Summary

The recyclability of plastic packages on the Dutch market has been assessed. Samples of three different municipalities were analysed to assess the types of plastic packages placed on the Dutch market in 2021. First of all, one sample of Dutch lightweight packaging waste and three samples of mixed municipal solid waste of three different municipalities were analysed. The plastic packages present in the samples were sorted in packaging types (like PET non-beverage bottles, PP drinking bottles or PE film) from which their shares in the waste samples were calculated. These shares were averaged for the three municipalities, which resulted in a first assessment of the types of plastic packages placed on the Dutch market in 2021. The level of recyclability was first estimated with a straightforward assessment method. This method assesses the recyclability on the level of packaging types, ignoring design aspects of individual packages within these packaging types. Since comparable data had previously been gathered by WFBR for Dutch plastic packages in 2014 and 2017, this revealed trends in the shares of packaging types over the years. This showed that the share of good recyclable plastic packages remained almost constant between 2014 and 2021. The share of non-recyclable plastic packages dropped. The share of packages that are likely to be recyclable in the near future has increased. The most clear was the drop in the share of non-NIR detectable rigid packages (the dark coloured rigids) and the simultaneous increase in the shares of PP and PET rigid packages. This indicates that the Dutch fast moving consumer good (FMCG) industry has made progress with this aspect of design-for-recycling.

The recyclability of Dutch plastic packages in 2021 was studied in greater detail with a more strict assessment method. In this new assessment method different categories of recyclability were used to show why a certain packaging was not recyclable. The packaging types that were evaluated as "well recyclable" as packaging type were re-evaluated on the level of individual packages on multiple design aspects that could hamper their recyclability. The design aspects for limited and non-recyclable packages were evaluated step-by-step. Packages that were rejected based on a design aspect were not evaluated on the following design aspects.
From this more strict assessment it appeared that 27% of the plastic packages present on the Dutch market are well recyclable. Only one percent of the plastic packages are non-recyclable, such as PVC based packages and sealant kit canisters. It also showed that 17% of the Dutch plastic packages are currently only recyclable as mixed plastic. These are small flexible packages and PP based flexible packages. For 18% of the plastic packages there is currently no recycling technology available. They can be sorted into a separate sorted product, but their mass recycling technology is still under development. This relates to non-bottle PET (also named PET trays) and PS rigid packages, for which recycling processes are expected within the coming five years. 13% of the plastic packages on the Dutch market cannot be sorted properly since the packages are either too small or possess too large labels. The packages with too large labels can be re-designed to be recyclable. Finally 25% of the plastic packages contain materials that cannot be separated and which contaminate the recycled plastic. This is a very diverse group of packages ranging from laminated flexible packages, to detergent bottles with hand pumps and spray guns, to butter tubs with residues of aluminium top-film, etc. The recyclability of this group of packages offers room for improvement.

Of all plastic packages 27% is well recyclable. Of all the packages with a limited recyclability, either due to a lack of sortability or due to the contaminants that they introduce in the recycled plastics, a large share (29% of all packages) can be redesigned for recycling to well recyclable packages. For 25% of the plastic packages the redesign process will lead to dilemma's that need to be solved. And for 18% of the packages a sorting or recycling process needs to be developed first.

The recycling target is 50% for 2025 and even 55% for 2030. However, only 27% of the plastic packaging are well recyclable at the moment. As many packages as possible need to be collected or recovered and a fair share of limited recyclable packages need to be recycled as a mixed recycled plastic to obtain the recycling targets. Thus, it is important to raise the share of well recyclable packages. This analysis has shown that the FMCG industry started with this. Clearly the share of dark coloured rigid packages that cannot be sorted correctly has dropped in the last years. Although this

represents a fairly easy to implement design-for-recycling step, it is nevertheless important that is has been made. This study also reveals that the plastic packages can be improved largely to render them better recyclable. This is crucial in the development of a more circular economy for plastic packages in the coming decades.