

The World Water Crisis

Water is one of the most important resources for the survival of all known forms of life, accounting for 71% of the earth's surface; only 1.2% of which are freshwater resources. The global water demand is infinitely growing as developing markets such as China and India grow. The demand is estimated to grow to 6,350km³ by the end of 2030. In addition, water that is safe to consume is essential to all living organisms and is available to 90% of the population.

Despite water's importance to human survival, the resource is extremely underpriced due to its lack of scarcity. The price of water will remain the same as long as water continues to be abundant. Only recently has the question "is water too cheap" become a serious matter — especially the state of California, which often faces droughts and wild-fires. Water is easily taken for granted due to its affordability. Many first-world countries like Canada and the United States use clean, often drinkable, water to wash their dishes, do laundry, and as toilet water. Having clean water is a luxury and enough of a necessity to become a Veblen good, but most of the countries with the highest water consumption use the resource without a second thought — the United States is the second-highest consumer with 300 million people using 216 million gallons of water annually.

In fact, when buying water, customers are not paying for the water itself, rather, the delivery costs from the water source to the town or city. As water becomes more of a necessity for drought-struck cities like Sacramento experiencing rapid population growth, the price of water should rise. But it does not.

Without proportional prices and measurements, economists proclaim that there is no motivating force to conserve the utilization of water which leads to a frightening issue of water shortage in the future. The prices that we see today are costs that were implemented in a time where water shortage was a minor issue if even an issue. Richard Carson, an economics professor at the University of California San Diego believes that the price-floor on water prices was carried out in order to prevent municipalities from abusing the utility and profit off of it.

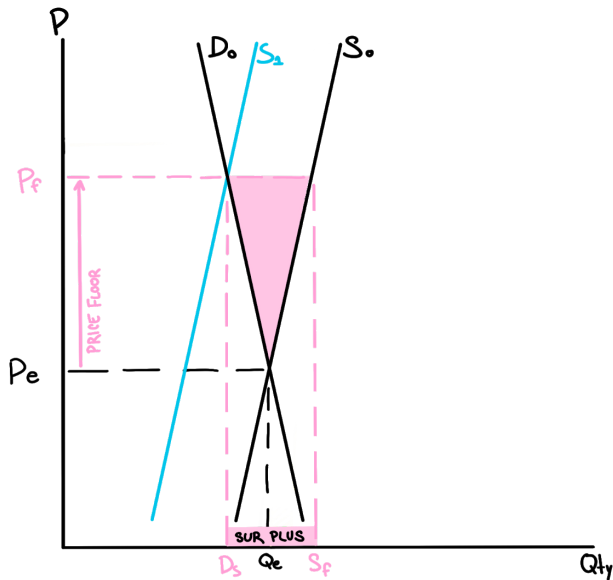
An individual needs an estimated 15 gallons a day to survive. However, Carson stated that "over 70% of water use in California urban areas is outdoors" creating a problematic issue on how to price water for the utilization other than consuming it, for instance, outdoor pools and farming. The Hamilton Project created a report based on agriculture and how horticulture "accounts for over 80% of water consumption in the American West". Even though farming and cities' essential water treatment differs from each other, farmers have less costly treatment bills. Glennon estimates that a "4% reduction in agriculture and livestock water consumption would translate into a 50% increase in water available for all residential, commercial, and industrial users." Carson also agrees upon this fact saying "oftentimes, the people in urban areas are paying 10 times the price per unit of water" both are stating that that agriculture water bills can be as low as a couple of pennies for a large number of gallons.

Although there are methods of increasing the water supply like desalination (the process of converting ocean water into fresh and safe drinking water) and traditional practices (pumping groundwater or diverting river water) hold their own environmental concerns. As the scarcity of water rises, so should the price. Hopefully, political difficulties will decrease and allow some desired reduced consumption regiments to be put in place.

References

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Water Market in California



Explanation:

1. Government intervention is required due to the ecological impacts of the underpricing of water, precipitating an upcoming future market failure

2. S (inelastic) — Although, in the immediate sense water is abundant, in the long run, fresh and drinkable water will become less accessible and obtainable. The environmental concerns of digging ground water and desalination are too perilous to even think about using as a substitute to replenish supply.

D (inelastic) — Demand is almost perfectly inelastic in the immediate sense, but is a negative slope due to the normalized over-abuse of water. There are no substitutes to water, and it holds a high degree of necessity to all living beings.

3. Implementing a price floor (a government mandated price minimum) would be most beneficial.

4. The price floor will be placed above the market equilibrium.

intervention: quota

5. A temporary surplus will be created.
6. Enforcing an excise tax on water would not be an effective route due to the fact that it would target those with low income, therefore enforcing a quota would be more socioeconomically beneficial and environmentally friendly. Raising the price as well as enforcing a quota will encourage the citizens of California to use their water more diligently and become less prodigal (shower in less time, refraining from leaving the tap on while brushing teeth, etc). The quota could extend to the limiting and/or halt of clean/drinkable water use in the State's plumbing system (including in toilets, sinks, washing machines, etc).
7. A quota reinforced on the amount of water a household receives may cause shortages in residences that house large families. Raising the price of water and adding a quota still affects those with low income or makes others pauperize creating a larger income divide, just not directly.
8. Sketch available above.