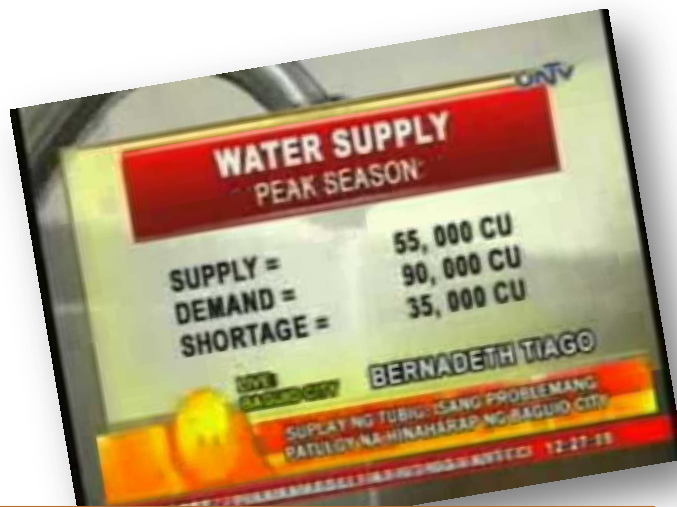


# Water Stress

in Three Types of Communities Surrounding the  
Sagudin-Balili River, Cordillera Highlands,  
Northern Philippines

*Author: **Maria Consuelo C. Doble**  
Co-Authors: **Abansi C. and Cariño, J.***

*Towards Good Water Governance for Development  
(Water Governance for Development Research Program)  
Funded by the **Emerging Interdisciplinary Development Research**  
of the University of the Philippines System*



**SUN STAR**  
Baguio

**Baguio facing water crisis**

**BAGUIO Midland Courier**  
EXPONENT of the WONDERLAND of the CORDILLERAS and the RICHES of ROCANDIA

**BWD: Water supply won't match demand in 8 years**

**PHILIPPINE DAILY INQUIRER**

**Water crisis may worsen Millions in Metro endure rationing**

**Honasan: Amnesty for Trillanes**

**Sarmiento appointed Pagcor chief**

**Slay of activist kin accidental?**

**Aquino stands by Abads: where's the honeymoon?**

**Cinemalaya showcases best of RP indies**

# RATIONALE

“Water is looked upon as life itself.”

– *Macli-ing Dulag, Igorot hero*

Indigenous people in the Cordillera “see the death of rivers as decapitation of communities from the ecosystem that once supported them.”

– *George Facsoy, Forester of the Cordillera Ecological Center*

“Water scarcity is both a natural and a human-made phenomenon... freshwater is distributed unevenly and too much of it is wasted, polluted and unsustainably managed.”

- *United Nations Department of Economic and Social Affairs  
(on water scarcity)*





# WATER STRESS DEFINED



## Schultz (2014)

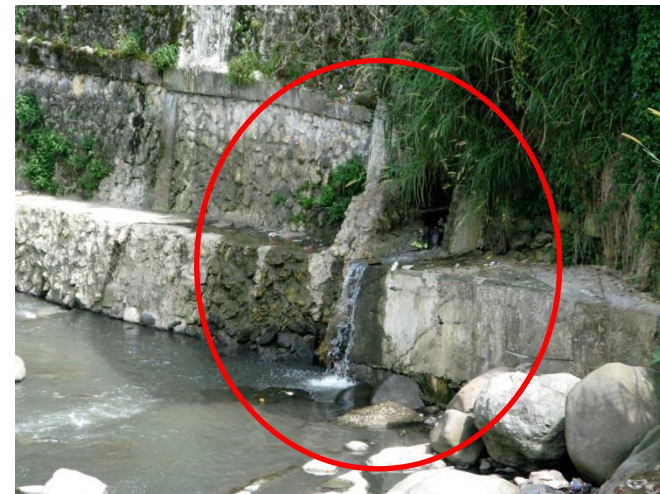
- Inability to meet human and ecological demand for water; increased water scarcity, degradation of water quality and environmental flows, and poor access to water



Source: Moffett, C. (2015). And Water for All

## Fry (2005)

- Water is not available for different types of uses (domestic, agricultural, industrial)



# STUDY SITES

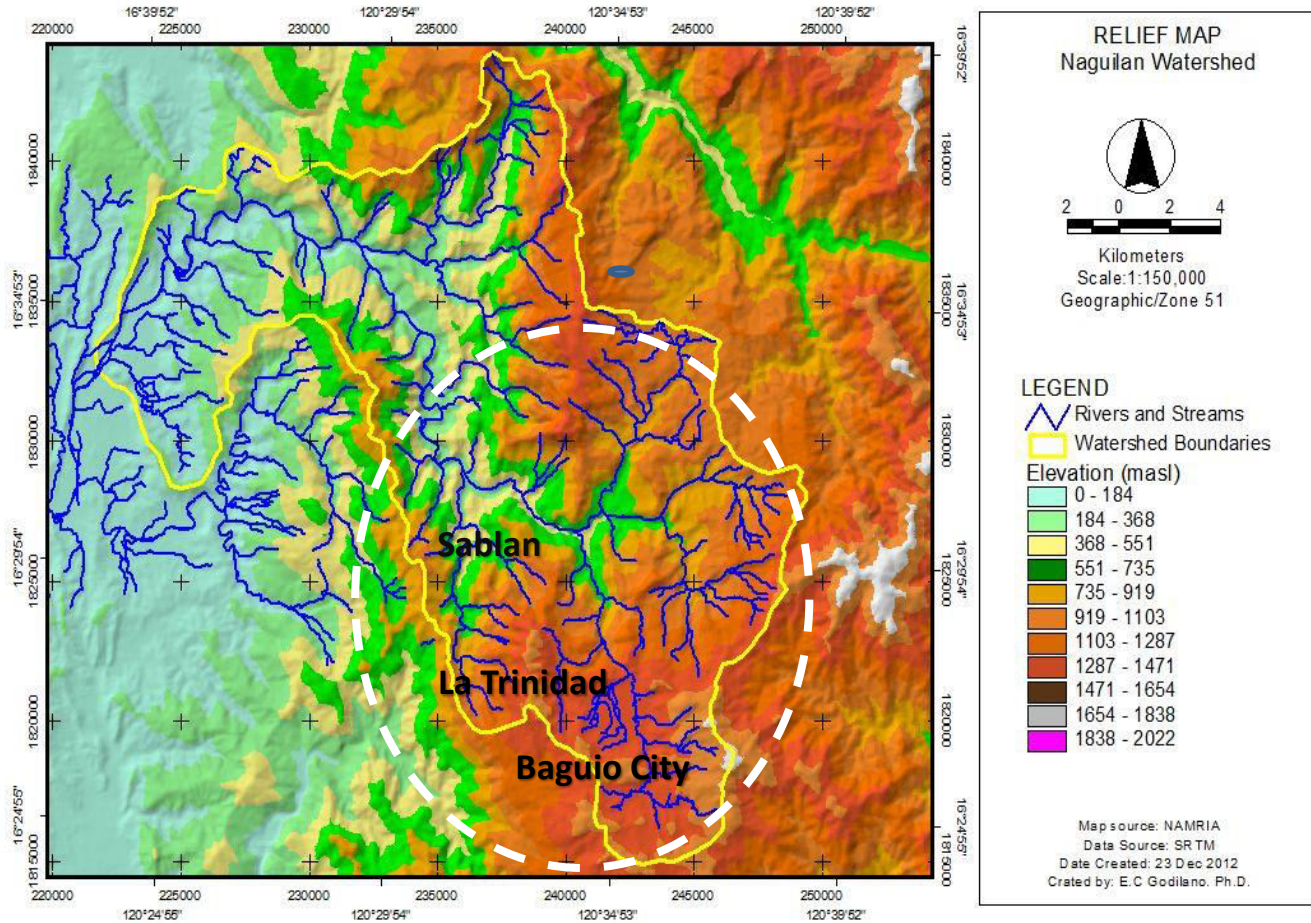


**Sagudin-Balili River System,  
Benguet province,  
Northern Luzon, Philippines**

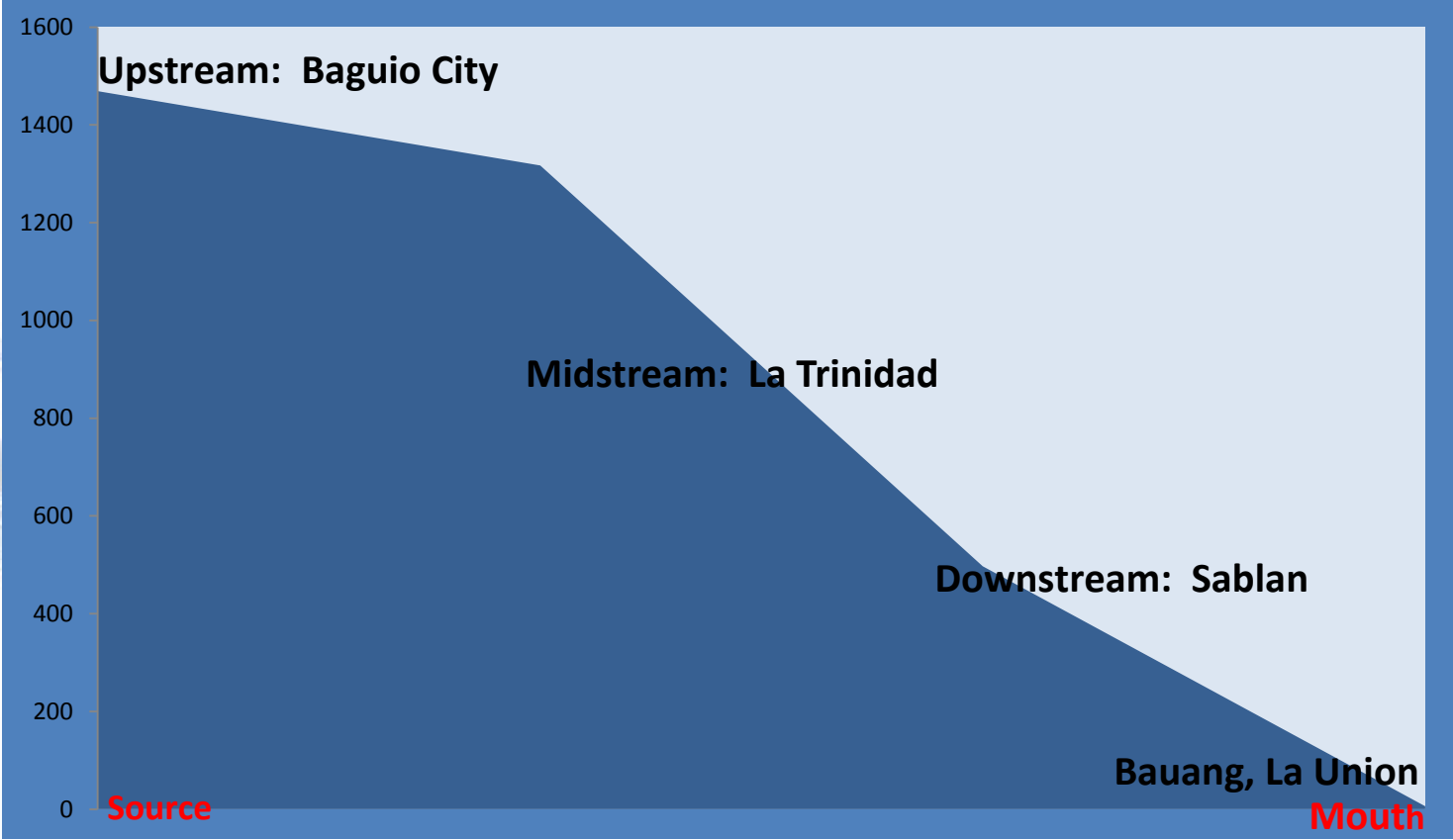
**Upstream – Baguio City  
Midstream – La Trinidad  
Downstream – Sablan**



# STUDY SITES



# ELEVATION



# QUESTIONS



- What type of community along the Sagudin-Balili River experiences the most water stress?
- What factor/s cause/s water stress in this area?
- What can we do about these factor/s?



# METHODOLOGY

- 1) Focus group discussion (self-assessment)
- 2) Key informant interviews
- 3) Anecdotal reports from a survey of water managers
- 4) Water quality assessment



# Methodology

## FOCUS GROUP DISCUSSIONS

(April to June 2013)

**15 FGDs**



| SECTOR       | Number of FGDs         |                             |                   |           |
|--------------|------------------------|-----------------------------|-------------------|-----------|
|              | BAGUIO CITY<br>(urban) | LA TRINIDAD<br>(urbanizing) | SABLAN<br>(rural) | TOTAL     |
| LGUs         | 1                      | 1                           | 1                 | <b>3</b>  |
| Households   | 2                      | 2                           | 1                 | <b>5</b>  |
| Enterprise   | 3                      | 1                           | -                 | <b>4</b>  |
| Farmers      | -                      | 1                           | 2                 | <b>3</b>  |
| <b>TOTAL</b> | <b>6</b>               | <b>5</b>                    | <b>4</b>          | <b>15</b> |

# OVERVIEW OF FINDINGS

| PROFILE                         | Baguio City   | La Trinidad   | Sablan  |
|---------------------------------|---|---|---|
| Type of community               | Urban   | Urbanizing  | Rural   |
| Location along river            | Upstream  | Midstream   | Downstream  |
| Population and land area (2010) | 312,314 people in 5,751 has.  | 107,188 people in 7,004 has.  | 10,511 in 10,563 has.   |
| Description                     | <ul style="list-style-type: none"> <li>- Summer capital of the Philippines</li> <li>- Garden city built for 25,000</li> </ul> | <ul style="list-style-type: none"> <li>- 1<sup>st</sup> class municipality</li> <li>- “Strawberry Capital”, “Salad Bowl”, “Rose Garden” of the Philippines</li> </ul> | <ul style="list-style-type: none"> <li>- 5<sup>th</sup> class municipality</li> <li>- broom-making industry</li> <li>- Populated by <i>Ibalois</i> (IPs)</li> </ul> |
| Economic Activities             | <ul style="list-style-type: none"> <li>- Tourism, education, trade and commerce, services</li> </ul>                          | <ul style="list-style-type: none"> <li>- Agriculture, education, trade and commerce, services</li> </ul>  | <ul style="list-style-type: none"> <li>- Agriculture, cottage industry</li> </ul>   |



# WATER QUANTITY



| <b>BAGUIO CITY<br/>(urban)</b>  | <b>LA TRINIDAD<br/>(urbanizing)</b>  | <b>SABLAN<br/>(rural)</b>  |
|---|--|--|
| <ul style="list-style-type: none"><li>- <b>Chronic shortage</b> - water supply is greater than demand.</li><li>- Domestic /commercial water - scheduled and rationed (1 hour a week to 3 hrs. thrice a week).</li><li>- Water conservation is widely-practiced.<ul style="list-style-type: none"><li>• Recycling</li><li>• Water containers</li></ul></li></ul> | <ul style="list-style-type: none"><li>- Domestic/commercial water - scheduled and rationed (3 hrs. thrice a week).</li><li>- Some do not receive water from water district for days.</li></ul> | <ul style="list-style-type: none"><li>- Daily water supply is unlimited.</li></ul> |

# WATER QUALITY



## BAGUIO CITY (urban)

- Domestic water is heavily chlorinated or murky and undrinkable.
- Parts of Sagudin River is biologically-dead.

## LA TRINIDAD (urbanizing)

- Domestic water is chlorinated, murky and undrinkable.
- Parts of the Balili River are biologically-dead.

## SABLAN (rural)

- Domestic water is potable.

The Sagudin-Balili River has been designated as a Water Quality Management Area by the Environment Management Bureau.



*Photo credit: In My Life Blogspot*

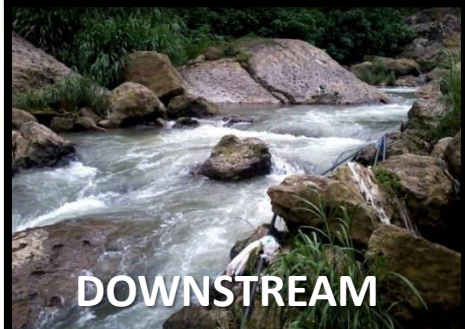
# WATER ACCESS



| BAGUIO CITY<br>(urban)  | LA TRINIDAD<br>(urbanizing)  | SABLAN<br>(rural)   |
|---|--|---|
| <ul style="list-style-type: none"><li>- <b>Water elites:</b> tourism-based enterprises</li><li>- <b>Water-disadvantaged:</b> those who cannot afford water fees; those living in high elevations.</li></ul> | <ul style="list-style-type: none"><li>- <b>Water elites:</b> wealthy business enterprises; subdivision developers</li><li>- <b>Slightly-disadvantaged:</b> those who get less water than others.</li><li>- Water from LTWD arrives only at night for others.</li></ul> | <ul style="list-style-type: none"><li>- Everyone has access to water.</li><li>- Water-sharing is practiced. Restriction of water use is <b>unthinkable!</b></li><li>- Water is free.</li><li>- <b>Water elites:</b> old farming community.</li><li>- <b>Water-disadvantaged:</b> non-members of water associations.</li></ul> |



# ENVIRONMENTAL FLOWS



| <b>BAGUIO CITY<br/>(urban)</b>  | <b>LA TRINIDAD<br/>(urbanizing)</b>  | <b>SABLAN<br/>(rural)</b>  |
|---|--|--|
| <ul style="list-style-type: none"><li>- Baguio City vs. La Trinidad - because of pollution of Balili River.</li><li>- Houses along river discharge septic wastes directly into river.</li><li>- Seepage from septic tank of Baguio abattoir into river.</li></ul> | <ul style="list-style-type: none"><li>- Pollution of Balili River is from household septage along river and agricultural wastes.</li></ul> | <ul style="list-style-type: none"><li>- At this point, Balili River is clean due to self-purification thru aeration, filtration and dilution of water.</li></ul> |

# WATER GOVERNANCE



| BAGUIO CITY<br>(urban)  | LA TRINIDAD<br>(urbanizing)  | SABLAN<br>(rural)  |
|---|--|--|
| <ul style="list-style-type: none"><li>- Many are unaware of water laws.</li><li>- There is difficulty in enforcement among barangay officials.</li><li>- People are resigned to rationing as long as schedule is followed.</li><li>- Conflict resolution is by negotiation.</li><li>- Barangay officials are ill-equipped to resolve water issues.</li><li>- BWD is searching for bulk water supplier to meet demand.</li></ul> | <ul style="list-style-type: none"><li>- Greater awareness about state water laws than in Baguio City, but with more awareness on customary laws.</li><li>- Water districts charge higher fees than LGU or community-based systems.</li><li>- Conflict resolution thru legal means.</li></ul> | <ul style="list-style-type: none"><li>- Awareness only of customary laws and pertinent barangay ordinances.</li><li>- One <i>barangay</i> hosts the Ampohaw Mini-hydro plant (income-generating)</li></ul> |

# WATER RIGHTS AND REPRESENTATION



| <b>BAGUIO CITY<br/>(urban)</b>   | <b>LA TRINIDAD<br/>(urbanizing)</b>   | <b>SABLAN<br/>(rural)</b>  |
|--|---|--|
| <ul style="list-style-type: none"><li>- Most are unaware of legal requirements in securing water rights.</li><li>- “Water is a gift from God.”</li><li>- Lack of communication between users and providers.</li><li>- The people’s voice is unheard in institutions of water governance.</li></ul> | <ul style="list-style-type: none"><li>- Conflicting views on water rights.<ul style="list-style-type: none"><li>• Everyone has a right to water.</li><li>• You own the land but not the water.</li></ul></li><li>- LTWD clients feel they do not have a voice in decision-making.</li></ul> | <ul style="list-style-type: none"><li>- General sentiment: Everyone has a right to water.</li><li>- Everyone is well-represented because they are decision-makers in associations.</li><li>- Strong community spirit of cooperation and self-reliance.</li></ul> |



# **WATER ORGANIZATIONS**



| <b>BAGUIO CITY<br/>(urban)</b>  | <b>LA TRINIDAD<br/>(urbanizing)</b>   | <b>SABLAN<br/>(rural)</b>   |
|---|---|---|
| <ul style="list-style-type: none"><li>- Water district is main distributor of piped-in water.</li><li>- Drinking water is from refilling stations.</li><li>- Alternative institutions have not emerged to question and contest the situation of water scarcity.</li></ul> | <ul style="list-style-type: none"><li>- Water district and cooperative are main distributors of piped-in water.</li><li>- Drinking water is from refilling stations.</li><li>- Irrigators' Associations are transitioning to domestic water.</li><li>- Support institutions for funding of water systems.</li></ul> | <ul style="list-style-type: none"><li>- Community-based organizations distribute water and maintain water sources.</li><li>- Irrigators' Associations for agriculture.</li><li>- Support institutions fund water systems.</li><li>- Every household is a member of both waterworks and irrigators' organizations.</li></ul> |

# CONCLUSION



- There is a high level of water stress in urban Baguio, moderate stress in urbanizing La Trinidad, while rural Sablan feels minimal stress.
- Because of rapid population growth and urbanization, governance of water is unable to cope with the growing demand.

# **MOVING FORWARD**



**Recognizing the problem of water stress and identifying the causes is just the beginning. Identifying a good governance mechanism is the more important concern as suggested by Cleaver and Franks (2005) where water governance is constantly negotiated by people, consciously or unconsciously, as they access water based on competing principles, priorities and interests.**



**“The problem of scarcity of water should not be taken lightly because it is the lifeblood of the [city’s] economy.”**

**– *Hon. Mauricio Domogan, Baguio City Mayor***

**Thank you!**

