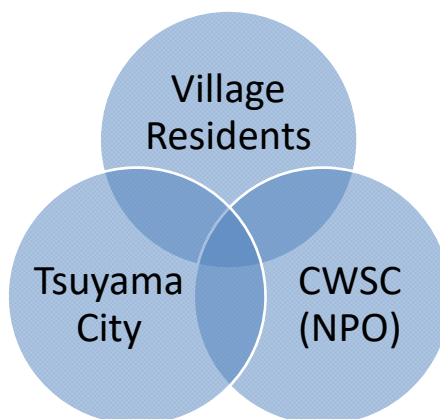


# Supporting Rural Water Supply

**(NPO) Community Water Supply  
Support Centre in Japan (CWSC)**

**Deputy Director Morifumi Seno**  
Professional Engineer: Comprehensive Technical  
Management, Water Supply & Sewerage

## Interrelationship among Tsuyama City, Community Residents, and CWSC in Marginal Villages\*



\* Marginal Villages = villages where over half of the population is over the age of 65, and the community's social, institutional, financial, and hard infrastructure are not being maintained and are possibly at risk of collapse.

## Interrelationship among Tsuyama City, Community Residents, and CWSC in Marginal Villages

- Background
  - Village Residents
  - Tsuyama City Water Services Department
  - Tsuyama City
  - CWSC (NPO)
- Roles and Responsibilities
  - Village Residents
  - Small Water Utility Association
  - Tsuyama City
  - CWSC (NPO)

## CWSC Support for Marginal Villages

- Situation (Current Condition) Surveys
- Technical Explanations
- Design Support
- **Guarantee of Facility Performance**
- Construction Supervision
- Support to Establish of Small Water Utility Associations
- Operation and Maintenance (O&M) Support
  
- Training for Design Engineers
- O&M Training for Village Managers/Technical Operators

## Changes in Management of Water Supply System Before and After CWSC Support

- Before support
  - Individual use of mountain stream water
  - Water becomes turbid during and following rain events, and is not ideal for washing and cooking
- After Support
  - Available clean water for domestic purposes
- Issues after start of water supply services
  - Water shortages (no habit to close water faucets)
  - Problem addressed by adopting a metered payment system

## A New Living Style = Community

Professional Management Systems  
(Commercial & Government Services)

Difficult to understand the internal structure and how the systems work

Mutual Cooperation  
(Community) System

Tedious and inefficient (with for e.g., a lack of organization and influences from people relationships)



Currently finding the best balance between both systems  
(An alternative to Japan's traditional community system  
of 講[Kou]・結い[Yui]・もやし[Moyai])

## Next Steps

- Technical Support for Water Supply in Marginal Villages using Biological Treatment Systems
  - Train design engineers
  - Prepare manuals (for O&M and design)

## Weaknesses of Manuals

- **Uncertainties**
  - Human Uncertainties
    - Intentionally ignoring or deviating from the manual
    - Carelessness, resulting in deviating from the manual
    - Use of the manual even when it is not applicable
    - Errors in the manual
  - Inherent Uncertainties
    - Contents or situations that cannot be manualized

**Manuals cannot address unexpected events**

- **Too much emphasis on safety also results in inefficiencies**