

# Collaboration among Water Utilities: Japan Water Works Association



No. C1 Ver. 1

Committee, examination, inspection and training of JWWA  
[Online] Available: <http://www.jwwa.or.jp/jigyou/kensyu.html>

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# 1. Introduction

## History of Japan Water Works Association (JWWA)

Year	Activities of Japan Water Works Association
1904	1st meeting of Federation of Water Authorities held under the theme of "Standardization of water testing methods"
1914	"Specifications for Cast Iron Pipe for Water Supply " (prior to JWWA standards) was established.
1932	Water Works Association founded, held 1st board meeting and general assembly. The first issue of <i>Journal of Japan Water Works Association</i> was published.
1933	Standing committees were formed.
1934	Quality inspection service for iron pipes started
1953	Printed and distributed " <i>Water Supply Facilities Maintenance Manual</i> " developed by the Ministry of Health and Welfare. Published " <i>Seismic Design and Construction of Water Supply Facilities</i> "
1955	Joined International Water Supply Association (IWSA, current IWA) as a corporate
1958	Started training programs. Published " <i>Guidelines for Water Supply Facilities Standards</i> "
1997	Launched Quality Certification Center, started qualification certification service.
2006	Revision of " <i>Water Supply Facilities Maintenance Manual</i> " (5th edition)

## 2. Establishment of Japan Water Works Association

### (1) History of JWWA Activities

Water supply started;  
 1887 Yokohama City  
 1891 Nagasaki City  
 1895 Osaka City  
 1898 Hiroshima City  
 1898 Tokyo City  
 :  
 Construction  
 of water supply  
 systems is promoted.

Construction of modern water supply systems started.

Facilities were designed by foreign engineers.

Little know-how about operation and management

No advice from the national government

Discussion among water utilities

In 1904, the 1<sup>st</sup> Federation of Water Authorities  
 (on standard methods for the examination of water quality)

Annual meetings were held to discuss about topics on  
 operation and engineering.

In 1932, Incorporated Association "Water Works  
 Association" approved by Minister of Interior

## 2. Establishment of the Japan Water Works Association



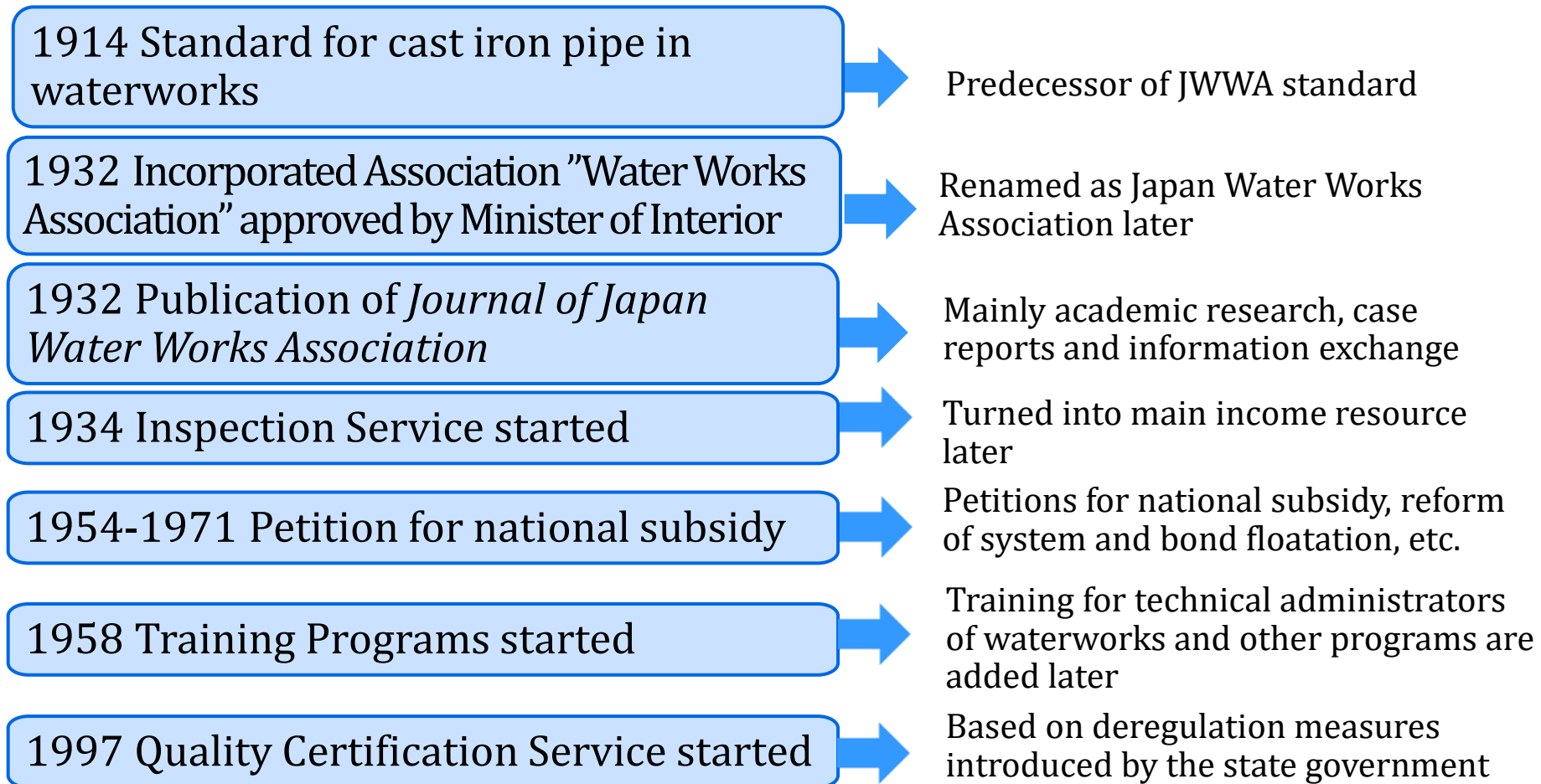
**Attendees at the 11th meeting of the Federation of Water Authorities (1913)**

JWWA, Federation of Water Authorities, *One Hundred Years' History of Japan Water Works Association* (2004).



## 2. Establishment of Japan Water Works Association

### (1) History of JWWA Activities



# 3. Activities of Japan Water Works Association

## (2) Committees

Management Standing Committee



Research and development **concerning waterworks management**

Engineering Standing Committee



Research and development **concerning waterworks technology**

Water Quality Standing Committee



Research and development **concerning water quality management**

Special task forces



Established as necessary

Other committees such as publication and inspection

- Committees are the foundation of JWWA's expertise.
- Members are assigned mainly from large water utilities.



### 3. Activities of Japan Water Works Association

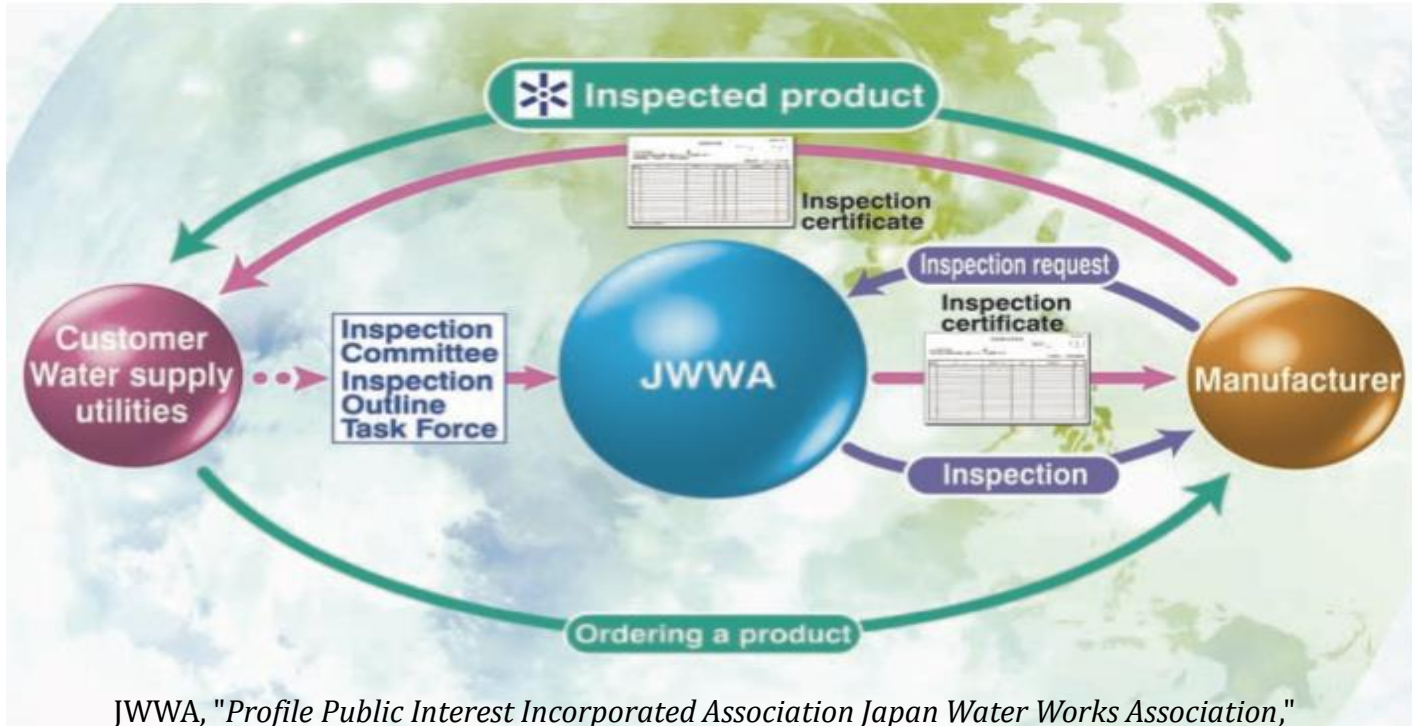
#### (3) Product Inspection Service

Inspection by each water utility



Inspection by JWWA

- Standards for materials and equipment
- Improving efficiency of inspection

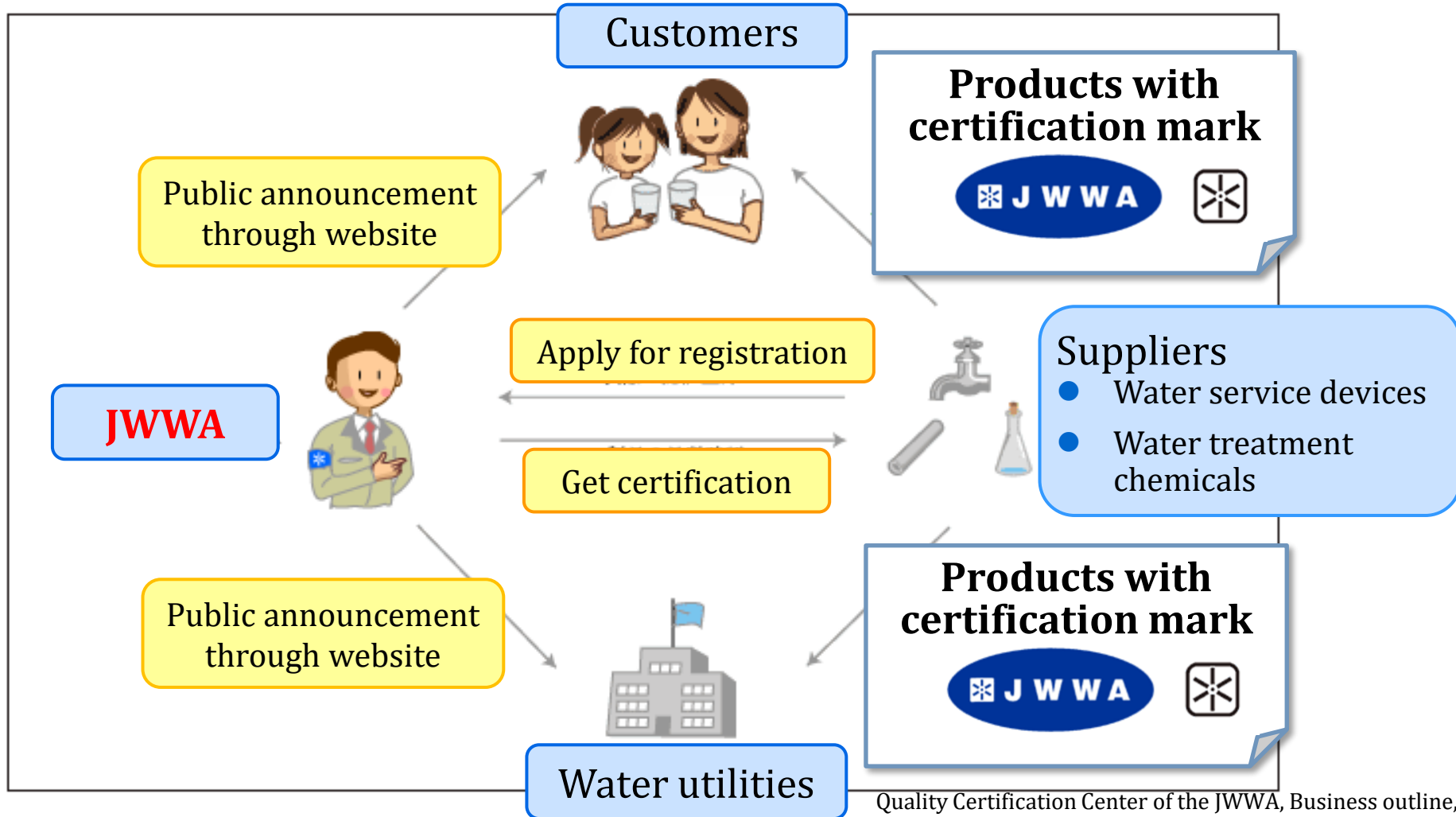


JWWA, "Profile Public Interest Incorporated Association Japan Water Works Association," [http://www.jwwa.or.jp/jigyou/kaigai\\_file/jwwaProfile2015.pdf](http://www.jwwa.or.jp/jigyou/kaigai_file/jwwaProfile2015.pdf)



### 3. Activities of Japan Water Works Association

#### (4) Quality Certification Service



Quality Certification Center of the JWWA, Business outline, [http://www.jwwa.or.jp/Center/02gyom/main02\\_1.html](http://www.jwwa.or.jp/Center/02gyom/main02_1.html)

## 3. Activities of Japan Water Works Association

### (5) Training programs

#### Management courses

Training for director generals (Executive Managing Director)

Water utility management

Practical training for collection of unpaid water bills

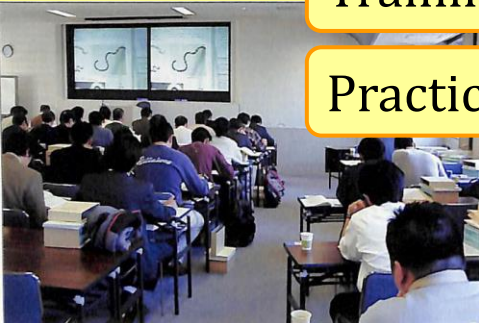
#### Technical courses

Training for technical administrators of waterworks

Training for water supply engineers

Training for water leak prevention

Practical training for water purification plant operation



### 3. Activities of Japan Water Works Association

#### (6) International Activities

1955 Joined International Water Supply Association (IWSA)

1978 Established the agency office of the 12th World Congress of IWSA

1987

- Established JWWA's International Committee
- Joined the Asia-Pacific Group (ASPAC) of IWSA
- Cooperative research with American Water Works Association (AWWA)

1999 Represents the International Water Association (IWA) in Japan since the establishment of the IWA

- JICA's training programs
- Overseas training and Senior Technical Experts for Developing Countries
- Establishing Waterworks Associations and Friendship Associations

### 3. Activities of Japan Water Works Association

#### (7) *Design Criteria for Water Supply Facilities*

- *Guidelines for Water Supply Facilities Standards 1958*
- *Guidelines for Water Supply Facilities Standards 1966*
- *Design Criteria and Guidelines for Water Supply Facilities 1977*
- *Design Criteria and Guidelines for Water Supply Facilities 1990*
- *Design Criteria for Water Supply Facilities 2000*
- *Design Criteria for Water Supply Facilities 2012*

Revised every decade

The latest information at the time of publication

Easy access to the latest information for the small and medium scale utilities

Nationwide standardization of water supply facilities

### 3. Activities of Japan Water Works Association

#### (8) *Water Supply Facilities Maintenance Manual*

- *Water Supply Facilities Maintenance Manual* 1953; the first edition
- Revised five times
- *Water Supply Facilities Maintenance Manual* 2006; the latest edition (undergoing it's sixth revision)



Standardization of maintenance

Accordance with :

- Introduction of outsourcing to a third party
- Reinforcement of water quality management
- Diversity of water treatment

#### (9) *Seismic Design and Construction Guidelines*

- *Seismic Design and Construction of Water Supply Facilities* 1953 ; the first edition
- Revised four times
- *Seismic Design and Construction Guidelines for Water Supply Facilities* 1997; the latest edition (undergoing revision after the 2011 Great East Japan Earthquake and 2016 Kumamoto earthquakes)



Standardization of seismic design and construction

Incorporating lessons learned from the Great Hanshin/Awaji Earthquake in 1995

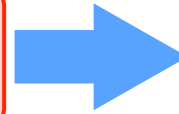


### 3. Activities of Japan Water Works Association

#### (10) Disaster Response

Supporting activities by water utilities in various places

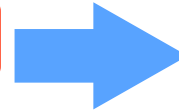
The Great Hanshin/Awaji Earthquake in 1995



*Report on emergency response in earthquake and disasters 1996*

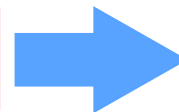
Chuetsu Earthquake in 2004

Noto Earthquake in 2007



Chuetsu Offshore earthquake in 2007

The Great East Japan Earthquake in 2011



Kumamoto Earthquake in 2016



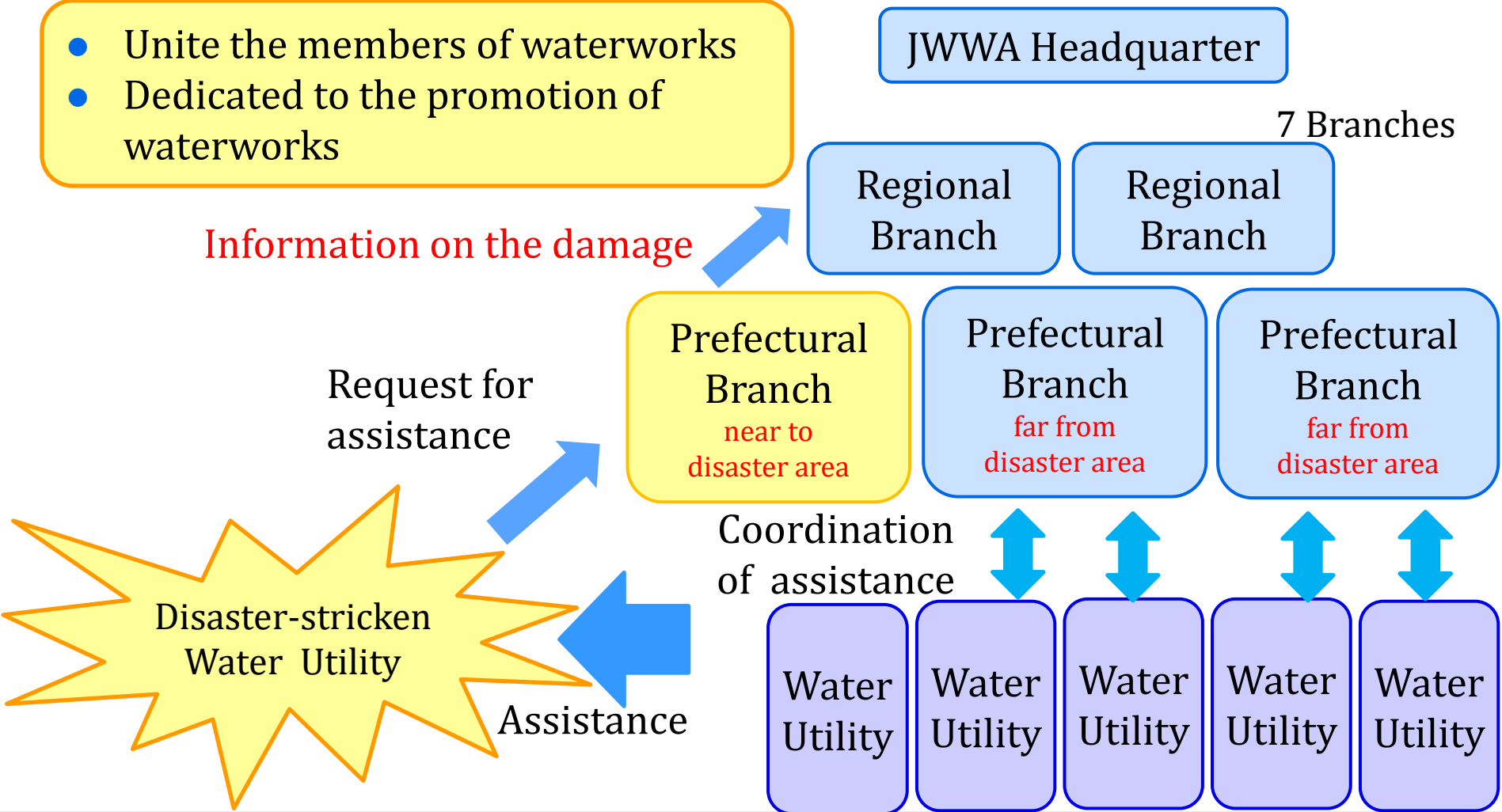
*Manuals of emergency response in earthquake and disasters 2008*

Being revised based on experience from the recent earthquakes

### 3. Activities of Japan Water Works Association

#### “Suido Ikka” (Waterworks Family)

- Unite the members of waterworks
- Dedicated to the promotion of waterworks



### 3. Activities of Japan Water Works Association

#### Emergency Response for the Great East Japan Earthquake by JWVA(1)

##### The Great East Japan Earthquake

- March 11, 2011 at 14:46
- Magnitude 9.0 centered around the Iwate, Miyagi and Fukushima
- Tsunami in large area
- Suspension of water supply ; 2.56million households



Water tanker in Iwate prefecture



Set up of Relief headquarters at JWVA



Reorganized as the Great East Japan Earthquake Reconstruction Support Headquarters

Information  
←  
→  
Arrangement

##### Assistance in emergency

- Water utilities; 550
- Water tankers; 13,500
- Total supporters; 41,000

##### Restoration support

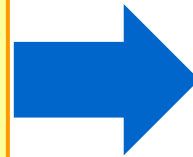
- Total supporters; 3,500
- Repair of breaks and leaks

### 3. Activities of Japan Water Works Association

#### Emergency Response for the Great East Japan Earthquake by JWVA(2)

##### The Relief Headquarters

- Arrangements for **dispatching water tankers**
- **Collection of information** on extent of damage
- **Communication and coordination** with Ministry of Health, Labour and Welfare and water-related organizations



##### Reconstruction Support Headquarters

- **Collection of information** on extent of damage
- **Communication and coordination** with Ministry of Health, Labour and Welfare and water-related organizations



**Vehicles gathered from various regions in front of the Iwate Prefectural Branch**

# 4. Financial Structure of Japan Water Works Association

## (1) Membership Fees

Amount of annual membership fee depends on scale of water utility.



- Fixed fee 43,000 JPY
- Variable annual membership fee depends on annual revenue water. (diminishing system)

- Annual revenue water 1 million m<sup>3</sup> (10,000 in population); 73,000 JPY
- Annual revenue water 30 million m<sup>3</sup> (300,000 in population); 420,000 JPY
- The largest utility (Tokyo); 5,500,000 JPY

Total number of utilities; 1,482  
Water supply utilities; 1,388  
Utilities for bulk water supply; 94

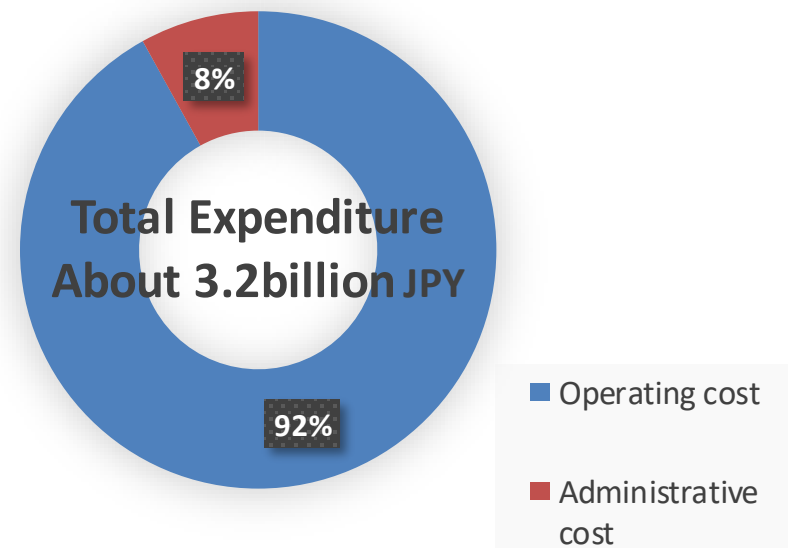
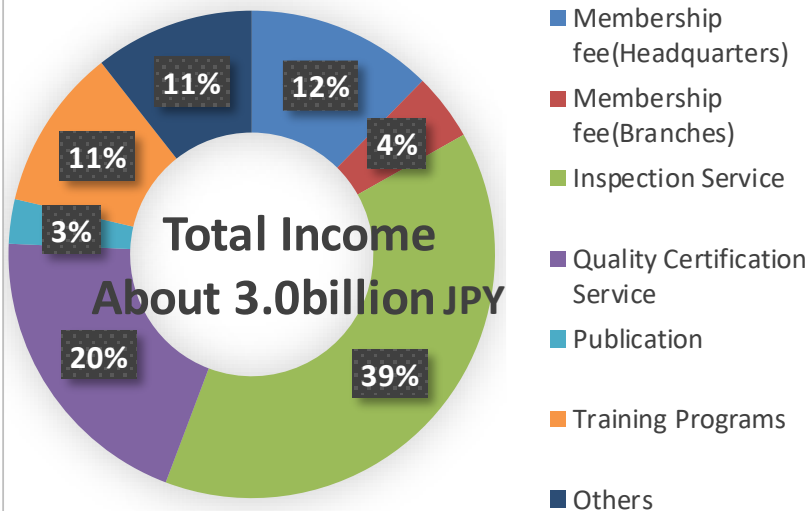
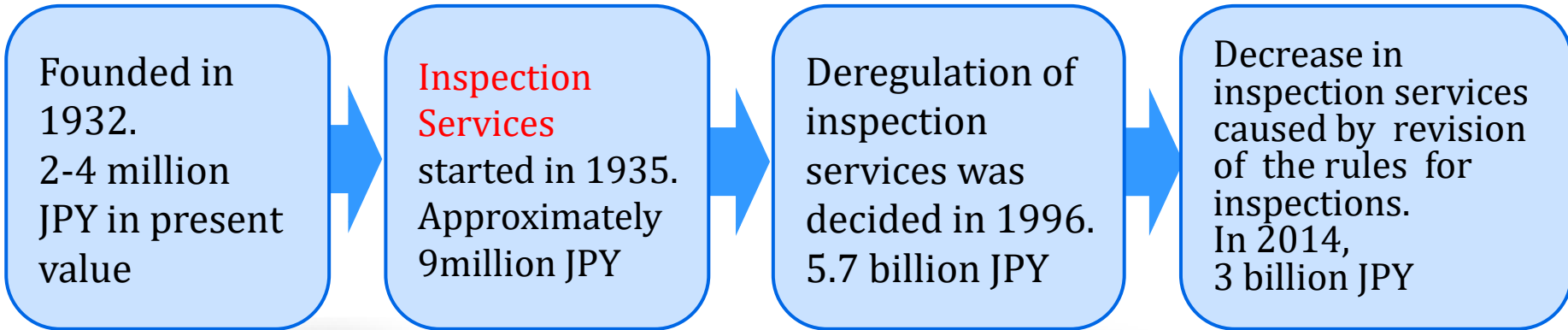


The number of JWWA members;  
1,361  
=92% of the total utilities



# 4. Financial Structure of Japan Water Works Association

## (2) Changes in Revenue Sources



## 5. Other Organizations in the Water Supply Sector

Japan Small Scale Water Works Association

Support for Small Scale Public Water Works; Publishing handbook for national subsidy

Japan Water Research Center

Information collection, research and development activities, public promotion and others about the waterworks technology

Federation of Japan Water Industries, Inc.

Technical collaboration among private companies

Japan Water Plumbing Engineering Promotion Foundation

Promotion of water plumbing engineering

Japan Finance Organization for Municipalities

Joint financing for bond floatation

Nihon Suido Shimbun  
Suidou Sangyou Shimbun

Specialized newspaper concerning water supply, semi-weekly

## 6. Lessons Learned (1)

- **(Cooperation among Water Utilities)** JWWA was founded through discussions among water utilities on water quality, and operation and management of water supply. **Cooperation among members** plays a critical role in sharing knowledge and experience and mutual support in case of disaster response.
- **(Communication between Government and Utilities)** JWWA plays an important role in facilitating **communication between the national government and water utilities**, e.g. it disseminates and draws its members' attention to national policies and lobbies for government support on behalf of the utilities.
- **(International Activities)** JWWA participates **at the International Water Association (IWA)** board meetings in coordination with the Japan Society on Water Environment. JWWA contributes to **overseas training**, dispatches **experts** and supports **establishment of waterworks associations** in developing countries.

## 6. Lessons Learned (2)

- **(Materials and Equipment Quality)** JWWA develops standards for materials and equipment, and guarantees their high quality level with its inspection and quality certification services.
- **(Publication of Guidelines)** JWWA publishes the “*Design Criteria for Water Supply Facilities*,” “*Water Supply Facilities Maintenance Manual*,” and “*Seismic Design and Construction Guidelines for Water Supply Facilities*” to provide the latest information to water utilities. These publications have contributed to stable operation of water supply nationwide even in rural areas.
- **(Disaster Response)** Natural disasters occur frequently in Japan. JWWA organizes disaster response activities and makes valuable and significant contribution to effective emergency response and restoration of damaged utilities.

## 6. Lessons Learned (3)

- **(Financial Structure)** JWWA's revenue comes from **membership fees** and **revenue generating services** such as **inspection** and **certification**, which contribute substantially to its sound financial foundation. The income generating services contribute to the improvement of the water supply industry. However, the income from these services is declining because of recent regulatory changes. The revenue sources of the association need to be **diversified** in order to mitigate the risk caused by changes of regulations and business environment.