

SMART WASTE - Innovation in Waste Management Policies

Template to report on final results of local evaluation activities

Draft 1.0

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1. Policy instrument(s) evaluated

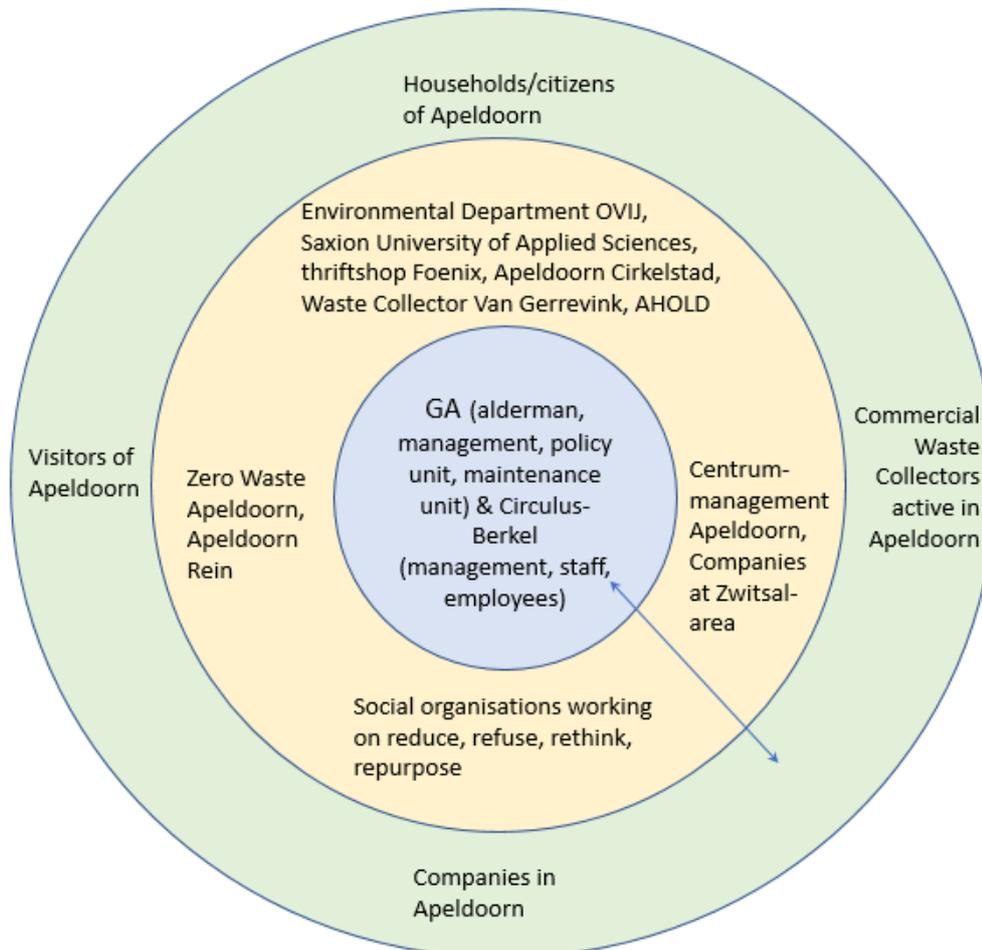
Municipal waste management plan 2018 – 2025 called *Recycle Service 2025*

2. Evaluation process

Provide some details on how you run your evaluation activities, including:

- *Elements of the policy instrument(s) that were subject to evaluation*
- *Methodologies used (e.g. desk analysis, interviews, etc.)*
- *Actors involved in the evaluation process*
- *Timeframe of evaluation activities*

The evaluation of our policy is done in several steps expanding the reach of people/organizations involved. It is based on the evaluation process as described in the framework of the project SMART WASTE. Together with Kolding we added several questions/subjects in order to make the evaluation more comparable with one another. It is very important if you want to learn from each other to know the context in which the waste management policy of the SMART WASTE partners thrive. We had several online meetings and of course a visit to Kolding.



First we had an internal evaluation with our waste collector Circulus-Berkel. In general we can say that the policy is successful especially because of the in between outcome of the amount of residual waste and separation rate in the first quarter of 2020:

- 66 kilogram of fine residual waste per capita per year
- A separation rate of 79%

Note that these results are at a moment when just half of the municipality was switched towards the new policy¹. So we are doing great.

There are a lot of good elements in our waste management policy (see next paragraph).



Of course there was resistance when people have to change their behavior, but most of the people find the policy change a logical step towards obtaining more raw materials and less residual waste. Challenges are:

- Dumping and additional placements
- Pollution of the raw materials (primarily with organic waste and PMD (plastic, metal and beverage cartons))
- Finance – will it still be able to use ‘pay as you throw’ when people are less and less throwing away residual waste

The next evaluation step was with supermarkets and citizens. Apeldoorn gathered representative of supermarkets and citizens initiatives to brainstorm about the opportunities that can be set up to reduce waste. Participants were invited to reply to questions such as:

- Which challenges do we see to reduce waste?
- Which challenges do you see in the transition to a circular economy?
- What are your expectations for waste reduction?
- Where is your impact of influence regarding waste reduction?
- Do you need a specific support to become more circular? How can Apeldoorn help you in this process?

From the various answers received, several interesting point could be drawn and will be taken into consideration in particular regarding the communication to the users. These include:

- Extra communication is necessary, but it will only be successful when it addresses a specific group with a specific message. Thus, additional information about specific issues in identified areas or of identified groups are necessary and should be collected and analysed;

¹ The prognosis for 2021 is 60,5 kg residual waste per person per year and a separation rate of 81% for raw materials (biowaste, paper, glass, plastic, metal, drink cartons, textile, diapers, e-waste and other such as Styrofoam and mattresses).

- The message of waste reduction can be brought in different places like supermarket, in school (targeting children), in public places or in thrift shops and/or the housing associations – depending on its content and the target audience;
- All these communication actions have a cost and might not lead to lesser residual waste. However, it can lead to a better understanding of the situation and less pollution of the raw materials (plastics, paper, biowaste, glass, etc.). It is a necessary first step to reach the final goal of zero waste.

Finally it resulted in participation during the national waste-free week in terms of all fast running bread having a sticker showing the best way to conserve bread and several recipes with old bread.

With Zero Waste – a citizens’ initiative – we organized a Zero Waste week.

The evaluation of the outer circle consisted of an evaluation done by our waste collector Circulus-Berkel asking inhabitants of Apeldoorn about their service. 506 Inhabitants filled in the online questionnaire showing:

- The average grade given was a 7,5 – the same as in 2017
- People were not so satisfied with the offer options for residual waste, which is not surprising because of our introduced reverse collection
- In 32% people experienced a full container – mainly paper, clothes and plastics (PMD)
- We have two recycle stations (Apeldoorn and Vaassen), but Vaassen is hardly used, because 66% of the people doesn’t know that you can visit more recycle stations. The problem with Apeldoorn is the speed of services especially on Saturday.
- 48% Uses the Waste-free app of Circulus-Berkel

Another investigation showed that PMD (Plastic, Metal, Drink cartons) contains 42% of interfering substances – substances that don’t belong in PMD². On the other hand 85% of our fine residual waste contains other sub-streams which can be made into raw materials. The introduction of Recycle Service 2025 – reversed collection – made a huge impact on the amount of residual waste (see picture below, whereby orange is PMD, blue is paper/cardboard, green is biowaste and grey is the other remainder fractions).



² This is measured by weight. A full bottle of water is just as much as 20 empty bottles.

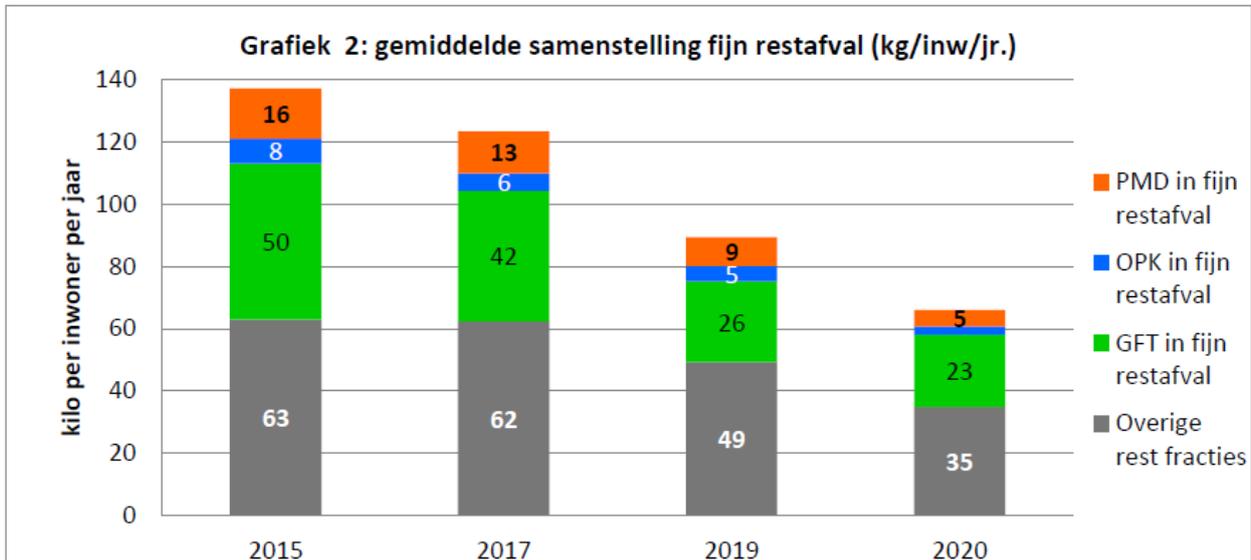


Figure 1. Average composition of residual waste in Apeldoorn (kg/person/year)

3. Evaluation results

The good part of our Recycle Service 2025 is:

- A total package is delivered. People can choose to hold their residual waste bin and they can separate their diapers.
- Lots of service for inhabitants. They get extra support when they are less abled and a financial contribution for medical waste.
- The free amount of bulky waste is raised up until 400 kilogram per household per year and the opening hours are extended.
- The participation and communication of the plans and what was going to happen was very extensive. We had 25 well visited walk-in evenings. The inhabitants were already involved during the policy making and because of that some adjustments were made (extra service and offering the option of retaining their residual waste bin).
- The physical combination of the bulky waste intake station with the Thrift store ensures less residual waste.
- Last but not least people do separate their waste a lot – the financial incentive does work.

The amount of residual waste is 60,5 kg per person per year and the separation rate of raw materials is 81% (estimation 2021).

The issues still to address are:

- Placements near the containers and dumping;
- Too much (42%) interfering substances in PMD;
- Too much (85%) valuable sub-streams in residual waste;

- We need to do more on preventing stuff to become waste;
- How to influence industrial waste although we don't have an official role in this.

4. Next steps

In our connections and meetings with the partners we learned several interesting things about how they manage their waste. One of the examples we also introduced is a sensor for measuring the fullness of a container. We did a pilot with it with the result that it functions technically well and that we would like to expand the number of containers having a fullness sensor. In that way we would be able to configure dynamic route planning. The benefit from this is that full containers will be emptied sooner in order to prevent placements.

Other interventions to avoid placements are more social like having a person in the neighborhood who pays attention on that everyone is putting their garbage in the right bin. It is a trustworthy person known by the neighbors.

In terms of prevention September was a month with several events:

- A waste-free week – a national event – in which did several local activities in order to help people wasting food;
- A Zero Waste week covering different kind of events in order to prevent waste in general. Events are for example package-free shopping (bring your own bags and sacks), tour along second hand shops, repair cafés, lectures, workshops making your own deo or laundry detergent.

Another important issue to address is communication. Most people don't know what may or may not be put into the PMD-bin. And we would also like give more information on how to prevent waste. For that case Circulus-Berkeel and the municipality of Apeldoorn will set up an integral communication plan for our inhabitants.