Public willing to pay to improve water quality, research finds

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In the wake of the recent water crisis in Flint, Michigan, in which studies confirmed lead contamination in the city's drinking supply, awareness of the importance of protecting watersheds has increased. User-financed ecosystem service programs can compensate landowners to voluntarily participate in environmental improvement efforts. Now, researchers from the University of Missouri have found in a nationwide survey that members of the public are more willing to pay for improved water quality than other ecosystem services such as flood control or protecting wildlife habitats.

"Our findings support the notion that ecosystem service programs need to happen at the local level," said Francisco Aguilar, associate professor of forestry in the School of Natural Resources, which is located in the MU College of Agriculture, Food and Natural Resources. "People in different areas of the country have different priorities, and that's hard to coordinate at a national level. If someone lives in a flood plain, they are going to be a lot more willing to pay for flood controls. Still, people from around the nation consistently seem to be willing to pay for water quality improvements."

Aguilar and his colleagues—including Elizabeth Obeng, a former U.S. Department of Agriculture Borlaug Fellow who completed her doctorate at MU while working on the research—sampled more than 1,000 U.S. households nationwide. The survey asked participants to indicate their preferences for various ecosystem services in a hypothetical payment for an ecosystem service program on a monthly utility bill. Researchers

found that while participants were consistently more willing to pay for water quality than other services, habitat protection and flood control varied widely in importance depending on the location of the participant. Landscape beauty was not an important ecosystem service, which Obeng believes is because it cannot easily be translated into a monetary benefit.

"A forest can be seen as a resource from which services flow for the good of society," Obeng said. "Trees pump oxygen into the air and can regulate floodwaters. You can't say the same about the visual qualities of a landscape. It's hard to sell that as a return on investment for the landowner."

The results of the survey also indicated that individuals' attitudes toward the environment and ecosystem service programs were a better predictor of their willingness to pay than income. This means behavioral factors could be more important than demographic information in predicting participation in ecosystem enhancement programs, according to Aguilar.

The study, "Water quality improvements elicit consistent willingness-to-pay for the enhancement of forested watershed ecosystem services," was published in *Ecosystem Services*.

More information: Francisco Xavier Aguilar et al. Water quality improvements elicit consistent willingness-to-pay for the enhancement of forested watershed ecosystem services, *Ecosystem Services* (2018). DOI: 10.1016/j.ecoser.2018.02.012

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