

Policies, Measures, and Collaboration for integrated implementation toward sustainable Integrated Water Resource Management at Sub-national level

Case Study: City of Nagoya, Japan

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Overview

- 1. Introduction: Basic Act on Water-Cycle Policy - IWRM Efforts at river basin scale in Japan**
- 2. Case Study: the City of Nagoya**
- 3. Challenges, Policies & Measures in the City of Nagoya**
 - 3-1 Protection of water sources and basin cooperation**
 - 3-2 Improvement of the water environment**
 - 3-3 Promotion of local economy through public-private cooperation**
- 4. Conclusion: Factors to realize sustainable IWRM**

Basic Act on Water Cycle (enforced on Jul 1, 2014)

- New Water Policy in Japan

Purpose 1 (Article 1)

- Measures regarding water cycles shall be promoted in an integrated manner and comprehensively, thereby
- maintaining or recovering sound water cycles and contributing to the sound development of the national economy and society and to the stable improvement of the citizens' lives.

Definition (Article 2)

1. Water cycles

→ Circulation of surface or underground water mainly in river basins in the process of reaching ocean or other destinations through evaporation, precipitation, flow or infiltration

2. Sound water cycles

→ Water cycle of which functions for human activities and environmental conservation are properly maintained.

Basic Principle (Article 3)

1. Importance of the water cycle
2. Public nature of water
3. Consideration toward sound water cycles
4. Comprehensive river basin management
5. International cooperation regarding water cycles

Basic Plan on Water Cycle Policy (Article 13)

Basic measures (Articles 14-21) The Headquarters for Water Cycle Policy (Articles 22-30)

Basic Plan on water cycle from July 2015

- Developed based on the Article 13, and approved by the Cabinet in July 2015
- * Establish the river basin water cycle council, which consists of local government, the local branch offices of the government agencies, organizations, business operators and local residents.
- * The river basin water cycle council develop a comprehensive river basin water cycle plan horizontally across each field.
- * The stakeholders will mutually cooperate in a flexible manner to implement measures concerning forests, rivers, farmland, sewage systems and the environment according to the basic concept of the river basin water cycle plan.

Basic Act on Water-Cycle Policy is enforced from 2014

IWRM Efforts at river basin scale in Japan

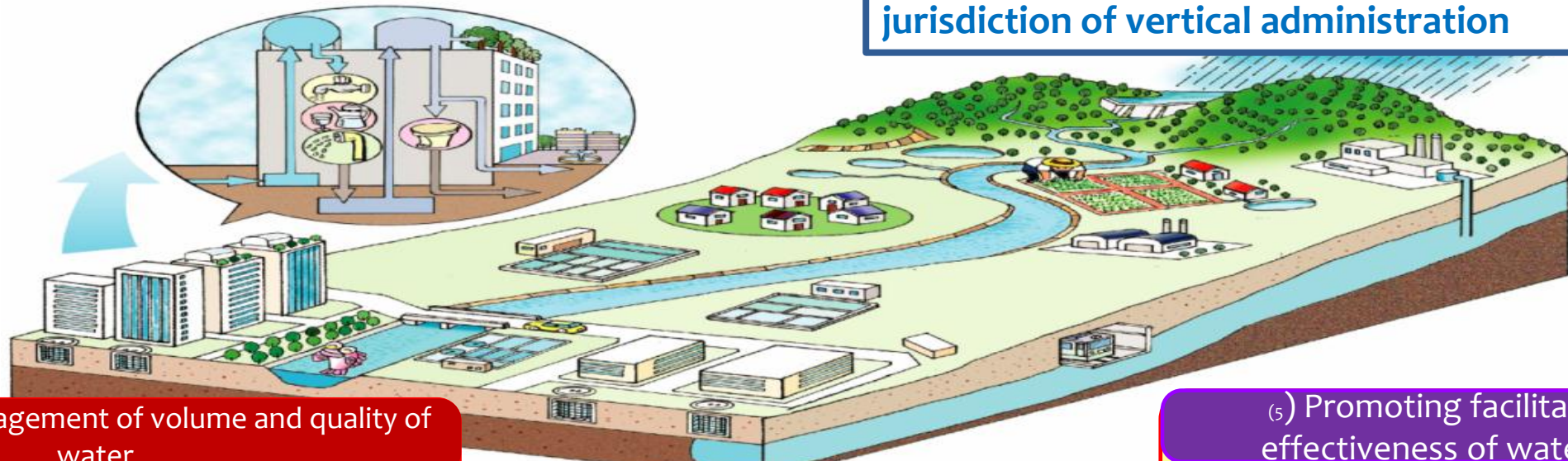
(1) Development, operation, and maintenance of facilities

- Renovation and maintenance of existing facilities
- Efficient operation of water resources facilities
- Development of new facilities
- Crisis management during disasters such as earthquakes and accidental water pollution
- Effective use of natural energy of water resources

(2) Conserving river basins

- Restoring sound water cycle in basins
- Preserving water source areas

Challenges: implementation of actions under the institutional mechanisms in accordance with the jurisdiction of vertical administration



(3) Integrated management of volume and quality of water

- Securing water quality and quantity needed at specific points at a lower cost and using less energy

(4) Conservation and utilization of groundwater

- Groundwater use based on preservation & management

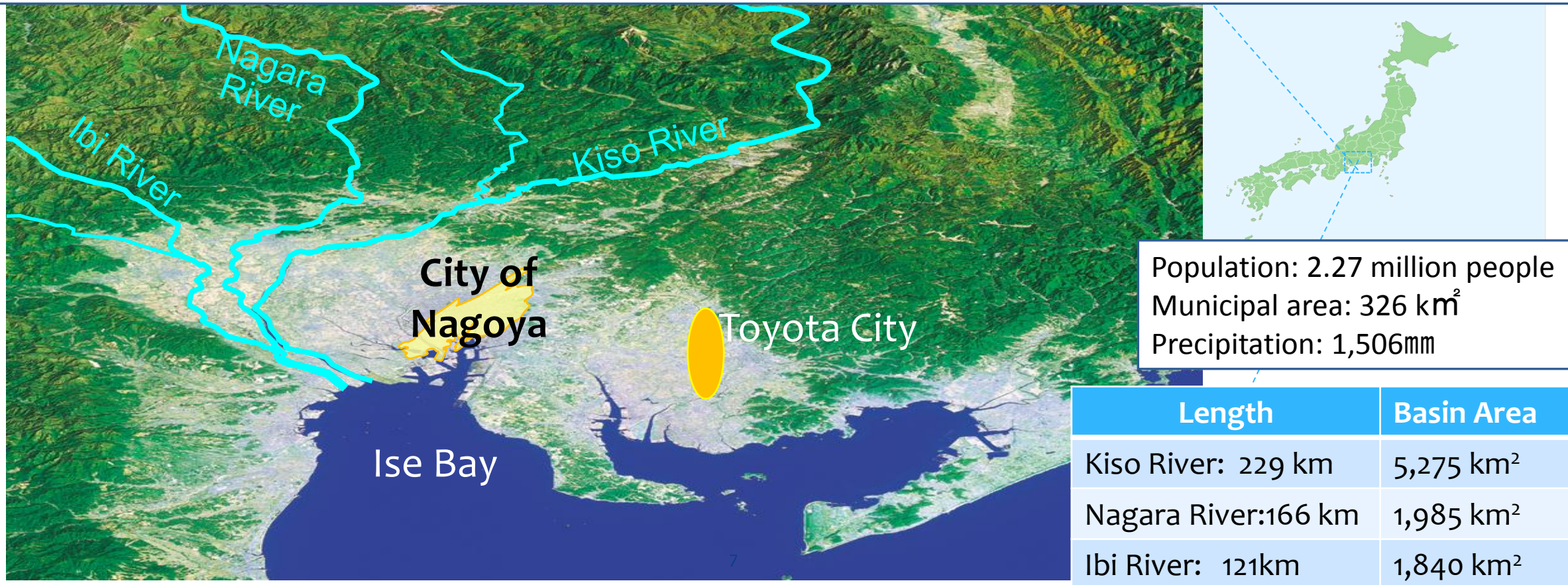
(5) Promoting facilitation / effectiveness of water use

- Water use coordination
- Promoting rainwater use
- Promoting use of recycled water
- Responding to drought

Promotion of the collaboration in river basin areas: Case Study: the city of Nagoya

Characteristic of Water utilities in Nagoya City: **slow sand filtration is used**

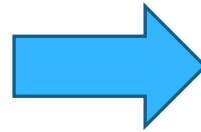
- 100th year anniversary from its operation in 2014
- **Implement the activities to support marginal rural areas of upper river basin** to maintain purified water and the economic activities



Growing need to protect water source

[Around 1950 –]

- Industrial development
- Rapidly increasing population served by piped water
- Modernization of residents' lifestyles

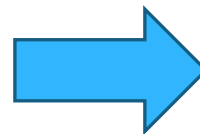


- **Increased demand for water**
- **Pollution of Kiso River**



[1958]

- **Establishment of Clean Water Act and Factory Effluent Control Act**



- **Nagoya, which receive the benefits of the Kiso River (water source), should take own actions**

Rationale to proceed the actions for IWRM

◆ Challenges for the upstream and middle areas

- Aging, depopulation
- Lack of leaders in agriculture and forestry
- Lack of revenue due to the pull back of private companies

◆ Challenges facing all of the basin area including downstream areas

- Lack of awareness about water cycle



Devastation of the water source forests...



- Depression of the soil-percolation capability of forests
- Runoff of sediment and fallen trees



- Decrease of river flow rate
- Muddy stream in river of water source

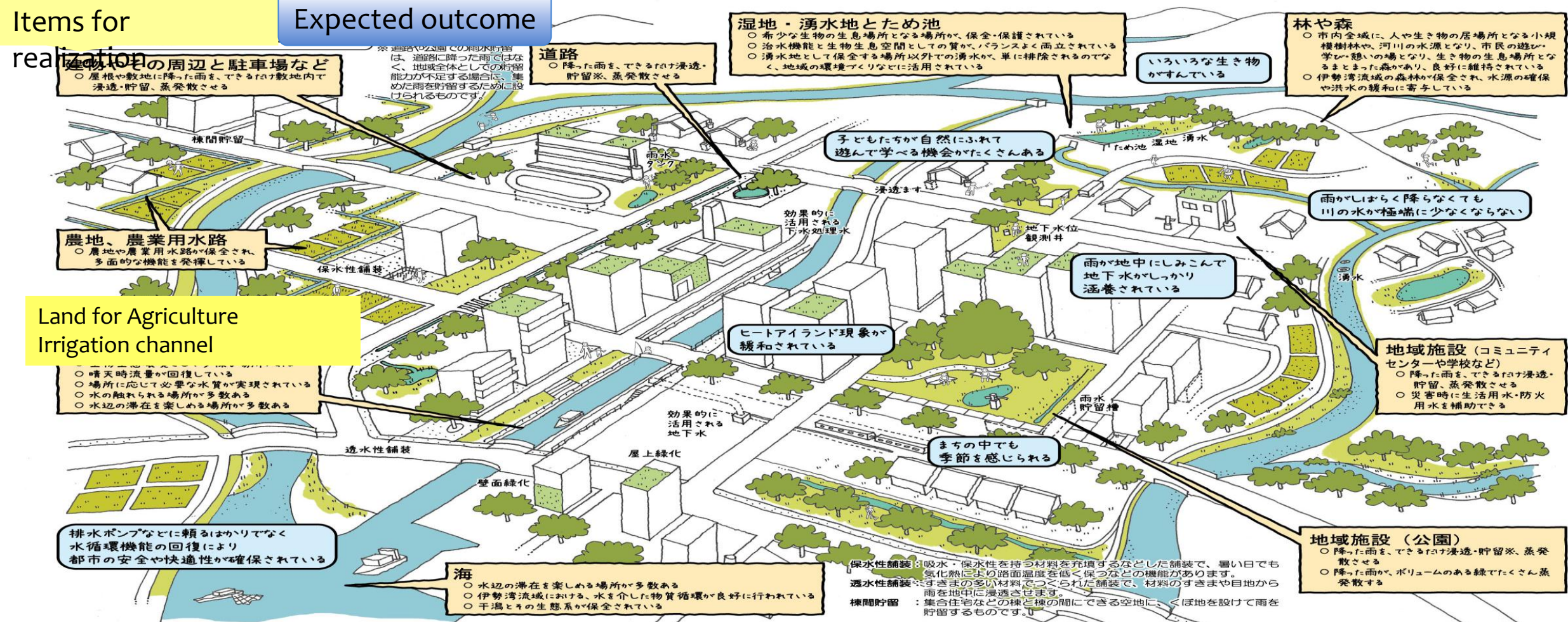


- Increase the loss from water-related disaster

- Needs to find solutions with all the basin areas working together and sharing problems

Policy Making Process by the City of Nagoya

- 1) Visualize ideal city for Sustainable Water Cycle in the long-term
- 2) Examine what city wants to realize



Source: Nagoya Waterworks & Sewage Bureau, 2016, p14-15

Backcasting approach for the realization of visions in 2050

Nagoya's strategies to recover sound water cycle by 2050

Water cycle

Forestry & Biodiversity

People & Peace

Until 2020

Develop enabling environment to realize the targets and visions

2020

20 individual targets

(2030: SDG)

2050

Water cycle Vision in 2050: Realization of Environment Capital Nagoya supported by abundant Water Cycle

Backcasting

The structure of Policies & Measures to Realize the Visions & Targets of Nagoya City

Nagoya City's Vision in 2050

Healthy & safety cities

Sustainable resource circulated city

- Vision for Environmentally Sustainable cities in 2050: Recovery of soil, water, green, and wind and activate all living in cities

- Water Cycle Vision For 2050: Realization of Environment Capital Nagoya supported by abundant Water Cycle

Harmony with economic development and nature

Low Carbon City

Nagoya City's Target in 2020

Develop Nagoya for Environmental Capital City through the collaboration with multi-partnership making use of their nature

Measure 1:

Promotion of the participation of citizen and collaboration through sharing environmental information and environment studies

Measure 2:

Promotion of collaboration for sustainable 3 rivers' basin's development and recovery of Ise-Bay

Measure 3:

Provision of safety and good quality water

Measure 4:

Secure health and safety living environment by improving water environment

Measure 5:

promotion of the reduction & recycle of waste

Measure 6:

Promotion for Sound water cycle

Measure 7:

Promotion of low carbon activities

Measures 1-7:

Examples of measures by Nagoya Waterworks & Sewerage Bureau to achieve the targets in 2020

Soft Measures for IWRM and Water Resilient City in Nagoya

2. Promotion of public participation to conserve the water environment



1 Strengthen mutual cooperation in basin municipalities



3 Promotion of local economy through public-private cooperation

1 Strengthening Mutual Cooperation for regional development in Basin Municipalities

- Establishment of Council Meeting on the Kiso Three River Basin Municipalities in 2011 to collaborate for regional development in the river basin
- 29 local government declaration to protect water, human, and biodiversity's circulation

Since then:

- The participations in the council meeting from 44 cities, towns and villages of upper, middle, downstream
- The “Kiso Three Rivers Basin Municipalities Summit” every year
- Direct visits by municipal mayors to other basin municipalities
- Focus on regional development
 - business matching between upper and lower river basin, training, inter-communication



2 Promotion of public participation to conserve the water environment

Source: Nagoya Waterworks & Wastewater Bureau

- Water quality improvement of rivers in collaboration with residents
- More than 50,000 supporters have carried out the activities
- Verify the effectiveness of activities

Cooperation with Residents



Water quality studies

Planting the trees in upper streams



Observing living creatures

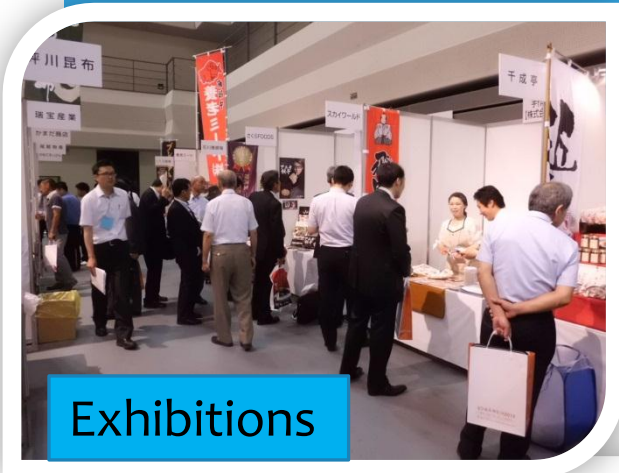


Clean up activities



3. Promotion of Local Economy through Public-Private Cooperation

– Business much meetings



FY	Target	Results (related outcomes)	
		Number of Cases	Monetary Amount
2011	Food, water, forestry	6	JPY 1.304 million
2012	Beauty, food, healing therapy	28	JPY 4.322 million
2013	Delicacies	15	JPY 5.009 million
2014	Delicacies	34	JPY 9.191 million
2015	Delicacies, manufacturing	13	JPY 2.626 million
2016	Delicacies	Currently being calculated	Currently being calculated

Source: Nagoya Waterworks & Wastewater Bureau

- Provides a forum for negotiations between producers in the upstream and middle stream areas with purchasing companies in the downstream areas
- Themes set in accordance with needs, from food, beauty, and health to manufacturing

The City of Nagoya's activities were
Awarded at the 18th Japan Water Awards on June 21, 2016



4: Factors to realize sustainable IWRM

Governance

Common
Concept

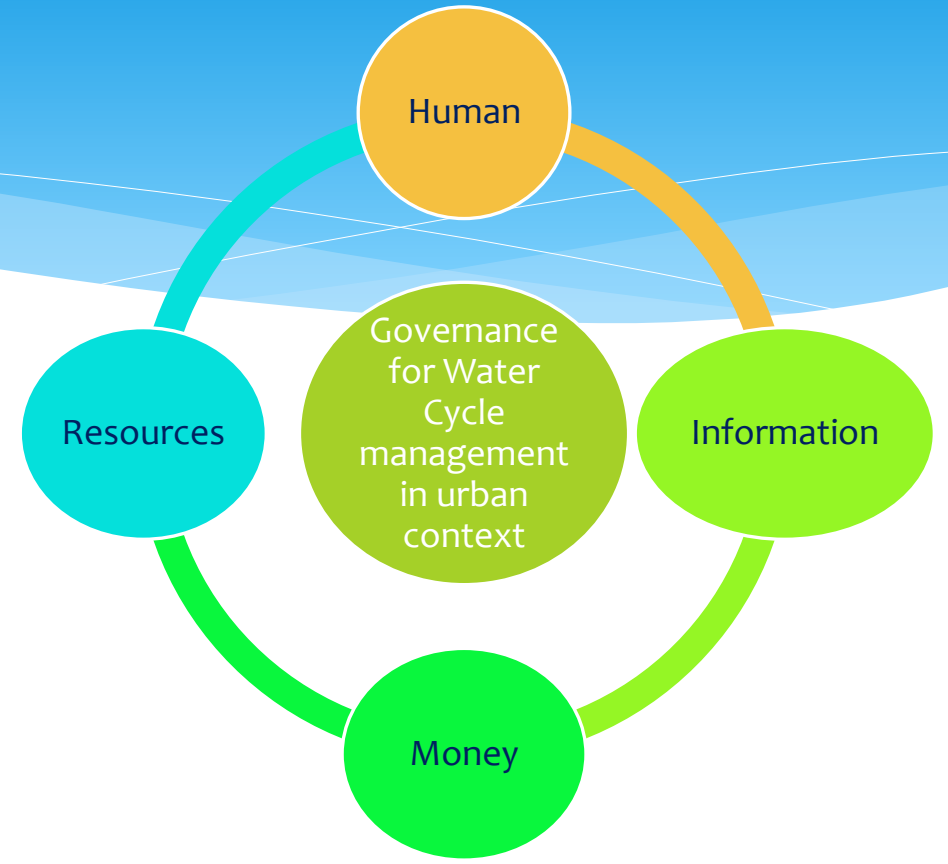
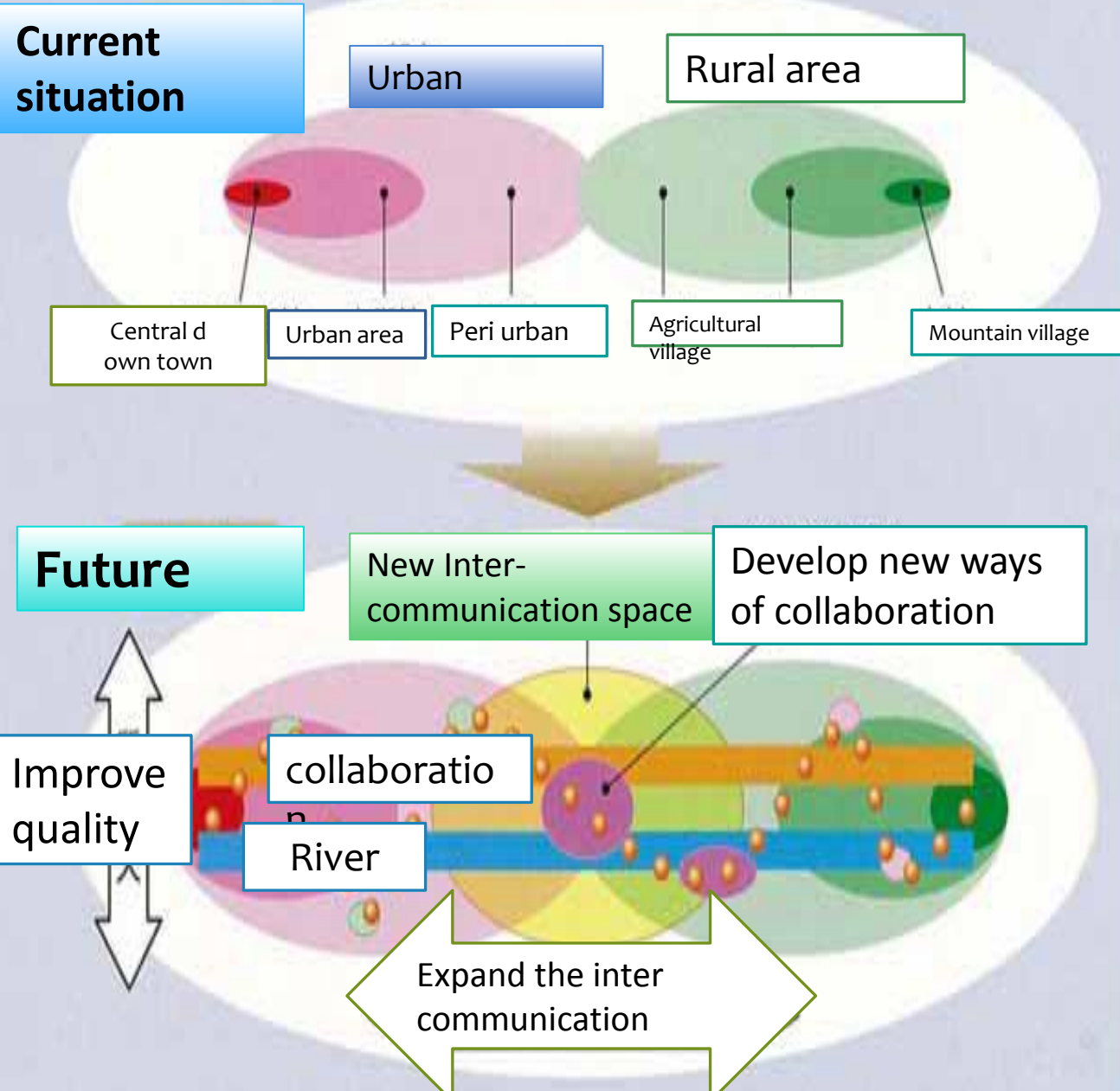
Future
Visions &
Targets

Comprehensive
Plans to realize the
vision

- ◆ Create the Mechanism (governance) to implement the measures through the discussion on mutual trust
- ◆ collaboration among the river basin areas **toward their economic & social activation and self-sustainability**

Conclusion:

From the internal-communication to the collaboration among multi-stakeholders



Develop the circulation mechanism between information, human, resources, and money for IWRM (SDG6.5) and water resilient cities

Thank You

Acknowledgement

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- **Japan Water Forum**