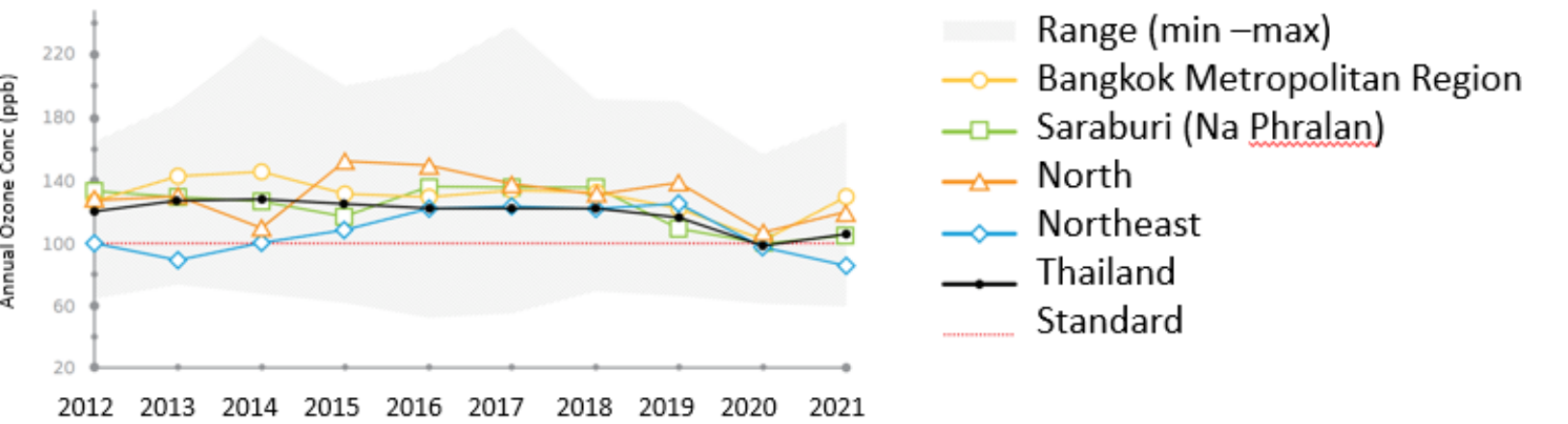
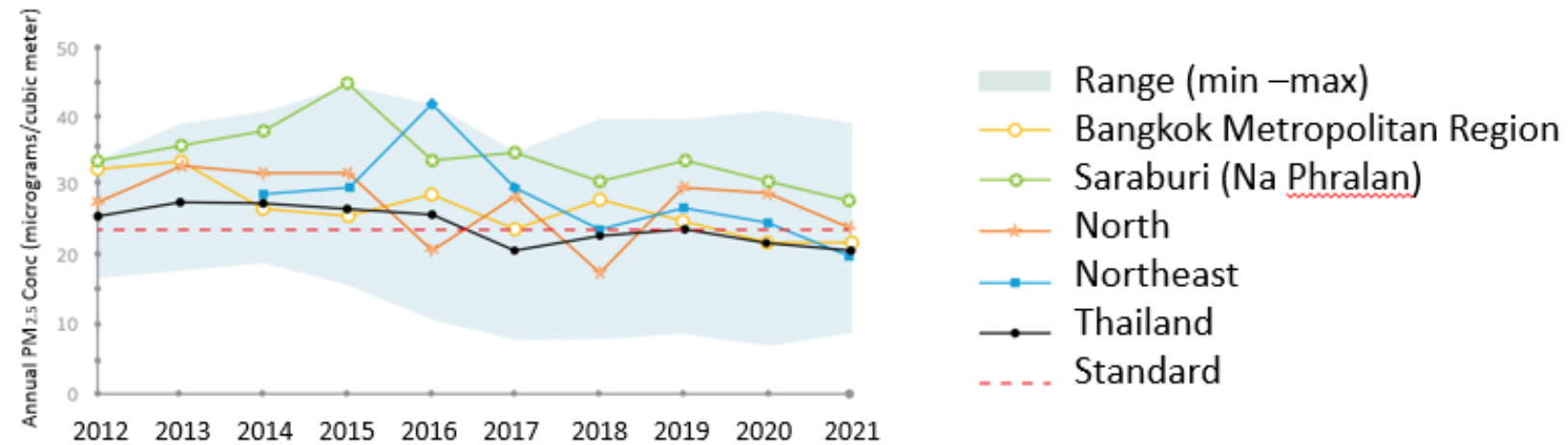


# Thailand Open Burning Management: Agricultural Sector

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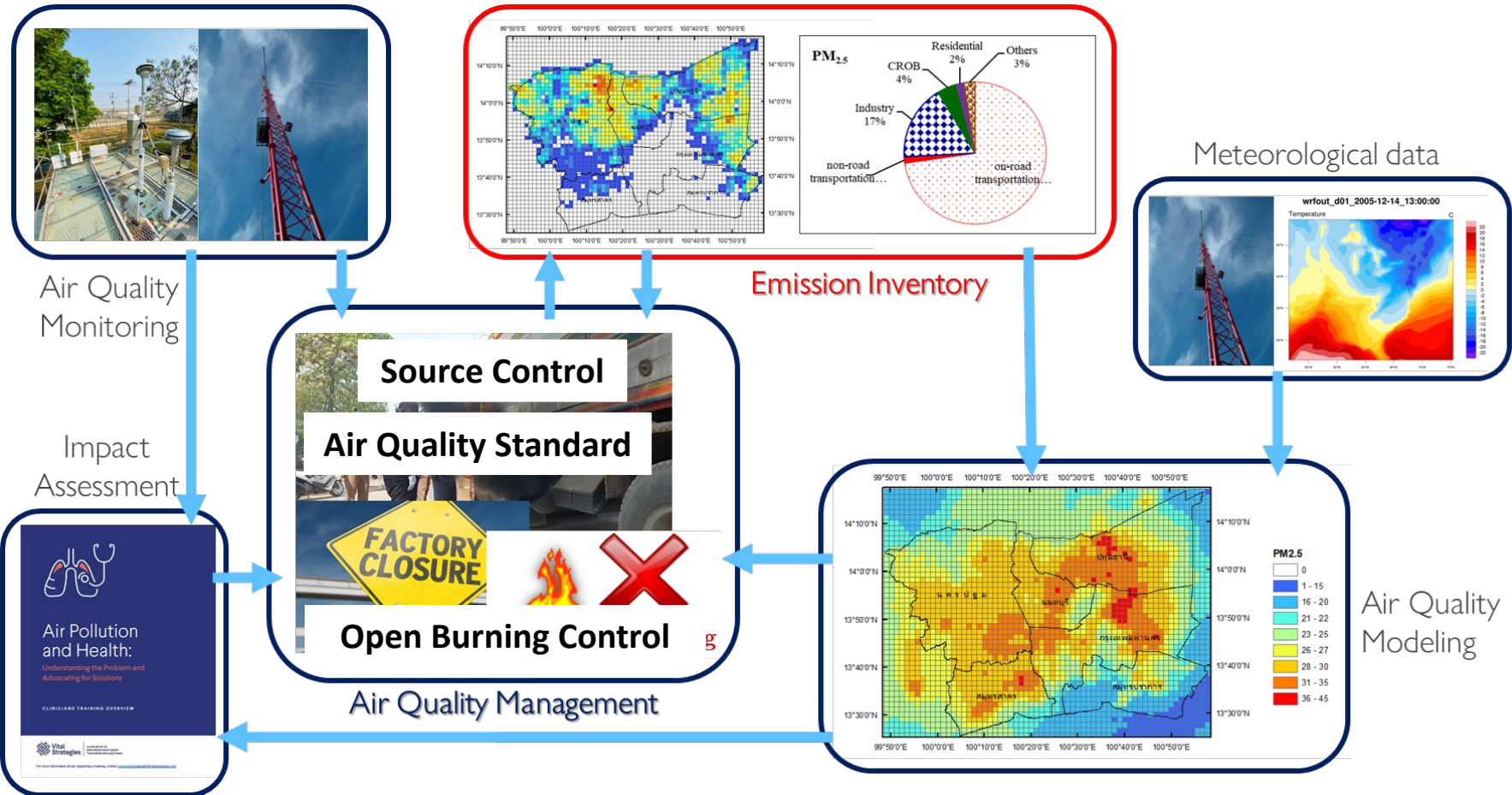
# Air Quality Situation in Thailand



- Criteria air pollutants
- PM 2.5 (PM10 in some area) and Ozone are still problems in Thailand
  - Others (NO<sub>x</sub>, SO<sub>x</sub>, CO) are well controlled



# Current Air Quality Management in Thailand



## Technologies

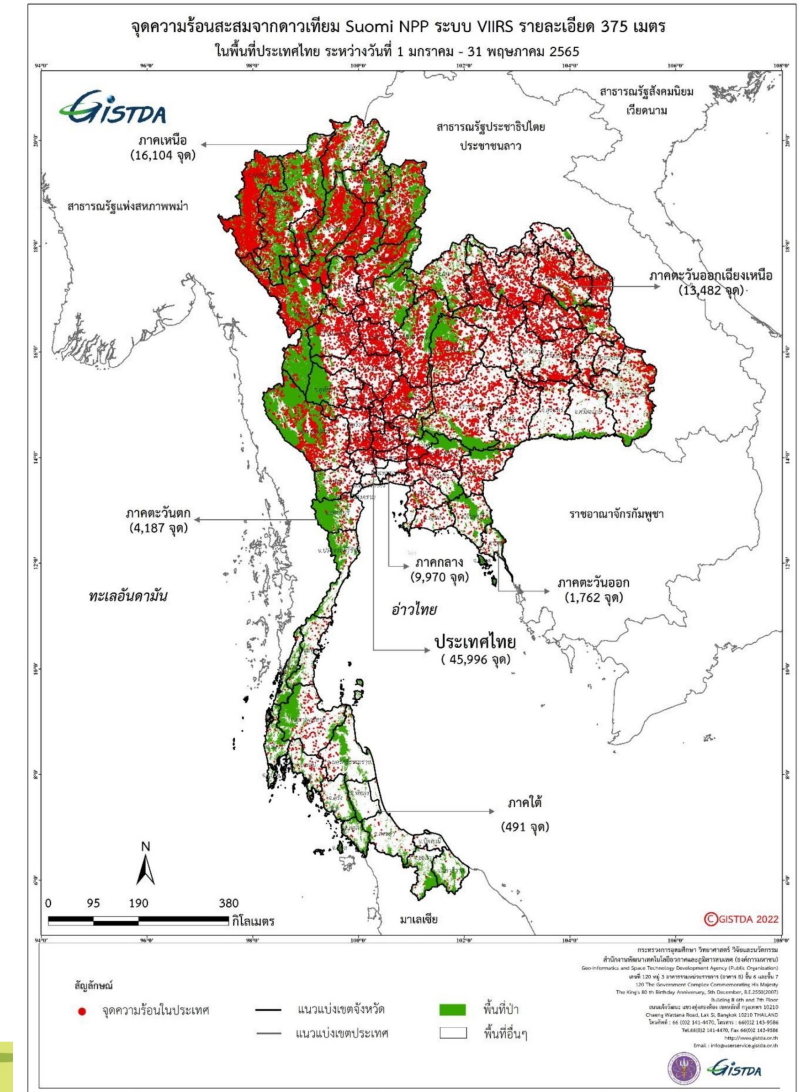
The 'Technologies' section displays two digital tools used for air quality management in Thailand. The top image is a screenshot of the **Air4Thai** mobile application, showing real-time air quality data for Chang Phueak, Muang, Chiang Mai on October 27, 2014, at 05:00. The app displays a 50 AQI and various pollutant levels: PM<sub>2.5</sub> (23 µg/m<sup>3</sup>), O<sub>3</sub> (51 ppb), CO (0.93 ppm), NO<sub>2</sub> (24 ppb), and SO<sub>2</sub> (4 ppb). The bottom image is a screenshot of a Thai government website (กรมส่งเสริมการค้าระหว่างประเทศ) showing air quality standards and a daily forecast for Bangkok (กรุงเทพฯ) for the 7th day of the month. The website lists standards for different groups (e.g., 30 S.A. for general public) and provides a daily AQI forecast with corresponding health advice.



# Open Burning is main source of PM2.5 in Thailand

## Cumulative hotspot in 2022 (data from GISTDA)

Area	North	Central	East	Northeast	South	West	Total	%
Urban	1,347	877	456	1,963	52	498	5,193	11
Forest	17,238	345	175	3,253	67	1,102	22,180	48
Agriculture	5,328	1,909	1,607	8,266	372	1,141	18,623	41
Total	23,913	3,131	2,238	13,482	491	2,741	45,996	
%	52	7	5	29	1	6		



# Burning of Agricultural Residues in Thailand

- During and after harvesting (Rice, Sugar Cane, Corn)
- Why farmers burn → Land clearing
  - Cost saving
  - Time saving
  - Less labour intensive
  - Believes, traditional attitudes, practices

# Policy Response

- Particulate Matters is Thailand National Agenda since 2019
- Ad-hoc plan for Particulate Matters mitigation year 2023  
“3 areas” urban-forest-agriculture “7 measures”

## “Proactive Communication”

1. Enhance public relation and warning people in advance for 7 days when problems tend to occur

## “Stepping Up Actions”

2. Step up measures to achieve the Action Plan to drive the national agenda on “Solving the Problem of Particulate Matter (PM2.5)” and relevant plans.
3. Step up fuel management (Systematic Fuel Management: BURN CHECK Collect and Use)
4. Closely command, supervise, and evaluate
5. Decrease hotspots/ prevent and control open burning/ develop Fire Danger Rating System (FDRS)
6. Enhance international mechanism in order to prevent and solve transboundary haze pollution

## “Building Up Participation ”

7. Promoting all stakeholder to join the particulate matter mitigation in the process of setting plan and solving problem

# Policy Response

- Early Warning System (Fire Danger Rating System: FDRS)
- Fuel Management
- Incentive
- Public Awareness and Engagement
- Reduction of Health and Environmental Risks



# Important Tool: Fire Risk Map

**Burning Fired Area**

- Burning area on 2015 - 2018
- Repeated (Year)
- Compare burn area (Year)

[Click to display](#)

**Fire frequency (times)**

1	2	3	4	5
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**Layers**

Cassava Growing Area from S...

16-31 พ.ค. 2566

(เริ่มปลูก)

16-31 พ.ค. 2566
01-15 พ.ค. 2566
16-30 เม.ย. 2566
01-15 เม.ย. 2566
16-31 มี.ค. 2566
01-15 มี.ค. 2566
16-28 ก.พ. 2566
01-15 ก.พ. 2566
16-31 ม.ค. 2566
01-15 ม.ค. 2566
16-31 ธ.ค. 2565
01-15 ธ.ค. 2565
16-30 พ.ย. 2565
01-15 พ.ย. 2565
16-31 ต.ค. 2565

Provided by GISTDA





# 3-Phase Action Plan

1. Preparation (November–December)	2. Operation and management (January–April)		3. Recovery and sustainability
	Before critical period	Critical period	
<ul style="list-style-type: none"> <li>• Policy declaration</li> <li>• Preparation meeting</li> <li>• Setting up common understanding</li> <li>• Data integration</li> <li>• Open burning management</li> <li>• Building fire break</li> <li>• Public relation</li> <li>• Awareness raising campaign</li> </ul>	<ul style="list-style-type: none"> <li>• Reporting and warning</li> <li>• Surveillance</li> <li>• Fire prevention and suppression</li> </ul>	<ul style="list-style-type: none"> <li>• Single Command</li> <li>• Law and Regulation Enforcement</li> <li>• Surveillance</li> <li>• Fire prevention and suppression</li> <li>• Reduction of air pollution and health impacts</li> <li>• Cooperation on transboundary haze pollution</li> </ul>	<ul style="list-style-type: none"> <li>• Recovery burned area</li> <li>• Promote zero-burning agriculture and community</li> <li>• Encourage the use of agricultural residue</li> <li>• Stakeholder engagement</li> <li>• ASEAN Haze Agreement</li> </ul>

# Agricultural and Forest Fire Management

- Set up SOP for Data dissemination & warning
- Preparation of vehicle, equipment and staff
- Resource Mobilization for fire monitoring: fire fighter, military, volunteer, helicopter
- Annual Exercise/Fire Fighting Training/ Training of Trainer
- Improving the coordination mechanisms among related organizations to share resources and working together
- Setting up village/community Forest Fire Fighting Team



# Systematic Fuel Management (Burn Check, Collect, and Use)

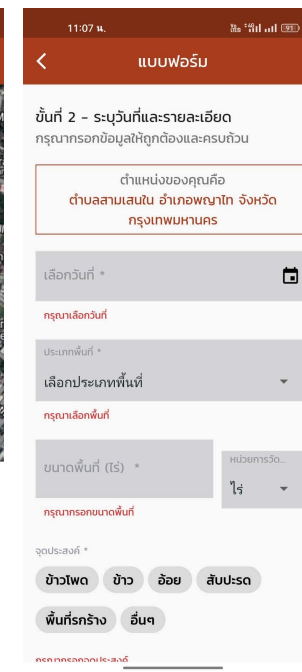
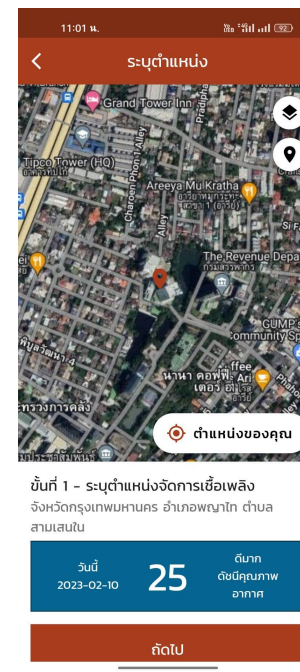
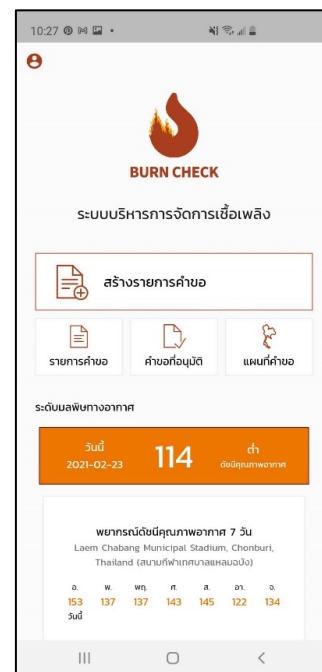
## 1. Value adding to agricultural residues

- Community base
- Bio-Circular-Green (BCG) Model

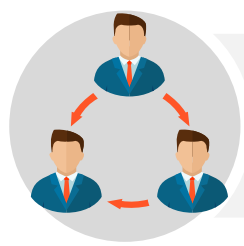


## 2. Open burning control

- Burn Check application





# Success Factors





After Action Review (AAR)

Open Burning Management



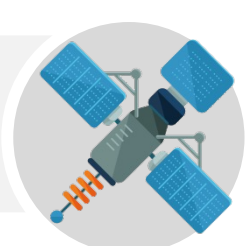
Management/ Single command

Risk assessment and appropriate response




Public-Private-People Collaboration

Technology and Innovation



ASEAN Cooperation





## Way Forward

- Utilisation of satellite data
- Fire management system
- Traceability
- Scaling up best practices
- Good Agricultural Practices (GAP) + PM2.5
- Agricultural technology and innovation
- Concrete collaboration in Mekong-subregion

# Thank you for your attention!

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