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## Value of Water - Economic and Full Value - Michigan Tech University

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# Value of Water Module: Economic and Full Value of Water.

Developed by Rabi Gyawali, Ali Mirchi, and David W. Watkins, Jr.  
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as part of requirements for NSF Grant No. 0725636. This education module is one of five modules developed by a graduate research assistant, with assistance of a faculty mentor, to support engineering education for the project titled Modeling and Analyzing the Use, Efficiency, Value, and Governance of Water as a Material in the Great Lakes Region.



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# Module Overview

**Value of Water:** This module presents introductory information for evaluation of the value of water to different stakeholders in terms of use, wealth, and geographic location. Using select case studies, activities have been provided to facilitate understanding of the difference between the economic value (cost) and the full value of water.

# Goal #1

1. Familiarity with water's value and worth as material, as well as existing methods of sustainability assessment as they pertain to water use and pricing.



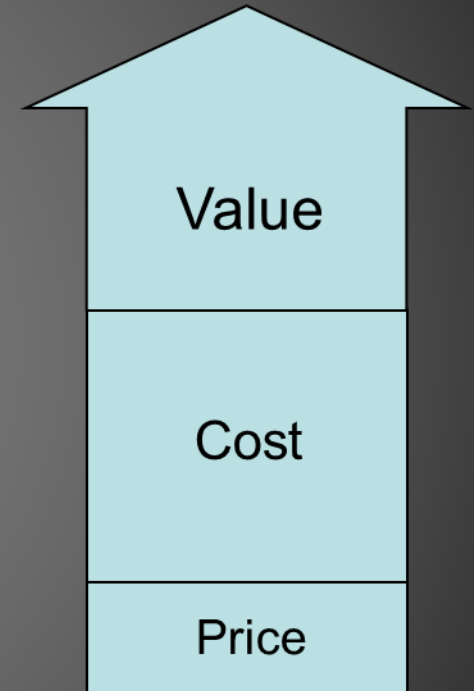
Photo by: Sara Alian



Photo by: Bapook

# Goal #2

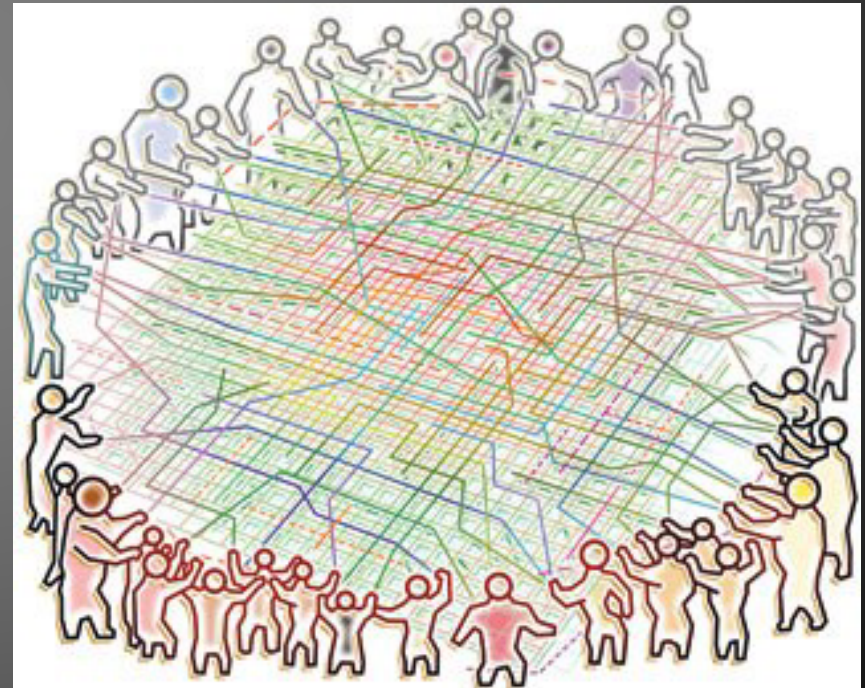
2. Introduction to application and integration of foundational knowledge to better understand the distinction and relation between price, cost, and value, and geographic variability of the value of water with respect to water scarcity and willingness to pay (WTP).



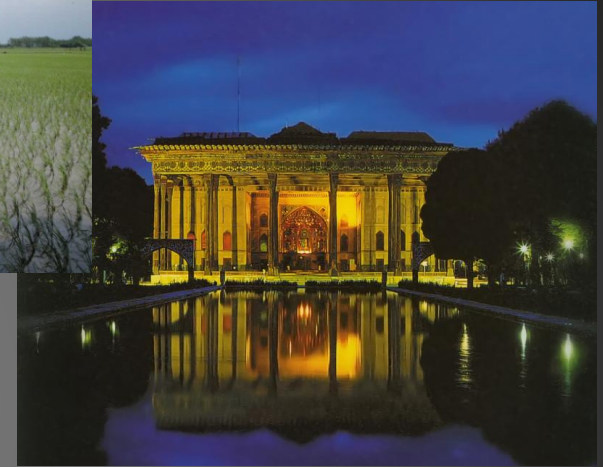


# Learning Goal #3

3. Identifying citizens' values and roles in water management.



# Big Picture



Source: Wikipedia

## Water:

- is a public good and a natural resource.
- generates different types of value (e.g., environmental, economic, cultural/spiritual, aesthetics).
- creates competition among disparate use sectors (e.g., municipal, commercial/industrial, recreation, navigation).

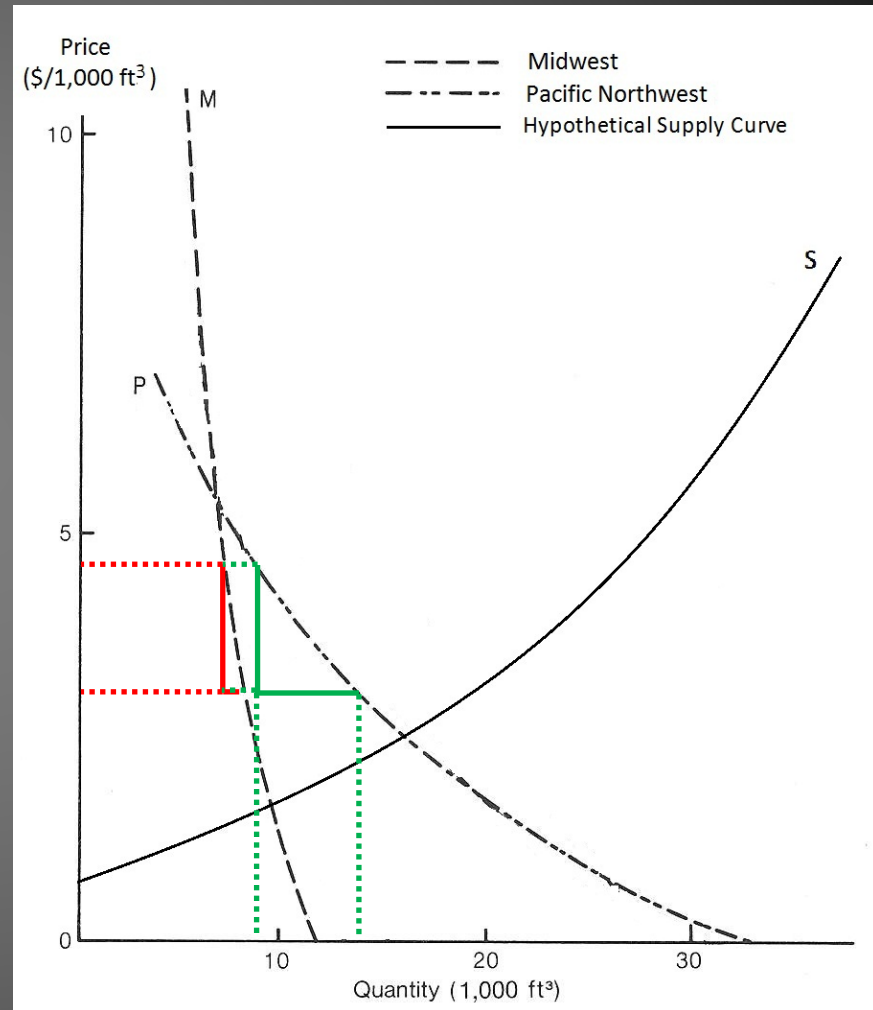
# Basic Economic Terms

**Water Demand/Supply Curve:** measures the amount of water people would be willing to consume (dashed lines)/a water utility would be willing to supply (solid line) at different prices.

**Willingness To Pay (WTP):** the maximum amount that a person would be willing to pay to use a certain amount of a good (water).

**Price Elasticity of Demand/Supply:** measures responsiveness or per cent change of demand /supply to per cent change in price as shown in the two example demand curves).

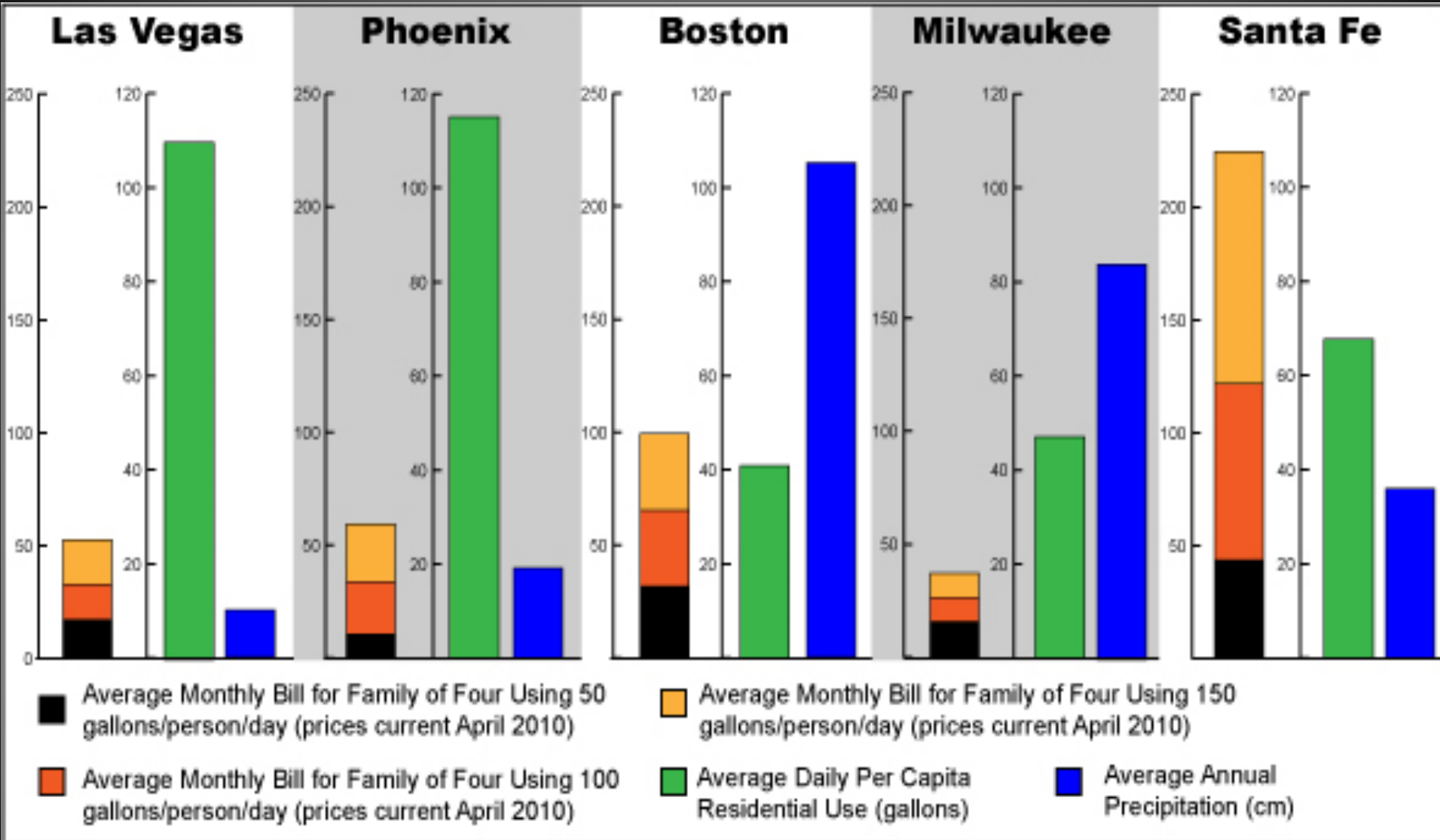
**Scarcity:** human demand for water exceeds limited resources, creating opportunity costs.



Adapted from Gibbons (1986)



# Activity 1: Group discussion of water prices across US cities





# Conceptual cost model :

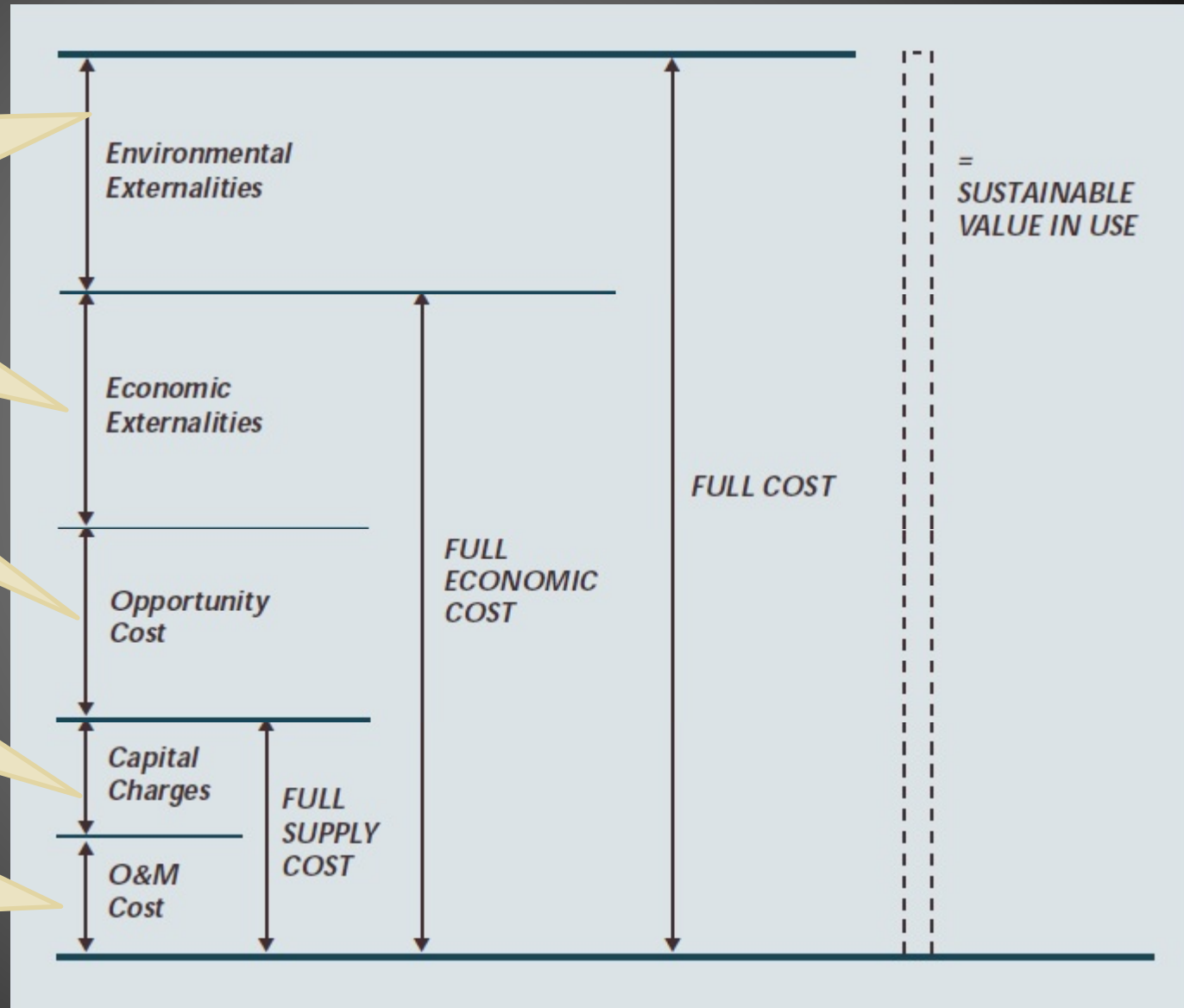
Public health and ecosystem maintenance (e.g. wastewater treatment)

Economic impacts on a third party (e.g., upstream diversion, pollution, etc)

Potential net benefits of the second best available option

Capital for building infrastructure, interest and depreciation costs

Daily running of the supply system (e.g., purchasing raw water, pumping, labor, repair, etc.)



(Source: Rogers et al., 1998)

# Conceptual value model :

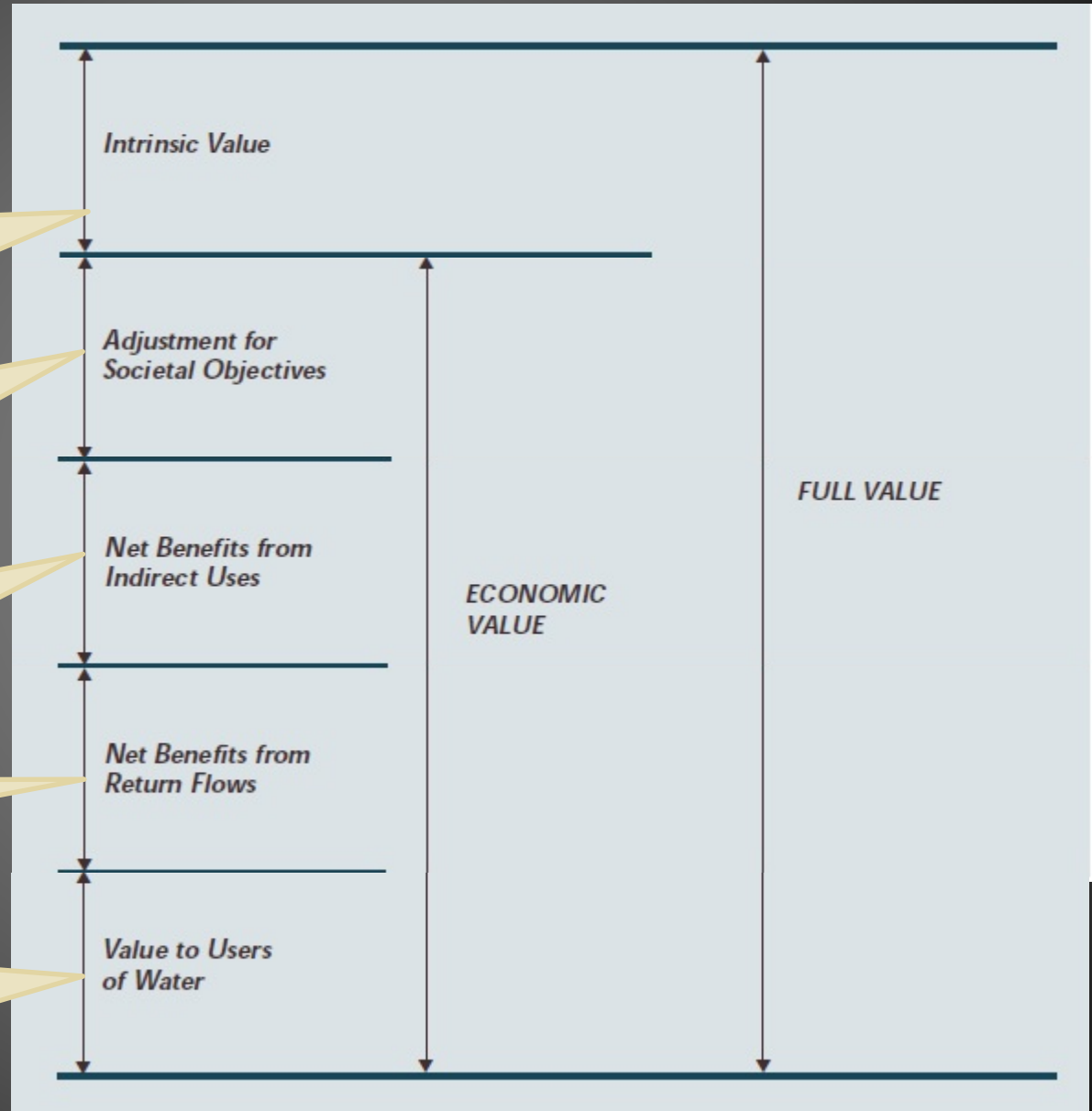
Stewardship, bequest values, and pure existence for which no monetary value can be assigned

Poverty alleviation, employment and food security

Irrigation schemes which also provide water for domestic use

Groundwater and surface water recharge

Marginal value of agricultural/industrial product, households' willingness to pay (WTP)



(Source: Rogers et al., 1998)

# Activity 2: Constructing a conceptual value and cost model of water in Phuket, Thailand

Students read a narrative describing the attributes of a water resources system of Phuket, Thailand and develop a conceptual model of the cost of water and estimate a reasonable value for water in use.

1. Construct a conceptual model of cost of water in Phuket.
2. In your opinion, what would be a reasonable estimate of the economic value of water on this island?
3. Data on the willingness to pay (WTP) of urban households and hotels for buying water from private vendors suggest that during three summer months the value in use of water is \$1.30/m<sup>3</sup>. What can be inferred from the discrepancy between the economic value of water and value in use during summer months?

# Value and Cost of Water in Phuket, Thailand

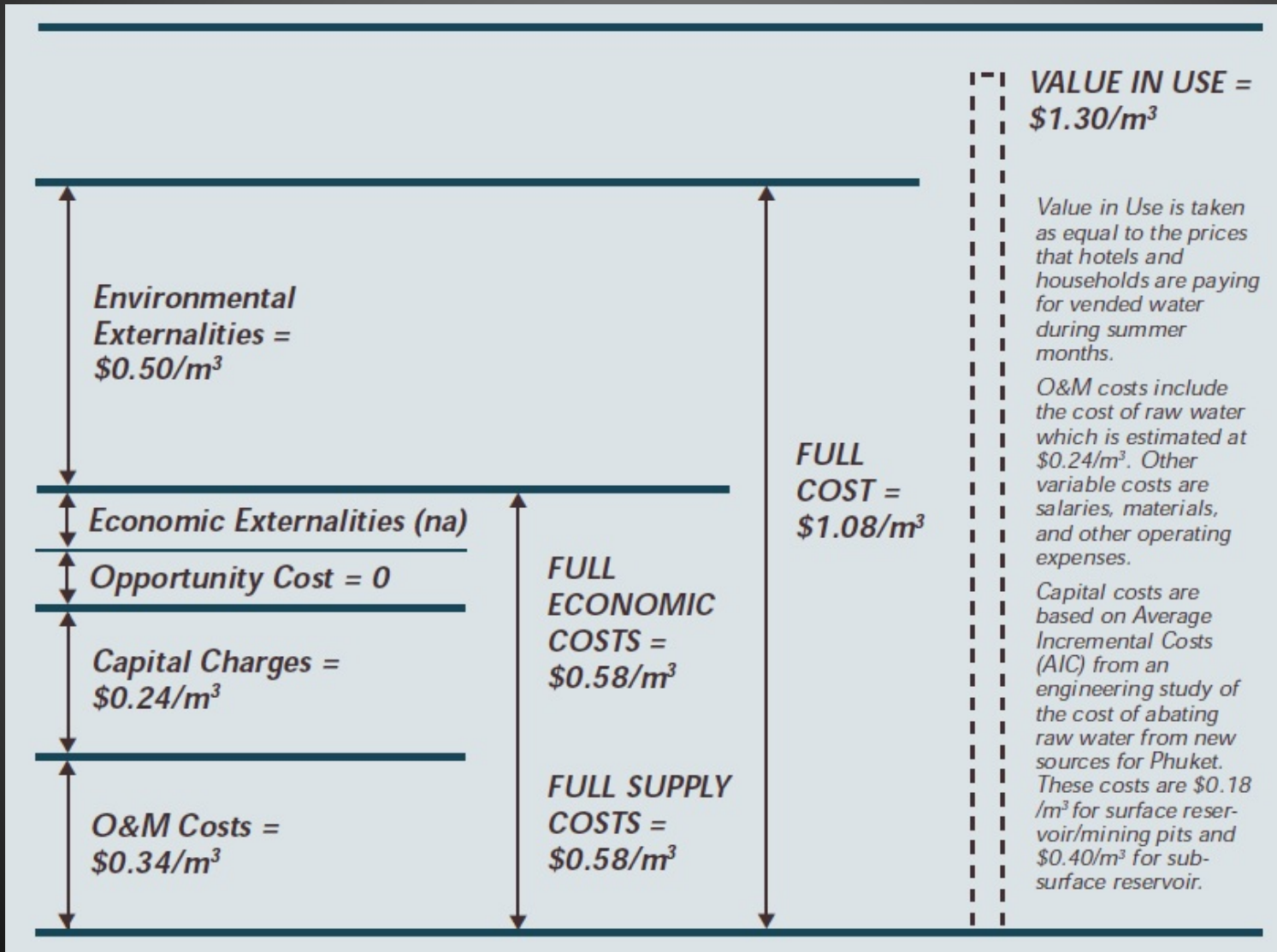
Phuket is Thailand's largest island with many sandy beaches. As it is a popular destination for expatriate retirees, Phuket is one of the country's most expensive retirement destinations.

Operations and maintenance (O & M) costs of water supply, including the cost of purchasing raw water (\$0.24/m<sup>3</sup>), have been estimated at \$0.34/m<sup>3</sup>. Capital charges for the water distribution system have been estimated at \$0.24/m<sup>3</sup>. In order to prevent public health hazards and maintain ecosystems, wastewater is treated at \$0.50/m<sup>3</sup>.



Photos by: Anabelle Garcia & Kunistyn Evgeny

# Activity 2: A conceptual cost model of water in Phuket, Thailand



Jeopardy!



# Activity 3: Video and discussion activity on value of water as a basic human right

Watch the “water as a basic human right video” and discuss:

- (1) How does water crisis in a setting like Kibera, Kenya affect peoples’ lives?
- (2) How would a reform in management and governance of water help alleviate the problem in Kibera?
- (3) What are potential costs and benefits of solving the water problem in the 71,000 person slum?
- (4) In general, in a location with water meters, how may adoption of a pricing policy promote equity, efficiency, and sustainability?

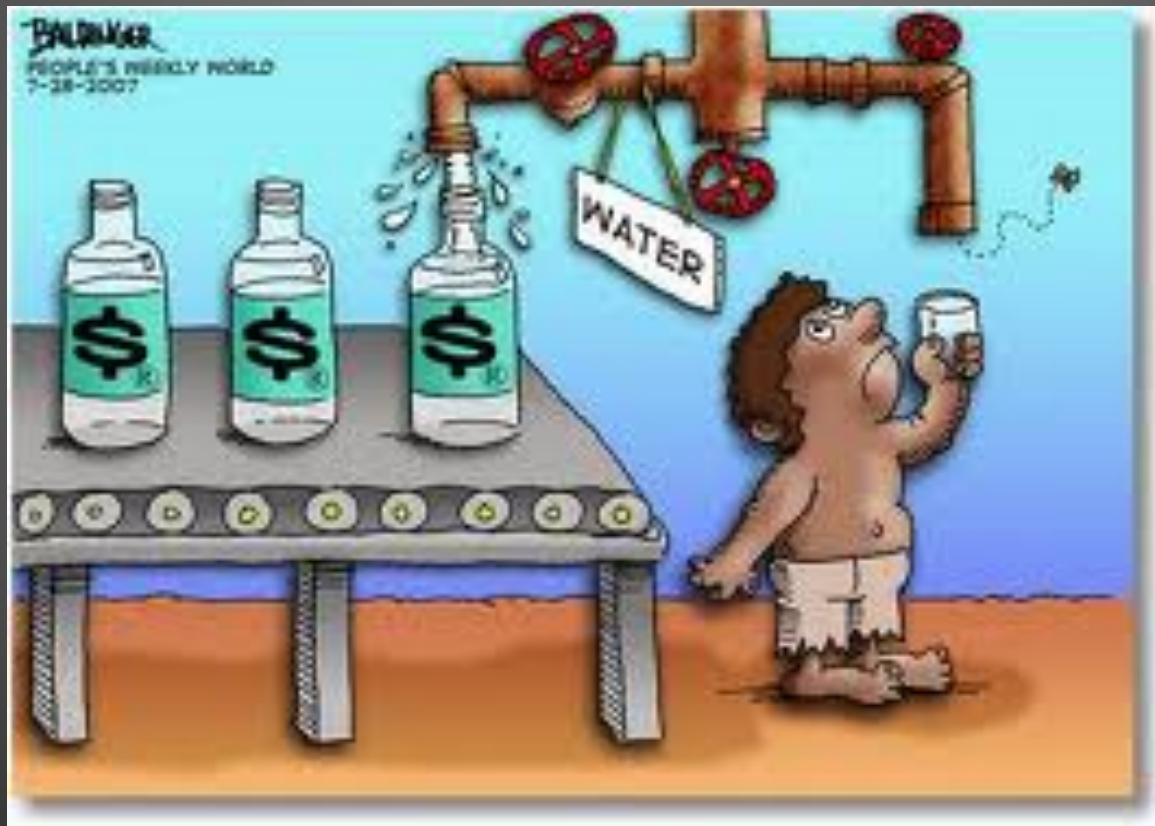
Use the following link to watch the video:

<http://www.youtube.com/watch?v=3jYr8MFTXrM&playnext=1&list=PLD19637C20582C89B&index=31>



# Key message:

Should water be a human right,  
and, if so, who pays for it?



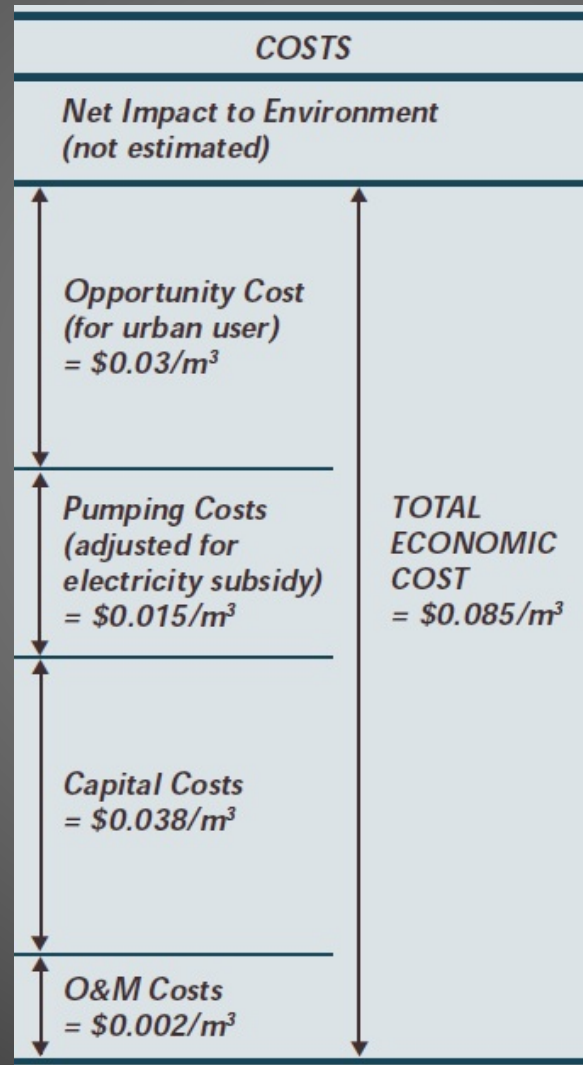
# Activity 3b: Constructing a conceptual cost model of Haryana, India

## **In class modeling activity**

Students read a narrative describing the attributes of a water resources system of Haryana, India and develop a conceptual model of the cost of water and estimate a reasonable value for water in use. The students will be asked to:

1. Construct a conceptual model of cost of irrigation water in Haryana.
2. In your opinion, what would be a reasonable estimate of economic value of water in this agricultural district?
3. What does the gap between the costs and value indicate?

# Activity 3b: Constructing a conceptual cost model of Haryana, India



# Value and Cost of Water in Haryana, India

Haryana is a state in Northern India where irrigated agriculture is practiced in an arid zone. 70% of the population is dependent on agriculture for their livelihood. Approximately 75% of the cultivated area in the state is irrigated.

The economic cost of supplying irrigation water is comprised of O & M ( $\$ 0.002/\text{m}^3$ ), capital costs ( $\$ 0.038/\text{m}^3$ ), and pumping costs ( $\$ 0.015/\text{m}^3$ ). If water were not used for irrigating crops, it would alternatively be consumed in urban households, generating a benefit of  $\$ 0.03/\text{m}^3$ . The total economic Value of Water diverted to irrigated agriculture is estimated at  $\$0.062/\text{m}^3$ .

Please complete the following activity and answer the questions.

# Activity Slides

The following slides are the detailed version of each of the activities giving instructions and references and targeted learning objectives.

# Learning Activity 1 | Value of Water

## Water prices across U.S cities

### Targeted Learning Objectives

- 1.2 Understand fundamental economic concepts/terms widely used in water valuation, namely; supply and demand curves, price demand elasticity, scarcity, and non-market valuation .
- 1.4 Understand how competition among disparate use sectors in a water resources system generates different values
- 2.4 Identify similarities and differences between water valuation in developed and developing countries
- 2.5 Analyze data to determine factors affecting water price in a given location.
- 4.2. Appreciate different use sectors' view of value of water by thinking about the role of water in their livelihood.
- 5.1. Care about appropriate water valuation .
- 6.1. Identify a region in the community or in the world where more appropriate water valuation is needed;
- 6.2. Identify internet resources to obtain information, facts, and figures needed for analyzing water valuation in the region of their choice

### Activity

This is an in and out of class activity. Students will be encouraged to develop their own understanding of water pricing . Students may either bring in a water utility bill, find information pertaining to water pricing in their home towns, or at least find out bottled water prices from a local store. The information brought in by the students will be collected by the instructor, who will initiate and facilitate an in class discussion to analyze variability in water pricing. Some out of class readings which discuss the variability of water pricing across U.S cities will also be assigned to students so the discussions are rendered thought provoking and meaningful. This way, the wide variation in water use and price across different World/U.S. cities is presented to the students. It is highlighted that water pricing may not always follow the economics of simple supply-demand relationships. The two following internet news articles (also available in pdf) are the assigned out of class reading:

- 1.U.S. Urban Residents Cut Water Usage; Utilities are Forced to Raise Prices  
<http://www.circleofblue.org/waternews/2010/world/u-s-urban-residents-cut-water-usage-utilities-are-forced-to-raise-prices/>
- 2.The Price of water: A comparison of Water Rates, Usage in 30 U.S. Cities  
<http://www.circleofblue.org/waternews/2010/world/the-price-of-water-a-comparison-of-water-rates-usage-in-30-u-s-cities/>

The following are potential in class discussion questions:

1. Why are the water prices low in Chicago, Milwaukee or Detroit as compared to arid regions like Las Vegas or Phoenix? What are the other key factors that may contribute to water pricing?
2. How can water conservation, or declining water consumption, increase water prices? Discuss the conflict between conservation and cost recovery in relation to the articles.
- 3.How might water pricing be affected by increase/decrease in precipitation due to climate change in the next 50 years ?
4. "For more than 20 years industry has been moving south looking for cheaper labor. I'm hoping that now they'll start coming back [to the Great Lakes] looking for cheaper water." - Do you think providing discounted water tariffs in the Great Lake region would help bolster the economy of the region? What externalities might be involved?
5. Discuss how privatization may affect water pricing in relation to the existing publicly owned and operated water systems.

### Objectives

- 1.2, 1.4, 2.4, 2.5,
- 4.2, 5.1, 5.2, 6.1,
- 6.2

### Criterion

Foundational knowledge, Human dimension, Caring, Integration, Application

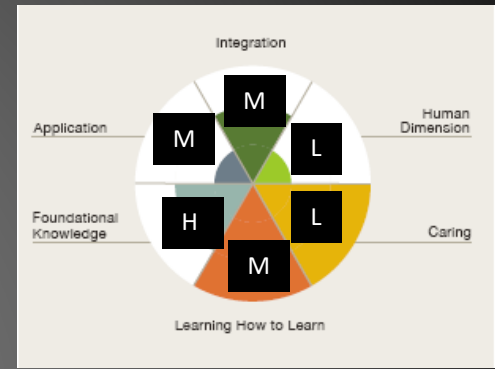
### Standards

**The scoring for this activity should be through completion of assigned tasks and participation in the in-class discussion.**

- 5 PROFICIENT: Demonstrate interest and understanding of content and significantly contribute to class discussion.
- 3-4 DEVELOPING: Demonstrate interest and some understanding, but contribute minimally to class discussion.
- 0-2 BELOW EXPECTATIONS: Lack interest and make no effort to contribute to discussion.

**Active Learning Profile**  
 Information source: direct / indirect  
 Experience: doing / observing  
 Reflection: individual / group

**Time Investment Profile**  
 individual: 1 hour reading/collecting information  
 Group: 20-30 minutes discussion



### Notes to Faculty

This activity is focused on both in class discussion and participation as well as out of class readings. The activity should engage the students for 20-30 minutes.

The purpose of this activity is to bring to light the existing variety of water prices, pricing structures, water demands and water infrastructure systems across U.S cities/world. This activity provides the students an opportunity to understand how water prices may be structured and what factors may influence water pricing.

The instructor is advised that some water utility bills include sewage and other municipal utilities. Hence, it becomes important to distinguish water price from other utilities on the bill.



# Learning Activity 2 | Value of Water

## In-class discussion on value of water

### Targeted Learning Objectives

- 1.1. Understand the terms public good and natural resource;
- 1.3. Understand that water generates different types of value (e.g., economic, cultural/spiritual, aesthetics, etc);
- 1.4. Understand how competition among disparate use sectors generates different types of value;
- 1.5. Understand the distinction and relation between cost, price, and value;
- 3.1. Recognize the role of appropriate valuation of water in sustainable development ;
- 4.1. Understand the role of individual residents in maintaining the value of water in the community.

### Activity

Students will watch the “UN water video” and participate in in-class group discussions based on the proposed themes from the video. Proposed discussion themes may be handed in to the students when introducing the activity to facilitate insightful thinking while watching the video. Key ideas can be written on the board as they are generated during discussion.

- 1. Rogers, P., de Silva, R. & Bhatia, R. (2002). Water is an economic good: how to use prices to promote equity, efficiency and sustainability, *Water Policy*, 4, pp. 1–17.
- 2. You Tube: <http://www.youtube.com/watch?v=6IC9R7hez0&feature=related>

### Research Questions:

- (1) What are some aspects of the video that denote water as a public good and a limited natural resource?
- (2) What aspects of value of water were presented in the video?
- (3) What components of cost of water supply were discussed in the video?
- (4) What other components of cost of water could be considered that were not mentioned in the video?
- (5) What is the potential role of appropriate valuation of water in promoting sustainable development?
- (6) How can appreciation of the value of water make a difference in individuals thinking and action for protecting water resources?

### Objectives

- 1.1, 1.3, 1.4, 1.5,
- 3.1, 4.1

### Criterion

Foundational knowledge, Human dimension, Caring, Integration, Application

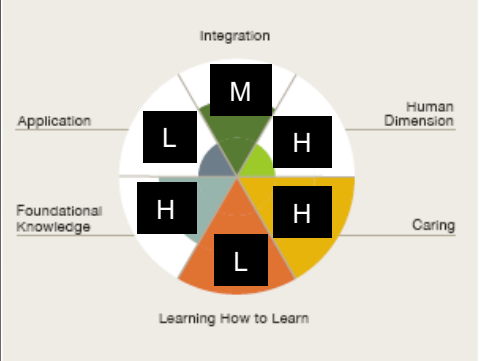
### Standards

**The scoring for this activity should be based on students’ participation in the in-class discussion.**

5 PROFICIENT: Demonstrate interest and significantly contribute to insightful class discussion  
 3-4 DEVELOPING: Demonstrate interest but contribute minimally to class discussion  
 0-2 BELOW EXPECTATIONS: Lack interest and make no effort to contribute to discussion

**Active Learning Profile**  
 Information source: direct / indirect  
 experience: doing / observing  
 reflection: individual / group

**Time Investment Profile**  
 individual or group: 30-45 minutes watching video and generating ideas  
 group: 15-20 minutes discussion



### Notes to Faculty

The activity will be introduced in about up to 5 minutes during one class period allowing the students to prepare themselves for the discussion in the next class. In the interest of time, students will watch the UN video outside of class individually or in groups of up to 4 people, generating ideas about the proposed discussion themes. Then, the students share their views with class. The activity is intended to draw the students’ attention to different types of value of water generated due to competition among user groups, and the role of appreciating the value of water in sustainable development. The activity facilitates meeting of 6 main learning objectives.



# Learning Activity 3 | Value of Water

## Constructing a conceptual model of cost and value of water

### Targeted Learning Objectives

- 1.2. Understand fundamental economic concepts/terms widely used in water valuation;
- 1.3. Understand that water generates different types of value (e.g., economic, cultural/spiritual, aesthetics, etc);
- 1.4. Understand how competition among disparate use sectors generates different types of value;
- 1.5. Understand the distinction and relation between cost, price, and value;
- 2.1. Develop a general conceptual model for cost and value of water ;
- 3.1. Recognize the role of appropriate valuation of water in sustainable development;
- 4.2. Appreciate different use sectors' view of value of water by thinking about the role of water in their livelihood.
- 5.1. Care about appropriate water valuation.

### Activity

Students read a narrative describing the attributes of a water resources system in a given setting (e.g., urban or agricultural) and develop a conceptual model of the cost of water and estimate a reasonable value for water in use. They will then participate in discussions based on their findings.

1. Rogers, P., de Silva, R., & Bhatia, R. (2002) Water is an economic good: how to use prices to promote equity, efficiency and sustainability, *Water Policy*, 4, pp. 1–17.

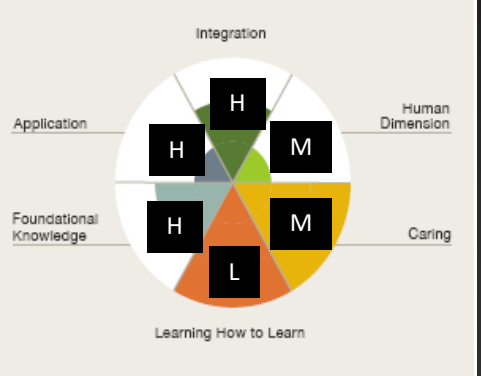
#### Research Questions:

- (1) Construct a conceptual model of the value (cost) of water for the given narrative.
- (2) In your opinion what would be a reasonable estimate of economic value (cost) of water in the given setting?
- (3) What can be inferred from the potential discrepancy between the economic value (cost) of water and its value in use?

Objectives	Criterion	Standards
1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.2, 5.1	Foundational knowledge, Application, Integration, Human dimension, Caring	<p><b>The scoring for this activity should be based on students' participation in the in-class discussion.</b></p> <p>5 PROFICIENT: Develop correct conceptual model, Demonstrate interest and significantly contribute to insightful class discussion</p> <p>3-4 DEVELOPING: Develop incorrect conceptual model, Demonstrate interest but contribute minimally to class discussion</p> <p>0-2 BELOW EXPECTATIONS: Does not develop conceptual model, Lack interest and make no effort to contribute to discussion</p>

**Active Learning Profile**  
 Information source: direct / indirect  
 experience: doing / observing  
 reflection: individual / group

**Time Investment Profile**  
 Individual: 1-2 hours reading article by Rogers et al. (2002)  
 Individual/group: 15 -20 minutes model development (5min) and discussion (10 min)



### Notes to Faculty

This activity focuses on developing a cost model to generate insights for value in use of water to promote sustainability. The instructor assigns the article by Rogers et al. (2002) as required reading. Students can work individually or in groups of up to 3 people. Once the model development has been completed, students can discuss the answers to the posed questions in small groups and share their ideas with the class.

This part of the activity reinforces the integration of economic value of water and sustainability. The activity facilitates meeting of 8 main learning objectives.

# Learning Activity 4 | Value of Water

## In-class discussion on value of water as a basic human right

### Targeted Learning Objectives

- 1.1. Understand the terms public good and natural resource;
- 1.3. Understand that water generates different types of value (e.g., economic, cultural/spiritual, aesthetics, etc);
- 2.3. Use creativity to design a water pricing policy;
- 4.1. Understand the role of individual residents in maintaining the value of water in the community.
- 5.1. Care about appropriate water valuation ;
- 5.2. Feel empowered to contribute to appropriate water valuation;

### Activity

The activity builds on the reading of Rogers et al. (2002), introducing the use of pricing policy to promote equity, efficiency, and sustainability in a developing world context. Students watch a You Tube video entitled “Beyond Scarcity” and participate in discussions based on the proposed themes from the video. Proposed discussion themes may be given to the students when introducing the activity to facilitate insightful thinking while watching the video. Key ideas can be written on the board as they are generated during discussion.

- 1. Rogers, P., de Silva, R. & Bhatia, R. (2002). Water is an economic good: how to use prices to promote equity, efficiency and sustainability, *Water Policy*, 4, pp. 1–17.
- 2. You Tube: <http://www.youtube.com/watch?v=3jYr8MFTXrM&playnext=1&list=PLD19637C20582C89B&index=31>

### Research Questions:

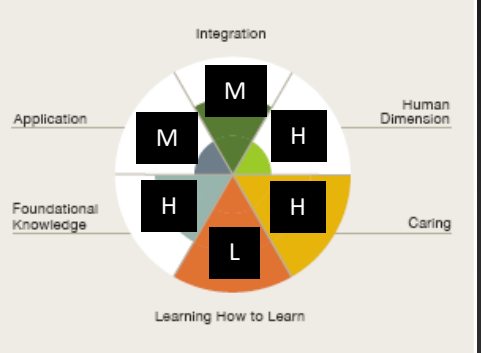
- (1) How does water crisis in a setting like Kibera, Kenya affect peoples’ lives?
- (2) How would a reform in management and governance of water help alleviate the problem in Kibera?
- (3) What are potential costs and benefits of solving the water problem in the 71,000 person slum?
- (4) In general, in a location with water meters, how may adoption of a pricing policy promote equity, efficiency, and sustainability?

<b>Objectives</b>	<b>Criterion</b>
1.1, 1.3, 2.3, 4.1, 5.1, 5.2	Foundational knowledge, Human dimension, Caring, Integration, Application

<b>Standards</b>
<b>The scoring for this activity should be based on students’ participation in the in-class discussion.</b>
5 PROFICIENT: Demonstrate interest and significantly contribute to insightful class discussion
3-4 DEVELOPING: Demonstrate interest but contribute minimally to class discussion
0-2 BELLOW EXPECTATIONS: Lack interest and make no effort to contribute to discussion

**Active Learning Profile**  
 Information source: direct / indirect  
 experience: doing / observing  
 reflection: individual / group

**Time Investment Profile**  
 individual: 5 minutes watching video  
 group: 15-20 minutes discussion



### Notes to Faculty

This rationale for this activity is to instigate a class discussion focusing on social and economic aspects value of water as a basic human right. Students may participate in the activity individually or discuss the proposed questions in groups of 2-4 people, sharing their views with the class. The Instructor has the choice of implementing the price policy design component as an in-class activity or homework assignment. The activity depicts the value of water beyond the economic context, encouraging the students to think about the role of pricing policies in promoting sustainability. The activity facilitates meeting of 6 main learning objectives.

# Learning Activity 5 | Value of Water

## In-class interactive assessment : Jeopardy!

### Targeted Learning Objectives

- 1.5 Understand the distinction and relation between cost, price, and value.
- 2.2 Identify similarities and differences between water valuation in developed and developing countries .
- 3.1. Recognize the role of appropriate valuation of water in sustainable development .
- 4.2 Appreciate different use sectors’ view of value of water by thinking about the role of water in their livelihood.
- 5.1. Care about appropriate water valuation .

### Activity

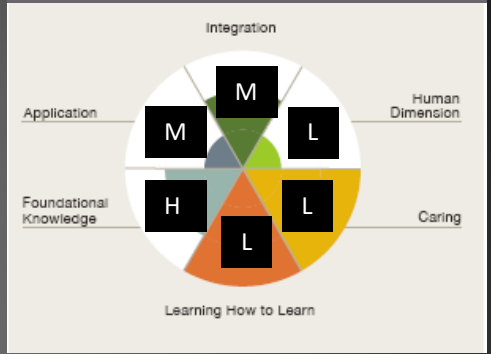
This is an in-class activity, very similar to the popular television game show, Jeopardy. Unlike the Jeopardy game, the questions will be posed to the students instead of answers. The students may be divided into two or more groups. The groups will take turns choosing and answering the questions from available categories, with liters of water awarded as points. This final assessment activity will be introduced after students go through other components of the education module. The questions will help the students see the significance of the material being presented, as well as foster teamwork while answering them. The template also allows the instructor the flexibility to choose and design questions from relevant journals articles or other information.

The current template lists twenty questions, five each from four different categories: Reading assignments, Foundational Knowledge, Videos and Conceptual Model, and General water resources questions. The questions are from the assigned reading, the foundational knowledge slides presented to the students, and in a few cases general water resources trivia.

Objectives	Criterion	Standards
1.5, 2.2, 3.1, 4.2, 5.1	Foundational knowledge, Application, Integration Human dimension, Caring,	<p><b>This is an interactive quiz activity which assesses student knowledge from the learning module. Each question ranges in the level of difficulty. The virtual liters of water awarded as points are indicated in each question.</b></p> <p>5 PROFICIENT: 80% of the questions answered correctly. Demonstrate interest and significant understanding to contribute to class participation.</p> <p>3-4 DEVELOPING: 50 -80% of the questions answered correctly. Demonstrate interest but not significant understanding to contribute to class participation.</p> <p>0-2 BELOW EXPECTATIONS: Less than 50% questions answered correctly. Lack interest and make no effort to contribute to discussion.</p>

**Active Learning Profile**  
 Information source: direct / indirect  
 experience: doing / observing  
 reflection: individual / group

**Time Investment Profile**  
 group: 30 minutes interactive assessment.

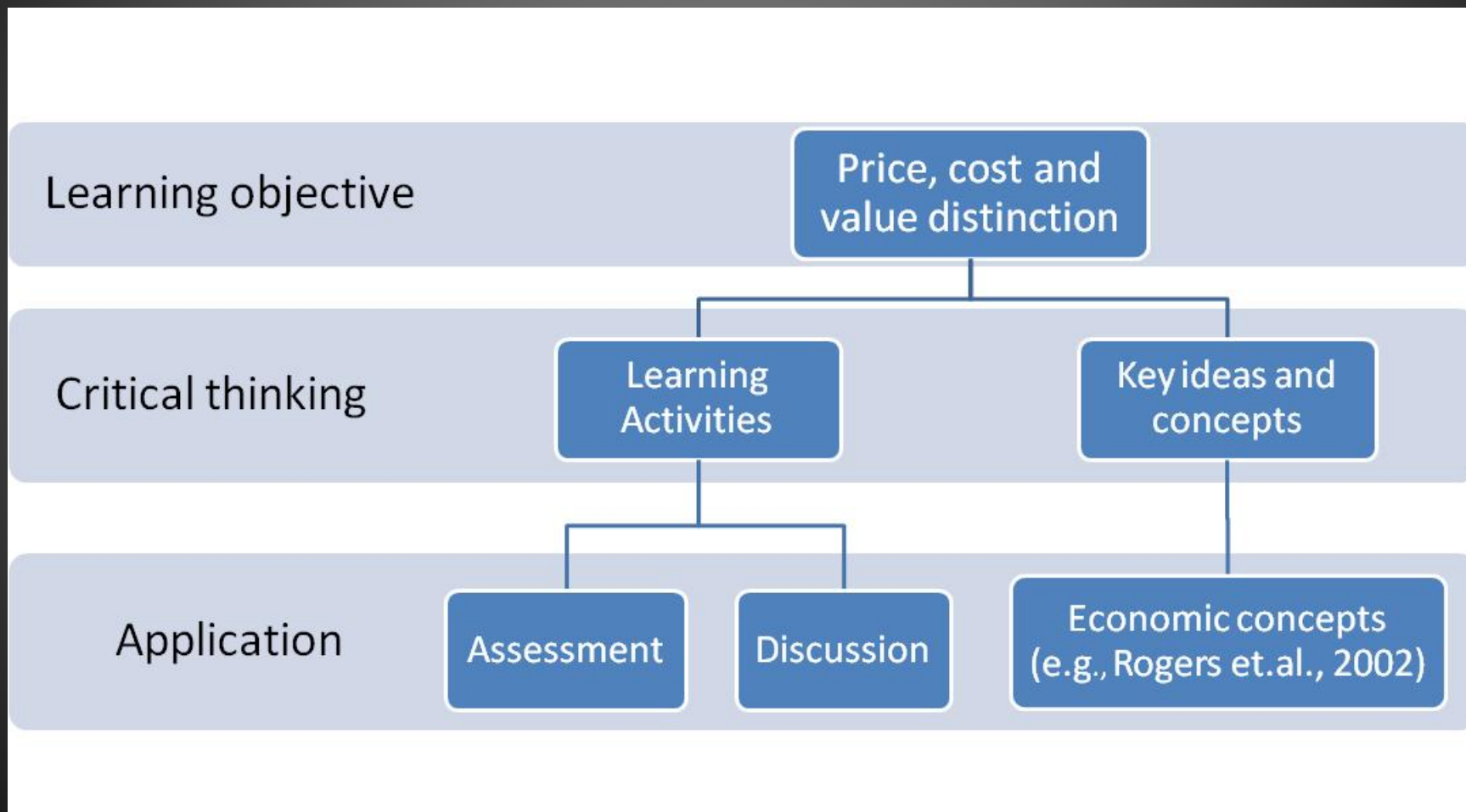


### Notes to Faculty

This activity is focused on interactive class participation. The activity should engage the students for 30 minutes. The template also allows the instructor to change the questions and answers to test students in other relevant areas of interest. In using the template, the instructor should click on the blue border on the right hand side each time answer slides are prompted. This allows the instructor to get back to the original slide with the choice of questions. Additional direction is also provided in the template. It is recommended that the instructor goes through the slides at least once before implementing it in the class.

Apart from serving as an assessment tool, this activity may indirectly introduce students to the idea of water markets – which may contribute to inequality between the “haves” and “have nots.”

# Classroom Application of the module



# Fink's Taxonomy: Learning Objectives

FOUNDATIONAL KNOWLEDGE	
detail	
<p>What key information (facts, terms, formula, concepts, relations...) is important for students to understand and remember in the future?</p> <p>What key ideas or perspectives are important for students to understand in this module?</p>	<p>Key information:</p> <ol style="list-style-type: none"> <li>1.1 Understand the terms public good and natural resource;</li> <li>1.2 Understand fundamental economic concepts/terms widely used in water valuation, namely; supply and demand curves, price demand elasticity, scarcity, and non-market valuation (e.g., willingness to pay);</li> <li>1.3 Understand that water generates different types of value (e.g., economic, cultural/spiritual, aesthetics, etc);</li> </ol> <p>Key ideas or concepts</p> <ol style="list-style-type: none"> <li>1.4 Understand how competition among disparate use sectors (e.g., municipal, commercial/industrial, recreation, navigation, etc.)in a water resources system generates different values;</li> <li>1.5 Understand the distinction and relation between cost, price, and value;</li> </ol>



# APPLICATION

detail

What kinds of thinking are important for students to learn here:  
Critical thinking, in which students analyze and evaluate?  
Creative thinking, in which students imagine and create?  
Practical thinking, in which students solve problems and make decisions?  
What important skills do students need to learn?  
What complex projects do students need to learn how to manage?

Critical thinking:

- 2.1 Develop a general conceptual model for cost and value of water (e.g., Rogers et al. (1998))
- 2.2 Identify similarities and differences between water valuation in developed and developing countries.

Creative thinking

- 2.3 Use creativity to design a water pricing policy

Practical thinking

- 2.4 Identify what can be done on a personal level to promote proper valuation of water.

Skills:

- 2.5 Analyze data to determine factors affecting water price in a given location

# INTEGRATION

detail

What *connections* (similarities and interactions) should students recognize and make...

- Among ideas *within* this course?
- Between the information, ideas, and perspectives in this course and those in other courses or areas?
- Between material in this course and the students' own personal, social, and work life?

3.1. Recognize the role of appropriate valuation of water in sustainable development;

3.2. Describe how water valuation may help improve environmental integrity

# HUMAN DIMENSION

detail

What can or should students learn about *themselves*?

What can or should students learn about understanding and interacting with *others*?

4.1. Understand the role of individual residents in maintaining the value of water in the community;

4.2. Appreciate different use sectors' view of value of water by thinking about the role of water in their livelihood.



## CARING

detail

What changes would you like to see, in what students care about, that is, any changes in their...

- Feelings?
- Interests?
- Values?

5.1. Care about appropriate water valuation;  
 5.2. Feel empowered to contribute to appropriate water valuation;  
 5.3. Compare personal value of an object (e.g., a photograph, gift, etc) with the aesthetic value of water.

## LEARNING HOW TO LEARN

detail

What would you like for students to learn about...

- *How to be a good student* in a course like this?
- *How to engage in inquiry and construct knowledge* with this subject matter?
- *How to become a self-directing learner* relative to this subject? That is, having a learning agenda of what else they need and want to learn and a plan for learning it.

6.1. Identify a region in the community or in the world where more appropriate water valuation is needed;  
 6.2. Identify internet resources to obtain information, facts, and figures needed for analyzing water valuation in the region of their choice;

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The Price of Water: A comparison of Water Rates, Usage in 30 U.S. Cities

<http://www.circleofblue.org/waternews/2010/world/the-price-of-water-a-comparison-of-water-rates-usage-in-30-u-s-cities/>

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