

# How citizens can help keep clean-up safe and effective

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Government and industry need to think twice and involve local citizens before they rush in and remove toxic contaminants from a polluted site, a leading international expert says.

The decision for remediation needs to be transparent and easily understood by the public, Mr Hans Slenders from ARCADIS, a design and engineering company based in Amsterdam, told the CleanUp 2015 Conference in Melbourne today.

"Sometimes, treating or keeping the contaminants where they are can be a lot less risky and costly than getting them off site – and many people do not realise this," Mr Slenders says.

"For example, a big clean-up project might involve removing 10,000 truckloads of contaminated soil, dumping it elsewhere and then bringing clean soil back to the site.

"Apart from a lot of noise and traffic in the neighbourhood, the excavation of the soil can release foul smells, burn a lot of fossil fuel and release large amounts of carbon dioxide into the air. There is also the risk of accidents – in a previous remediation, a person was hit by a truck and died. And this was after we advised the clean-up industry to go for another, less risky approach."

"So while we want to build a cleaner and safer world for ourselves and for the future generation, we need to keep a clear balance between the

benefits of the clean-up of the pollutants– and the risks of cleaning them up or shifting them elsewhere."

Mr Slenders explains that 'three pillars' – the social, economic and environmental impacts – must be considered before any clean-up project starts. Besides preventing accidents, reducing the use of non-renewable resources, waste and carbon dioxide, the plan should also assess whether the project is cost-effective.

For example, restoring a brownfield – an abandoned industrial site – completely to a housing area can require a more thorough clean-up, leading to high costs and emissions. In many cases, it might be more cost-effective to consider what the land will be used for, then determine the necessary restoration.

"The area could be restored to build office buildings, schools, parks or other uses. For each purpose, the remedial aim, related risks as well as the impact on the environment and neighbourhood differ greatly from each other."

"This is when we need to be prepared to hold discussions with those who are most affected by the remediation, such as owners or perhaps nearby neighbours," he says. "We should be transparent about all the impacts of the remediation to the public and workers."

"While it may not be possible to involve the public in all projects, we should do it for large scale ones that are carried out within communities. This includes inviting members of the public, explaining the careful decision process, and giving people a say about whether or not – or how – to remove the contaminants."

The team at ARCADIS used the three pillars to evaluate a soil excavation that was carried out in 2008, for a railway in Eindhoven, in

the Netherlands. "We found that while the excavation could result in increased land use and real estate value as well as creating more jobs, it was 13 times more expensive than monitoring the site.

"Also, the clean-up process was long, the [carbon dioxide](#) emission was more than 100 times higher, and the risk of fatal accidents was six times higher than monitoring the site. More importantly, the contamination did not pose a risk to humans before the remediation."

This is a clear example of how cleaning up the contaminants was actually less sustainable than monitoring them in place, Mr Slenders says: "We would have suggested a remediation if the site was going to be restored to a housing area, but it remained a railroad track after the clean-up.

"The project could have been improved if the differences between the various remediation scenarios were made clear at the start, and if the residents, local authorities and municipality were considered as stakeholders – instead of an obstacle – in the beginning."

Mr Slenders' presentation "Three reasons to consider sustainable remediation: a global perspective and mutual interest" is on Tuesday 15 September at 3.30pm in Crown Conference Centre Meeting Room 13.

Provided by CRC CARE

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