Potential new method to assess brownfield restoration

Researchers have developed a method to assess the sustainability of regeneration projects that could potentially be administered by a computer. The method tailors the universal goals of sustainability to specific local conditions.

Brownfields are abandoned industrial or commercial land that is often contaminated. The pressure for reuse and regeneration of these sites is high as reducing land consumption is an important goal in the European political agenda. However, the regeneration must be sustainable to be successful.

A number of methods have been devised to develop strategies for sustainable restoration and reuse of brownfields, such as the EU's RESCUE project¹, that produced the Sustainability Assessment Tool. This tool provides a good theoretical revision of the concept of sustainability but has little guidance on how to choose site-specific sustainability indicators.

The new method aims to provide a sequence of steps that allow stakeholders to tailor the concept of sustainable development to a particular context. It chooses an integrative concept of sustainability that has three general goals: securing human existence, maintaining society's productive potential and preserving society's options for development and participation in decision-making. These three goals are sub-divided to make a total of 15 more specific goals, such as protection of human health and conservation of cultural heritage.

The method is designed to identify local problems, connect them to one of the 15 sustainability goals and then define suitable indicators of sustainability to help decision-makers compare different land use options for restoring brownfield sites. The researchers illustrated this process using a case study in southwest Germany.

The area to be restored was next to a railway station and was contaminated by fuel, oil and chemicals. The researchers conducted 22 interviews with a wide range of stakeholders, including local authorities and property owners. The interviews revealed problems, such as groundwater contamination and hindrance of urban development. These were then connected to the sustainability goals in stakeholder workshops. To link them to just one goal, certain problems had to be redefined and specified.

Having paired the problems to the sustainability goals, indicators were identified to assess how a local problem could be overcome in a sustainable manner. For example, the local problem of ‘a lack of green spaces in the area’ was linked to the sustainability goal of ‘ensuring satisfaction of basic needs of society’. This lead to identifying ‘the number of green spaces close to dwellings’ as an indicator of sustainability. The number of indicators was limited to a maximum of two per problem and stakeholders were guided in the workshops on how to choose them. Eventually this guidance would need to be built into the computer software and the researchers suggested this could be done using visualisation tools and interfaces for data exchange.

By linking local problem areas to general goals for sustainable development and identifying appropriate indicators at local level, stakeholders constructed a set of sustainability criteria to potentially compare different land use options. There is still a long way to go before achieving the ideal case where no moderator or expert is required to link the problems to sustainability goals so that stakeholders can apply the method using a computer. However, in its current form, the method has already taken steps towards empowering stakeholders to assess the sustainability of restoration projects.

1. RESCUE (Regeneration of European Sites in Cities and Urban Environments) was supported by the European Commission under the Fifth Framework Programme. See: [www.rescue-europe.com](http://www.rescue-europe.com)


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