Operational Plans for Air Pollution Monitoring Networks in Korea

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National Institute of Environmental Research

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Introduction of Operational Plans for Air Pollution Monitoring Networks

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What are the challenges?

Operational Plans for Air Pollution Monitoring Newtworks

Installation/Management of the Air Quality Monitoring Network

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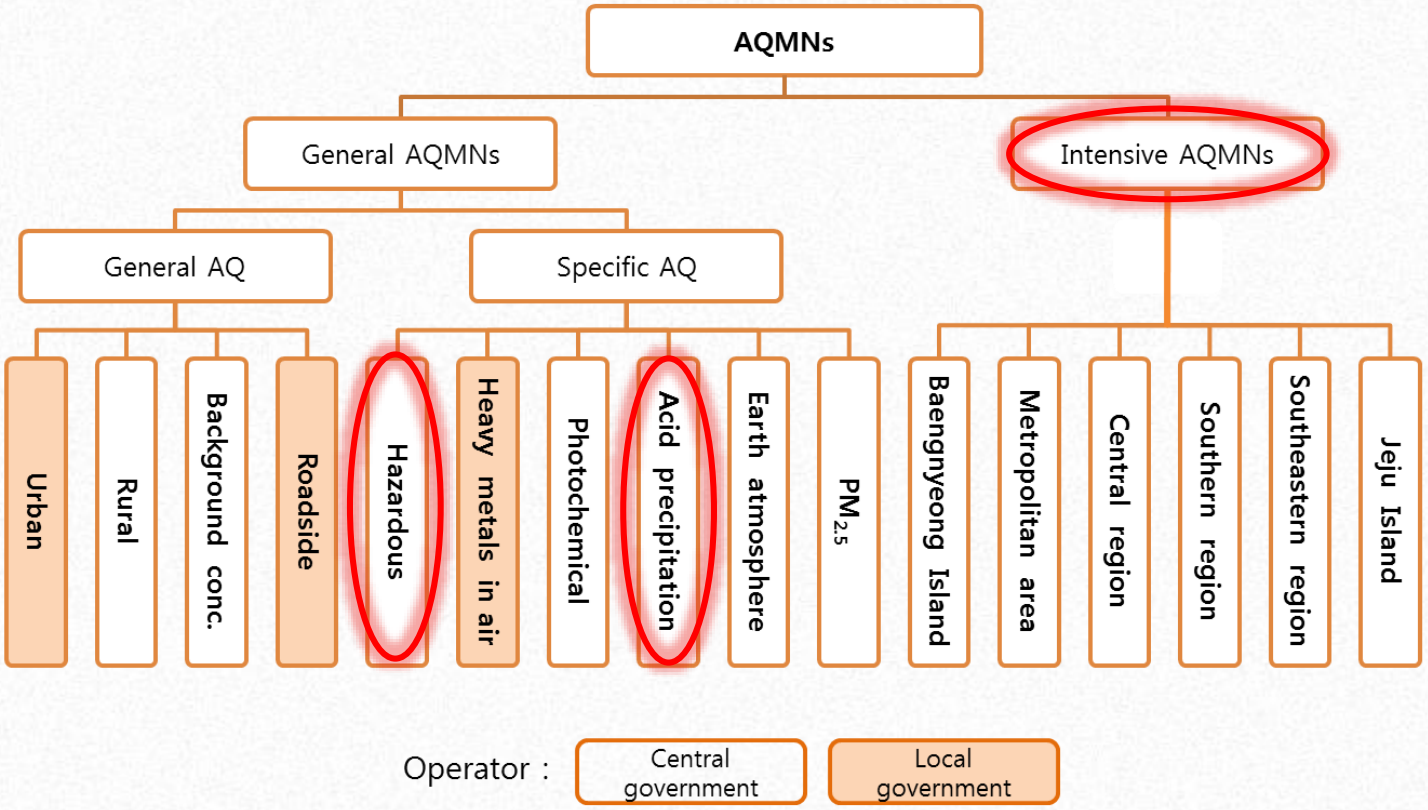
- Total of 509 stations in 344 locations nationwide (as of December 2016)
  - (MOE) 154 stations (76 locations)
  - (Local governments) 355 stations (306 locations)



National Mercury Monitoring Stations in Korea (12 stations, 2016)

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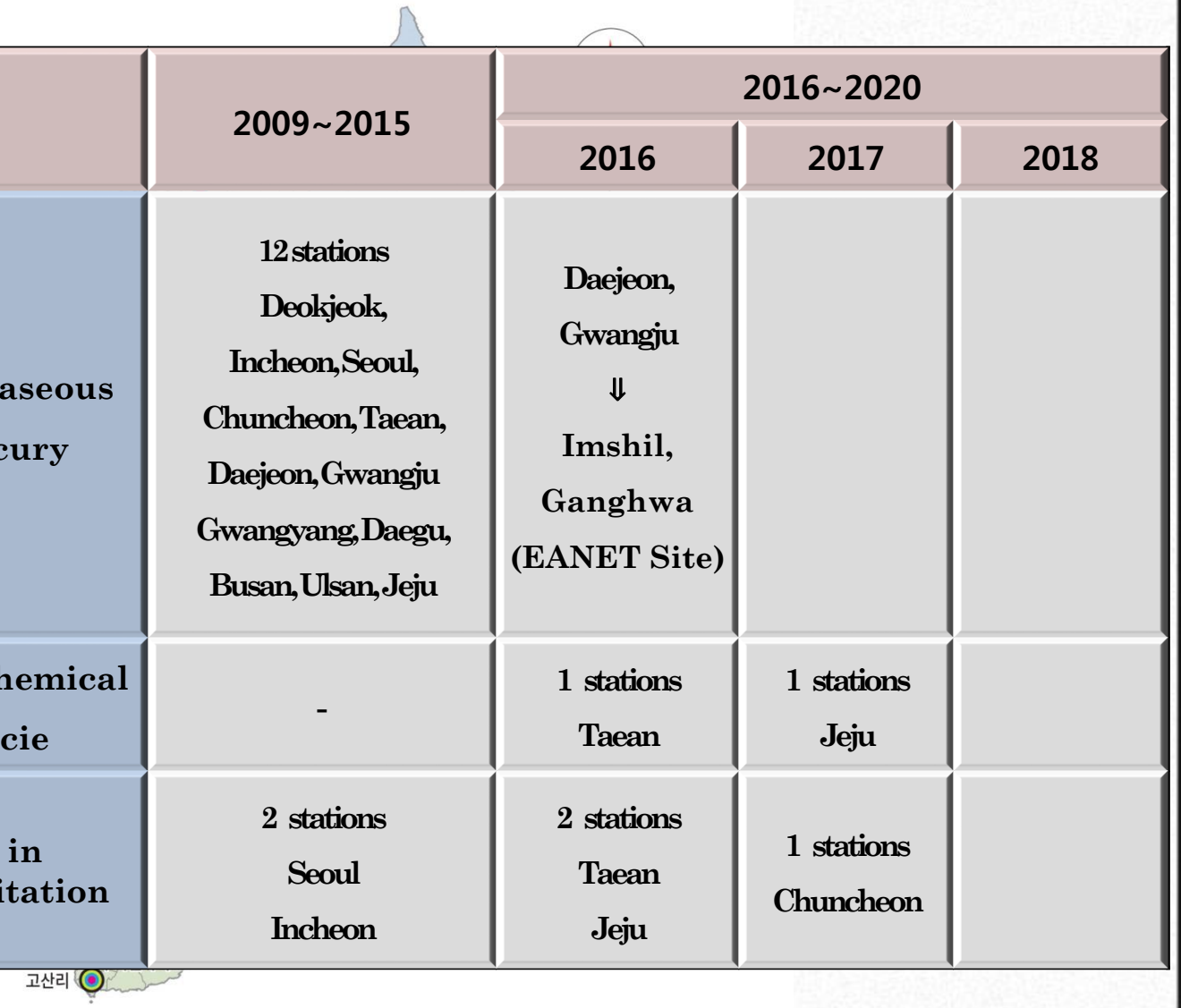
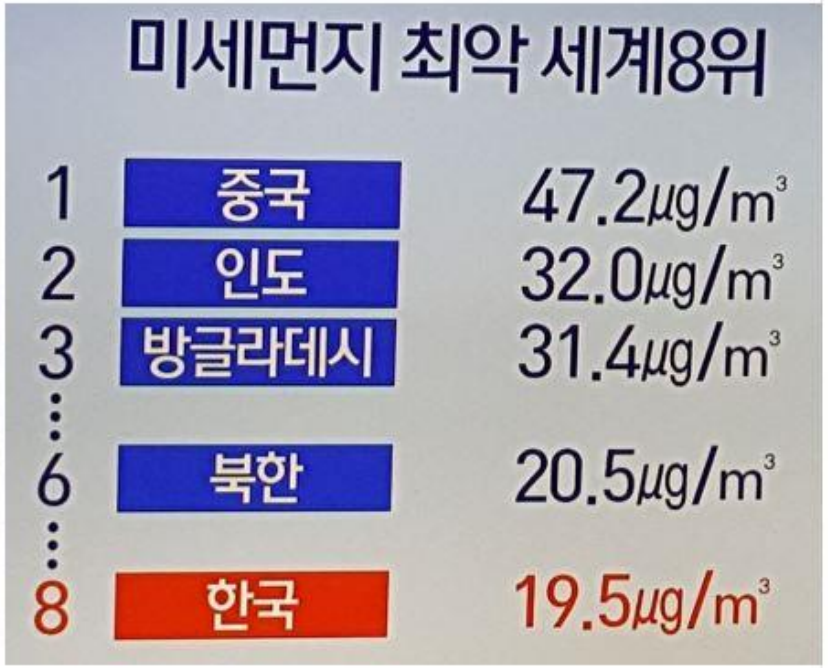
State		2009~2015	2016~2020		
			2016	2017	2018
Mercury Monitoring Stations	Total gaseous mercury	12 stations Deokjeok, Incheon, Seoul, Chuncheon, Taean, Daejeon, Gwangju Gwangyang, Daegu, Busan, Ulsan, Jeju	Daejeon, Gwangju ⇓ Imshil, Ganghwa (EANET Site)		
	Hg by chemical specie	-	1 stations Taean	1 stations Jeju	
	Hg in precipitation	2 stations Seoul Incheon	2 stations Taean Jeju	1 stations Chuncheon	



서울시, 미세먼지 이어 초미세먼지 주

수도권 심한 미세먼지 예상되면 긴급재난문자로 알려준다

이하정 기자 | 승인 2017.04.16 08:37

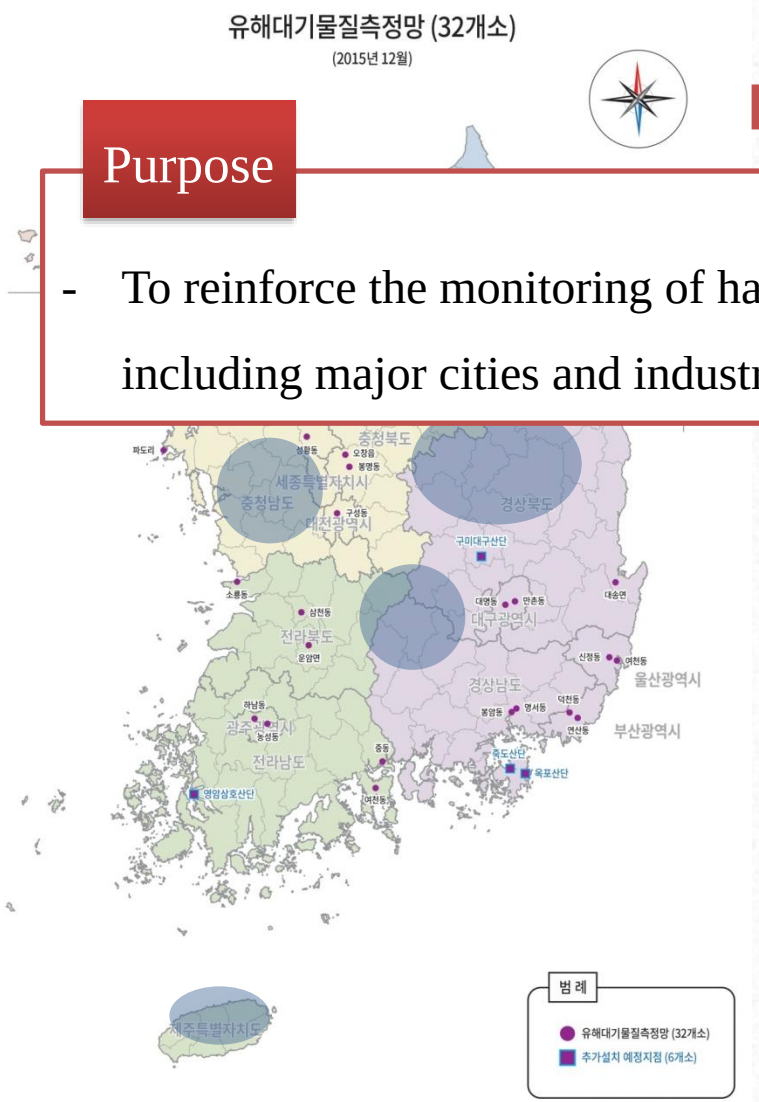


Amendments of Operational Plans

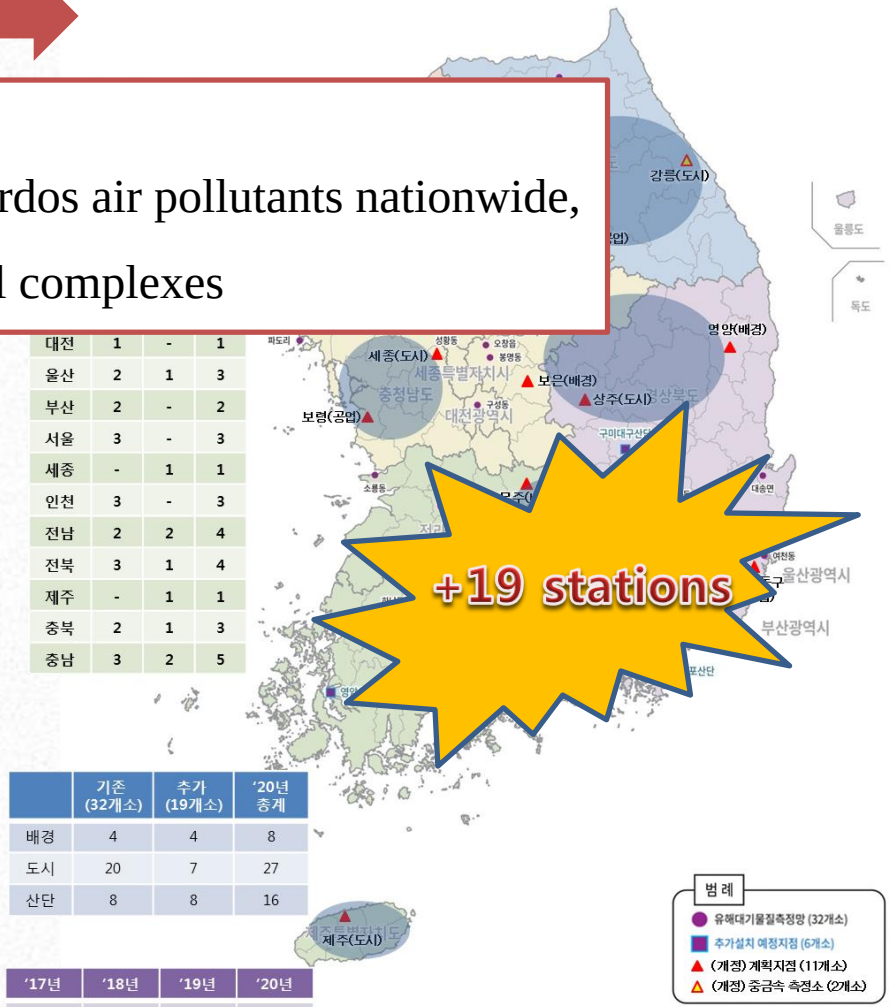
1 | Expansion of HAPMN & AHMMN

Distribution Chart of HAPMN & AHMMN

Distribution Chart (Current)



Distribution Chart (Future)



대전	1	-	1
울산	2	1	3
부산	2	-	2
서울	3	-	3
세종	-	1	1
인천	3	-	3
전남	2	2	4
전북	3	1	4
제주	-	1	1
충북	2	1	3
충남	3	2	5

	기존 (32개소)	추가 (19개소)	'20년 총계
배경	4	4	8
도시	20	7	27
산단	8	8	16

'17년	'18년	'19년	'20년
3개소	5개소	6개소	5개소

Purpose

- To reinforce the monitoring of hazardos air pollutants nationwide, including major cities and industrial complexes

Measurement Items

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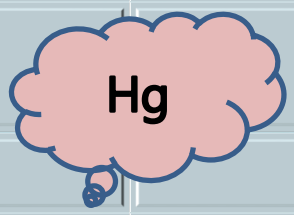
	Measurement Items
VOC (17 substances)	Benzene, Toluene, Ethylbenzene, m,p-Xylene, Styrene, o-Xylene, Chloroform, Methylchloroform, Trichloroethylene, Tetrachloroethylene, 1,1-Dichloroethane, Carbontetrachloride, 1,3-Butadiene, Vinyl chloride, Acrylonitrile, Methylene chloride, 1,2-Dichloroethane
Heavy Metal (12 substances)	Pb, Cd, Cr, Cu, Mn, Fe, Ni, As, Be, Ca, Fe, Mg
PAH (16 substances)	Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Dibenzo(a,h)anthracene, Indeno(123-cd)pyrene, Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Athracene, Fluoranthene, Pyrene, Benzo(g,h,i)perylene

Atmospheric Environmental Standards

Item	Standard
SO_2	Annual average less than 0.02 ppm 24 hours average less than 0.05 ppm 1 hour average less than 0.15 ppm
CO	8 hours average less than 9 ppm 1 hour average less than 25 ppm
NO_2	Annual average less than 0.02 ppm 24 hours average less than 0.05 ppm 1 hour average less than 0.15 ppm
PM_{10}	Annual average less than 50 ㎍/㎥ 24 hours average less than 100 ㎍/㎥
$PM_{2.5}$	Annual average less than 25 ㎍/㎥ 24 hours average less than 50 ㎍/㎥
O_3	8 hours average less than 0.06 ppm 1 hour average less than 0.1 ppm
Pb	Annual average less than 0.5 ㎍/㎥
Benzene	Annual average less than 5 ㎍/㎥



2 Expansion of IAQMN

Status of IAQMN

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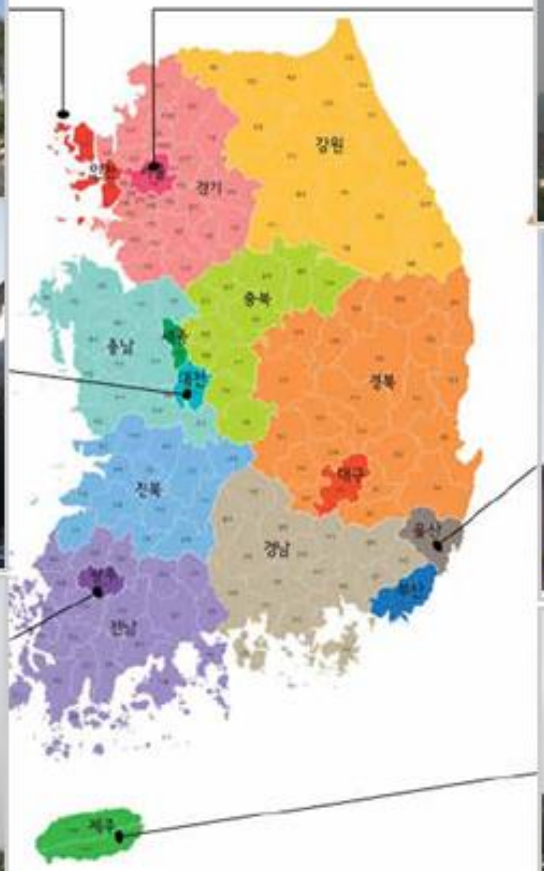
2008

2010

2009



2009

2013

2012

Expansion of IAQMN

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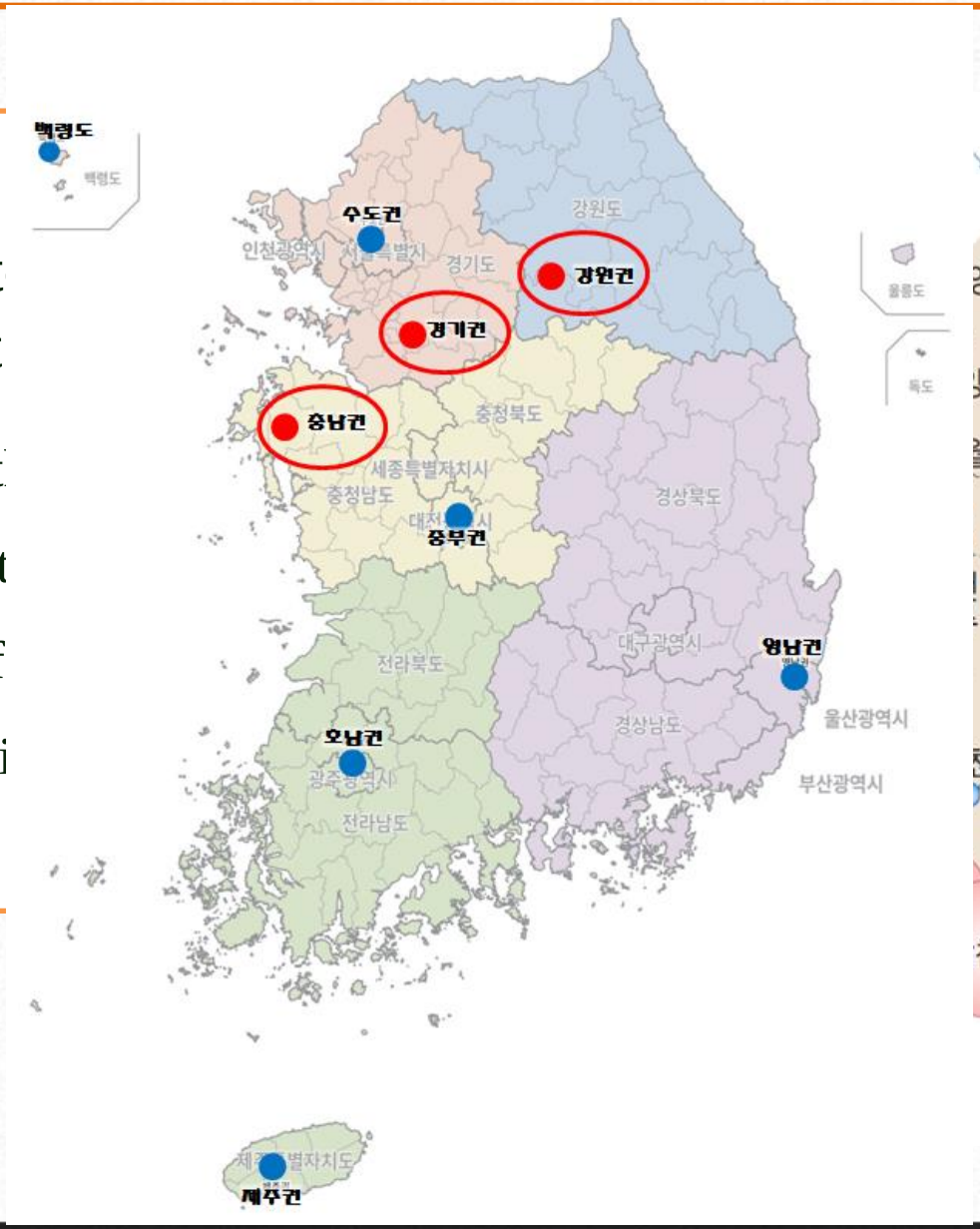
Needs

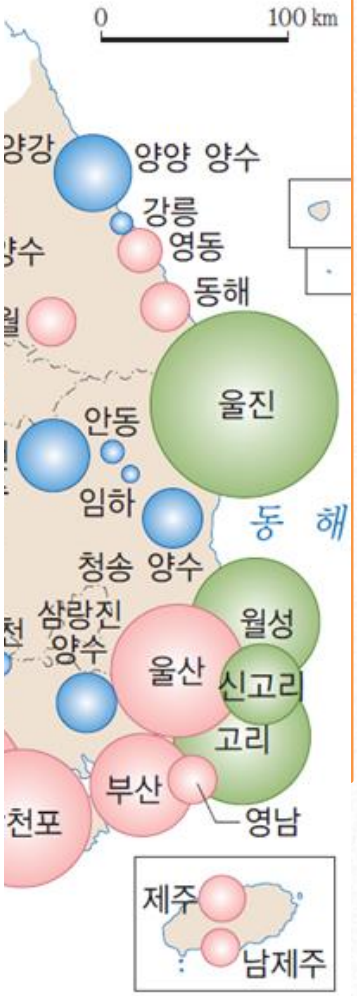
◈ **LTP monit**
the impact

A. Addition of t
servation Act

B. Definition of

C. Comprehensi
(Revision of





Expansion of IAQMN

Phase (Year)	Measurement Items	Location
Phase 1 (2017)	PM_{10}, $PM_{2.5}$, Pb, Ca	Baengnyeong Island Jeju Island
Phase 2 (2018)	Hg, Formaldehyde, Hydrogen Cyanide, HCl, F	
Phase 3 (2019)	Benzene, Carbon tetrachloride, Chloroform, 1,3-Butadiene, Dichloromethane, Styrene, Tetrachloroethylene, 1,2-Dichloroethane, Ethyl Benzene, Trichloroethylene, Vinyl Chloride, As, Ni, Mn	Baengnyeong Island Jeju Island Metropolitan area

※ Planned to expand the monitoring system starting from two stations, including the Baengnyeong Island intensive station, in 2019 to three intensive stations nationwide

3 | Expansion of MMN

Expansion of MMN

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State		2009~2015	2016~2020		
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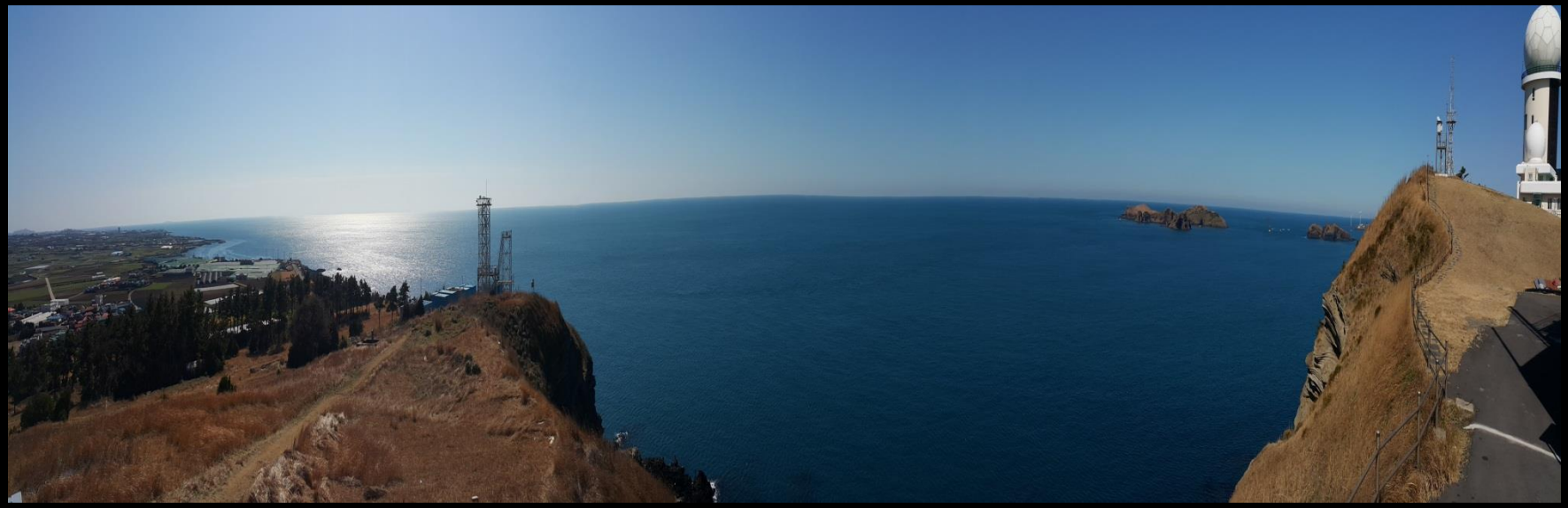

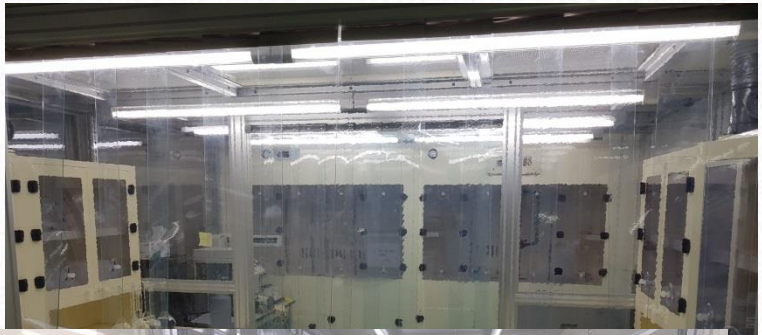

수은 분석기용 초자
산세척
(5% HNO_3)

What are the challenges?

What are the oppertunities?

AOC
Alphascan

감사합니다.

Thank You