

Benchmarking Study and Compliance to UN-SDG on Water Supply and Wastewater Management System of a Philippine Smart City: *The Case of the City of Cauayan, Isabela*

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Outline of Presentation

- Rationale/Background
- Objectives
- Methodology
- Results and Discussions
- Summary and Conclusions
- Recommendations for future actions



Rationale/Background



BENCHMARKING WATER SUPPLY & WASTEWATER MANAGEMENT SYSTEM IN CAUAYAN CITY

Cauayan City: Smarter City

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF SCIENCE AND TECHNOLOGY

DOST CHIEF NAMES CAUAYAN IN ISABELA AS "SMARTER CITY"

www.dost.gov.ph

BusinessMirror
News - World - Business - Sports - Opinion - Lifestyle - Features - More

Isabela's Cauayan City named "Smarter City"

www.businessmirror.com.ph

Philippine Star

CAUAYAN CITY is joining the United Nations in achieving the new set of



**ONE CAUAYAN
FOR GLOBAL ACTION**



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Cauayan City is a popular host and major sponsor for International Gatherings on Water and Climate Change



FIRST INTERNATIONAL CONFERENCE ON GOVERNANCE AND PARTNERSHIP, AND TECHNOLOGY EXHIBITION ON CLIMATE CHANGE ADAPTION AND DISASTER RISK REDUCTION MANAGEMENT

October 22-26, 2018



February 2-4, 2019

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Objectives

1. To characterize status of water supply system and roadmaps towards UN-SDG compliance of the City of Cauayan;
2. To determine enabling policies/ordinances of the local government unit in accordance to water security and management and consideration to climate change;
3. To assess water users satisfaction in domestic and agriculture sector;
4. To facilitate participatory approach in crafting future action plans

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Methodology

1. Stakeholders' Forum



Participating Sectors/Agencies

- Health
- Business
- River Basin Organization
- Labor
- Civil Society
- Agriculture
- Environment
- Tourism
- Education
- Refilling Station
- Service Provider/Cauayan Water District
- Municipal Planning & Development Office, CGU
- Municipal Engineering Office, CGU
- Barangay Captains, LGU
- Property Developers & Long Term Institutional Investors
- Women Group
- Youth
- Indigenous People

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Methodology

2. Key Informant Interview (KII)



Methodology

Household and Farmer Satisfaction Survey

388 Number of HH Respondents

400 Number of Farmer Respondents



Results

Enabling Laws/Ordinances on Water Management

Number	Nature
Ordinance No. 2009-005	Ordinance Prescribing Penalties to any Person and Corporate Entities Indiscriminately Throwing and Dumping of Garbage and Dead Animals along River Banks, Creeks and Bodies of Water within the Territorial Jurisdiction of the City of Cauayan, Isabela.
Ordinance No. 2015-067	An Ordinance Establishing a Septage Management System in the City of Cauayan, Province of Isabela to include Establishment of Proper Sewage Treatment as well as in Conformance with National Government Mandate.
Resolution No. 2015-077	Resolution Adopting the Work and Financial Plan on the Formulation of the 10-Year Solid Waste Management Plan of the City of Cauayan, Isabela.
Ordinance No. 2016-082	An Ordinance Establishing Water Conservation Programs in the City of Cauayan.



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Roadmaps, Targets and Key Programs

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Targets

- Achieve universal and equitable access to safe and affordable drinking water for all;
- Achieve access to adequate and equitable sanitation and hygiene for all and end open defecation;
- Improve water quality by reducing pollution, eliminating dumping; halving the proportion of untreated wastewater;
- Substantially increase water-use efficiency across all sectors;
- Implement integrated water resources management at all levels;
- Expand international cooperation and capacity-building support in water- and sanitation-related activities and programmes, including water harvesting, water efficiency, wastewater treatment, recycling and reuse technologies;
- Support and strengthen the participation of local communities in improving water and sanitation management



Goal 13: Take urgent action to combat climate change and its impacts

Targets

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters;
- Integrate climate change measures into national policies, strategies and planning;
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning



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Key Program Interventions

- Expansion of Coverage of Water Services Agriculture, Domestic and other Uses;
- Implementation of Integrated Water Resources Management;
- Mainstreaming of Climate Change Adaptation to Local Government Planning;
- Build Infrastructures and systems for waste water treatment and sanitation;
- Improve water quality for domestic and environment;
- Strengthen climate resilience and capacities of communities and individuals;
- Seek stronger partnership and collaboration to achieve the above programs



Results SWOT Analysis

STRENGTHS	WEAKNESSES
<p>1. Existence of enabling laws to comply with the UN SDGs and Water Related laws.</p> <p>2. Recipient of various Awards a. Seal of Good Local Governance b. Declared as First SMART City in the country by the DOST.</p> <p>3. Water infrastructure development such as: Irrigation system, Urban drainage system, Sanitary landfill, Flood Control Facilities Small Water Impounding projects, etc.</p> <p>4. ISO 9001:2015 Accredited for quality management system in the conduct of its duties to meet the needs of the people.</p> <p>5. Irrigation infrastructure and services are in place</p>	<p>1. limited water supply for domestic use due to limited sources</p> <p>2. Perception of households on the poor quality of water from Cauayan City Water District area of coverage</p> <p>3. Lack of Laboratory Facilities for water quality analysis.</p> <p>4. Lack of modern/innovative technologies for water and waste water management system.</p>

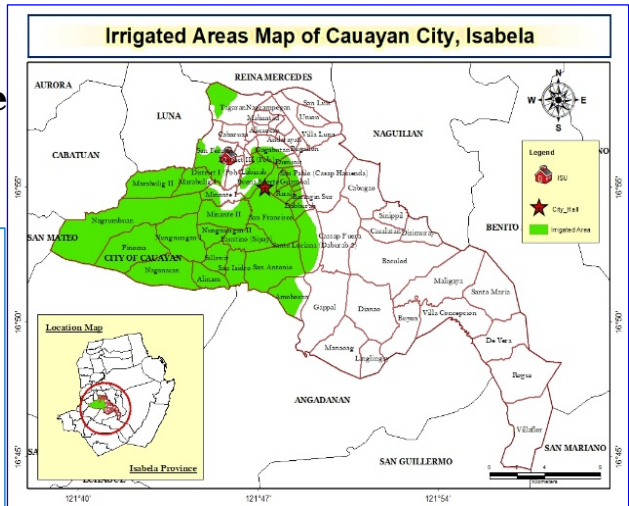
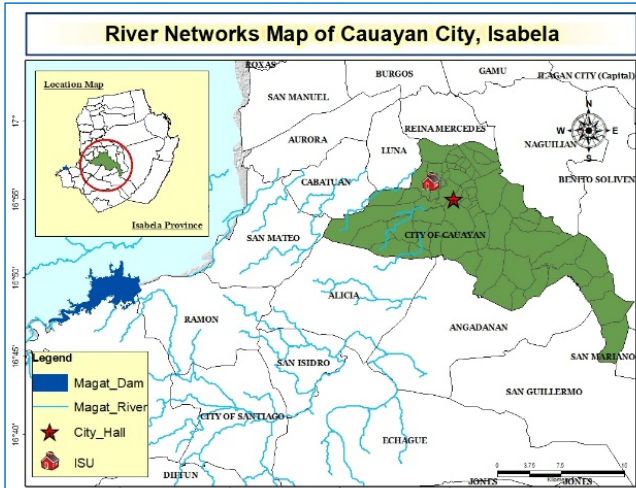
Results - SWOT Analysis

THREATS	OPPORTUNITIES
<p>1. Improper waste management resulting to contamination of water sources due to presence of informal settlers near water bodies.</p> <p>2. Commercial and Industrial establishments do not have WTF(Water Treatment Facility)</p> <p>3. Negative impact of climate change such as: drought, flood and typhoon.</p>	<p>1. Strong government support on integrated water resources management in cities and urban centers.</p> <p>2. Opportunities for linkages with government and private institutions working to improve water management.</p> <p>3. Availability of overseas development assistance to modernize water supply management system.</p>



Results

Surface Water Resources and Rice Irrigated Area: 80% of Irrigable Areas are covered



Annual Water Use = 881 million cu. m.

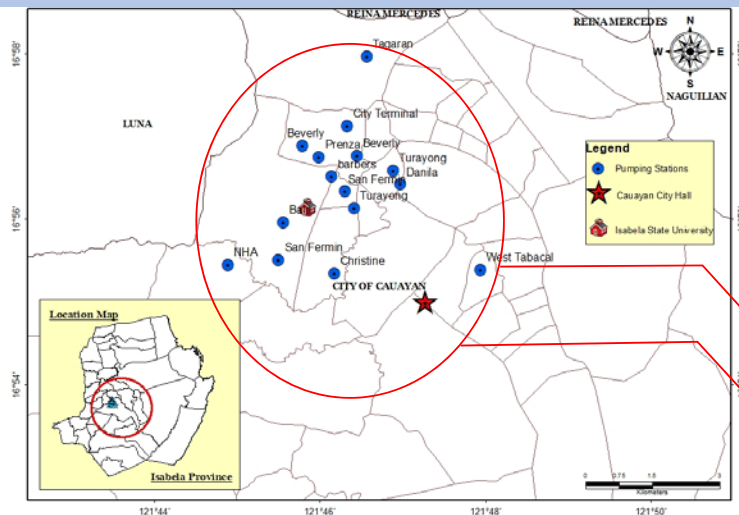
- Agriculture = 95%, mainly surface water
- Domestic = 2%, groundwater
- Others = 3%, groundwater

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Results

Area Coverage and Water System Facilities

Pumping Stations and Elevated Reservoirs



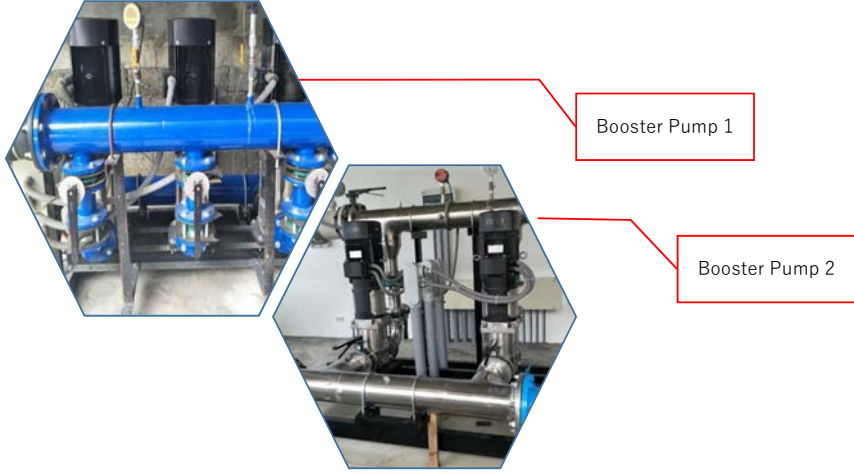
- 15 Pumping Stations
- 8 Elevated Reservoirs



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Results – Water Supply Infrastructures

Booster Pumps

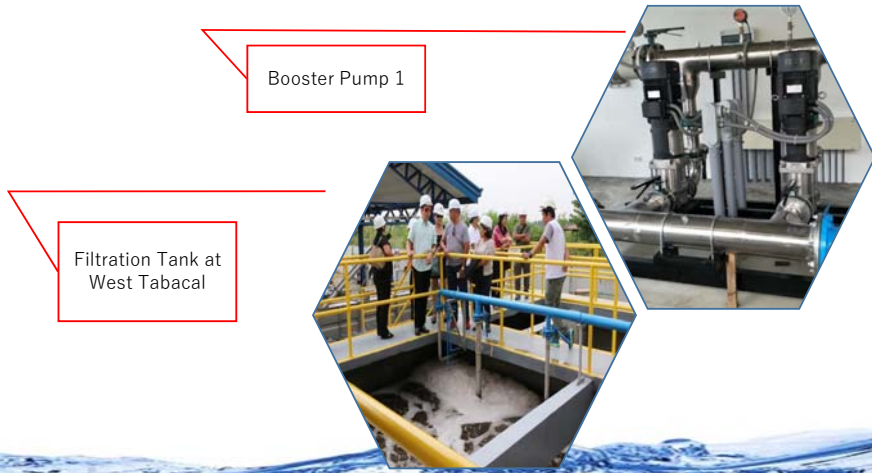


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Results – Water Supply Infrastructures

Filtration Tanks

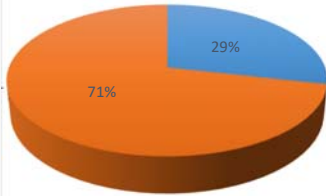
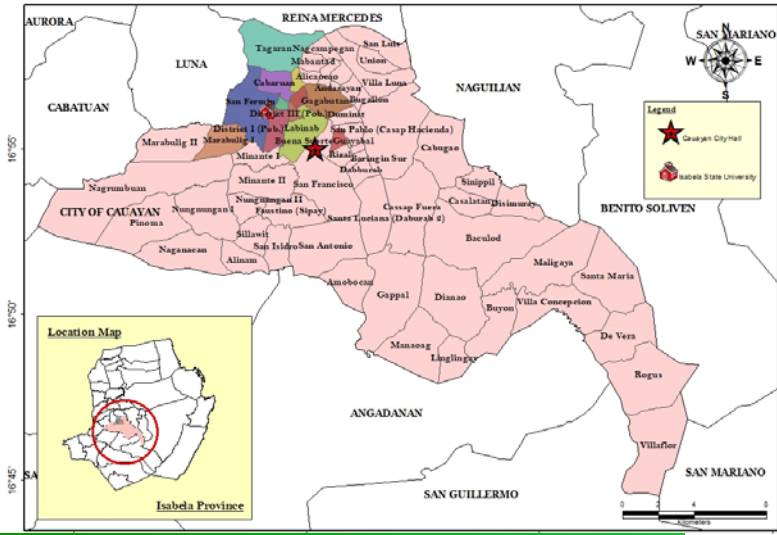


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Coverage Area of Water District: 12 communities in the city center at 40% connectivity

Number of Households Served



■ served ■ total household

Households Served	Total Household
12,067	30,207

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Results

Distribution Efficiency = 87.75%

2,863 households

unaccounted water...



consumed 88%

Pumped m ³ per day	Consumed m ³ per day	Unaccounted water m ³ per day
10,518.13	9,229.63	1,288.50

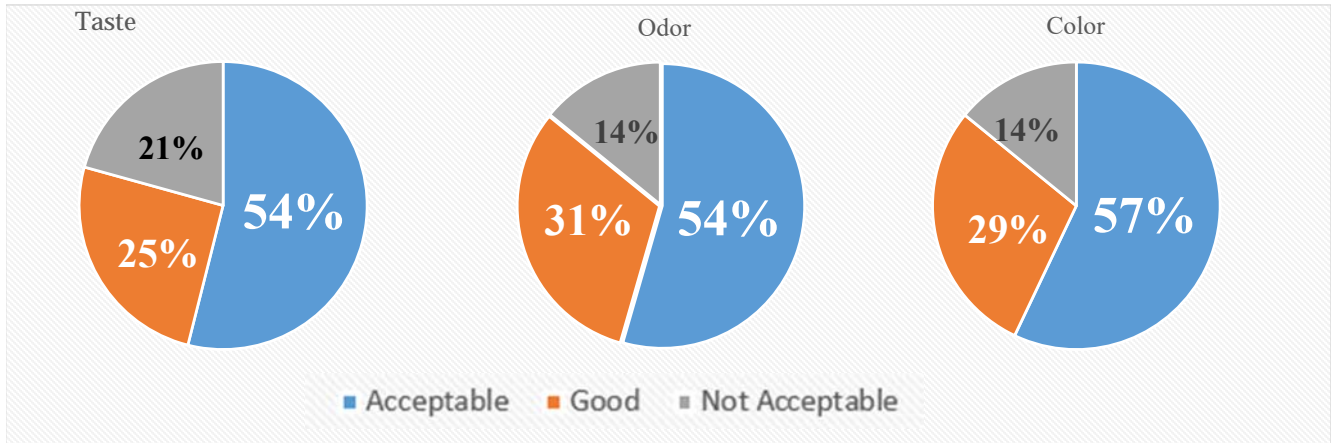


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Results

HH Respondents Perception on water quality from water district

Number of Respondents = 388

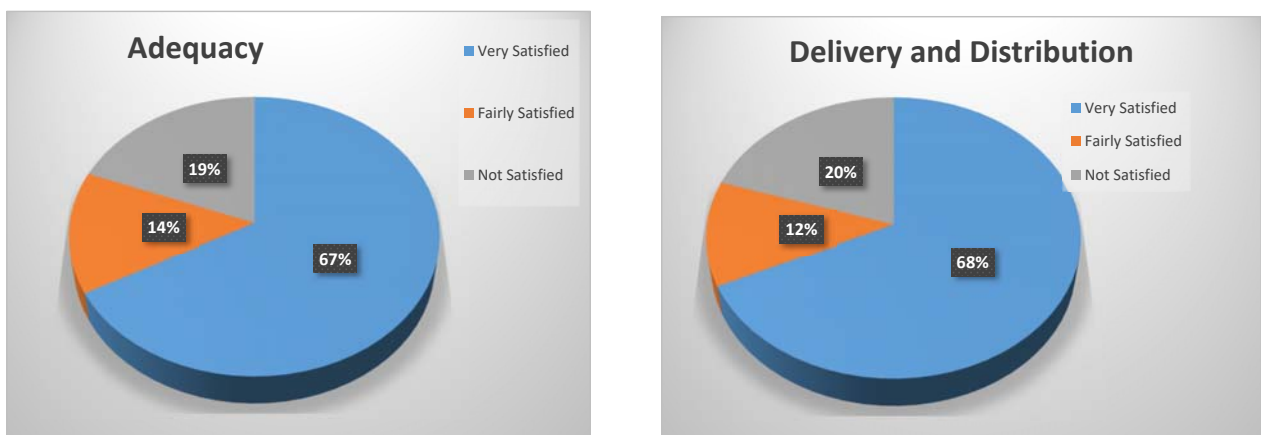


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Results

Farmer Respondents Perception on adequacy and timeliness of water supply

Number of Respondents = 400



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Summary and Conclusions

- Limited Service Coverage of the Water District due to limited water resource and economic viability consideration;
- Coverage for Irrigation water service area is high and farmer satisfaction rating is generally satisfactory;
- Reported depletion and contamination of aquifers and other water sources since shallow aquifer are mainly utilized;
- Quality of water is perceived to be not very acceptable for drinking by some water users;
- Lack of integrated water management plans yet adopted to climate change and vulnerabilities;
- No waste water treatment facilities yet resulting to direct disposal of wastes to water bodies

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Recommendations for immediate future actions

- Conduct water balance study under present and future water resources and use;
- Increase water supply through development of additional/alternative water resources and implementation of conservation measures;
- Establish water supply and waste water treatment facilities and laboratories under government control;
- Introduce new and innovative water management technologies and system adopted to climate change;
- Develop strategies and master plan for integrated urban water management adaptive to climate changes and mainstreaming environmental protection and aesthetics



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Cauayan City's Invitation for Partnership

We invite RECWET of the University of Tokyo to visit our City in the near future and explore partnership possibilities by extending technical assistance, and planning approaches on sustainable water management and climate change adaptation in the City of Cauayan

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