



**WATER SAFETY PLANS:  
ASSESSING AND MANAGING RISKS IN  
DRINKING WATER SYSTEMS**

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*Rick Gelting, Ph.D., P.E.*

*Environmental Engineer*

*US Centers for Disease Control and Prevention (CDC)*



*The findings and conclusions in this presentation have not been formally disseminated by the Centers for Disease Control and Prevention and should not be construed to represent any agency determination or policy.*



# Water Safety Plans

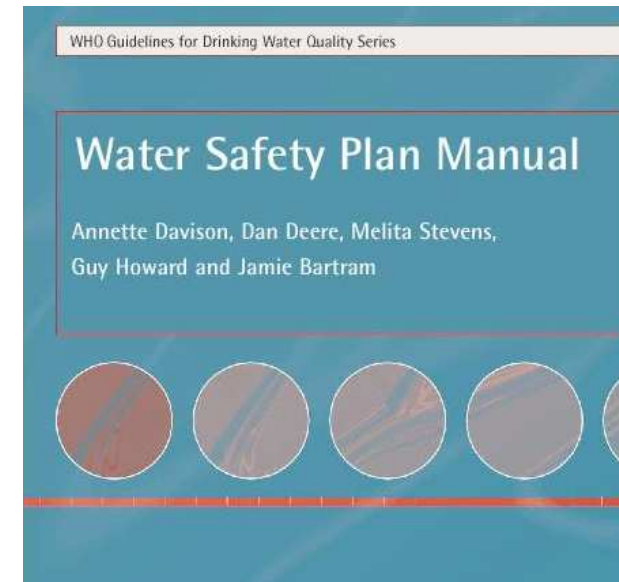
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**Developed by the World Health Organization  
& covered in Chapter 4 of the Guidelines for  
Drinking Water Quality (3<sup>rd</sup> Ed.)**

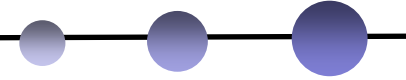
**Incorporates 30 years of WHO lessons learned  
in drinking water sector:**

**A systematic, integrated management  
approach used to identify and address threats  
to water quality at each step in the drinking  
water supply chain**



# Water Safety Plans

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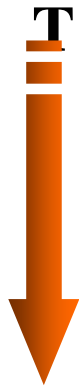


# Why WSPs?

# WSP Objectives

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**CATCHMEN**

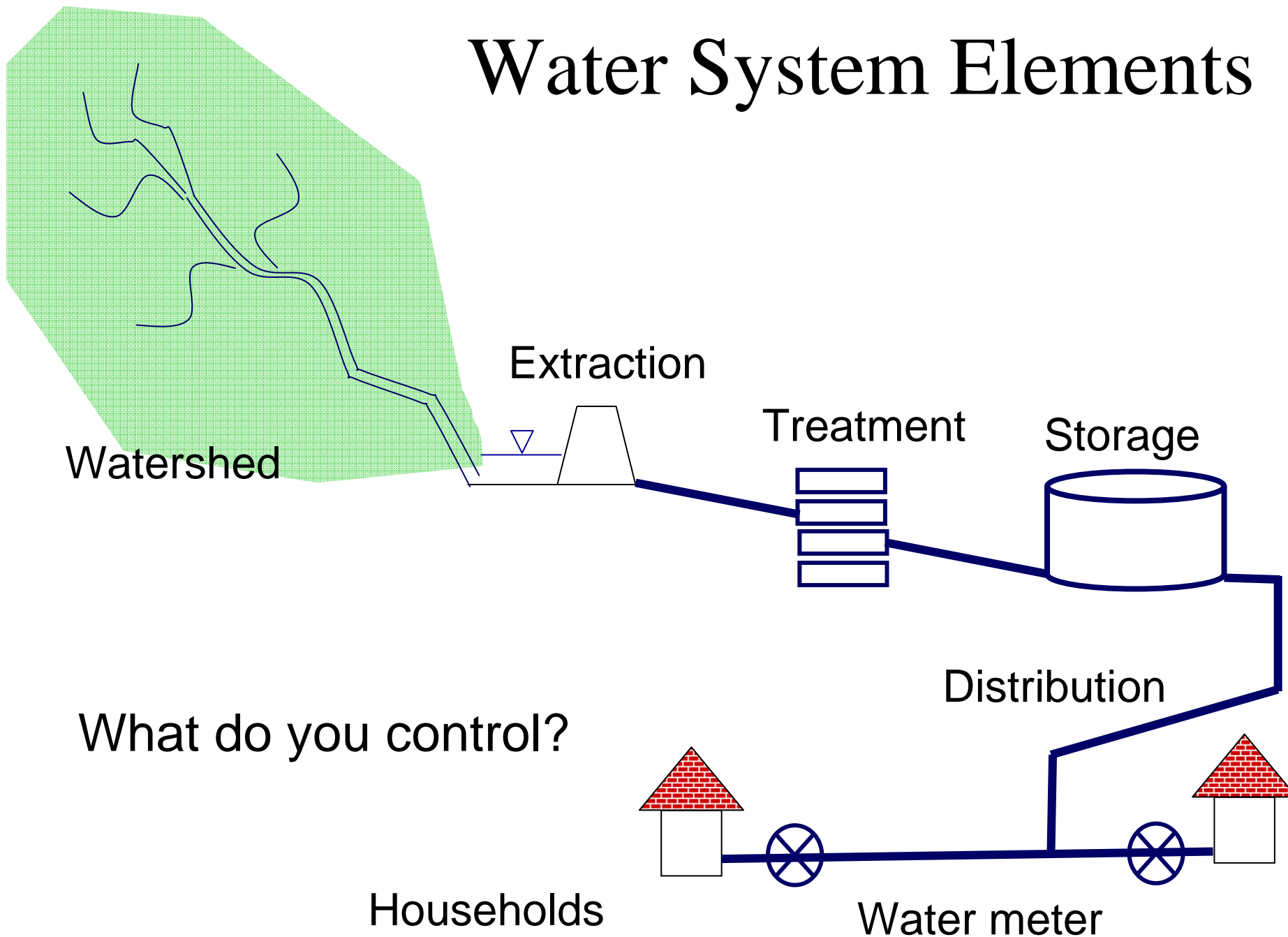


**CONSUMER**

## WSP Objectives

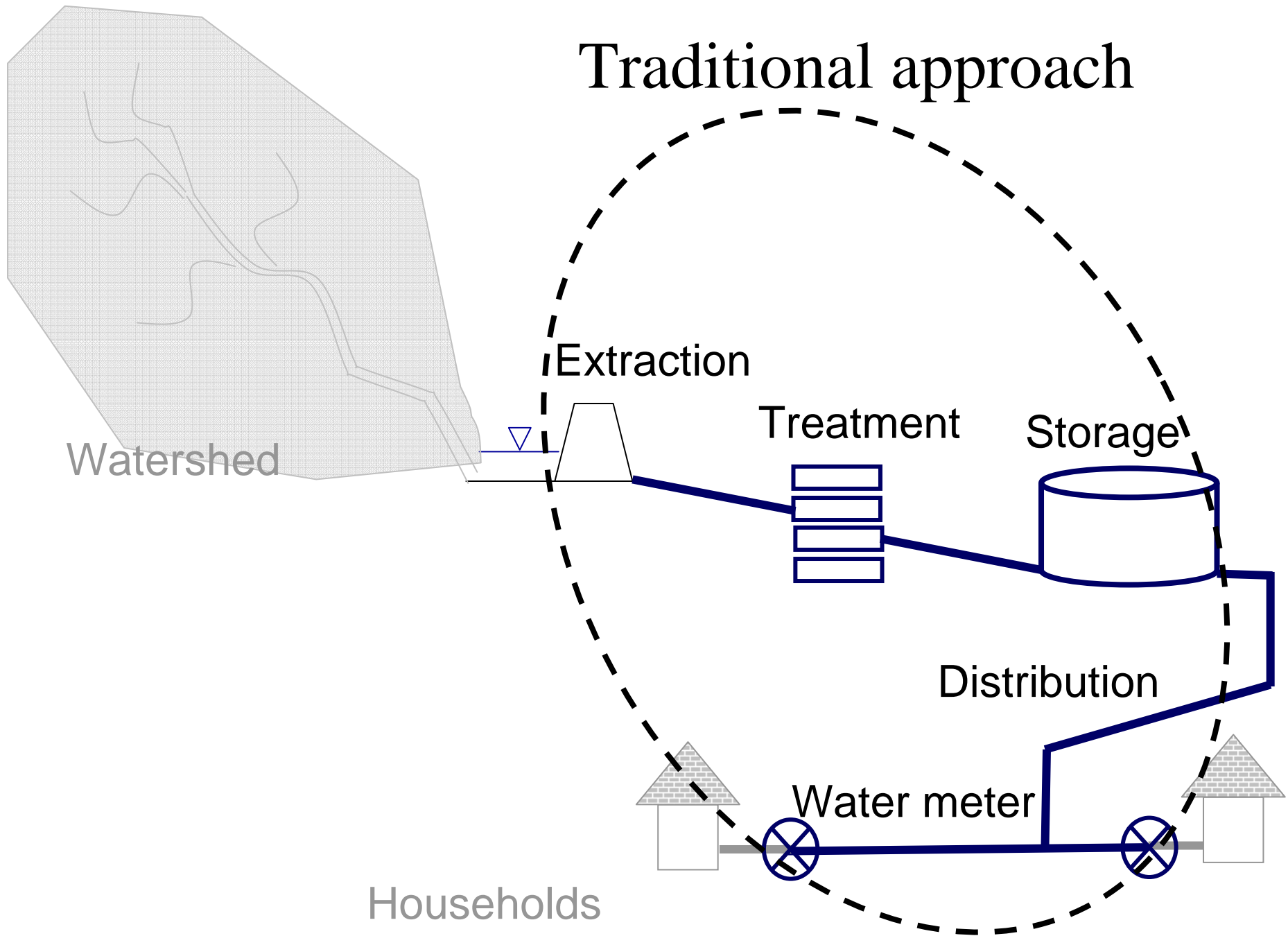
1. **Protect source waters**
2. **Optimize treatment**
3. **Prevent recontamination during distribution, storage and handling**

# Water System Elements

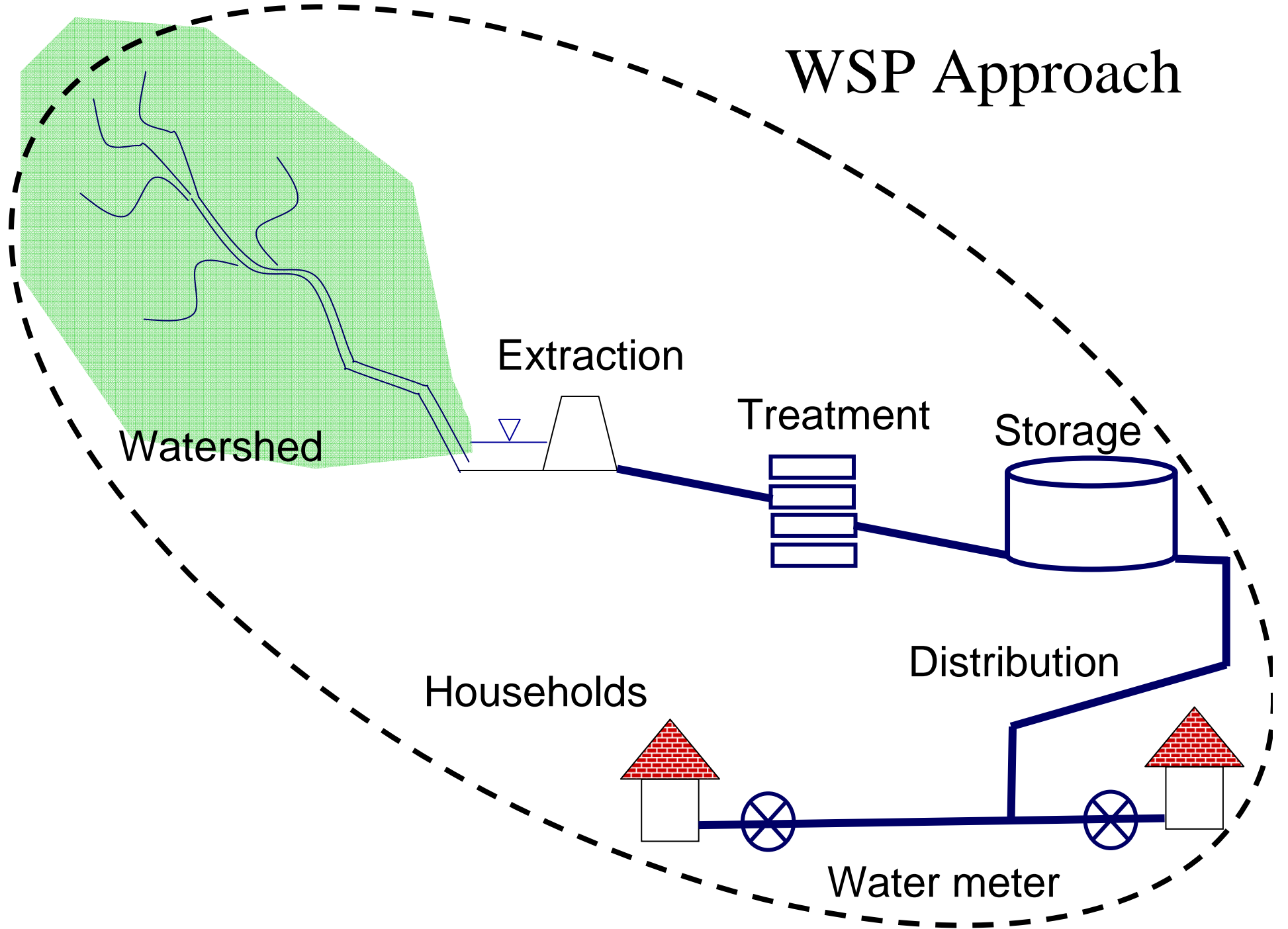


What do you control?

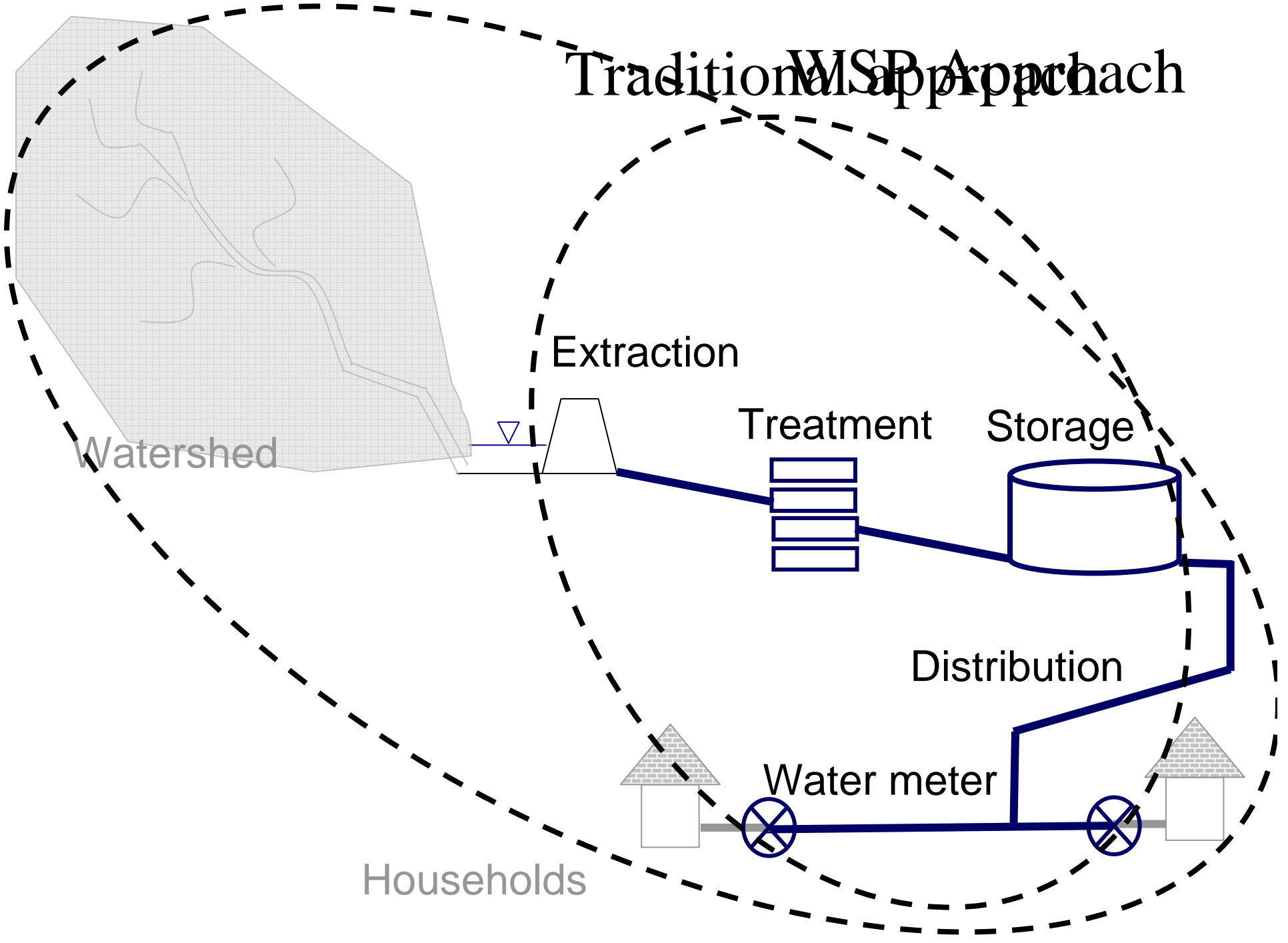
# Traditional approach



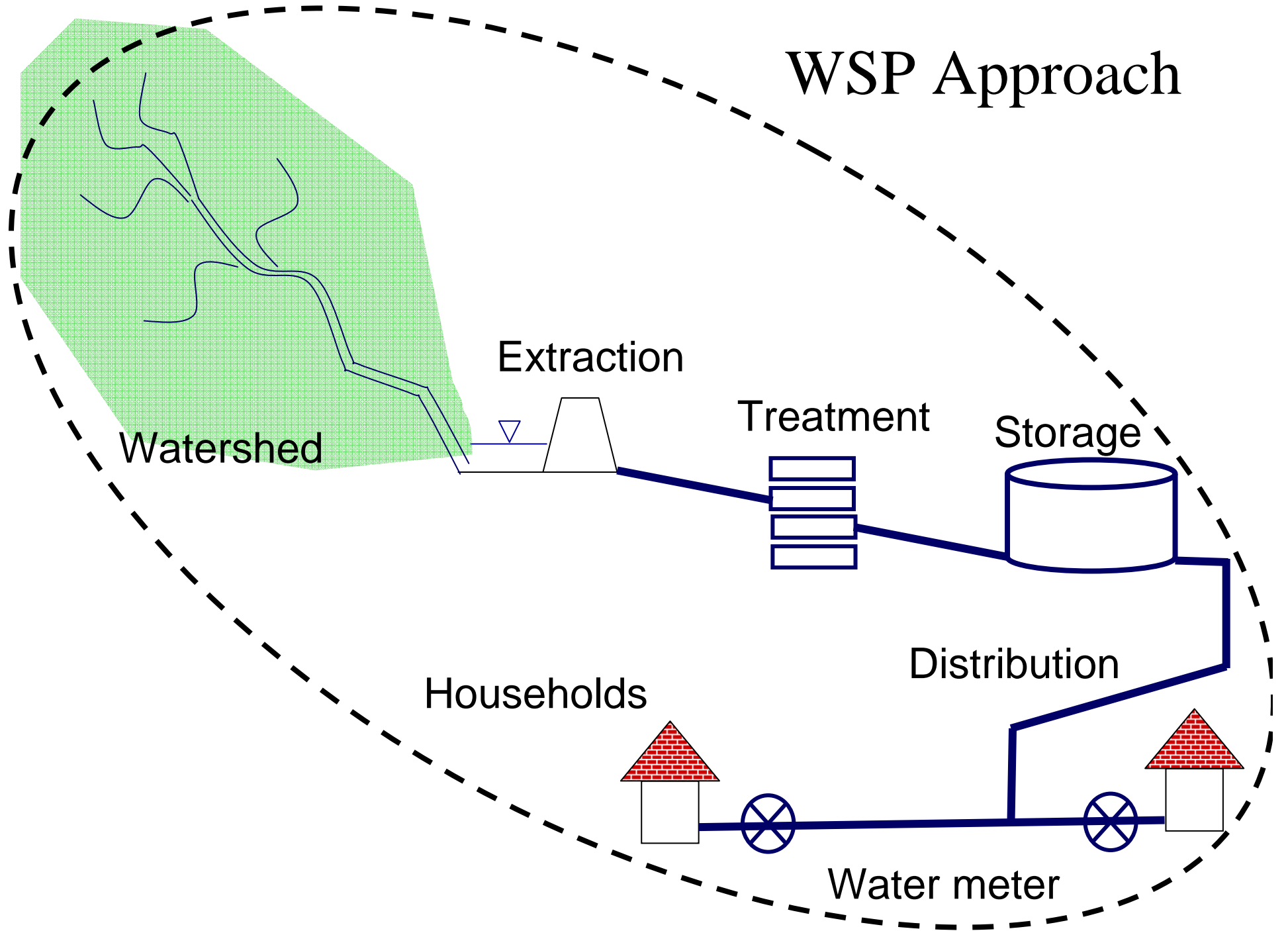
# WSP Approach



# Traditional WSP Approach



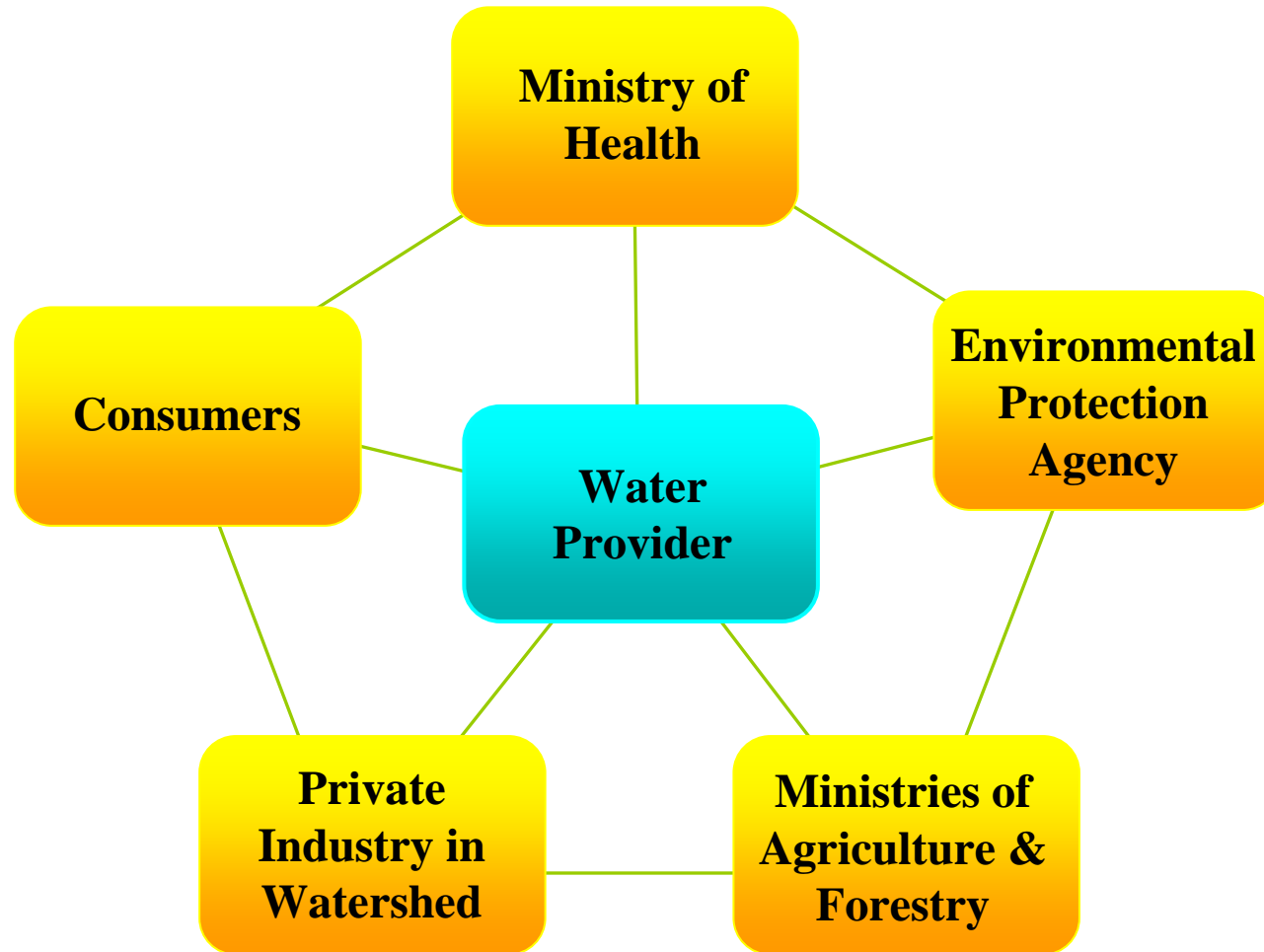
# WSP Approach



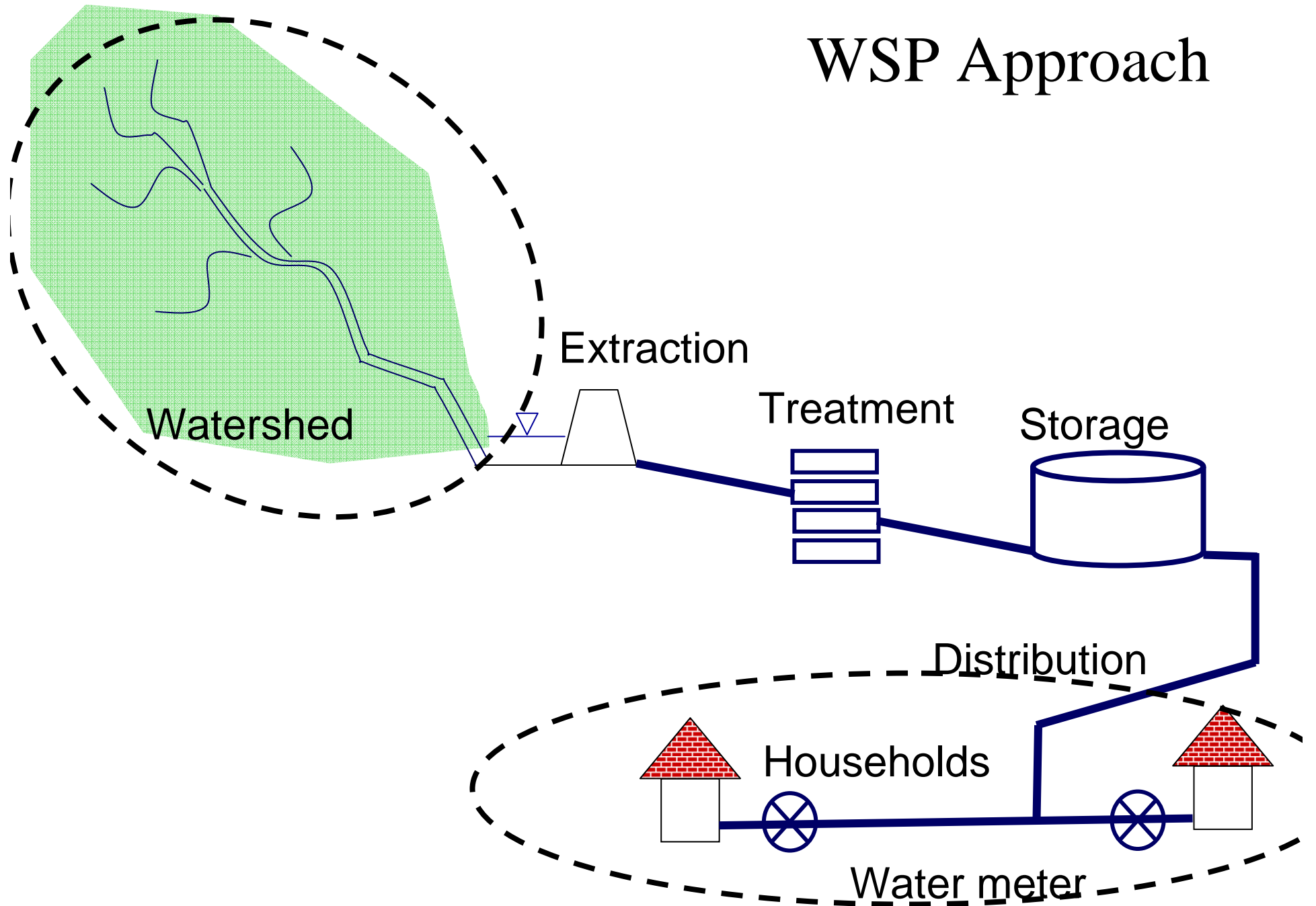


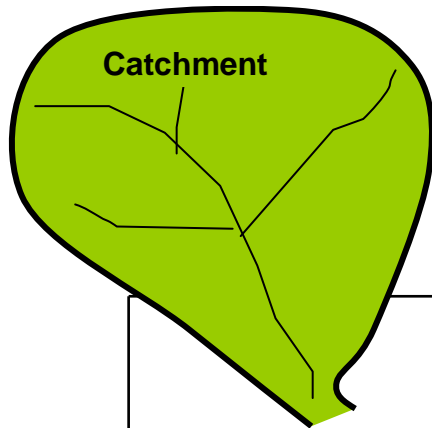
# Typical WSP Team Composition

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# WSP Approach





## RISKS : CATCHMENT

### SURFACE WATER/ RIVER

**Very High-** Informal residential settlement/improper sewage treatment and disposal along canal prior to intake

**Very High-** Informal commercial activities; car wash, garage, cookshops along canal prior to intake

**High-** Raw water with elevated organics leading to carcinogenic byproducts after chlorination



# Water Safety Plans

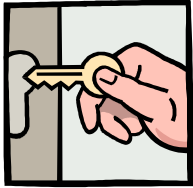
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- **Improve communication and collaboration between key stakeholder groups**

- **Improve stakeholders' understanding of water system and their role in protecting water quality**
- **Spanishtown: dealing with squatter settlements along canal that is source for Treatment Plant**







# CONTROL MEASURES

Maintain buffer zone  
around canal

Provide  
infrastructure to  
prevent waste  
reaching canal

**Very High**  
Informal residential settlement  
+ commercial activity along  
Canal prior to intake

Upgraded WTP/KMA  
project to treat  
contaminated water

Education  
Campaign

# Implementation of WSPs in the Caribbean Region

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## Guyana

- **Guyana Water Incorporated (GWI) initiated operator training—the primary recommendation of the WSP**
- **Improved stakeholder communication**
  - **They no longer communicate frustration through the media channels, but meet directly to find mutual solutions**



# Water Safety Plans

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**WSPs can/should encompass:**

- **Capital investment plans**
  - **Treatment plants, storage tanks, Distribution systems**
  - **Leverage financial support**
- **Optimizing operation of existing facilities**
  - **Operator training**
  - **Improve operation to enhance water quality and minimize cost**
- **Leveraging partnerships**



# Global WSP Activities

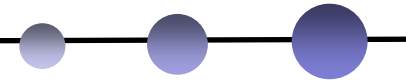


**JAMAICA**  
1<sup>st</sup> in western hemisphere

★ = WSP(s) implemented in country

# WSPs as a Matter of Policy

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★ = *Legislation introduced or proposed to require WSPs*

# Policies and Regulatory Requirements

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- **Jamaica:**

**WSPs proposed as component of new drinking water standards. Status: with Central Health Committee; if recommended, will go into legislation**



# Water Safety Plan Resources

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❖ **WHO: WSP manual**

[http://www.who.int/water\\_sanitation\\_health/publication\\_9789241562638/en/index.html](http://www.who.int/water_sanitation_health/publication_9789241562638/en/index.html)



❖ **PAHO: WSP training for country representatives in process**



❖ **CEHI: Caribbean regional resource**



❖ **LAC-WSP/Net: technical assistance**

[http://www.cepis.org.pe/bvsacg/red\\_lac\\_psa/redlacpsaeng.html](http://www.cepis.org.pe/bvsacg/red_lac_psa/redlacpsaeng.html)



❖ **CDC: <http://www.cdc.gov/nceh/ehs/GWASH/wsp.htm>**

THANK YOU FOR YOUR ATTENTION!

