Odor and environmental concerns of communities living near waste disposal facilities

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A recent study involving the University of Southampton has investigated public perception of how waste disposal sites affect residents living nearby.

Public opinion of waste management facilities can influence where sites are located and how waste management services are delivered. Obtaining the support of communities around municipal solid waste (MSW) facilities is an important part of the successful operation of these services. One common complaint from local communities concerns unpleasant smells emitted from waste disposal facilities, such as from landfill sites.

To understand how living close to a waste disposal facility affects peoples' perceptions of odours and local pollution, the study, which is published in the journal *Waste Management*, questioned residents in four villages located near a cluster of waste disposal sites in southern Italy.

Two sanitary landfill sites (designed to isolate the waste from the environment) were constructed in the 1990s and a refuse derived fuel (RDF) plant (where MSW is shredded and dehydrated to recover materials for fuel) was built in 2001. All facilities were closed in 2008.

Residents were questioned in 2003, when the facilities were operating, and again in 2009, when they had closed, about their perception of and

attitudes towards pollution and odours in the local area. They were also questioned their awareness of the waste facilities in the area.

The residents' perception of odour nuisance considerably diminished between 2003 and 2009 for the nearest villages, with odour perception showing an association with distance from the facilities. After the facilities had closed, residents had difficulty in identifying the type of smell due to the decrease in odour level. During both surveys, older residents reported most concern about the potentially adverse health impacts of long-term exposure to odours from MSW facilities. However, although awareness of MSW facilities and concern about potentially adverse health impacts varied according to the characteristics of residents in 2003, substantial media coverage produced increased knowledge about the type of facilities and how they operated.

It is possible that residents of the village nearest to the facilities reported lower awareness of and concern about odour and environmental pollution because the municipality received economic compensation for their presence.

Professor Ian Williams, Head of the Centre for Environmental Sciences at the University of Southampton, says: "This study clearly shows that user surveys have an important role to play in providing practical assistance to the development of improved sustainable waste management strategies. A lesson for future installation of solid waste facilities is that residents have to be adequately informed about the nature and specific characteristics of these facilities and the requirement to equip a country with essential infrastructure. This is particularly important in areas such as southern Italy that have suffered serious social and environmental problems because of negative perceptions of waste management, which after all, is an essential public service."

Co-author of the study, Dr Giovanni De Feo from the University of

Salerno adds: "This is an excellent example of how sharing expertise between universities internationally can bring positive benefits to the community and can assist decision-makers faced with challenging issues."

Provided by University of Southampton