Public acceptance crucial to success of water recycling systems

A new study has analysed public perceptions of greywater re-use systems in Barcelona, which are being increasingly employed to save water during times of shortage. Several factors, including perceived health risks, system reliability and maintenance costs, appear to influence public acceptance of the technologies.

Cities often import water to cope with the demands of large populations living in relatively small areas. However, they also waste a lot of water, some of which could be recycled as "greywater", for example, showering water could be re-used to flush toilets. In Spain, some local authorities now require new buildings to have water re-use systems installed as part of a strategy to deal with water shortages. Greywater use is also being promoted for environmental reasons elsewhere in Europe, for example, in Germany and the UK.

The study focused on water re-use for flushing toilets in an area of Barcelona called Sant Cugat del Vallès, where greywater systems have been in use for more than six years. This is a long time compared to other areas of Spain, where regulations are just starting to be implemented. In all cases, regulation has come before public acceptance and demand of the technology. The researchers were keen to explore public perceptions of greywater re-use systems as social acceptance is key to the uptake of any new technology, especially when it is directly used by members of the public. A survey was conducted in the Sant Cugat del Vallès area; 120 households using the re-use systems responded.

The most important factor in determining acceptance was the perceived level of health risk, but generally users were not very concerned about the health risk associated with the water. Most users had initially felt positive about greywater use, but acceptance decreased slightly after experience with the system and more than a third of respondents were dissatisfied with it. Some of the main drawbacks, according to users, were the unpleasant odour and appearance of the water, system breakdowns and maintenance costs. However, most users did appreciate the benefit of saving drinking water.

The researchers point out that most of the respondents were young, well-educated and relatively affluent, partly reflective of the fact that these systems are installed in new buildings. The vast majority described themselves as "environmentally responsible", which may not be the case in the general population.

As the public are particularly sensitive to failures of the system, the reliability of greywater re-use technologies needs to be improved, the researchers say. This will mean investing in technological improvements, training of practitioners and communication among stakeholders, all of which depends on the resource commitments of local authorities. The authors also say that to build trust in the technology, users have to be helped to understand its principles and benefits before installation.


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