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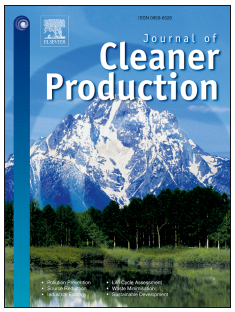

Management of landfill reclamation with regard to biodiversity preservation, global warming mitigation and landfill mining: Experiences from the Asia-Pacific region

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Management of landfill reclamation with regard to biodiversity preservation, global warming mitigation and landfill mining: Experiences from the Asia-Pacific region

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Highlights

- Closed landfills can be reclaimed as land resources for multi-purposes given that the environmental quality is under control.
- Closed landfills can contribute to improve urban ecosystems.
- Material/energy recovery can be conducted at closed landfills for mitigating global warming given that appropriate technology is available.
- Public safety should be noticed in implementing landfill reclamation.
- Energy recovery, land reclamation and the 3Rs (waste reduction, reuse and recycling) can be taken into account in the context of sustainable solid waste management.

Abstract

As a comparatively low-cost technology for waste treatment and disposal, landfilling has been adopted worldwide, particularly in developing countries. After one landfill is fully filled, the aftercare management turns into an important issue for municipalities, while the deposited waste is highly complex and condensed. Recent literature has indicated that landfill management plays an important role on critical issues of contemporary solid waste management, including biodiversity preservation, global warming mitigation, landfill mining and land reclamation. This study firstly made a comprehensive literature review on the existing studies in several Asia-Pacific economies, secondly conducted field surveys for the several illustrations of the aftercare management of closed landfills in Japan and Taiwan. Afterward, the findings from the literature and illustrations from the Asia-Pacific region were qualitatively summarized. Based on the results, concrete management strategies were discussed for the aftercare management of closed landfills in the context of land reclamation from important perspectives. For promoting the closed landfill management and seeking