

# “Life of Water” Chubu Forum, Nagoya

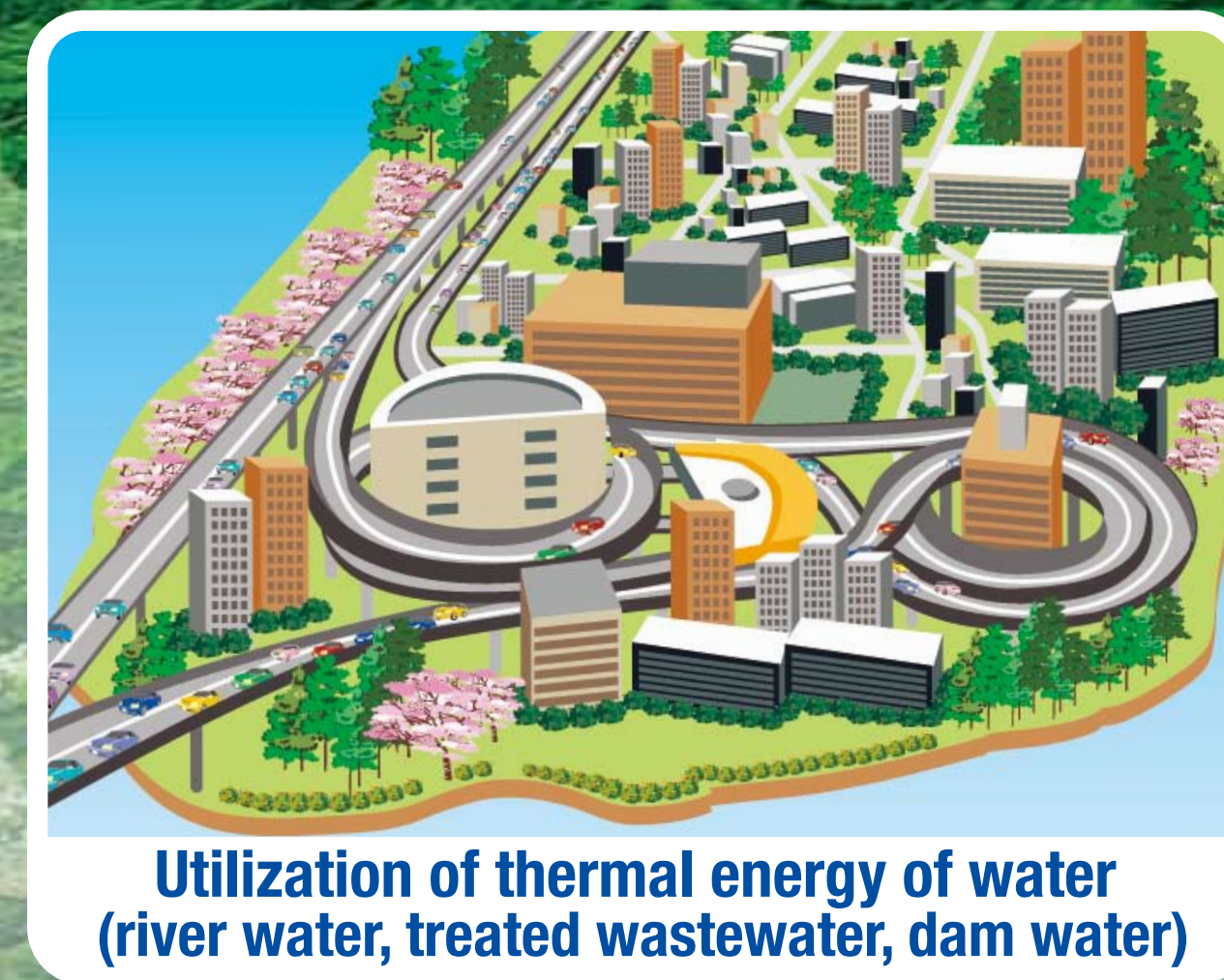
## Development of Chubu-region ~ Sustainable Development Management ~

### Nagoya – Chubu Region: Specialists in Water Control

Nagoya located at the center of Japan



Lake development



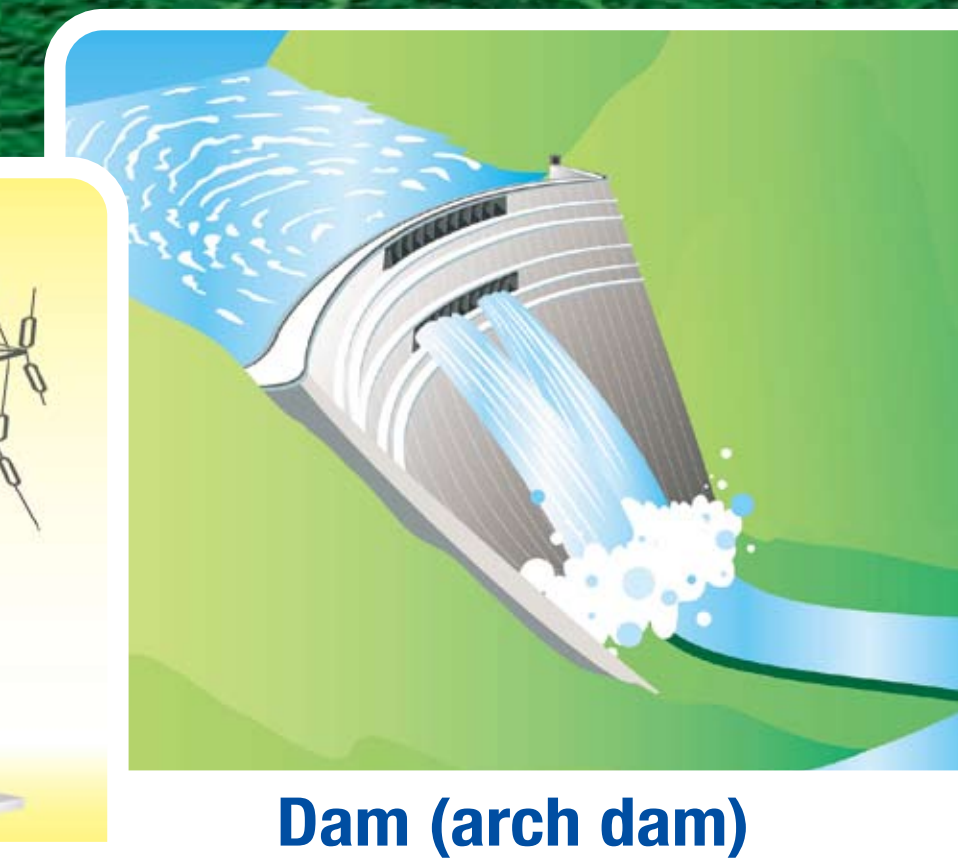
Utilization of thermal energy of water (river water, treated wastewater, dam water)



Water for snow control



Power generation



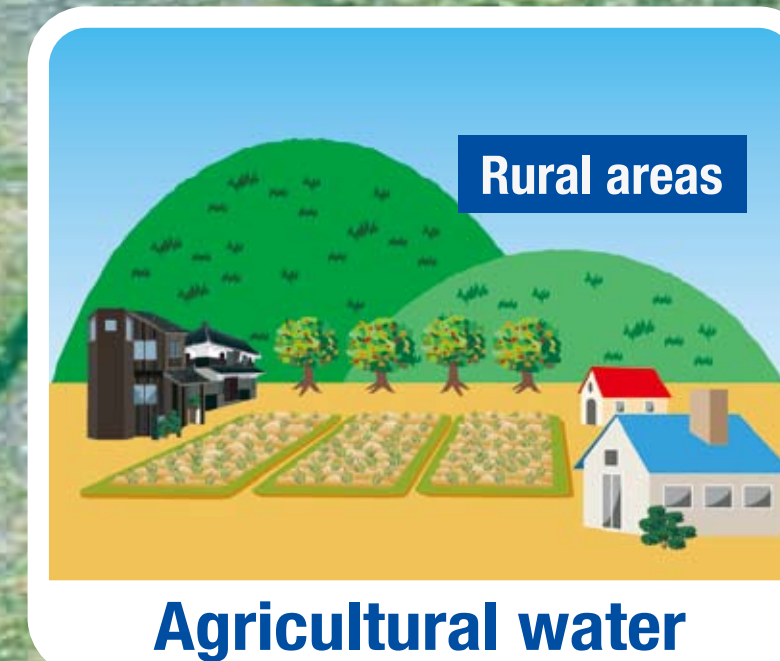
Dam (arch dam)

Home to Japan's roof  
– 3,000m high mountain range

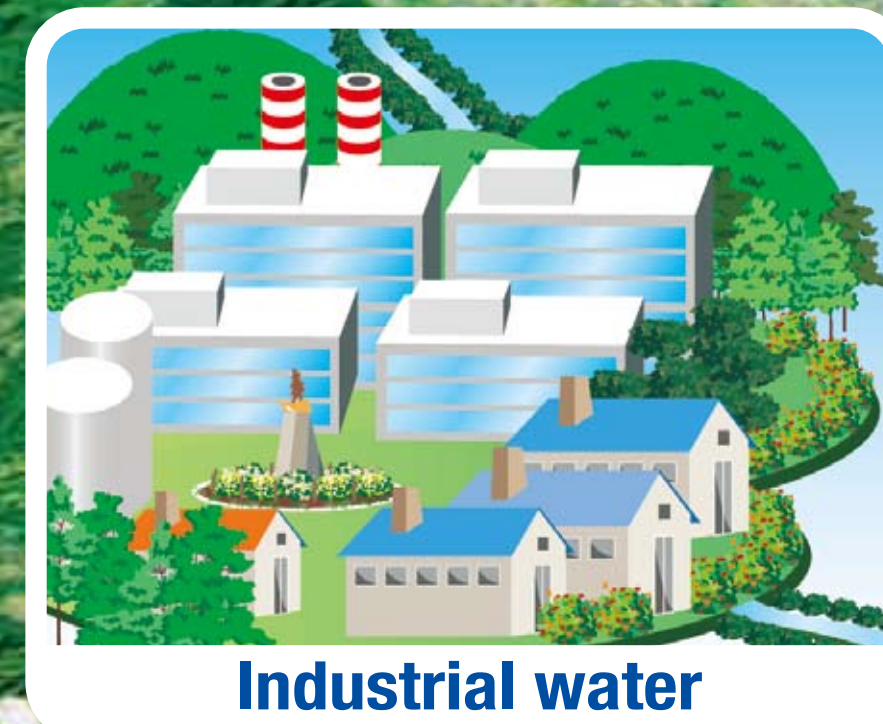
Wide ranging members of the “Life of Water” Chubu Forum

- Economic / financial organizations
- Local government
- Businesses
- Manufacturers
- Consultants
- General contractors
- Electrical power companies
- Distribution companies
- Education and research institutes
- Public entities
- Central government

Automotive powerhouse



Agricultural water

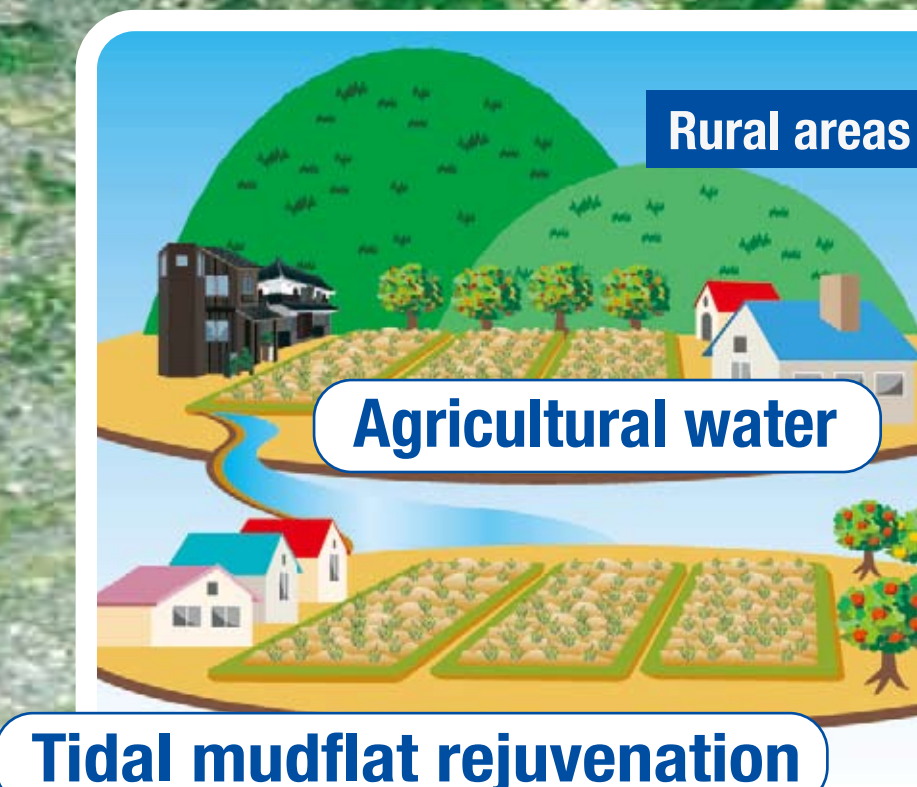


Industrial water

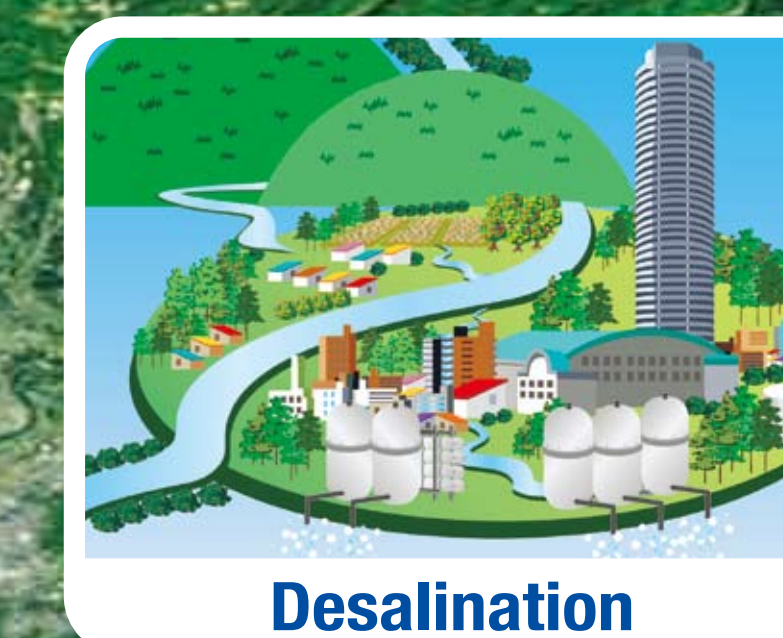
Management of land below sea level



Water purification plant



Agricultural water



Desalination

Chubu Region population

**10 million**

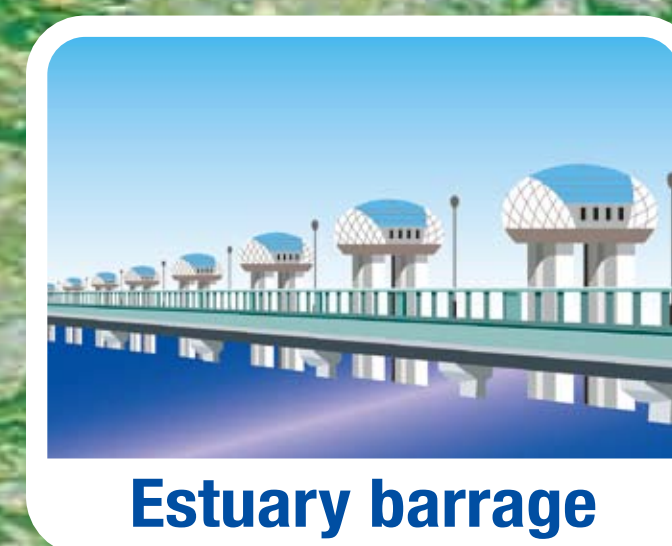
Area

**60 times larger than Singapore**

Japan's foremost port - Port of Nagoya

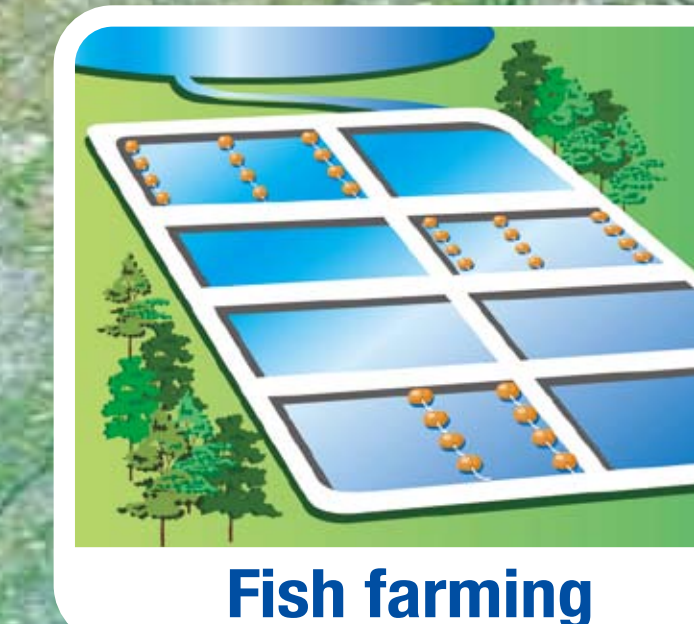


Wastewater treatment plant

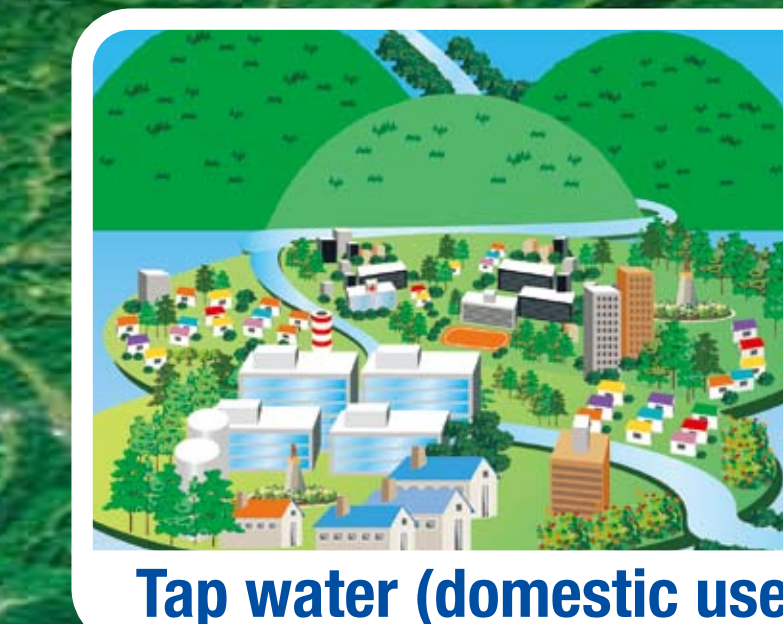


Estuary barrage

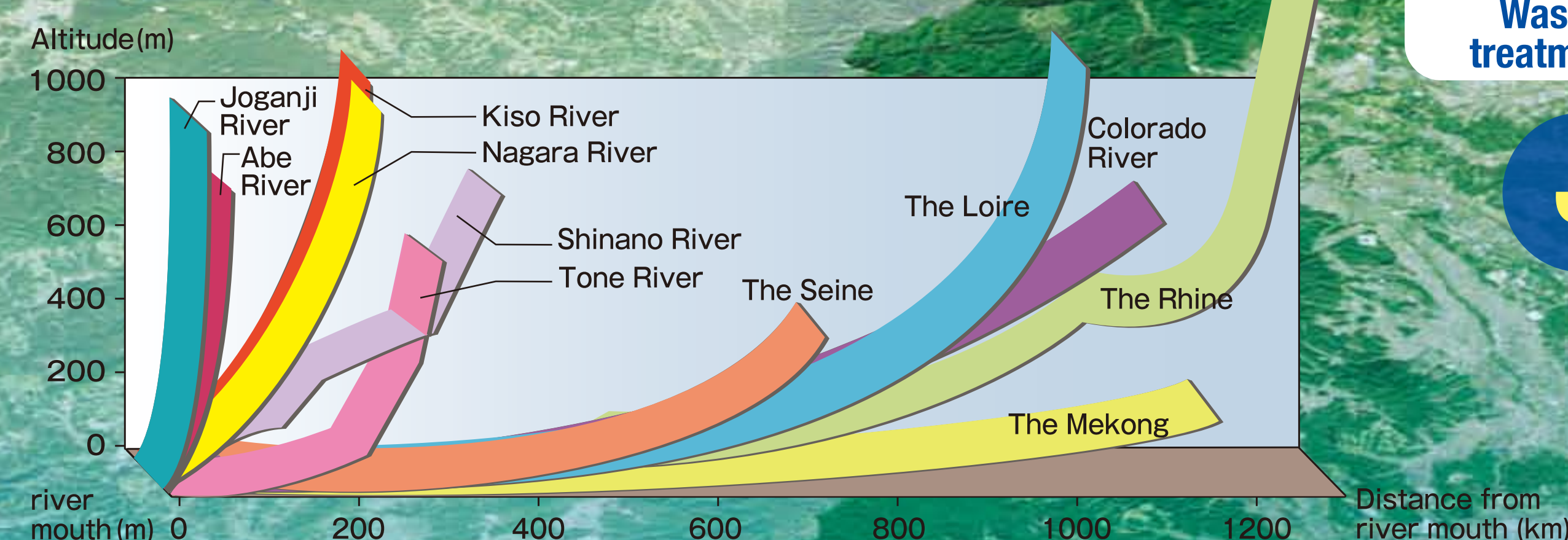
Tidal mudflat rejuvenation



Fish farming



Tap water (domestic use)

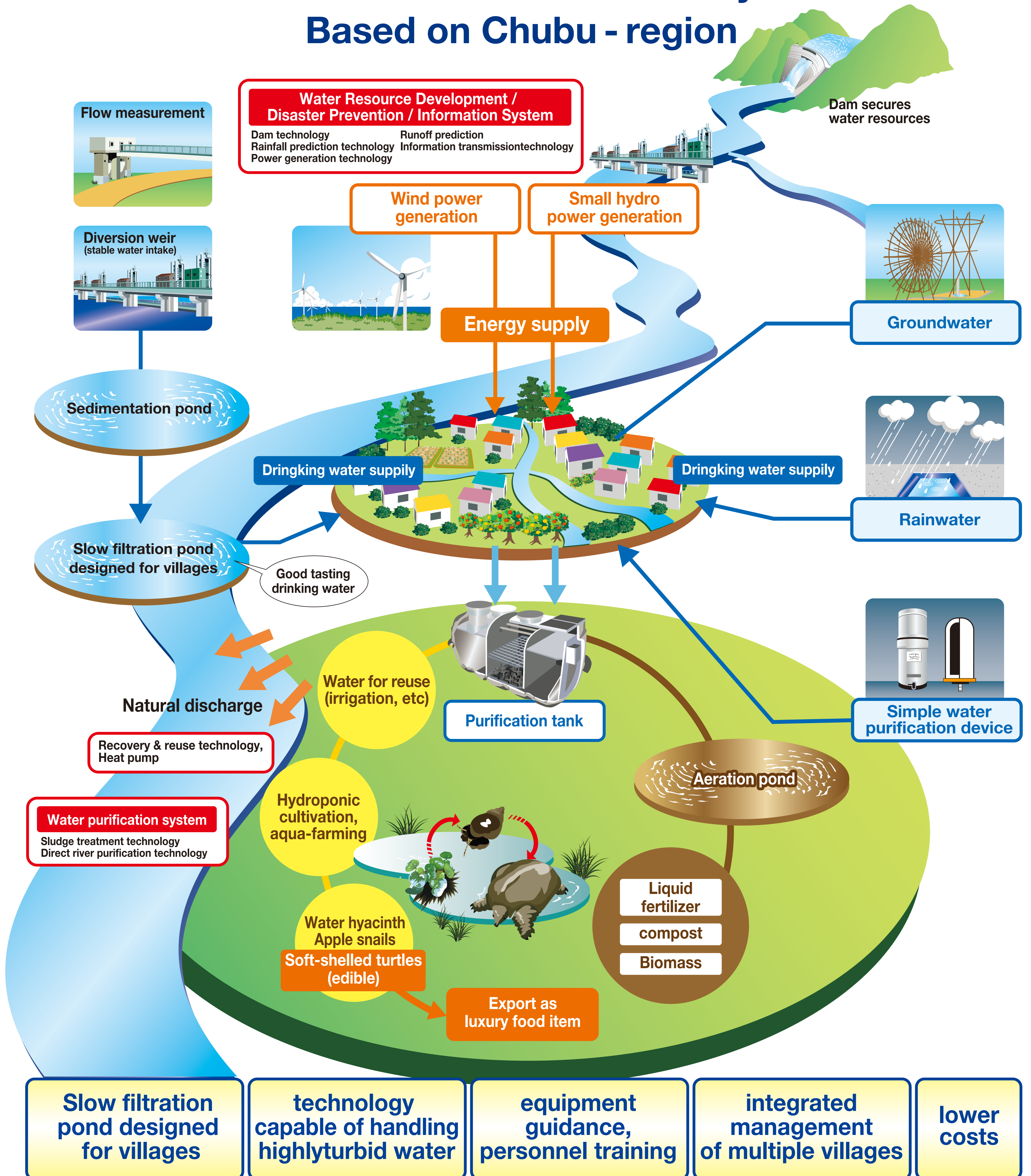


The Nagoya – Chubu Region has a very mountainous geography and little useable water with respect to the amount of rainfall. This has led the region to develop and maintain sustainable water management for the area as a whole, encompassing management of dams, rivers, irrigation, and tap and wastewater facilities, allowing the region to maintain its unique natural environment while at the same time develop one of Japan's foremost urban centers.

The “Life of Water” Chubu Forum comprises a total of 109 business and other organizations, and is capable of offering both low-tech and hi-tech solutions for energy usage, water circulation, as well as the establishment, management and operation of various water-related facilities. The Forum's wealth of experience and technology can help you achieve sustainable development of your community's water resources too!

# Proposal for Villages

## Sustainable Water Circulation System Based on Chubu - region



# Description of Slow Filtration Technology Designed for Villages

## 100 Year History of Nabeya Ueno Water Purification Plant

Is slow filtration technology sustainable?

**Benefit 1** Little machinery

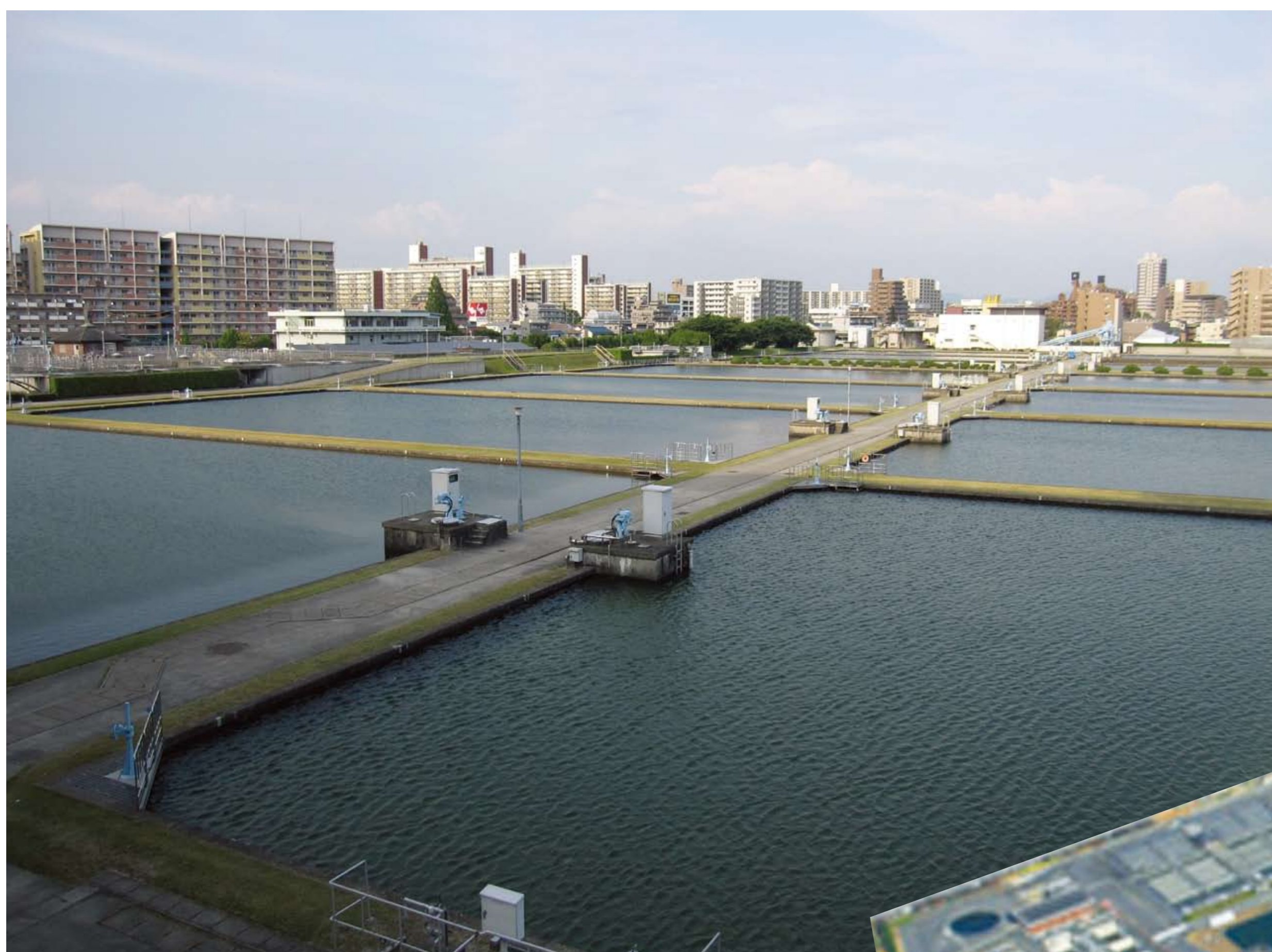
**Benefit 2** Low energy consumption

**Benefit 3** Low cost

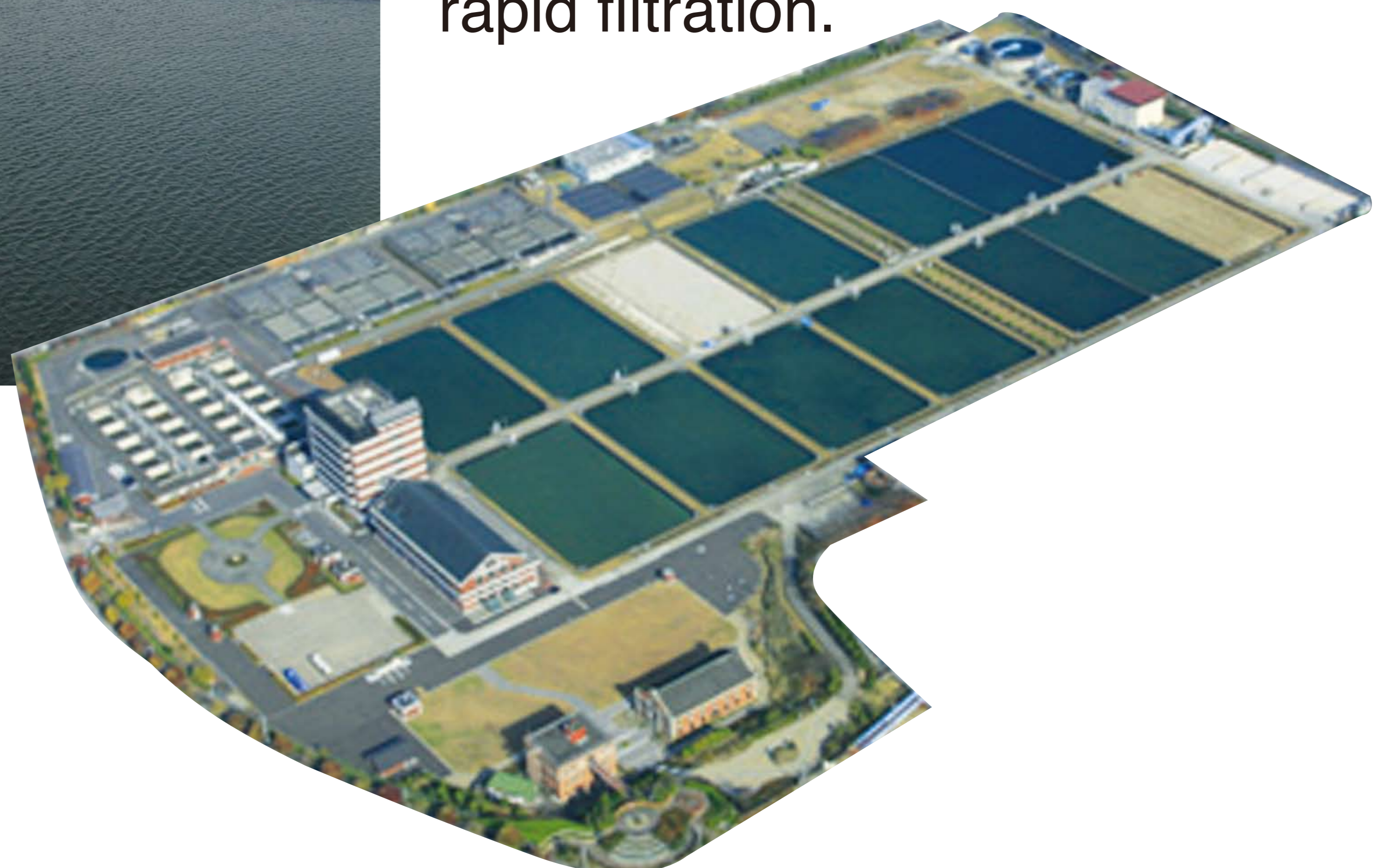
**Benefit 4** Good tasting water

**Benefit 5** Durable

**Constructed in 1914,  
the Nabeya Ueno Water Purification Plant  
has been providing Nagoya City with  
good tasting drinking water for nearly 100 years.**



Nagoya possesses the special expertise to seamlessly combine slow filtration with rapid filtration.

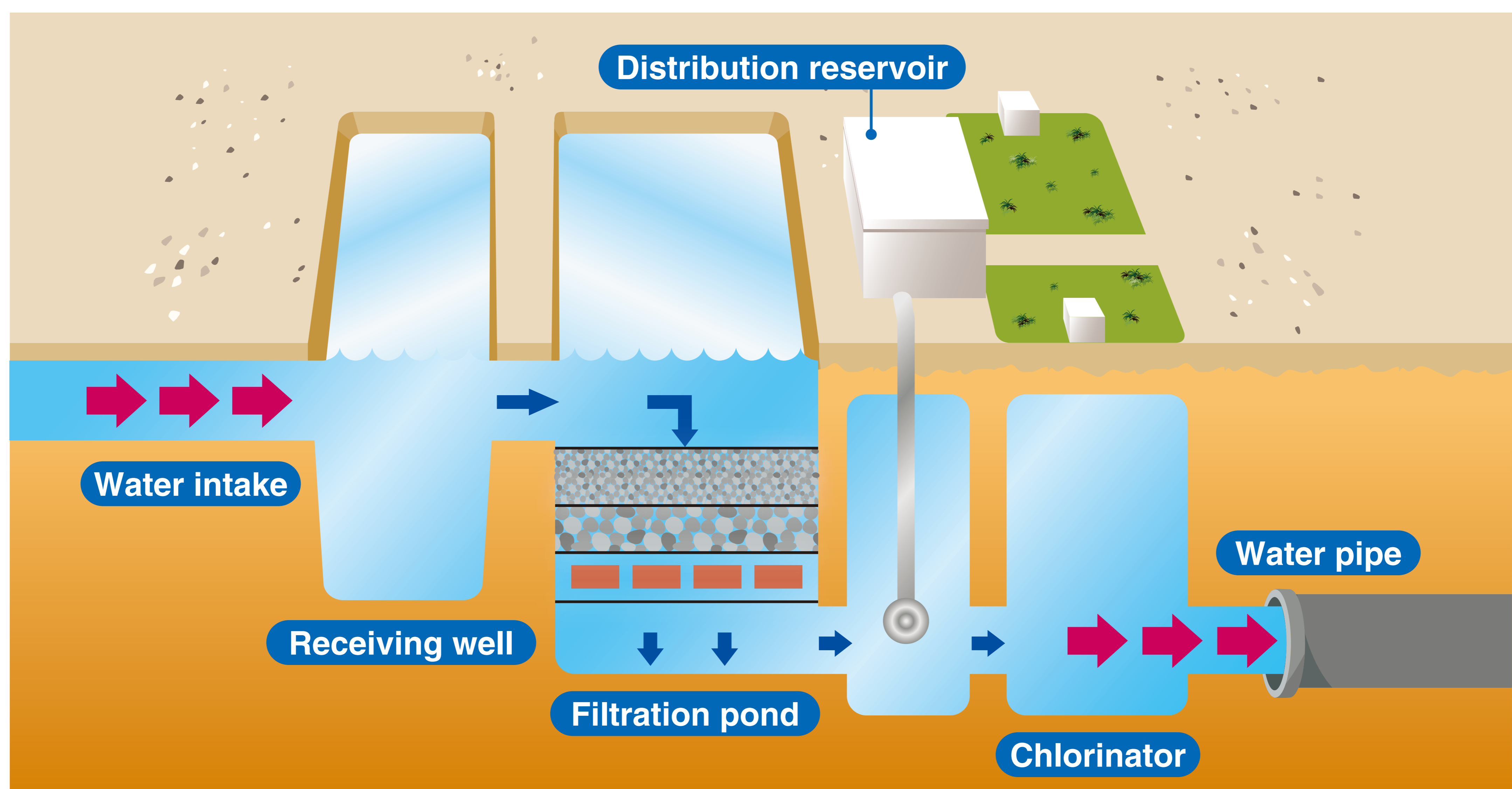


**Specification of slow filtration ponds**  
(Nabeya Ueno Water Purification Plant, Nagoya City)

|                           |  |
|---------------------------|--|
| Number of ponds           | Number of ponds <b>14</b>                              |
| Average filtration area   | Average filtration area <b>2,879m<sup>2</sup>/pond</b> |
| Standard filtration speed | Standard filtration speed <b>4m/day</b>                |
| Filtration capacity       | Filtration capacity <b>140,000m<sup>2</sup>/day</b>    |

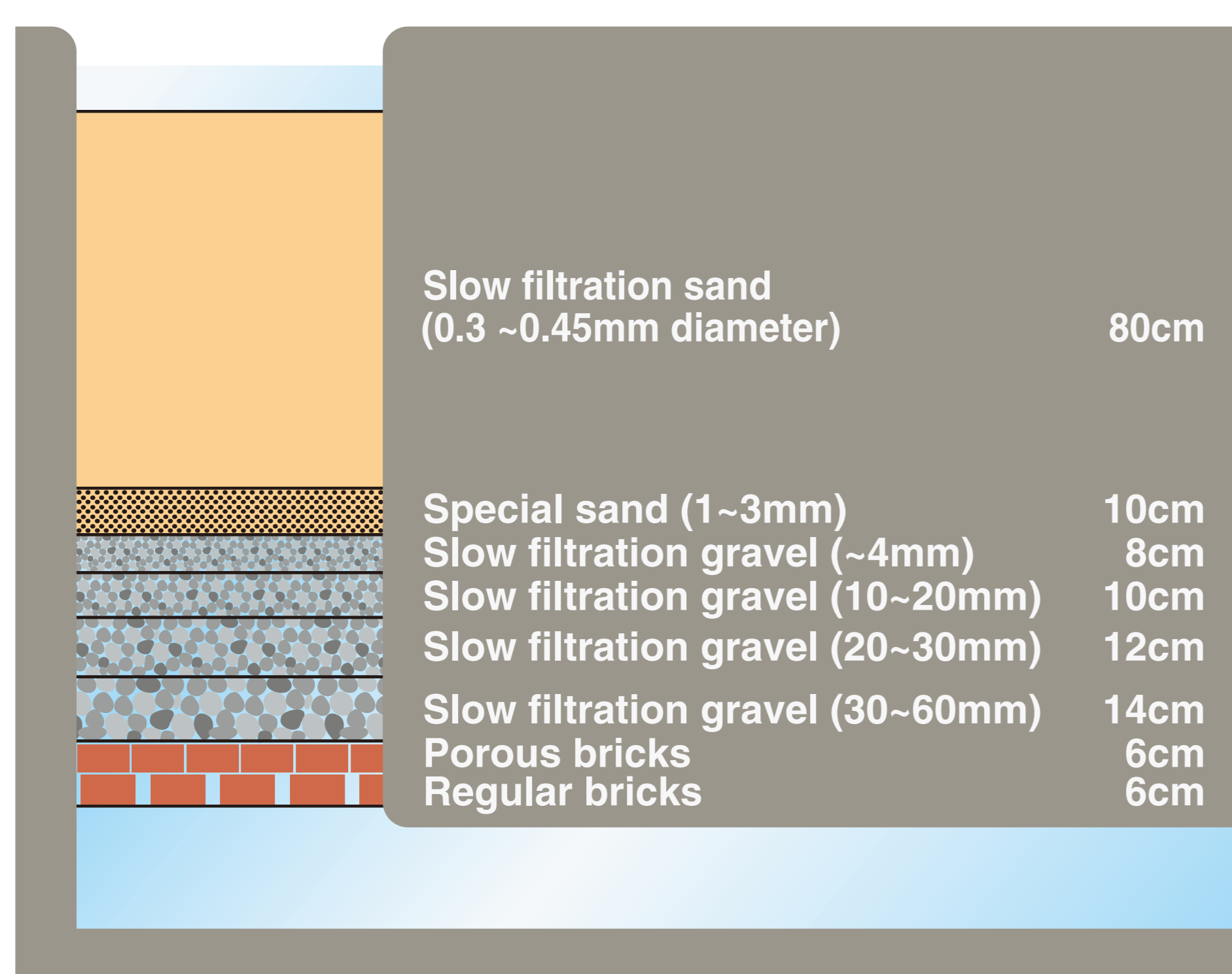
# What is Slow Filtration?

**Slow filtration employs special microbes and bacteria, instead of chemicals, slowly purify water. It is suited to purifying relatively clean water from rivers and other similar sources.**



## Cross section of filtration pond

Water is passed through a fine sand layer at a gentle rate of 4-5m/day. Microbes in the sand layer breakdown and remove suspended solids in the water. Unwanted bacteria and malodors are also removed at the same time.



## Cross section of filtration pond



## Cleaning a Filtration Pond

Requires periodic maintenance

# Safe and secure disaster prevention technology for the Nagoya - Chubu Region

A storm surge more than 50 years ago claimed the lives of over 5,000 people in low-lying sea-level area bordering Ise Bay. Ever since then, civil engineers have implemented numerous disaster prevention measures, and in doing so have developed various specialized technology to make Nagoya and the Chubu Region the safe place that it is today.



Source: Chubu Regional Data Center for Natural Disasters (photo taken by Japan Ground Self-Defense Force)

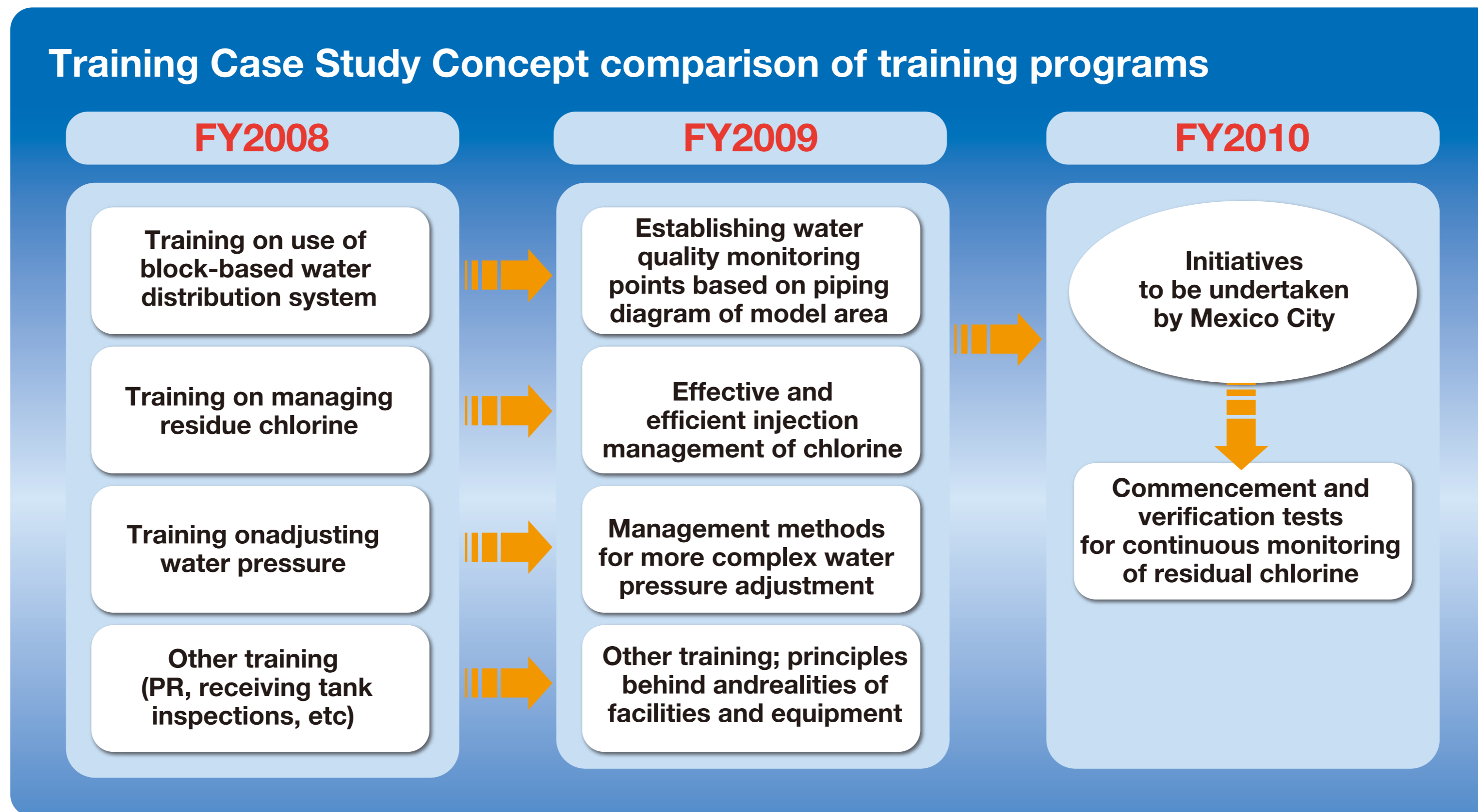
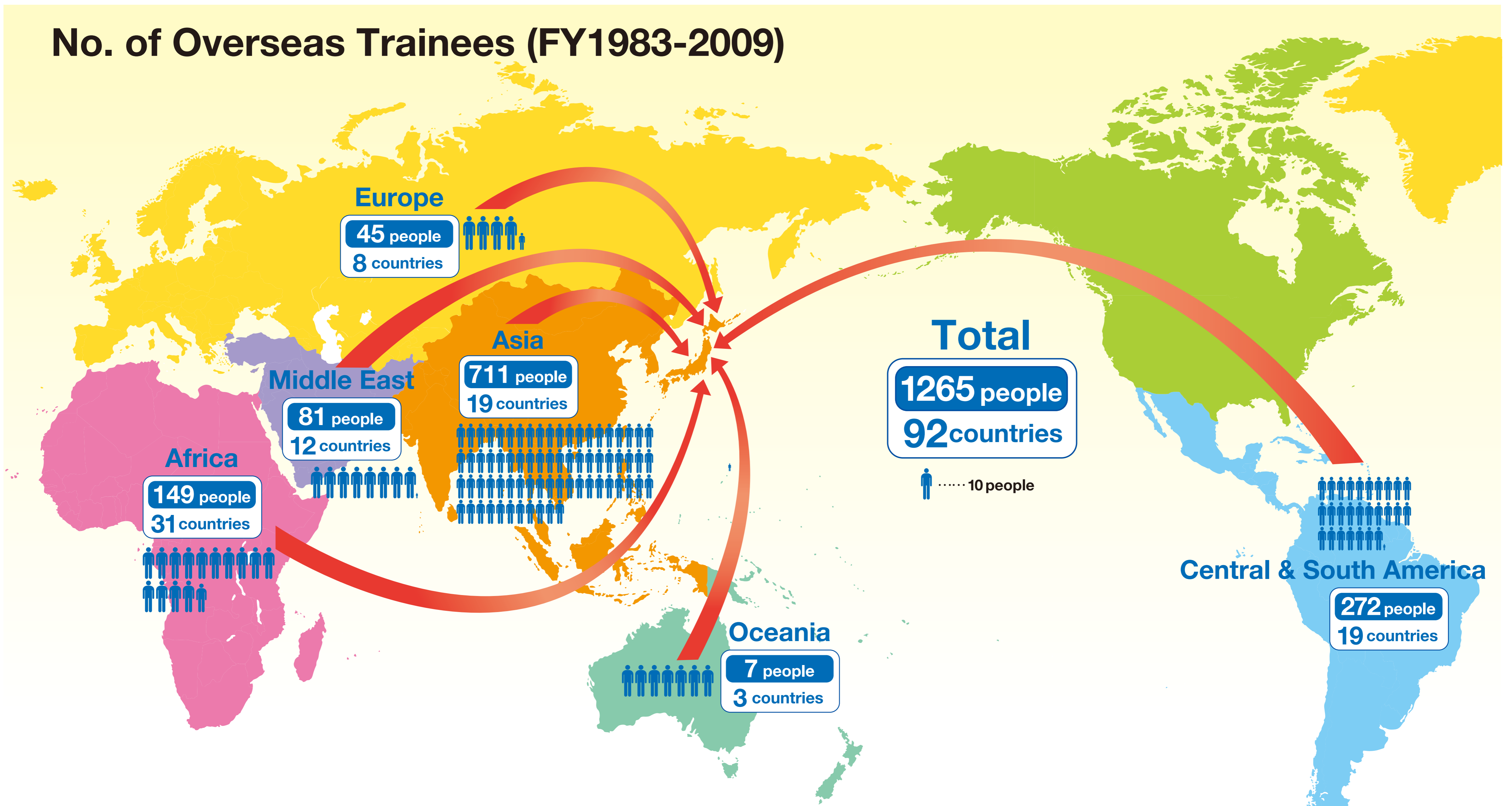
Damage caused by Typhoon Verawhich struck Ise Bay in 1959

Raising the height of embankments, excavating river channels and implementing other measures, as well as utilizing a special information sharing network, has made downtown Nagoya safer and more impervious to disasters than ever before.

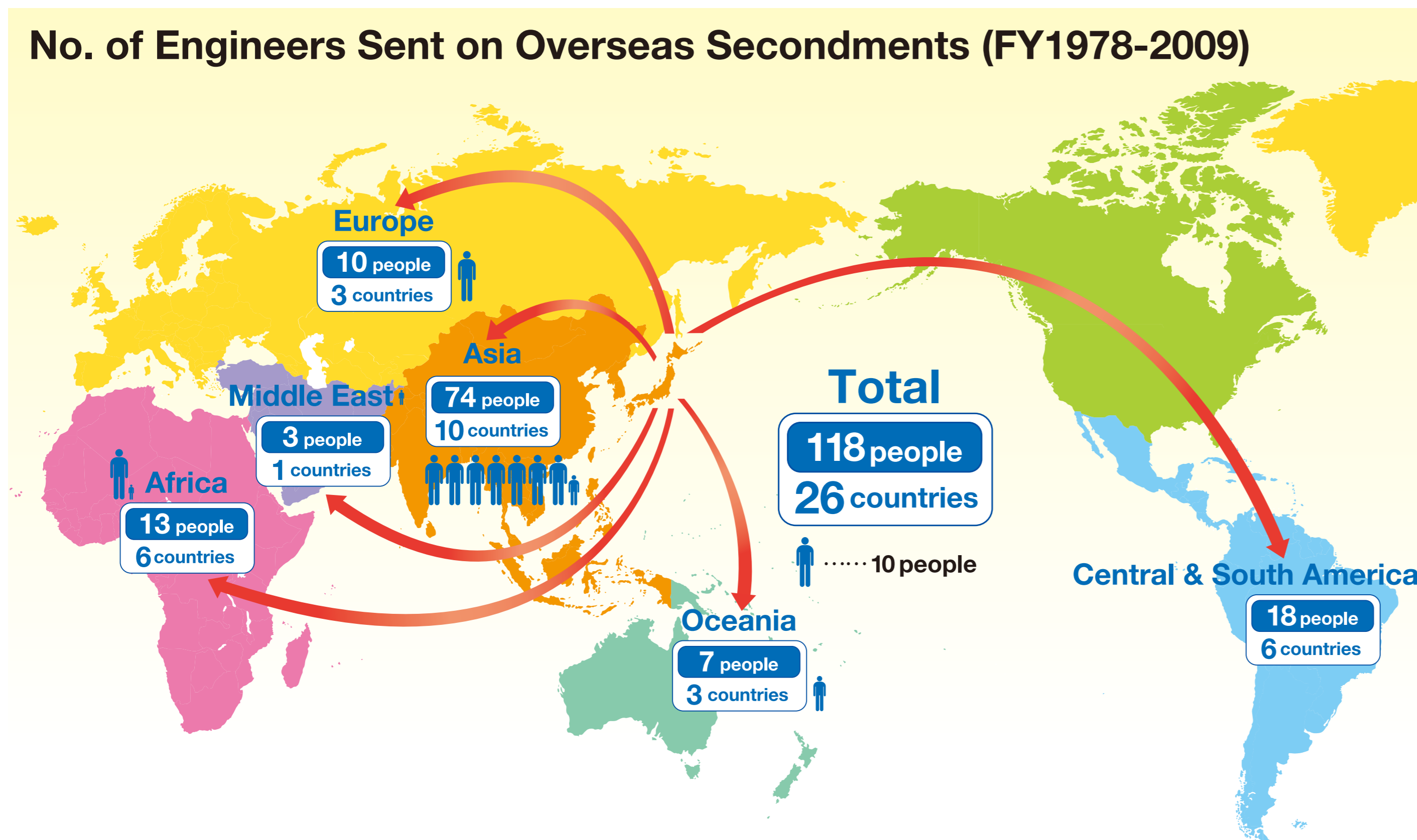


# Nagoya – Chubu Region: Working with People Overseas (Provision of Training, Personnel Secondment)

No. of Overseas Trainees (FY1983-2009)



No. of Engineers Sent on Overseas Secondments (FY1978-2009)



The city of Nagoya has been actively transferring state-of-the-art technology to developing countries for about 30 years.

# “Life of Water” Chubu Forum, Nagoya

- Consist of 109 members, having the best solution
- Offering wide range of technologies

## Private Sector

### Water Resources Development System

- Dam technology
- Desalination technology
- Technology for harnessing water energy

### Water Purification Systems

- River water purification technology
- Wastewater treatment technology

### Water Supply Systems

- Tap water (purification technology)
- Industrial water (reuse technology)
- Agricultural water (irrigation technology)

### Water Disaster Prevention / Information Systems

- Rainfall prediction technology
- Runoff / flood forecasting technology
- Flood prevention

## Central Japan Brand (Chubu Water Forum): A Name You Can Trust

Industry, academia and government work together to support numerous private sector enterprises.

