

A message from Minamata

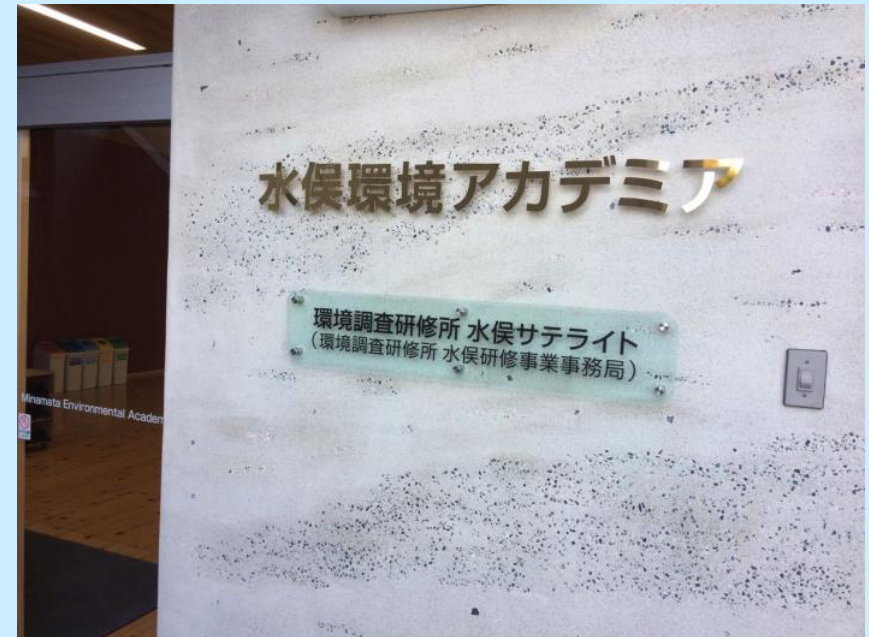
–Toward Sustainable Local Communities

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Director General, Minamata Environmental Academia

Prof. Emeritus, Prefectural Univ. of Kumamoto

Minamata Environmental Academia



Established in April, 2016.

Missions of the Minamata Environmental Academia

1. Research and Education
2. Local Community Development
3. Job-Creation and Industrial Development



Activities of Minamata Environmental Academia

Number of visitors: 118 groups,

3 287people (in 2016)



APMMN Workshop
Nov. 2016



JST Sakura Science Program
July, 2017



Sophia Univ. Field-work
Oct. 2016

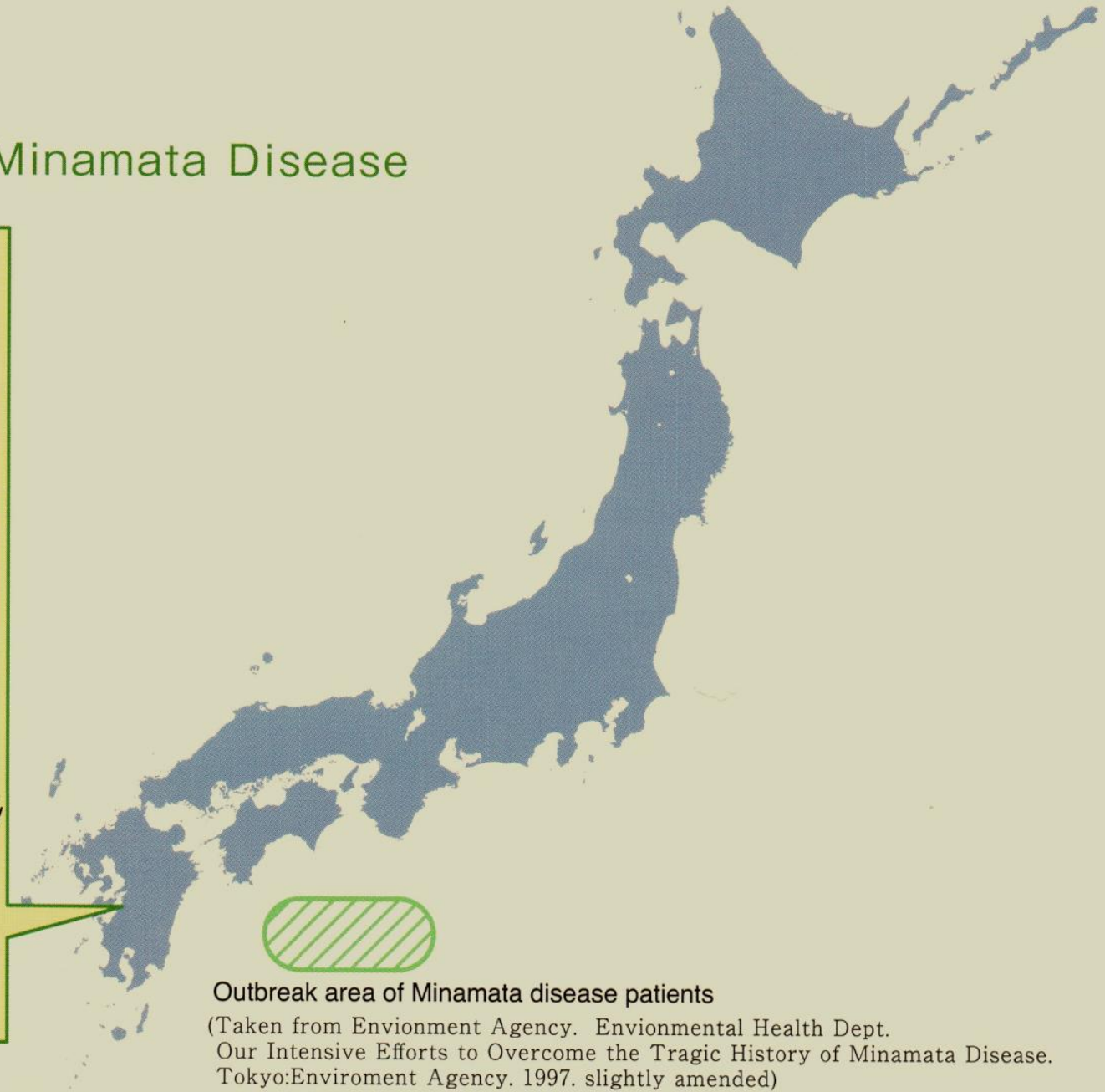
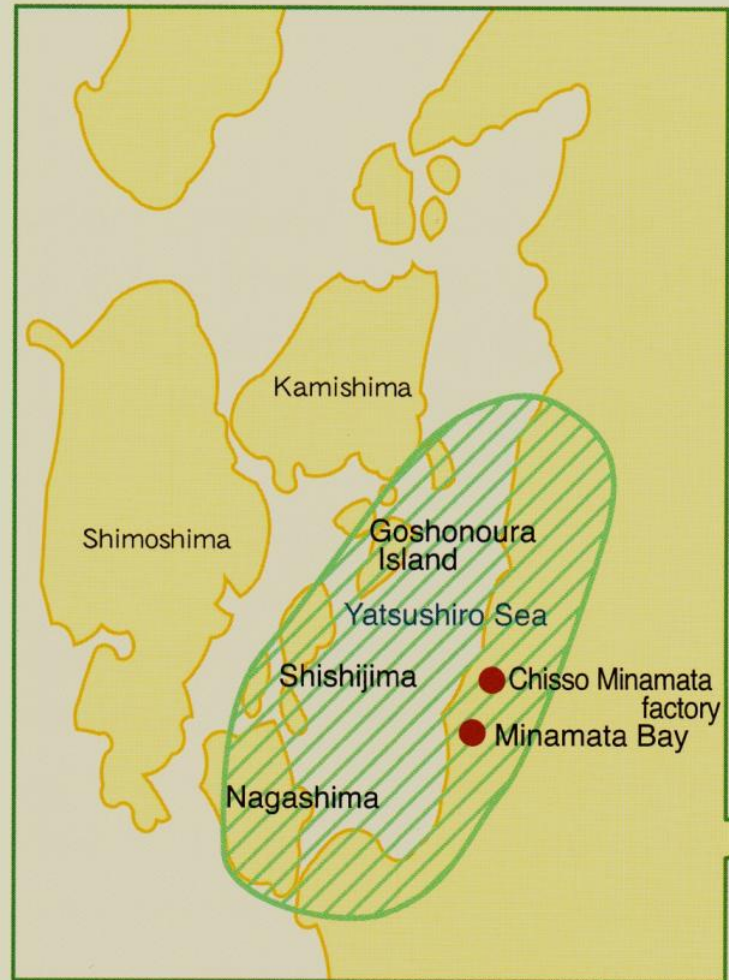
A Network of the Minamata Environmental Academia

- Prefectural University of Kumamoto
- Kumamoto University
- Sojo University
- National Institute for Minamata Diseases (NIMD)
- Keio University
- Nan Jeon Univ. of Science and Technology (Taiwan)
- National Taipei Univ. of Technology (Taiwan)
- Kyushu University Urban Research Center
- Minamata High School

Minamata Disease

- ◆ 1909 Chisso, Minamata Div. established
- ◆ 1932 Acetaldehyde production plant started
- ◆ 1937 Methylmercury poisoning reported in UK)
- ◆ 1945 Factory was damaged by US air raid
- ◆ 1955 Became a leading chemical company in Japan
- ◆ 1956.5 Minamata Diseases were reported.
- ◆ 1959.7 Kumamoto Univ. concluded the disease was caused by organo-mercury.
- ◆ 1962 Fetus poisoning (17 case)
- ◆ 1968.9 Government recognized organo-mercury poisoning.
- ◆ 1965 Niigata Minamata Disease

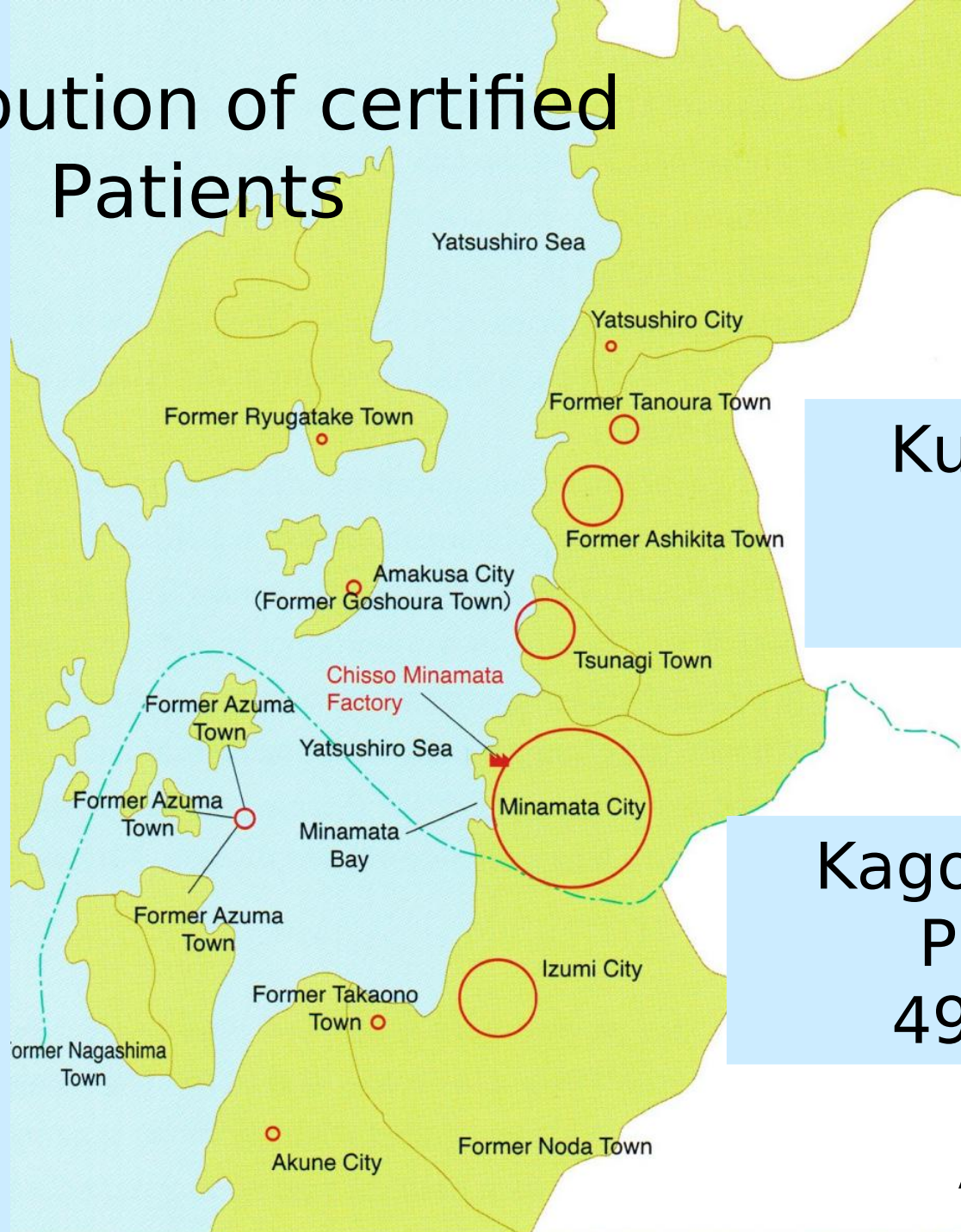
Fig.1 Outbreak Area of Minamata Disease



Outbreak area of Minamata disease patients

(Taken from Environment Agency. Environmental Health Dept.
Our Intensive Efforts to Overcome the Tragic History of Minamata Disease.
Tokyo:Environment Agency. 1997. slightly amended)

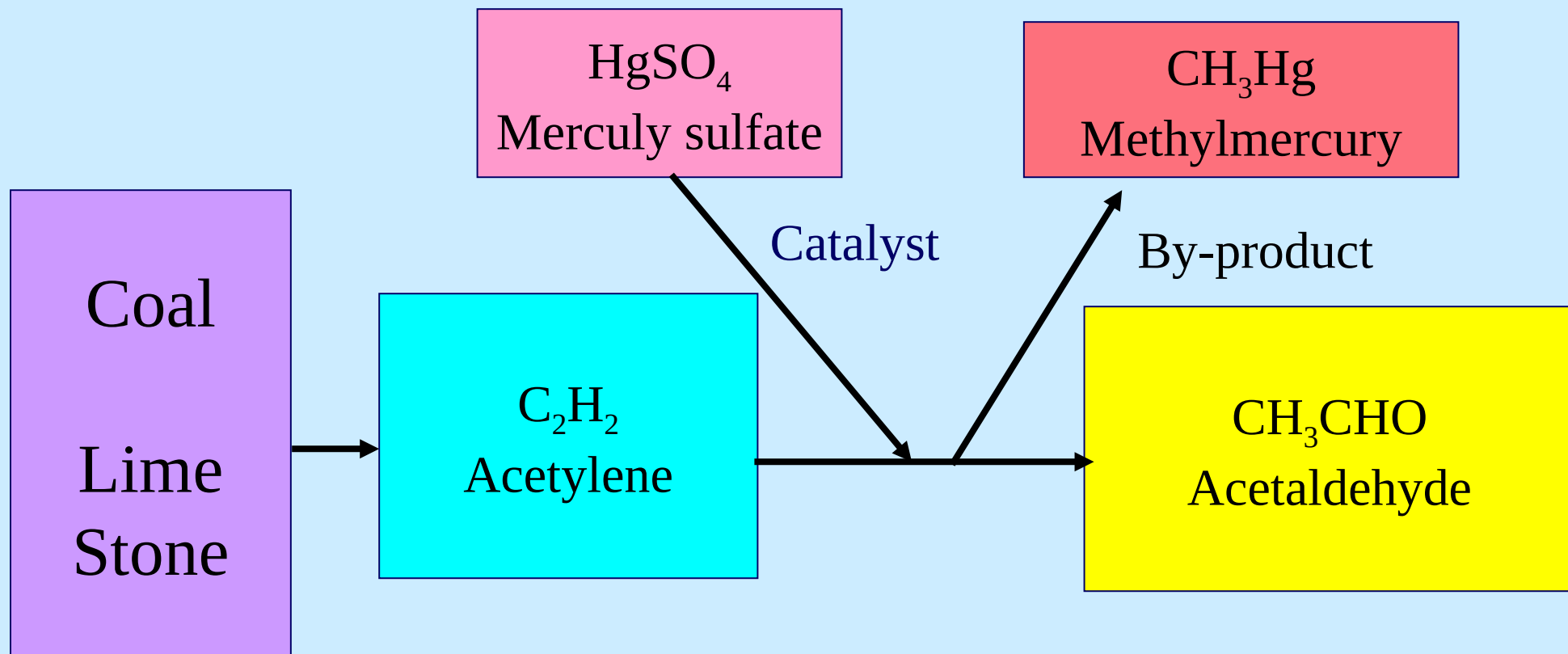
Distribution of certified Patients



Kumamoto
Pref.
1,786

Kagoshima
Pref.
492 名

As of Jan. 2016

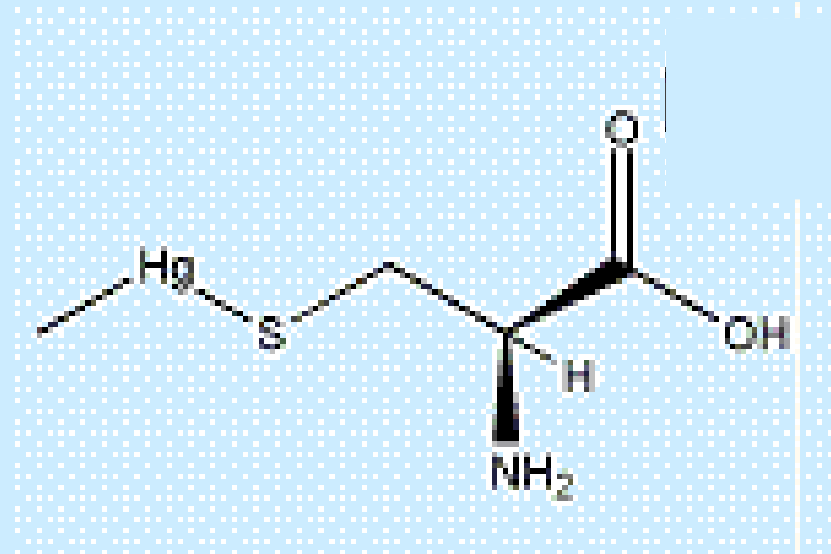


Methylmercury formation in the process

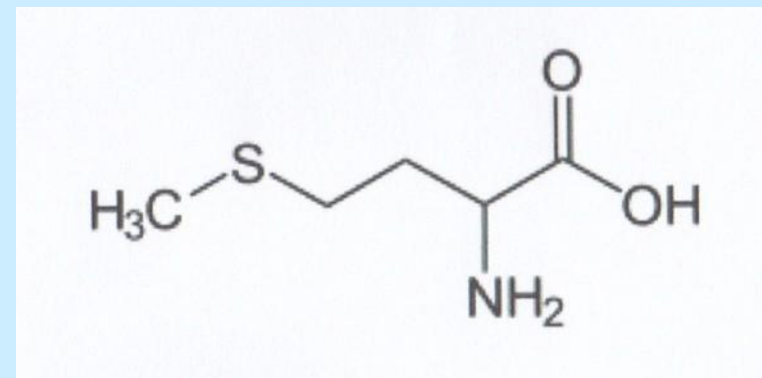
Typical symptoms of Minamata Disease (methyl-mercury poisoning)

- Sensory disorder of the four extremities
- Ataxia
- Concentric constriction of the visual field
- Hearing impairment
- Disequilibrium
- Speech impediments
- Tremors
- Disorder of the ocular movement

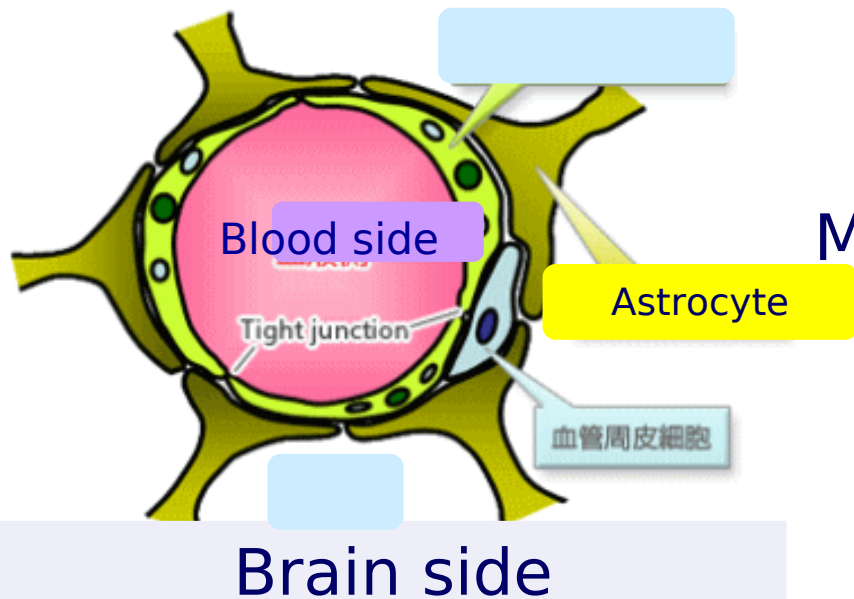
Blood-brain barrier



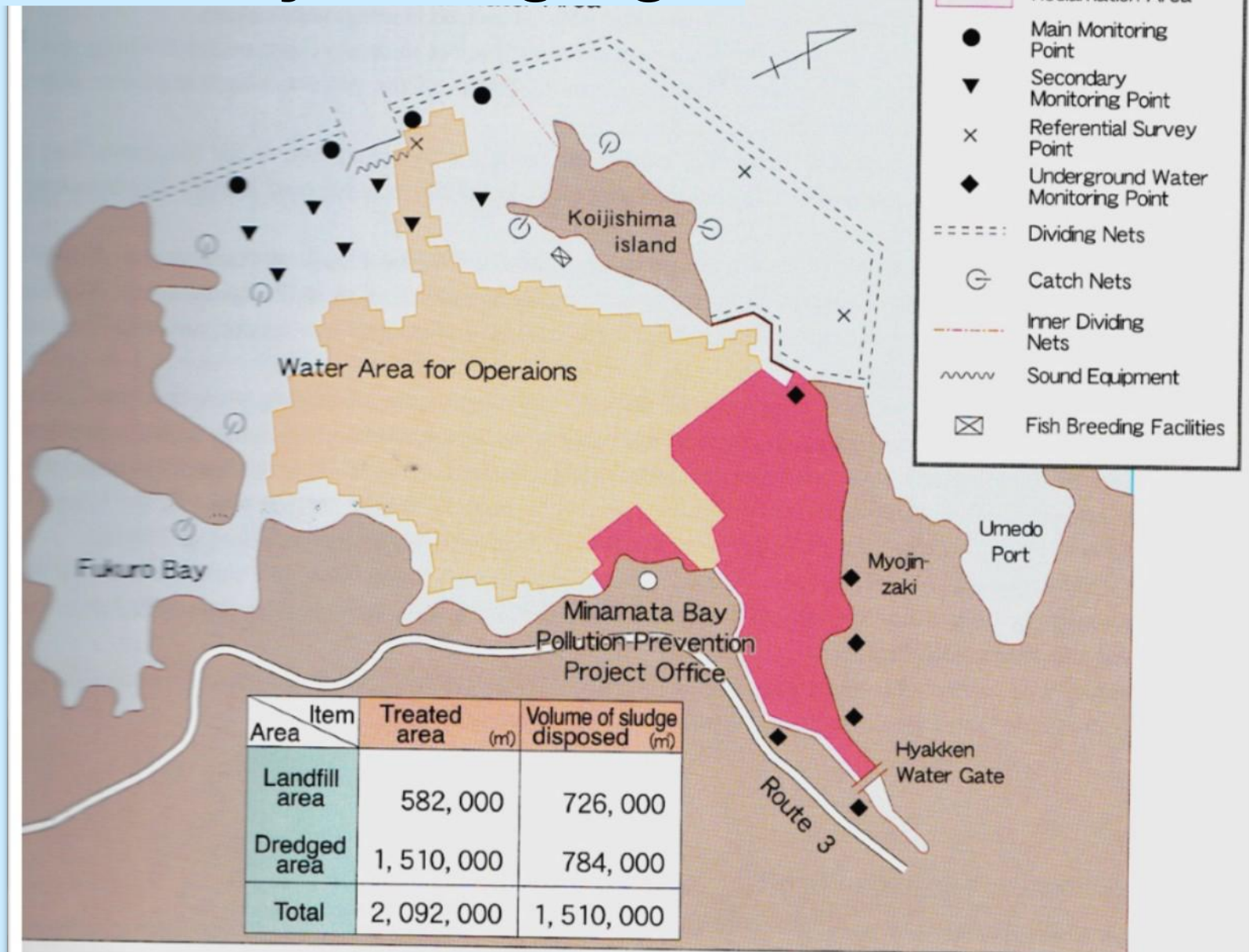
Methyl mercury-Cysteine conjugate



Methionine



Minamata Bay Dradging



Compensation Sums of Minamata Disease

Sums of provided compensation
(million yen/year, as of 1991)

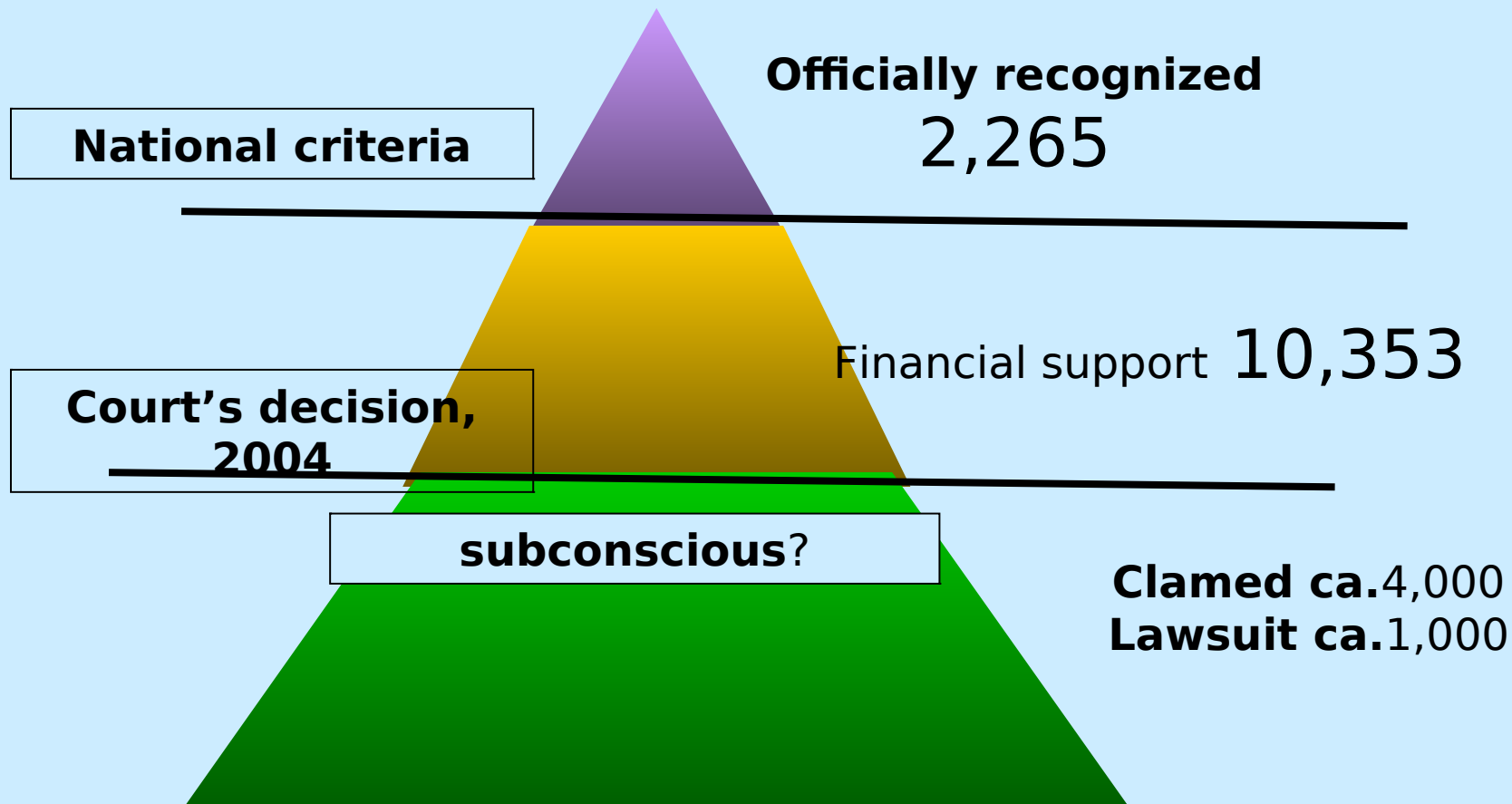
Health care	:	7,671
Dredging	:	4,271
Fishery	:	689
Sum		12,631

Estimated Treatment Cost : 123/year

The present Hyakken Waterway, JNC Minamata factory



Victims of Minamata Disease

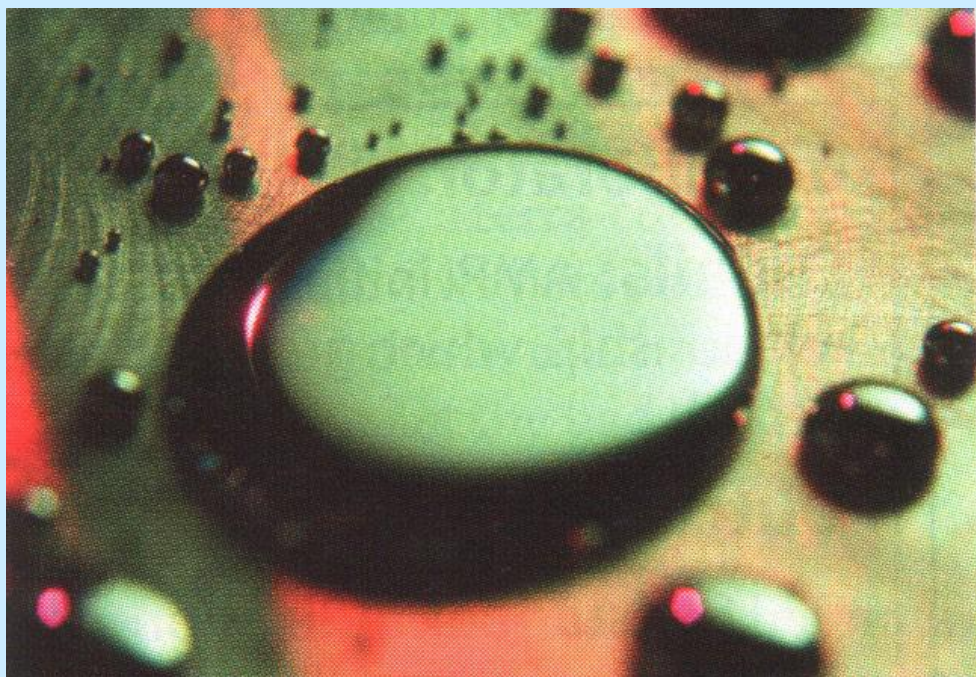


Comprehensive Lessons from the Minamata Disease Affair

1. The actual setting must be directly observed, and the approach to the affair must be initiated from sincere hearing from the people.
2. Protection of health against damages must have priority over everything, and the administrative decision is required according to the certainty of the cause.
3. Collection and presentation of information in various scenes are necessary.
4. Companies have the social responsibility.

From: Report of the Social Scientific Study Group on Minamata Disease. NIMD, 2001.

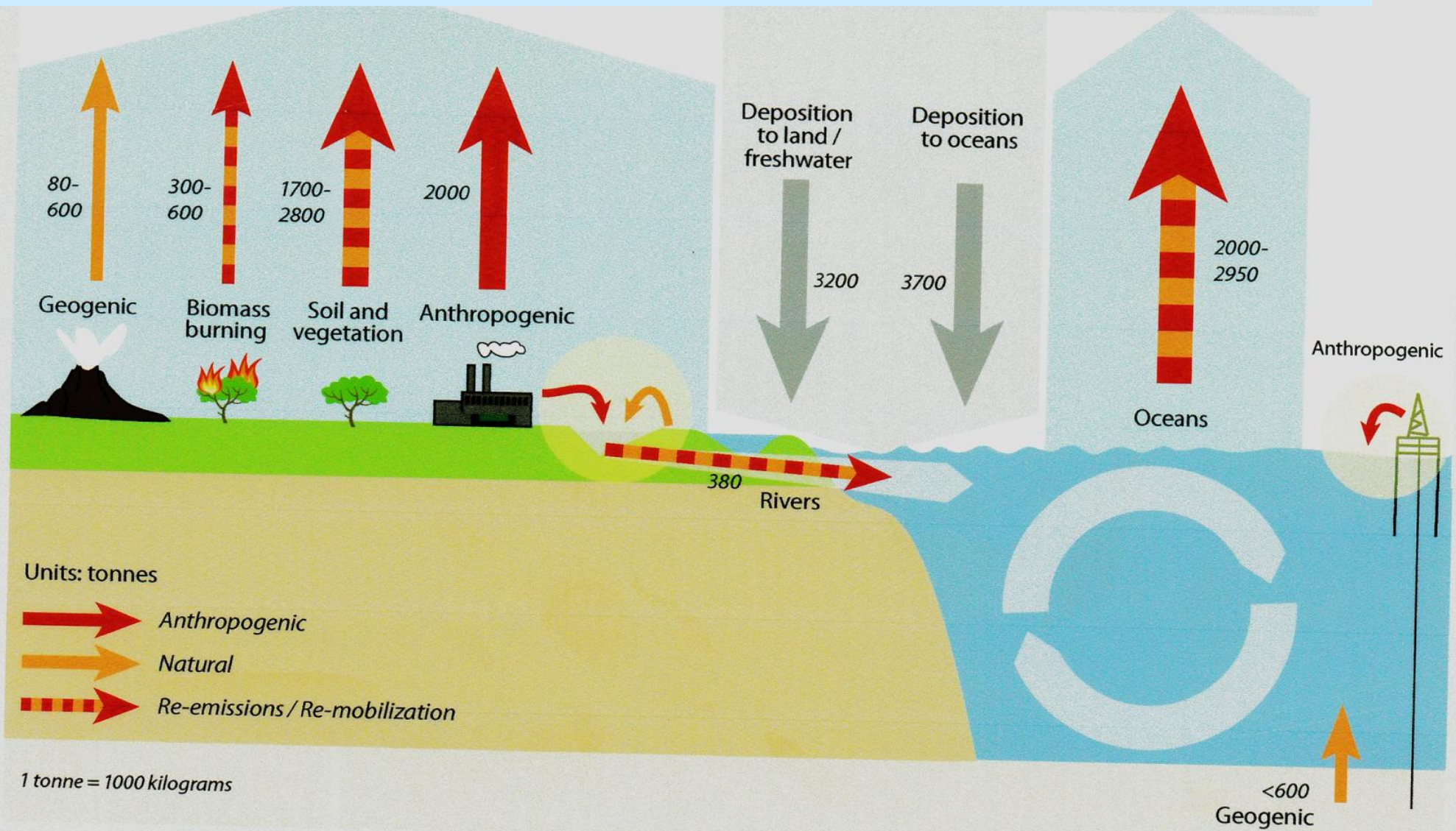
Mercury, Hg



- Atomic Number : 80
- Atomic Weight : 200.59
- mp : $-38.87\text{ }^{\circ}\text{C}$
- bp : 356.72°C
- Usage : Thermometer
Diffusion pump, Barometer,
Amalgam (alloy)

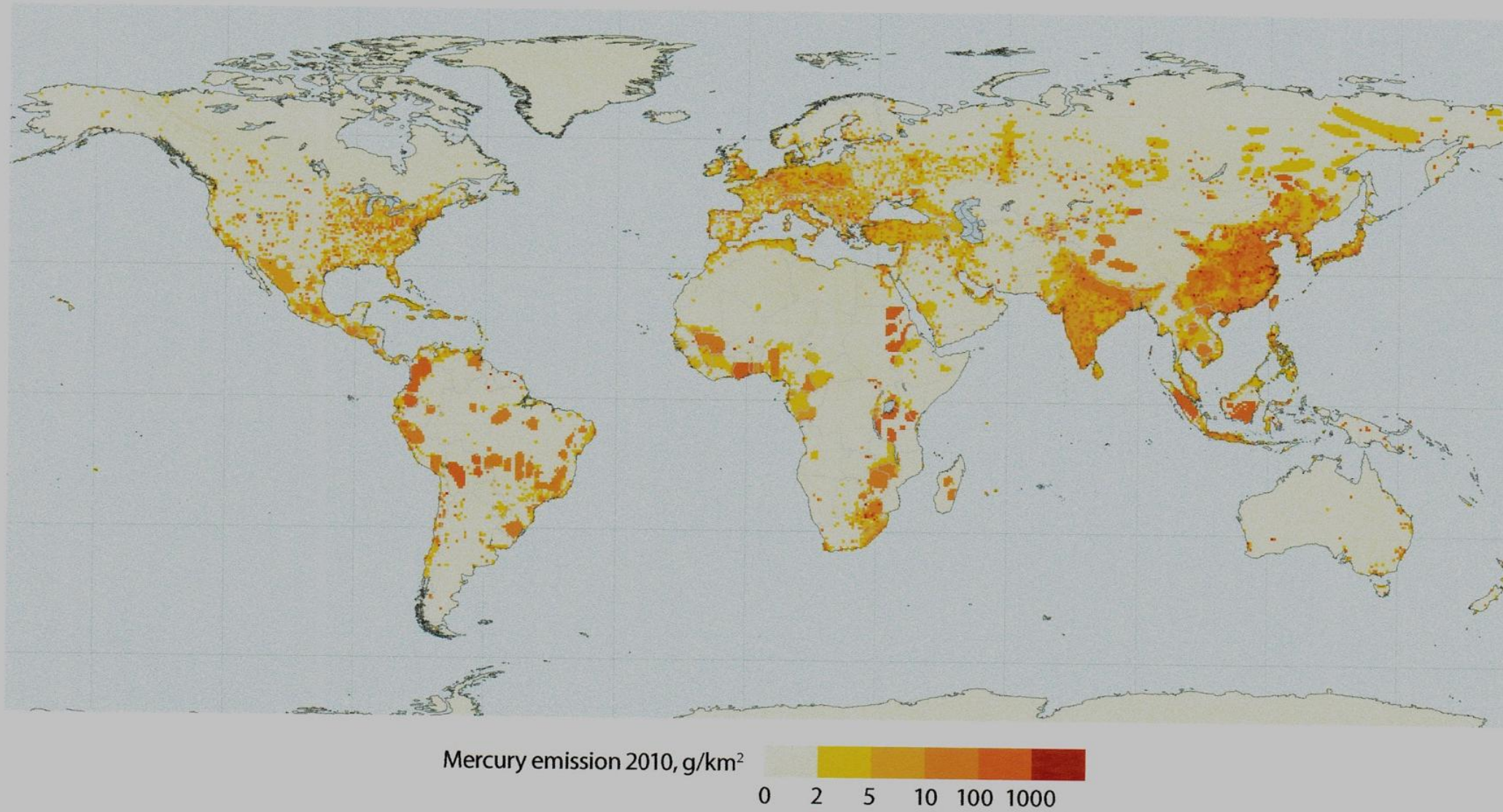
Minamata Convention on Mercury

- Adopted at the conference held in Kumamoto city and Minamata city in Oct. 2013. (92 countries).
- 70 Ratifications (as of July 14, 2017), enacted from August 16, 2017.
- COP-1 on Minamata convention was held in Geneva, Switzerland, September, 2017.
- Collaboration with WHO, UNEP, etc.



Global mercury budgets

UNEP, 2013



Global distribution of anthropogenic mercury emissions to air in 2010

Minamata's Regeneration (moyai-naoshi)

- 1992 The declaration on a City that values the Environment, Health and Welfare.
Declaration on the “Construction of a Model City for the Environment.
- 1993 The sorting and collection of household waste began (22 categories)
- 1994 Declaration of “Moyai-naoshi”
- 2001 Minamata Eco-town launched
The 6th International Conference on Mercury in Minamata.
- 2011 “ Environmental capital” received.
- 2013 Minamata Convention in Kumamoto city and Minamata city.

Citizens participation type garbage sorting and recycling collection.



Toward sustainable community

Issues

Population decrease

Innovation of new industries

Minamata Regeneration

- Model Environmental City
(International Environmental City)
- Based on abundant natural resources
(clean water, forest, marine products),
promotion of primary industry and agricultural diversification.
- Promotion of sustainability of the community.

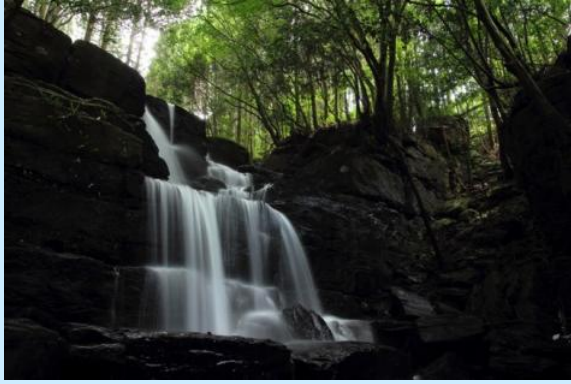


- Minamata Disease Municipal Museum
 - Environmental Center
 - NIMD Information Center



National Institute of Minamata Diseases

Attractive nature and environment in Minamata area



A river source of Minamata



Rice paddy fields in Kugino area



Cherry blossoms along
the Minamata river



Tea plantation in Ishidobi area



Yunoturu hot springs



Koiji Island from Eco-park



Seaweed forest in Minamata bay Photo: M. Morishita



Photo: M. Morishita



Sea horse



Kitakyushu Natural History Museum

Key persons to develop the sustainability in Minamata



Mr. H. Amano, owner of tea plantation.



Mr. T. Sawahata, organizer of local activities.



Minamata's original sweets
Monaka & Horaku manjyu



Mr. M. Morishita, diving instructor.

Mr. K. Sasahara, patishie, sweetshop.

Products of Minamata



Young sardine



Sweet Orange



Japanese Tea



Salada-Onion
(Salatama-chan
)

Sakura Science Plan in Minamata

Sponsored by JST

10 graduate students from Taiwan, Thailand, Singapore.

10 days program regarding Japanese high technologies and environmental issues.

Home stay (1 day) program included.



Collaboration with International Agencies

UNEP/ETC Initial Assessment on
Minamata Convention
2018.5.30 ~ 31

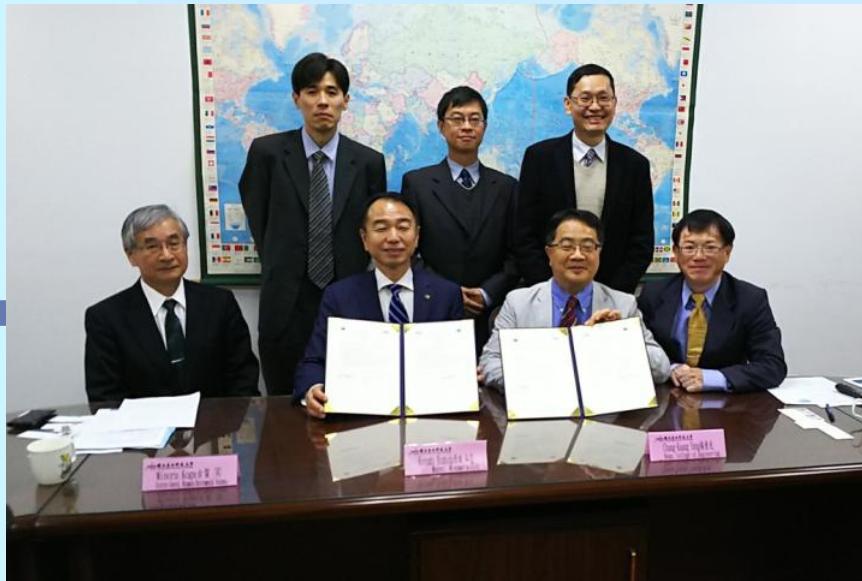


UNIDO-ITPO Tokyo
Site Visit Tour in Minamata
2018.11.20 ~ 22



Networks with Overseas Universities

MOU with National Taipei
University of Technology,
2017.2.8



2017 Cross-Cultural International Conference
Nan Joen Univ. of Science & Technology,
2017.2.10



Thank you for your attention.

