

Valuing treated wastewater and reuse: a review of applications and issues for further actions

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Abstract

In the last decade a significant amount of resources has been invested in wastewater infrastructure worldwide. In the same times the beneficial reuse of treated wastewater as well as the increasing demands on water resources has prompted the emergence of wastewater reclamation and reuse as an essential component of sustainable water resources management. Traditional economic studies do not accurately reflect the total economic value (“benefit”) that community places on the reuse projects. In practices most studies includes only the financial cost and benefits of projects. Some of the benefits are not included in the economic analysis because they cannot be assigned a monetary value but may in fact be more influential in project decision-making. In a sustainable approach, the project evaluation should, in principle, include all benefits and services: also those associated with social and environmental values.

This paper examines the importance of valuing treated wastewater in the context of reuse, particularly in agriculture. It reviewsempirical worldwide applications that have assessed the willingness to pay (WTP) estimates for treated wastewater, including a discussion on its most important determinants and the potential for transferring these estimates. The paper concludes by identifying some issues of the evaluation of the reuse project that follow from this review.

Keywords:

Economic valuation, wastewater treatment, reuse, willingness to pay, research synthesis

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