



Gemeente
Amsterdam



Evaluation of Container Gardens

This is an unofficial translation done by CityGard of just the Summary & Conclusion. Find the original full report in Dutch on

<https://onderzoek.amsterdam.nl/publicatie/evaluatie-containeruintjes>

Research & Statistics



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On behalf of: Waste and Resources, Strategy and Projects department

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Nina Vos

Joris Klingen

In collaboration with Barry van 't Padje, Faye Kornbluh, Jessica Greven, Natalie Runtuwene, Marleen Rijksen, Shy-Ann Moehamatdjilil en Daan Schmitz

Visiting address: Weesperstraat 113-117

Phone 020 251 10333

Postbus 658, 1000AR Amsterdam

onderzoek.amsterdam.nl

nina.vos@amsterdam.nl

j.klingen@amsterdam.nl

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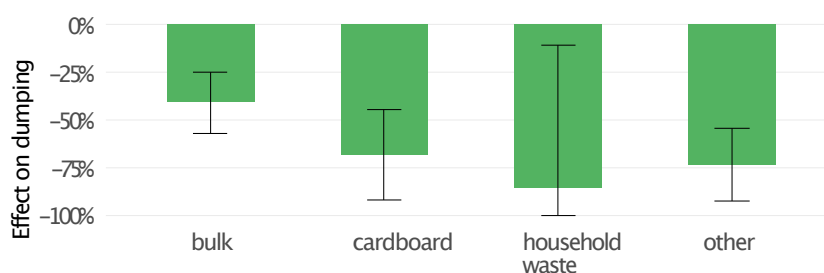
Front cover photo: Underground containers with container gardens in Sloterveer, Edwin van Eijs (2022)

Summary and Conclusion

In the autumn of 2022, the Waste & Resources department (A&G, Afval & Grondstoffen) of the municipality of Amsterdam installed container gardens at 25 container locations in the Central, South, and East districts as a pilot intervention against improperly placed waste (dumping). To assess the effectiveness of this pilot, the Research & Statistics (O&S) department analyzed measurements of the number of instances of dumping around the container locations before and after the installation of the gardens. Additionally, after the installation, a survey was conducted among residents living near the container gardens, and in-depth interviews were carried out with adopters of containers with gardens. This report juxtaposes and integrates the findings from these three research methods to provide a comprehensive evaluation of the pilot program.

Container gardens reduce the number of instances of dumping; variations based on the type of waste and type of garden. The effectiveness measurement reveals that the gardens lead to a reduction in instances of dumping. The estimated reduction for different types of instances of dumping is as follows: 40% for bulk waste, nearly 70% for cardboard, over 80% for household waste (although with greater uncertainty), and over 70% for other instances of dumping (see figure 1). There appears to be no indication of a displacement of the problem to surrounding container locations. The differences between the districts are not significant, suggesting that the gardens achieve roughly the same effects in the South, East, and Central areas. Various types of gardens were tested in the pilot. The results indicate that the reduction achieved by low sedum gardens is less certain than the reduction achieved by container gardens with taller vegetation.

Figure 1 Effect of container gardens on instances of dumping with a 95% confidence interval, by type of dumping (decrease in percentages)



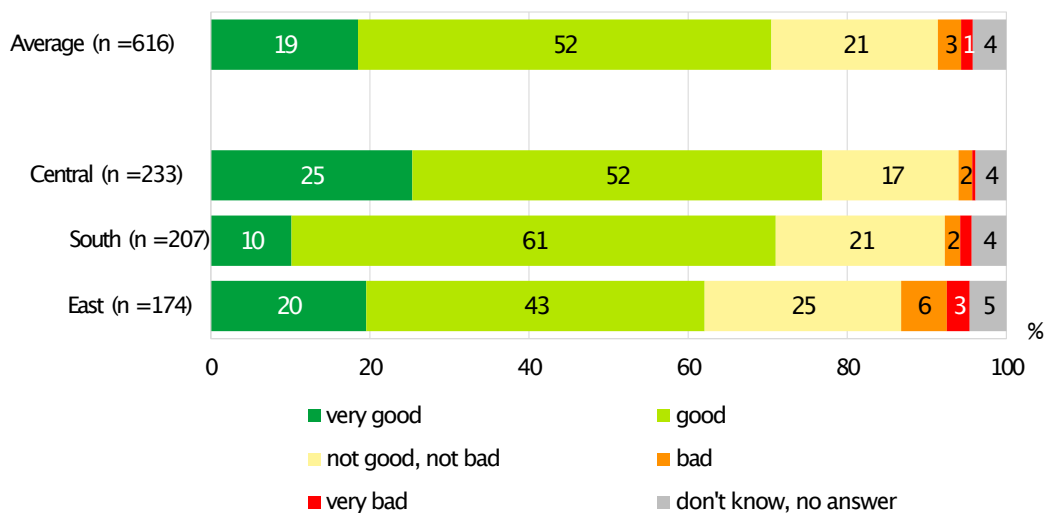
Local residents also notice a reduction in instances of dumping.

Local residents are pleased with the container gardens. Seven out of ten believe that container gardens work (very) well as an intervention against improperly placed waste (see figure 2). The majority of respondents note that there is less waste next to the container, both in terms of quantity and frequency, when asked about it. They also find that the street has become cleaner since the installation of the gardens. Additionally, there is substantial community support for the gardens in the neighborhoods where they are now placed. Almost all respondents would be disappointed if others' waste were to damage the gardens. They would also feel uncomfortable

placing waste next to the garden. The majority of local residents also show (intention of) involvement with the gardens. When asked, they indicate that they would remove litter from the garden. Moreover, a majority state that the gardens motivate them to keep the rest of the street clean as well. This indicates that the influence of the container gardens extends beyond just the container location.

Container gardens are rated highest in the Central district and least favorably in the East district. Residents of the Central district are most frequently positive about the effectiveness of the container gardens (see figure 2). In the East district, the proportion of respondents indicating that there is less frequent and less abundant waste next to the waste container since the installation of the gardens is the smallest. However, even here, a majority of over two-thirds still consider the gardens effective (figure 2). In the South district, the group of local residents who find the street cleaner since the introduction of container gardens is the smallest, at sixty percent.

Figure 2 How well do you think the container gardens work as an action against waste next to the container? By district and average, December 2022 (percentages)



Cleanliness begets cleanliness, dirt attracts dirt

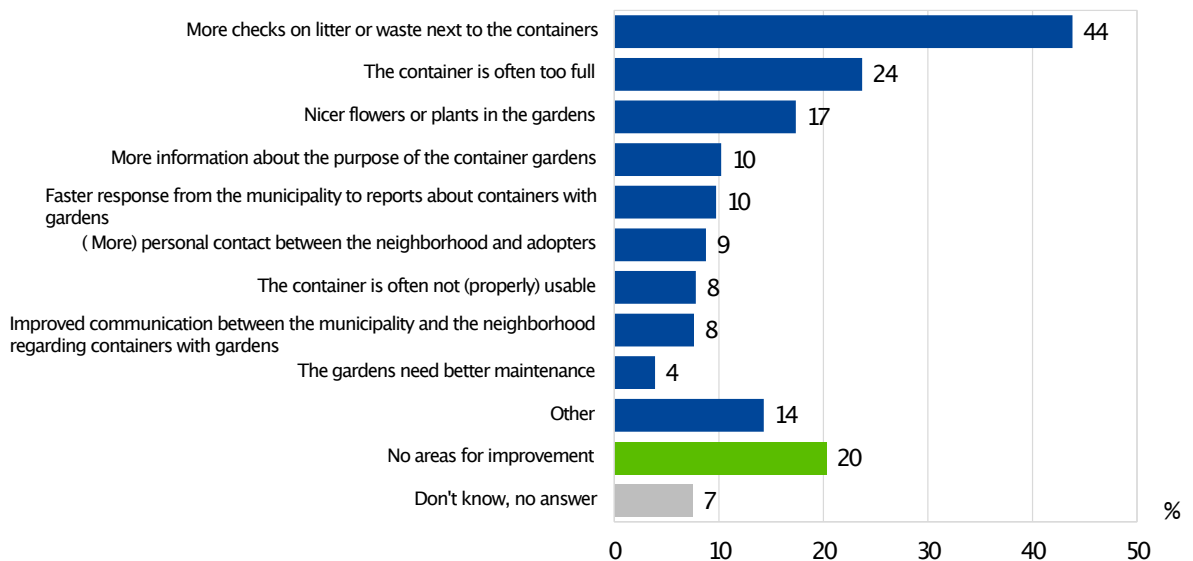
Residents believe that the gardens are effective in changing residents' behavior. "Cleanliness begets cleanliness." The gardens are thought to appeal to residents' moral compass and feelings of shame. This corresponds with the finding that local residents would feel uncomfortable if they were to place waste next to the gardens themselves. However, many residents also mention that the problem seems to shift to the sidewalk around the gardens. Another group points out that the container gardens are only effective under the condition that the containers are not full or blocked. Container adopters emphasize this and mention that the gardens only work when they are well-maintained. This suggests a "broken window" effect, where dirt attracts more dirt. This highlights the crucial role of the adopter. The effectiveness measurement also suggests that the presence of a container adopter ensures the functioning of the garden. Lastly, both residents and container adopters agree that improperly placed bulky waste is the biggest issue. It appears messy and attracts instances of dumping of other types of waste.

¹ James Q. Wilson & George L. Kelling. BrokenWindows. March 1982.

According to the neighborhood, the container gardens alone are not sufficient to bring about the desired change for this issue.

Residents identify the municipality's efforts and the type of vegetation as areas for improvement for the gardens. According to locals, in addition to installing container gardens, the municipality should conduct more checks on litter, waste next to containers, and full containers (see figure 3). These improvement points are particularly raised by residents of the South and East districts. Conversations with adopters also reveal a desire for extra checks by the municipality, such as for damage, or the condition of the vegetation. This would help ensure that the gardens don't deteriorate and lose their effectiveness. In line with this, they request the municipality to respond more promptly to residents' reports of instances of dumping or issues with the gardens. Experience shows that residents' reports often go unnoticed, whereas reports from adopters are more immediately acted upon. Furthermore, adopters suggest that gardens with taller vegetation appear to work better than sedum gardens. This aligns with the results of the effectiveness measurement, which indicates that the effectiveness of sedum gardens is less reliable.

Figure 3 What could be improved about the container gardens in your neighborhood? Multiple answers possible, December 2022 (n = 616, percentages)



Additionally, increased enforcement and information provision would also help.

Furthermore, during the interviews, the suggestion repeatedly arises to complement the guiding influence of the gardens with enforcement. There needs to be monitoring to ensure that people adhere to the rules for waste disposal. If they don't, there should be consequences. Lastly, container adopters recommend a more extensive approach to introducing the container gardens in the neighborhood. With flyers, signs, or even a small event shortly after the installation of the gardens, awareness and understanding of the initiative and its purpose could be increased. This could contribute to greater awareness and engagement with the waste issue in the neighborhood.

Awareness of a container adopter enhances the effectiveness of the garden.

Container adopters mainly carry out their work on the container gardens without being noticed. Sixteen percent of local residents have observed the adopter maintaining the gardens in the neighborhood. Adopters have not reduced their efforts since the installation of the gardens, nor have they increased their presence at the container location. Although the gardens require additional maintenance, the reduced instances of dumping mean they have less waste to clean up. Remarkably, the attitude of residents who have witnessed the adopter's work differs from that of those who haven't noticed it so far. **Those who have seen the container adopter at work are more willing to remove litter from the garden and assist in its maintenance. They also express a greater inclination to keep the rest of the street clean and are more likely to perceive the intervention as effective. This suggests that the visibility of the container adopter reinforces the effectiveness of the container gardens.**

Conclusions and Implications

The measurements, survey research, and interviews collectively reveal that the container gardens lead to a reduction in instances of dumping. This reduction applies to all types of waste, although it is least pronounced for bulky waste. Adopters and local residents therefore urge the municipality to enhance awareness of the disposal rules for bulky waste. Container gardens would lose their effectiveness as soon as the first piece of waste is improperly placed, highlighting the need for optimal maintenance of both the gardens and the waste containers. This requires that the containers are neither full nor blocked.

The explanation for the effectiveness of the gardens lies in their ability to touch upon people's moral compass, eliciting feelings of shame when waste is dumped next to them. As sedum gardens require less human attention, they have a weaker impact on the moral compass and thus might be less effective than the more vulnerable, taller variant. This experience is supported by the effectiveness measurement.

Furthermore, the maintenance of the garden by the container adopter triggers conversations and increases the visibility of the adopter. This not only reinforces the human aspect of the gardens and offers an opportunity to inform neighbors about proper disposal behavior, but also contributes to social cohesion and fosters engagement of residents in maintaining a clean neighborhood. Through this interplay, the container gardens not only contribute to cleaner container locations but also hold the potential to make a difference throughout the entire neighborhood.