



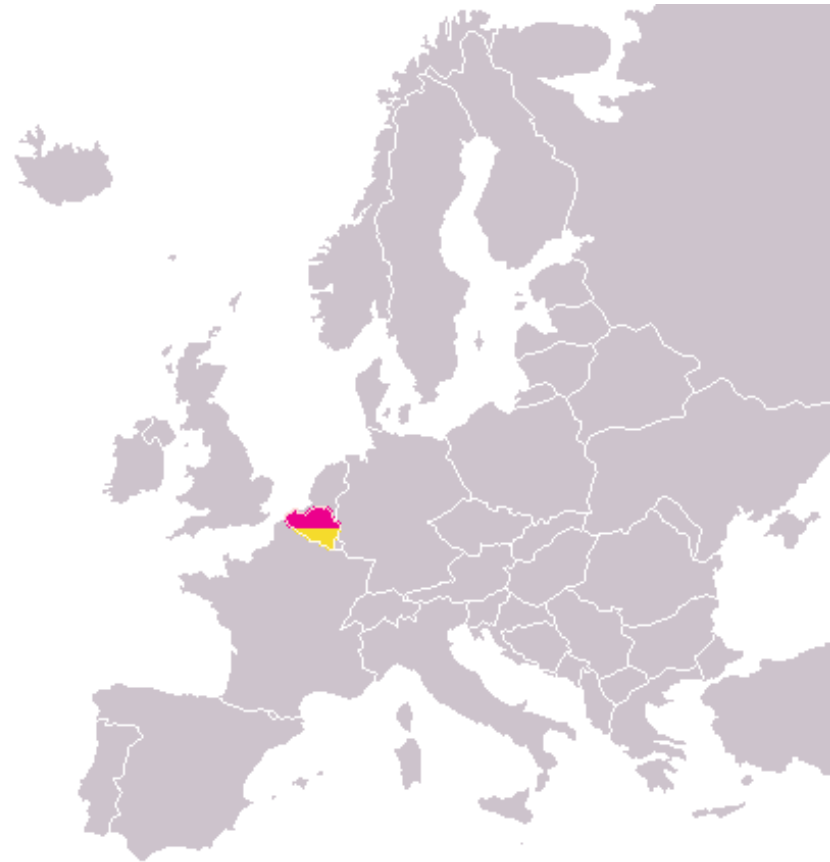
*Incentives for less waste and
better sorting:
a smart invoice and a web application*

Katleen Mertens
communication manager
IOK Waste Management

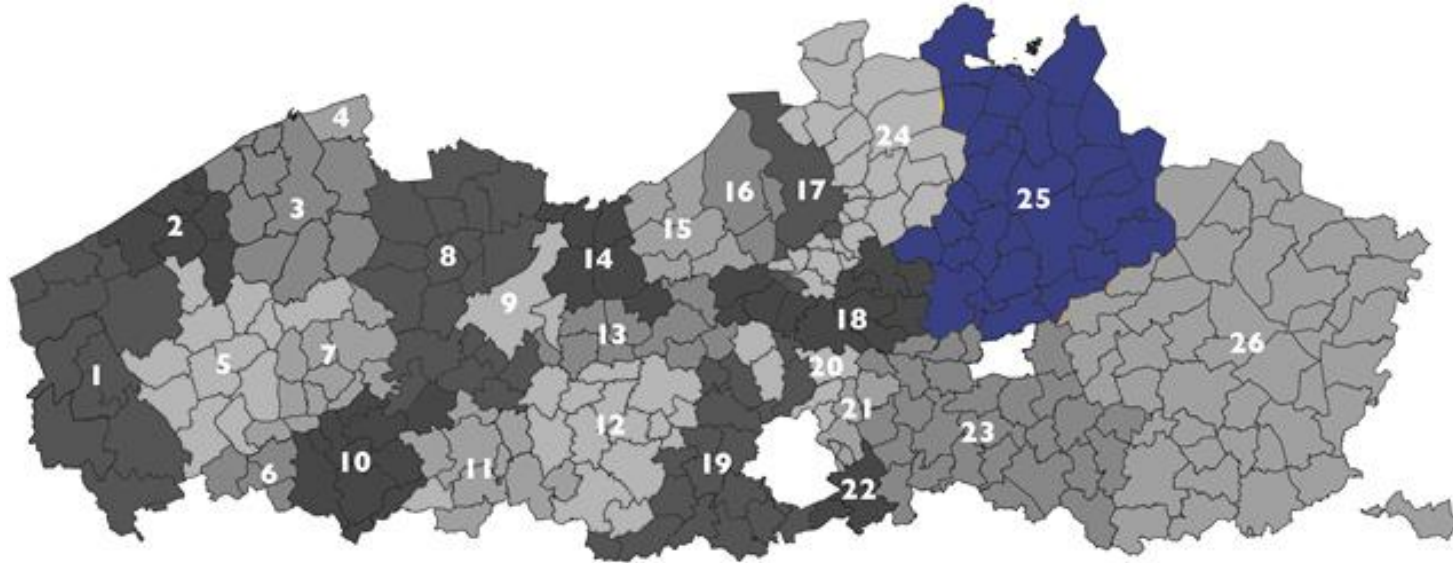


brief introduction to Flanders

- 1 of 3 Belgian regions
- 6,3 milion inhabitants
(Belgium: 11,4 million)
- 28 times smaller than
Norway
- 487 inhabitants/km²
- 308 municipalities



intermunicipal cooperation



- separate corporations, owned and controlled by municipalities
- board: political representatives from the municipalities
- **IOK: rural region: 29 municipalities - 524.000 inhabitants**



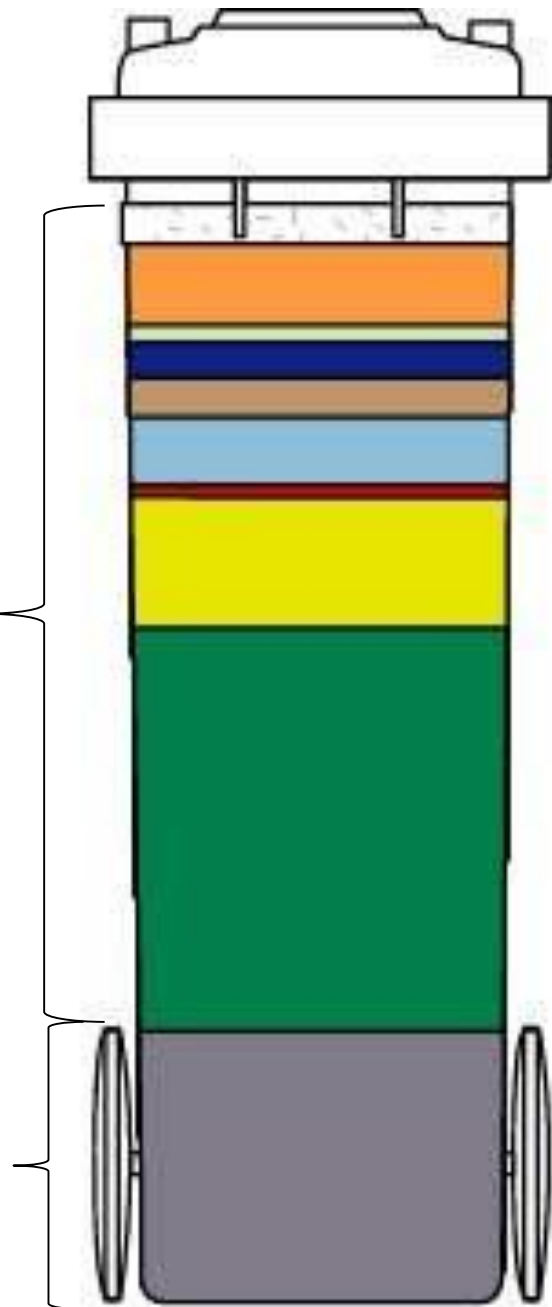
more out of less waste

results waste policy

73% recycling

2018	Flanders	IOK
restafval	116 kg/inh	74kg/inh

27% rest waste





50% collection door-to-door

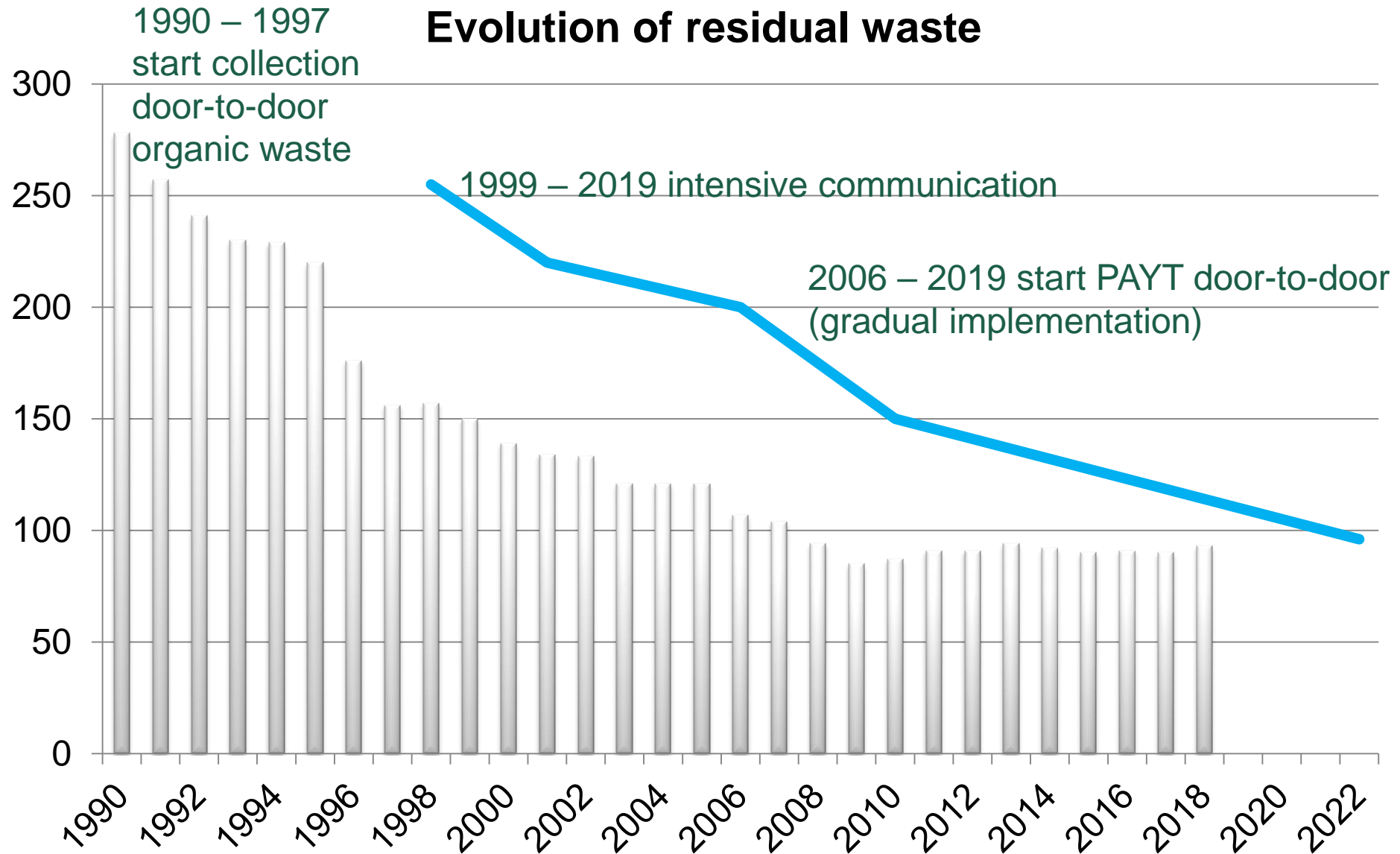


43% civic amenity sites



7% bring points

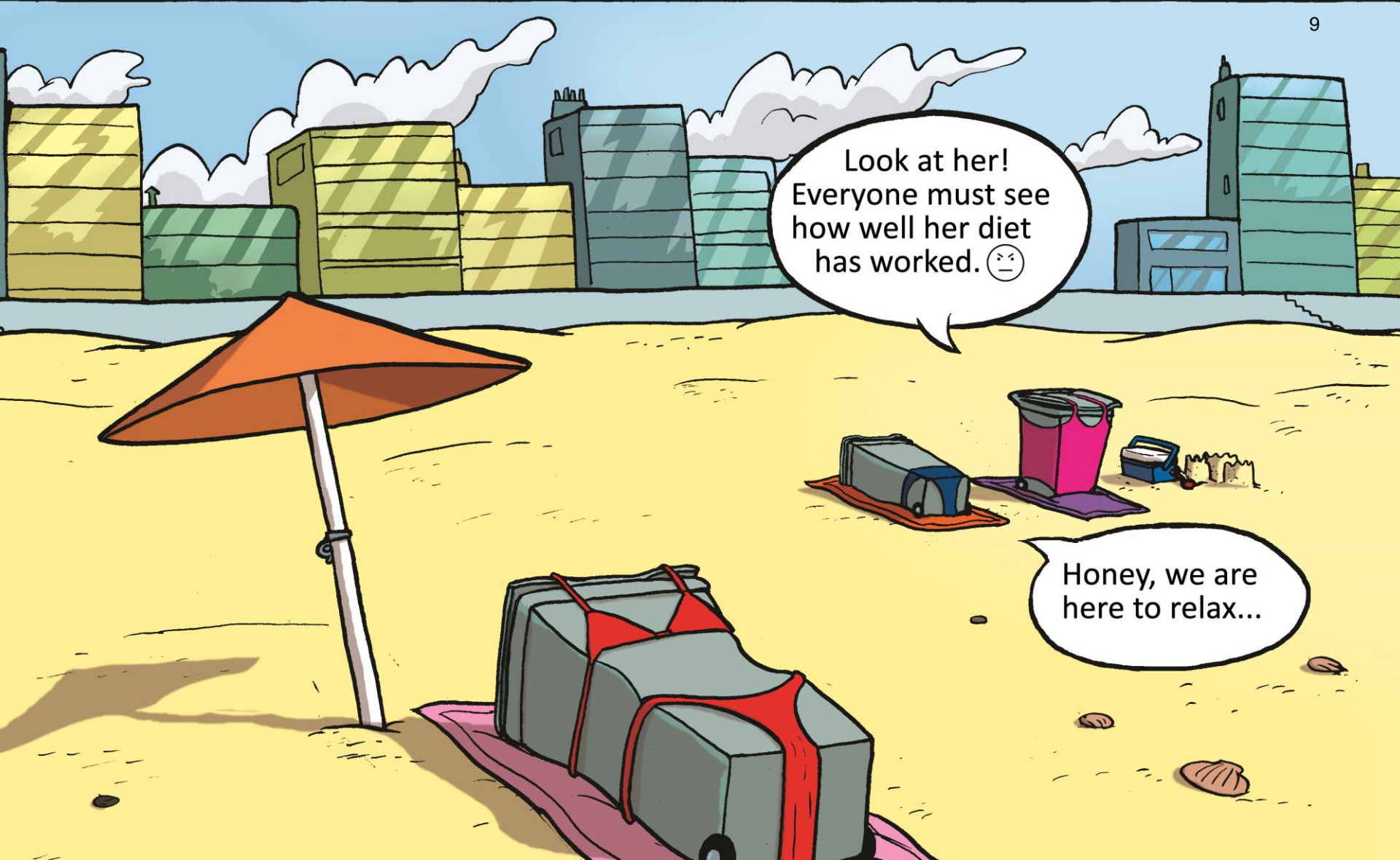
Milestones IOK Afvalbeheer



PAYT = DIFTAR

Pay As You Throw (PAYT) = DIFTAR
(DIFferentiated TARiff)







Look at her!
Everyone must see
how well her diet
has worked. 😞

Honey, we are
here to relax...

PAYT door-to-door

PAYT door-to-door

	residual waste	organic waste
variable kg-tariffs	€ 0,22/kg	€ 0,12/kg
container sizes	40 liters 120 liters 240 liters 	40 liters 120 liters 

PAYT door-to-door

data chip in containers

collection truck with weighing system

- calibrated (certified) weighing system within 0,5 kg
- each container is weighed several times, before and after emptying – net weight is charged

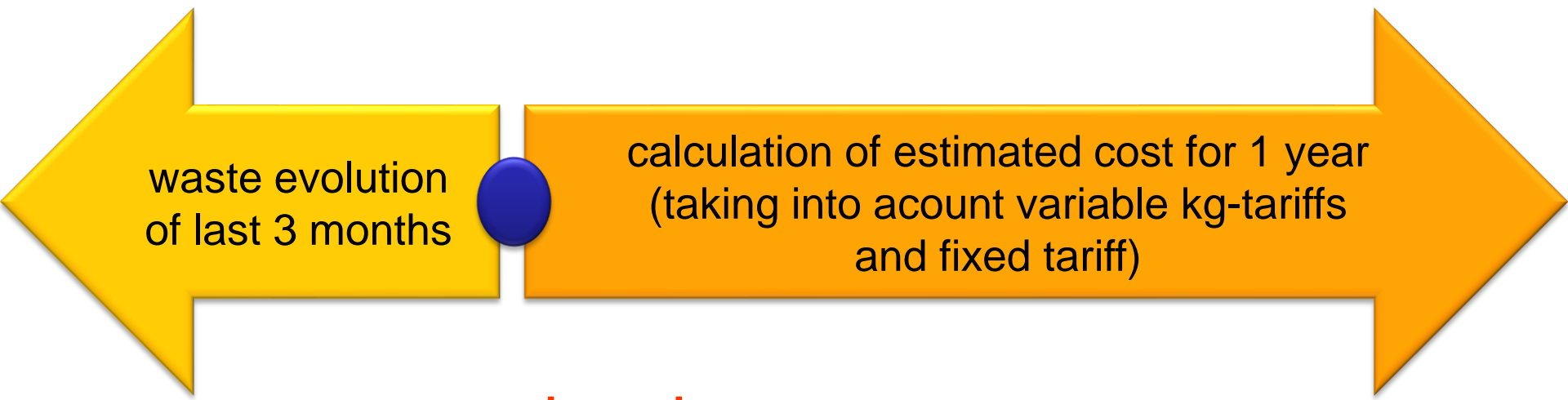


PAYT door-to-door

advance payments

when? if deposit below threshold → new invoice

how much (€)? “smart” invoice → 1 advance payment per year



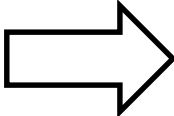
waste evolution
of last 3 months

calculation of estimated cost for 1 year
(taking into account variable kg-tariffs
and fixed tariff)

smart invoice

based on personal waste amount

reasons for the smart invoice

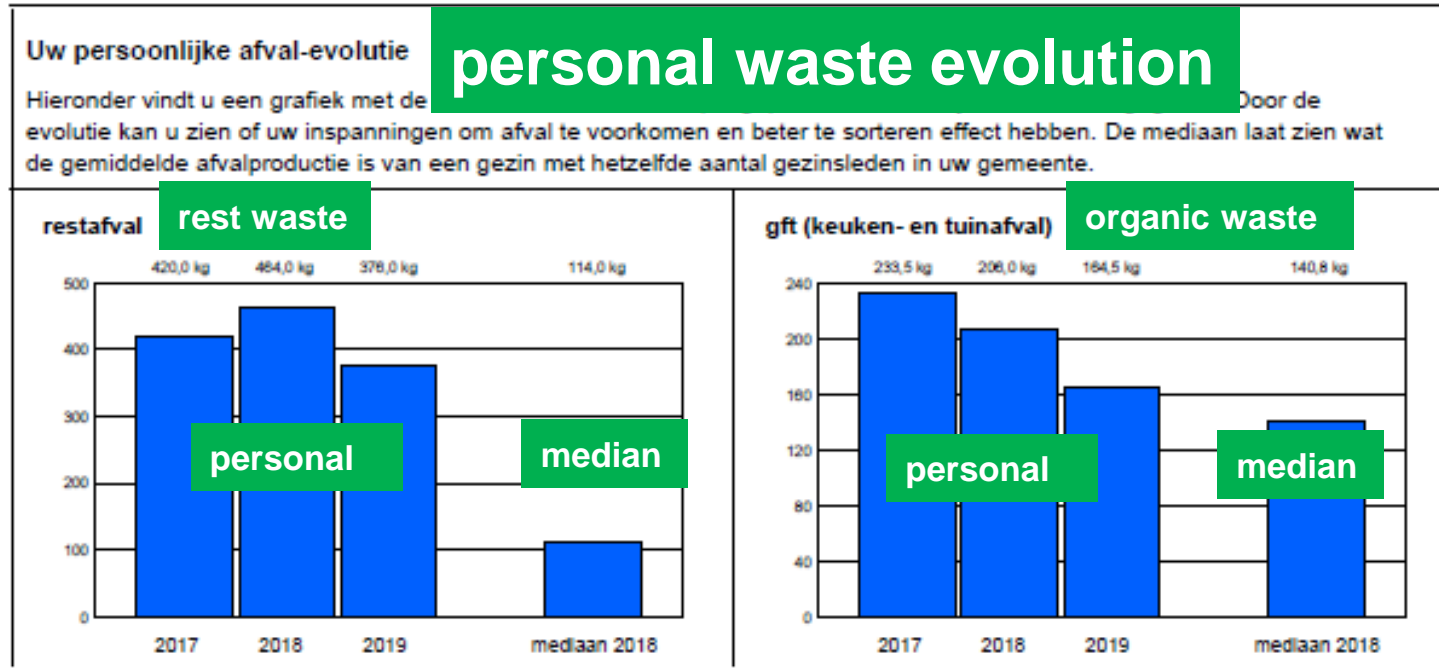
- new insights (based on research):
 - people think about waste when they receive their bill (and when visiting the container park)
 open for communication
 - people have no idea how much they pay for waste

printed invoice

overview weighing data

vorig saldo									3,12	
uw betaling van 20/11/2018									181,98	
vaste kost van december 2018 tot en met oktober 2019									-39,60	
container	jaar	datum lediging (aantal kilo's)				aantal	eenhpr.	totaal gewicht	eenhpr. gewicht	
Rest 120 L 000206287	2018	09/11 (22,5 kg)	23/11 (15,5 kg)	07/12 (22,0 kg)	21/12 (15,0 kg)	4	0,00	75,00	0,220	-16,50
	2019	04/01 (17,0 kg)	18/01 (16,5 kg)	01/02 (18,5 kg)	15/02 (20,5 kg)	22	0,00	376,00	0,220	-82,72
01/03 (22,0 kg)	15/03 (23,5 kg)	29/03 (8,5 kg)	12/04 (18,0 kg)							
26/04 (11,5 kg)	10/05 (18,0 kg)	24/05 (15,5 kg)	07/06 (22,5 kg)							
21/06 (18,5 kg)	05/07 (15,0 kg)	19/07 (11,5 kg)	02/08 (16,0 kg)							
16/08 (17,0 kg)	30/08 (21,0 kg)	13/09 (16,0 kg)	27/09 (15,5 kg)							
11/10 (17,0 kg)	25/10 (16,5 kg)									
GFT 120 L 000205144	2018	16/11 (11,5 kg)	28/12 (17,5 kg)			2	0,00	29,00	0,110	-3,20
	2019	25/01 (15,5 kg)	08/02 (6,5 kg)	22/02 (19,0 kg)	22/03 (5,5 kg)	14	0,00	164,50	0,110	-18,13
		19/04 (10,0 kg)	17/05 (11,0 kg)	14/06 (23,0 kg)	28/06 (9,5 kg)					
12/07 (21,0 kg)		26/07 (9,5 kg)	06/09 (10,0 kg)	20/09 (7,5 kg)						
04/10 (10,5 kg)		18/10 (6,0 kg)								
		gebruik container van december 2018 tot en met oktober 2019				11	1,50			-16,50

printed invoice



follow-up on your personal waste evolution, compared to the average (median) of all households in your municipality with the same number of family members

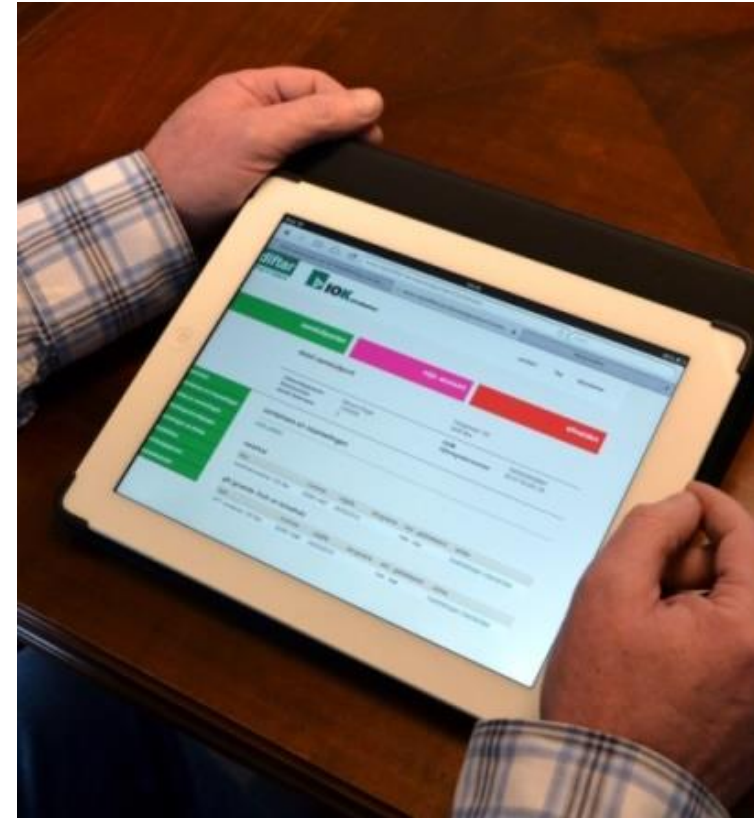
introducing DIFTAR - threats

- weights correct?
- my neighbour is going to dump waste into my container
- only 1 invoice a year
- not transparent



reasons for the application

- response to the concerns
- more transparant
- more digital
- correct data at any time
- proof of delivery



my DIFTAR since 2012

- overview of the collections - weights

saldo en verrichtingen

huidig saldo € 8,94 ← **current balance on Diftar account**

type verrichting

transactions

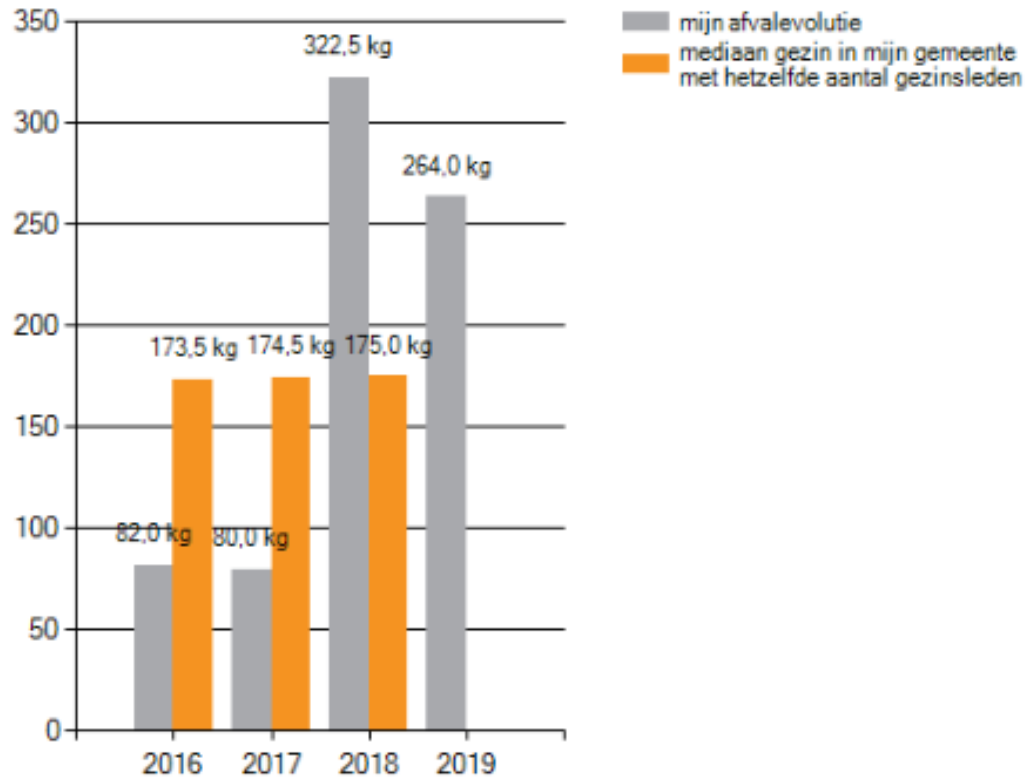
1 tot 10 van 184 rijen

datum verrichting	type verrichting	mededeling
01/02/2013	bijkomende belasting fractie	GFT februari 2013
02/02/2013	maandelijkse belasting (basiskost)	februari 2013
03/02/2013	gewicht	25/01/2013 REST0240 100360853
28/01/2013	aanbieding	25/01/2013 REST0240 100360853
01/01/2013	bijkomende belasting fractie	GFT januari 2013
01/01/2013	maandelijkse belasting (basiskost)	januari 2013

Opgelet:
- In onderstaande verrichtingen opgenomen
- De verrichtingen de ledigings

my DIFTAR

restafval



- your personal waste evolution (years) and comparison

comparison



bad recyclers



good recyclers

my DIFTAR

- balance of my (prepaid) account



detail aansluitpunt

St.Jansstraat 139
2490 Balen

referentiepersoon	Nuyts, Wim	OGM	100/0208/54731
klantnummer	1208545	rijksregisternummer	79.08.14-257.68
aantal bewoners	4		

saldo en verrichtingen

huidig saldo € 8,94 ← current balance on Diftar account

type verrichting

transactions

1 tot 10 van 184 rijen

datum verrichting	type verrichting	mededeling	bedrag
01/02/2013	bijkomende belasting fractie	GFT februari 2013	€ -0,75
02/02/2013	maandelijkse belasting (basiskost)	februari 2013	€ -2,25
03/02/2013	gewicht	25/01/2013 REST0240 100360853 20.5 kg	€ -3,08
28/01/2013	aanbieding	25/01/2013 REST0240 100360853	€ 0,00
01/01/2013	bijkomende belasting fractie	GFT januari 2013	€ -0,75
01/01/2013	maandelijkse belasting (basiskost)	januari 2013	€ -2,25
31/12/2012	gewicht	28/12/2012 REST0240 100360853 22.5 kg	€ -3,38
31/12/2012	aanbieding	28/12/2012 REST0240 100360853	€ 0,00
03/12/2012	gewicht	30/11/2012 REST0240 100360853 25.5 kg	€ -3,83
03/12/2012	aanbieding	30/11/2012 REST0240 100360853	€ 0,00

Opgelet:
- In onderstaand overzicht zijn enkel de verrichtingen ouder dan 5 dagen opgenomen!
- De verrichtingsdatum kan verschillen van de ledigingsdatum of betalingsdatum

Balance and transactions



data processing on a daily basis

- processing weighing data
- allocation of payments
- blacklist management
- planning interventions on containers
- management of population data
 - differences in national register
 - household movements communicated by municipality via online webapplication “my DIFTAR”

periodical data monitoring

- easy accessible report on waste to our community’s

The screenshot displays the DIFTAR web application interface. At the top, there are logos for 'diftar' (alval in balans) and 'IOK Afvalbeheer'. Navigation links for 'contact', 'faq', and 'privacy' are visible. Below the logos are four main menu buttons: 'aansluitpunten' (green), 'rapporten' (yellow), 'mijn account' (pink), and 'afmel...' (red).

The 'aansluitpunt' section shows the user's address: Gabriëlsdijk 8 (Z), 2400 Balen. It also indicates the 'aansluitpuntniveau' (bedrijf) and 'aansluitpunttype' (bedrijf).

The 'containers momenteel aanwezig op adres' section shows a search for containers with columns for 'fractie', 'type', 'aantal', 'slot', and 'geblokkeerd'. The result is 'Geen resultaten gevonden.'

The 'nieuwe relatie' section contains a form for adding a new contact. Fields include: naam, voornaam, telefoon, GSM, e-mail, rijksregisternummer, geslacht (man), aantal bewoners, aansluitpuntniveau (bedrijf), aansluitpunttype (bedrijf), and 'nieuwe relatie gaat in vanaf'.

The 'verzendadres' section (indien afwijkend van aansluitpunt) includes fields for: straat, huisnummer, huisindex, postcode, gemeente, and land (België).

The 'gewenste containers' section is a table with columns for 'fractie', 'type', 'aantal', and 'slot'. It lists various container types and their quantities:

fractie	type	aantal	slot
gt (keuken- en tuinafval)	gt-container 40 liter	<input type="checkbox"/>	<input type="checkbox"/>
gt (keuken- en tuinafval)	gt-container 120 liter	<input type="checkbox"/>	<input type="checkbox"/>
restafval	restafvalcontainer 40 liter	<input type="checkbox"/>	<input type="checkbox"/>
restafval	restafvalcontainer 120 liter	<input type="checkbox"/>	<input type="checkbox"/>
restafval	restafvalcontainer 240 liter	<input type="checkbox"/>	<input type="checkbox"/>
restafval	restafvalcontainer 1100 liter	<input type="checkbox"/>	<input type="checkbox"/>
papier / karton	papiercontainer 1100 liter	<input type="checkbox"/>	<input type="checkbox"/>
papier / karton	papiercontainer 240 liter	<input type="checkbox"/>	<input type="checkbox"/>

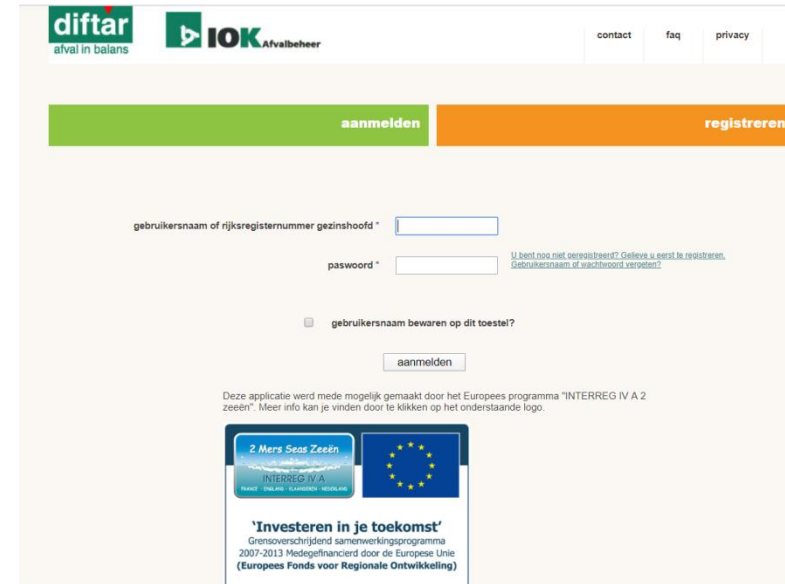
introduction



- personal (printed) mailing
 - easy to register (personal customer number)
- **focus on ‘what’s in it for me?’**
- stimulating message

number of registrations – my DIFTAR

- 42.204 registrations
- 20% of the households
- 250 new registrations/month



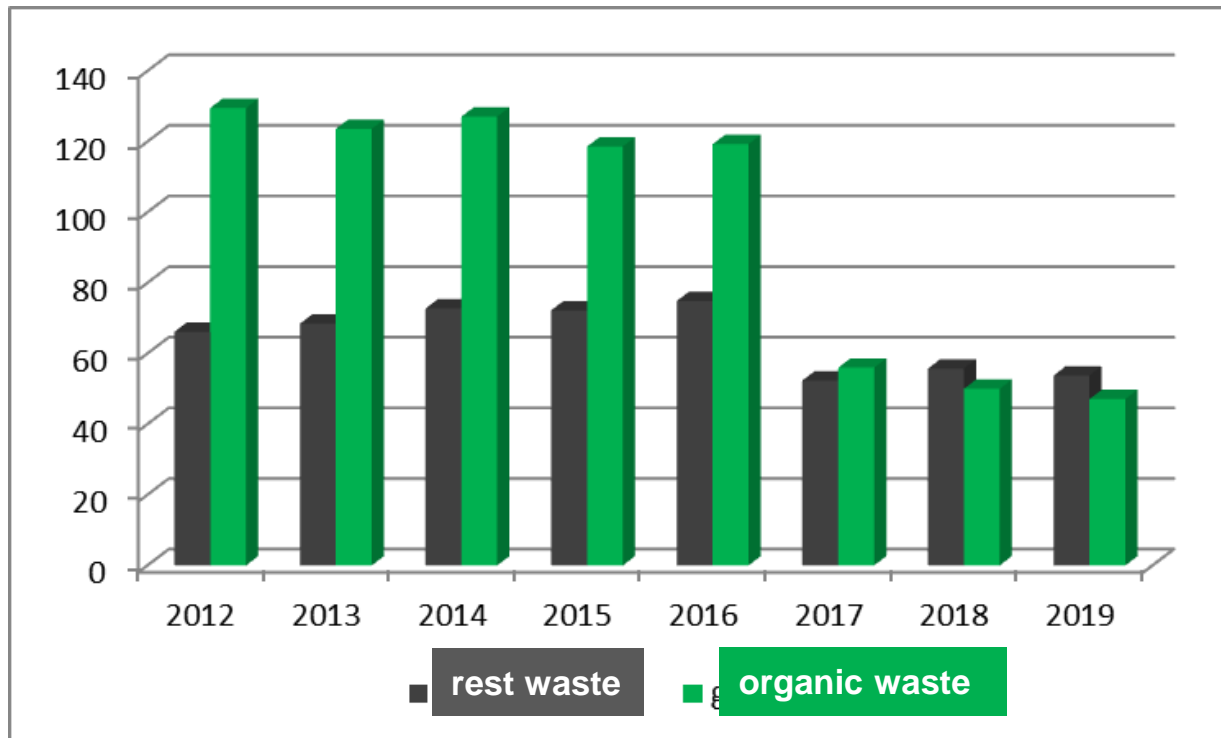
The screenshot shows the registration interface for DIFTAR. At the top, there are logos for 'diftar afval in balans' and 'IOK afvalbeheer', along with links for 'contact', 'faq', and 'privacy'. Below these are two prominent buttons: 'aanmelden' (green) and 'registreren' (orange). The main form area contains input fields for 'gebruikersnaam of rijksregisternummer gezinshoofd *' and 'password *'. A checkbox option 'gebruikersnaam bewaren op dit toestel?' is present below the password field. An 'aanmelden' button is located at the bottom of the form. A small note states: 'U bent nu niet verbonden? Geef u eerst te registreren. Gebruikersnaam of wachtwoord vergeten?'. Below the form, there is a promotional banner for the '2 Mers Seat Zeeën' project, featuring the INTERREG IVA logo and the European Union flag. The banner text reads: 'Investeren in je toekomst! Grensoverschrijdend samenwerkingsprogramma 2007-2013 Medegefinancierd door de Europese Unie (Europees Fonds voor Regionale Ontwikkeling)'.

What's in it for IOK?

- extra communication channel
 - message box
 - **direct communication at street level (mail)**
in case of calamities
- less contacts regarding weights – invoices
- very few complaints on the weighing data
- **raising awareness**
 - direct link behaviour – own waste production
- easy reports

results DIFTAR – small rural town

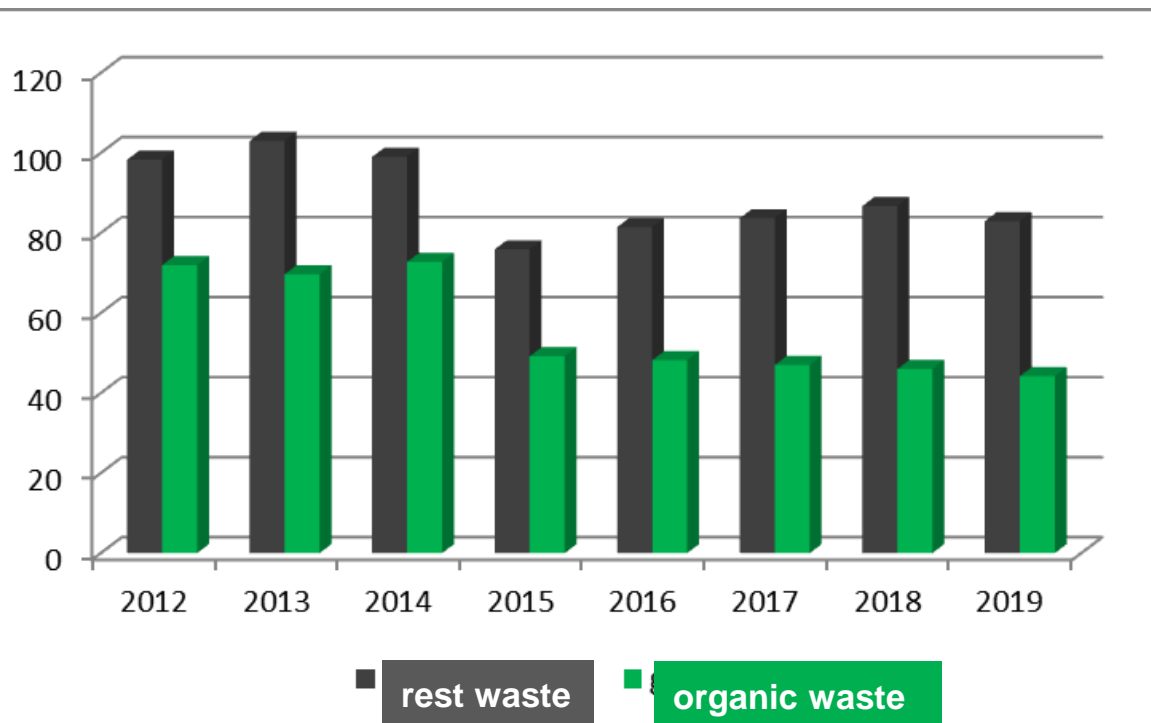
- evolution of rest waste and organic waste in Retie (12.000 inhabitants)
- DIFTAR since 2017



	rest waste kg/inw	organic waste
2012	66,14	129,52
2013	68,46	123,6
2014	72,74	127,08
2015	72,23	118,62
2016	74,89	119,28
2017	52,37	56
2018	55,73	50
2019	53,78	47,11

results DIFTAR – larger town

- evolution of rest waste and organic waste in Turnhout (45.000 inhabitants)
- DIFTAR since 2015



	rest waste kg/inw	organic waste
2012	98,29	71,97
2013	102,99	69,7
2014	99	72,77
2015	75,9	49,19
2016	81,47	48,22
2017	83,68	47
2018	86,73	46
2019	82,95	44,22

disadvantages

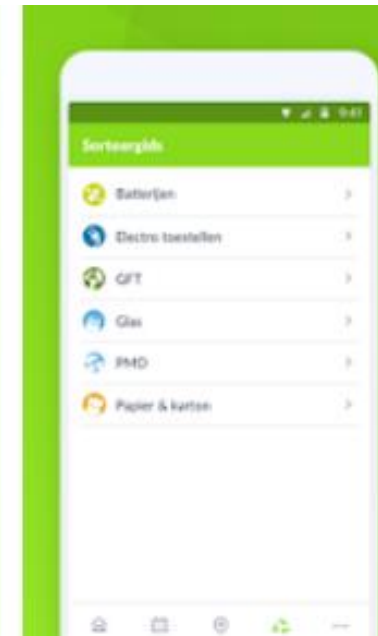
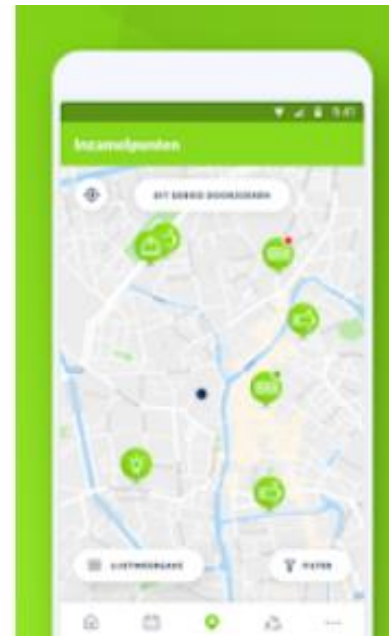
- not mobile
- layout needs refreshment
- online payments not possible at the moment

Recycle! app

- notifications door-to-door
- waste calendar
- collection
- information on sorting
- opening hours and location civic amenity sites and bringpoints

Download Recycle!

Mis geen enkele ophaling



wishlist for the future

- **combination ‘my DIFTAR’ and Recycle!**
 - features: notifications, waste calendar ...
- fresh layout
- payment platform
- connection with civic amenity sites
- creating a community
- positive rewards – collecting points - gamification
 - for good sorters ? threat: what is the ‘standard’?
 - points for anti-litter actions ...
- concern
 - App or not to app??



katleen.mertens@iok.be

LinkedIn: [Katleen Mertens IOK](#)