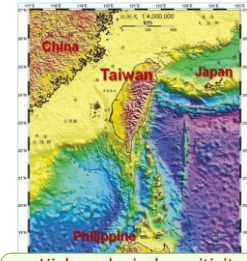
The Risk of Agricultural Disasters and Adaptation Strategies

Basic Information of Taiwan

- Geographic features
  - 400 km from north to south
  - 145 km from east to west
  - Area: 36,000 Km² over 70% in slope land
- Population
  - 23million, 67.70% in urban areas
  - Density: 641/ Km² (but 40,674 in highest district)
- Tectonic Conjunctions:
  - Philippine Sea plate
  - Euro-Asia Plate
- High risk of tropical cyclones
  - 3.6 typhoons/year



- High geological sensitivity
- Short rivers and rapid flows
- Precipitation season

Major Natural Disasters in Taiwan


Earthquake

5 Major Disasters


Landslide

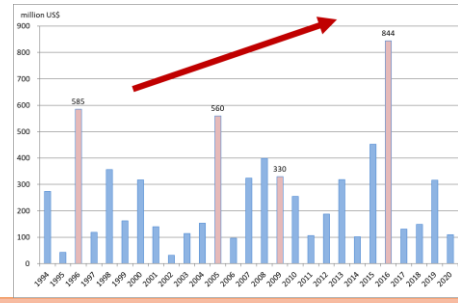

Typhoon


Flood


Debris flow

3

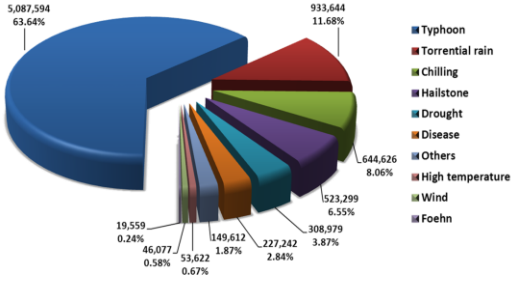
Historical Crop Loss by Weather Disasters



The annual crop loss is worth about 5 billion NTD in average.

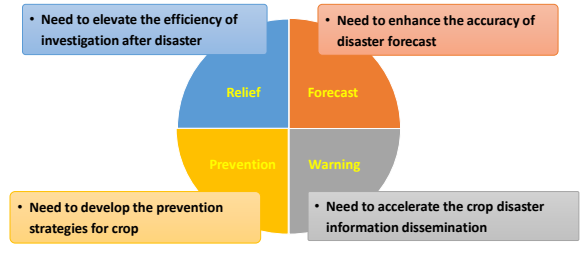
4

Crop Loss due to Different Disasters (1985-2020)



5

Current Gaps in Agricultural Disaster Prevention



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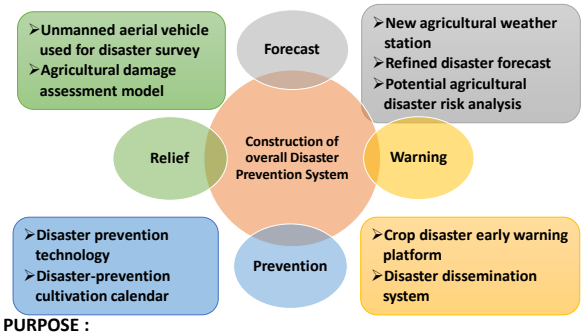
Project Content

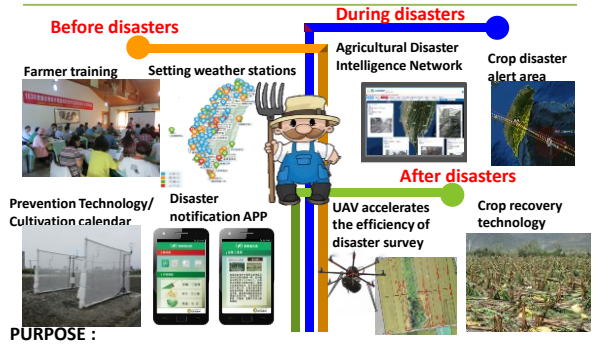


PURPOSE :

To build the overall disaster prevention system in Important crop production areas

7

Enhance Farmers' Autonomous Disaster Prevention Ability



PURPOSE :

To build the overall disaster prevention system in Important crop production areas

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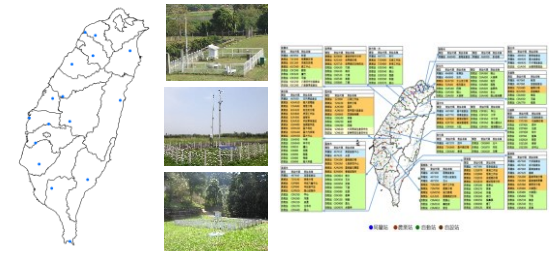
Agricultural Meteorological Stations

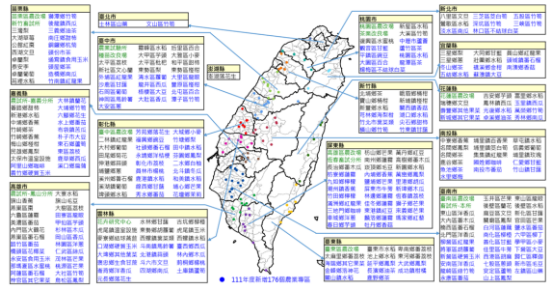


Before: 17 stations (2015)

Now: 176 stations (2022)

9

Refined Weather Forecasts for Crop Production Areas



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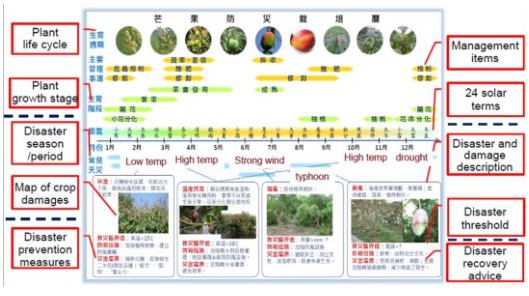
Crop Disaster-Prevention Calendar



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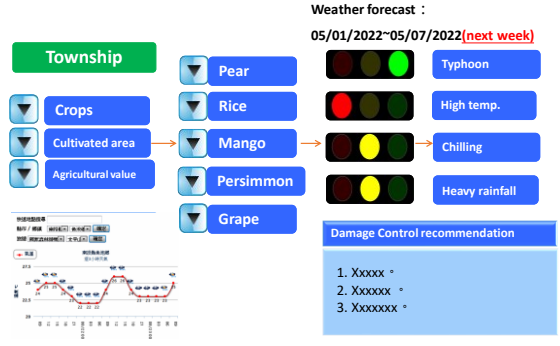
Crop Disaster Early Warning System



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Disaster Early Warning– Smartphone Application

13

Case Studies of Disaster-Prevention Technology - Windbreak Net to Resist Strong Winds

Crop is frequently lost by strong winds, the use of a windbreak net is a low-cost and simple disaster reduction strategy.



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Effectiveness of Windbreak Net during Typhoon



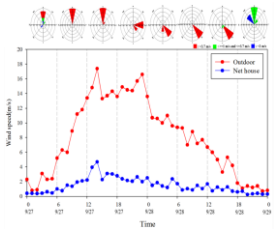

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Photo Card of Recommended Prevention

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Unmanned Aerial Vehicle (UAV) Technology and Disaster Survey

➢**Different spectral image processing technologies for yield loss determination.**

Image capture **Calculate damaged areas**

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Conclusion

We study on the adaptation strategies of disasters for coping with climate change in Taiwan, evaluate the vulnerability of domestic crop production against agricultural disasters, develop the disaster early warning system and suitable prevention techniques, and promote the farmer's autonomous disaster prevention ability to decrease crop loss.

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Thank you for listening！