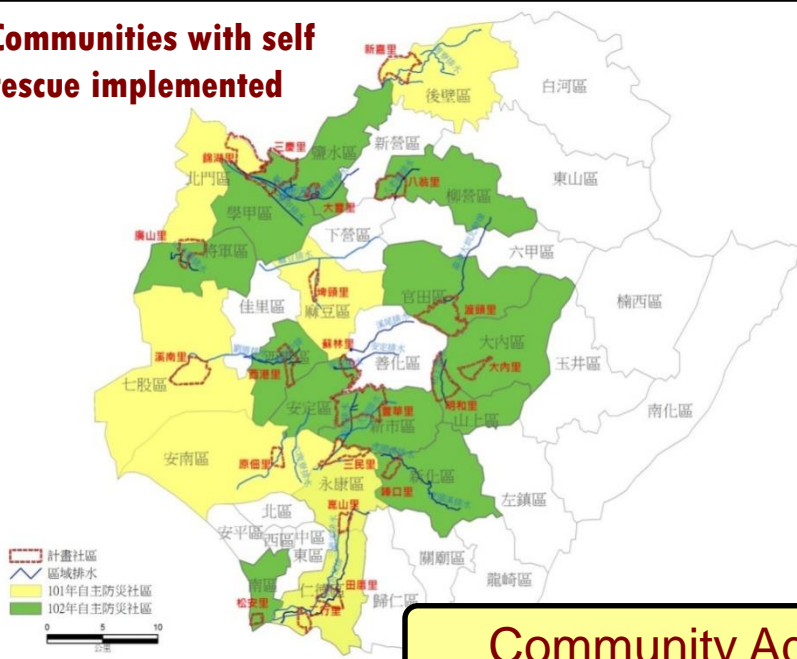


Tidal Information

Radar Echoes

Rainfall Information

Communities with self rescue implemented



Pumping stations and sluice gate



大腳腿排水開門



After

Increase height of construction



Community Adaptation workshop and Flood Prevention Drill

Smart Water Resource Disaster Prevention

Mobile 4G monitoring Infrastructure

- 330 Mobile Pumps



Pumps



4G Router

- 30 Pumping Stations



Wearable Cameras



4G Router

- 50 Water Level Monitoring Stations



Water Level
Monitoring Cameras



4G Router



4G



4G



4G

Citizen Info. distribution Service



PC



Android



IOS

Disaster Prevention System Integration Service

- 4G Real Time Video Monitoring Platform



Camera #1Camera #30

- Real Time Water Level Information & Disaster Prevention System



Water Level
Monitoring Info.



Real Time Water
Level Monitoring

- Distributed Data Backup System



Sub-Control
Station DB



Central Control
Station DB

Fixed/4G Infrastructure

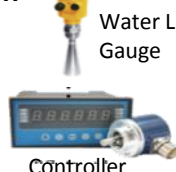
- Fixed Pumping Station



Oil Gauge



Pumps



Water Level
Gauge

Controller



Alarms



Fixed+4G Router



Industry
Computers



Fixed+4G Router



Sub-Control
Station Servers

- 50 Fixed Pumping Stations/ 6 Sub-Control Centers

- Sub-Control Center

Sustainable Development and Quality Life

Do right things at right time with Scientific knowledge!

Smart Living with Changing Climate!

