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Solid Waste Management in Refugee Camps in Jordan



Hosting a large refugee population in a protracted crisis brings with it a range of challenges – and sometimes opportunities – for governments and municipal authorities. Solid waste management services globally struggle to meet the demand in cities and densely populated areas, and this is exacerbated during a crisis when there are large and unplanned flows of people into urban areas.

Finding effective and sustainable waste management systems for the new population, particularly in refugee and IDP camps and settlements, is key to maintaining adequate and hygienic living standards for those displaced and ensuring the environmental and health impacts on the host community are minimal. Improper solid waste disposal can lead to public health risks, environmental degradation and socio-economic problems. However, with the right approach, waste management can also be a source of environmental protection, revenue and employment.

In the context of Jordan, the country currently imports around 90 per cent of its energy and fuel requirements and recycles approximately 7 per cent of the 2 million tons of municipal waste produced annually. Jordan is home to more than 650,000 Syrian refugees, 18 per cent of whom live in formal refugee camps at Zaatari and Azraq.

World Vision has been providing Solid Waste Management services at Azraq Camp since 2017, supported by the European Union (EuropeAid). The purpose-built refugee camp, which covers 14.7 km² and is 25 km from the nearest town, has a population of around 36,500 Syrian refugees. Approximately 20.7 tonnes of waste are produced at the camp daily, just over 15 per cent of which is recyclable. The rest is primarily organic waste, which is currently not compostable in Jordan.

World Vision provides the only solid waste management at Azraq Camp at its 'Green Centre', utilizing an environmentally-friendly approach with the aim of reducing the environmental and health impact of waste, reducing operating costs and providing sustainable livelihood opportunities for residents.

The Green Centre operating model may provide a useful example for other refugee or IDP camps in the region or globally, particularly as displacement crises become more protracted.

There are also lessons learned which can be built on for better environmental sustainability in Jordan in the future, particularly in the future if service provision in refugee camps is incorporated into the local municipality. Jordan has a national strategy to increase recycling by 2034, and the country aims to generate 30-50 megawatts of power from waste-to-energy projects by 2020.



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World Vision's Solid Waste Management at Azraq Camp

The Solid Waste Management Project at Azraq Camp aims to establish an environmentally friendly and economically sustainable model. The key components are:

- Construction and running of a 'Green Centre' for sorting and processing waste, powered in part by photovoltaic (solar) energy
- Provision of two types of bins for recyclable and non-recyclable waste for every eight household
- Daily collection of 21 tonnes of solid waste from households and community centres
- Behaviour change campaign - targeting community meetings, individual households and schools/children's centres - to encourage sorting and recycling at the household level
- Cash for Work opportunities for Syrian refugees through the hiring of 40 Incentive-Based Volunteers (IBVs) for daily collection and sorting and 150 IBVs on a monthly rotation for behaviour change activities



An average of 35.1 tonnes of recyclable materials are collected monthly, 29 per cent of which is plastic waste. Recyclables are then sold to local buyers who collect directly from the Green Centre, generating an income of approximately 2,500 Jordanian Dinars (\$3,526) per month. This covers 20 per cent of the running costs of the Green Centre.

The remaining 18 tonnes of non-recyclable daily waste is sent to the nearby landfill at Zarqa in coordination with the local authority.

Lessons Learned & Recommendations

The Solid Waste Management project at Azraq Refugee Camp seeks to ensure a sustainable economic model which will reduce dependence on foreign aid and embed environmentally sound approaches, starting with behaviour change among children and families.

The project model could be improved with greater cost recovery, which could be achieved with additional changes or interventions – for example:

- Further behaviour change to improve sorting at the household level – in a survey of camp residents, 90 per cent reported that they are aware of and willing to follow the recycling system, which is positive. However, staff still have to re-sort waste at the Green Centre as there continues to be mixing of recyclables and organic waste.

- National policy changes that would allow residential organic waste to be converted into fertilizer. World Vision is planning in the next phase to conduct a pilot laboratory assessment to



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see if the organic waste produced in the camp could be safely converted to compost for agriculture and other uses.

Based on experiences at Azraq Camp, World Vision believes this project provides a core model which can be applied in other refugee/IDP camp settings. The key aspects to consider for implementation include:

- Integration with existing formal and informal waste management procedures is key for sustainability in post-emergency contexts. Developing these systems, practices and relationships takes time, which must be built into the project lifecycle.
- A full and detailed assessment is needed at the outset to understand local dynamics relating to waste management and the potential for cost recovery through sale of recyclables and compost.
- Promoting environmental awareness and good waste management practices among the displaced population is possible, even in an emergency/humanitarian context. With the average refugee situation now lasting 17 years, it is vital that good practice is embedded from the beginning of a crisis.
- NGOs, donors and international institutions must advocate for and support the implementation of laws and policies governing waste management and environmental protection at the national and local level which promote and facilitate sustainable green practices.



World Vision is a global non-governmental organisation working across Jordan, supporting vulnerable Syrian and Jordanian children and their families. World Vision has been working in Jordan since the start of the Syria refugee crisis in both camp settings and host communities, and their programmes include education, child protection, food security and livelihoods, and water, sanitation and hygiene.

For more information about World Vision's Solid Waste Management approaches or response in Jordan, please contact: Hasmik Kocharyan (Hasmik_kocharyan@wvi.org) or Thomas Benton (Thomas_benton@wvi.org)

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of World Vision and do not necessarily reflect the views of the European Union.