

wastein
progress

16·17·18

April

2024

6th Edition

Reuse of diapers in public nurseries

City of Brussels



Bénédicte Hubinon

Eco-crèche project manager in the City of Brussels

ÉCO-CRÈCHE PROJECT *

Transformation process



* ECO NURSERY PROJECT



City/Region general figures and context

Inhabitants

Belgium

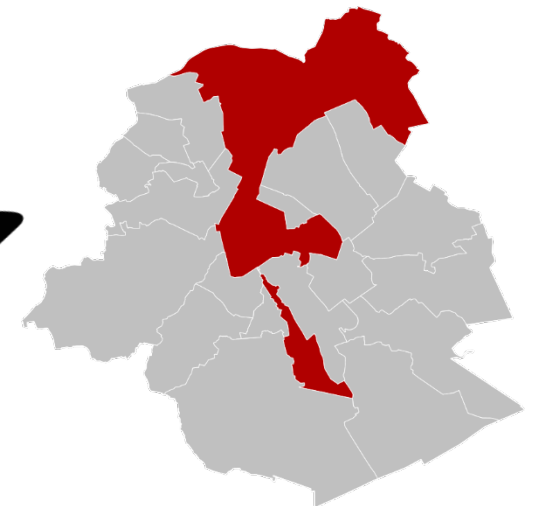
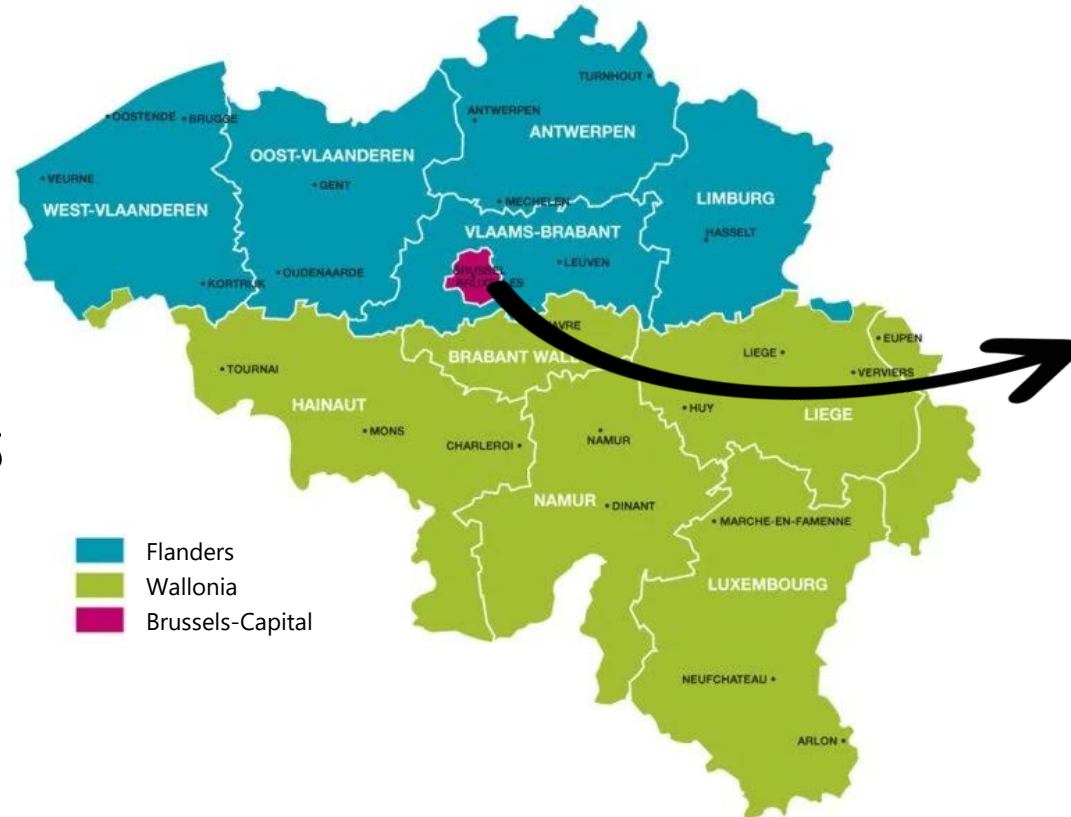
Around 12 million Belgian Citizens

3 region number of inhabitants

Flanders 7 million

Wallonia 3,8 million

Brussels 1,2 million



19 municipalities in the **Brussels Region**, including the **City of Brussels**



City/Region general figures and context

Inhabitants

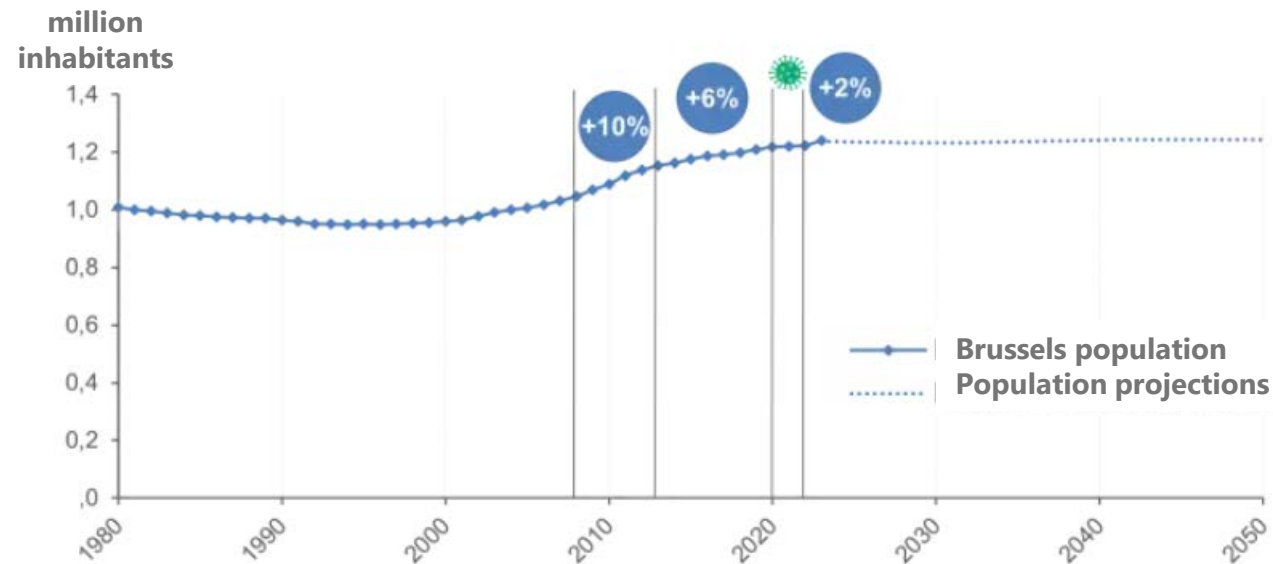
Brussels Region

Around **1.200.000 inhabitants**.

1/10 Belgian lives in the Brussels Region.

Fewer and fewer children have been born in the Brussels Region since 2014.

Demographic trends in the Brussels Region



strong growth between 2008 and 2013 (+10%), more moderate between 2013 and 2020 (+6%), very weak during the two years of the pandemic, then a slight increase in 2022 (+2%)



City/Region general figures and context

Inhabitants



City of Brussels

Around **195.000 inhabitants**

32,6 km² or **20% of the regional territory.**

The largest municipality in the Brussels Region

Population by Municipality	0-3 years old	> 3 years old	TOTAL	%
Anderlecht	7,133	117,932	125,065	6%
Auderghem	1,545	33,801	35,346	4%
Berchem-Sainte-Agathe	1,317	24,079	25,396	5%
Bruxelles	9,391	184,900	194,291	5%
Etterbeek	2,174	47,384	49,558	4%
Evere	2,311	41,944	44,255	5%
Forest	2,926	54,798	57,724	5%
Ganshoren	1,343	24,205	25,548	5%
Ixelles	3,343	85,178	88,521	4%
Jette	2,902	50,802	53,704	5%
Koekelberg	1,358	21,205	22,563	6%
Molenbeek-Saint-Jean	5,900	92,370	98,270	6%
Saint-Gilles	2,007	47,316	49,323	4%
Saint-Josse-ten-Noode	1,420	25,648	27,068	5%
Schaerbeek	7,036	123,739	130,775	5%
Uccle	3,322	82,779	86,101	4%
Watermael-Boitsfort	864	24,528	25,392	3%
Woluwe-Saint-Lambert	2,514	57,264	59,778	4%
Woluwe-Saint-Pierre	1,588	40,909	42,497	4%
Brussels-Capital Region	60,401	1,180,775	1,241,175	5%

Source : IBSA & Statbel (Statistics Belgium)

Figures at January 2023



City/Region general figures and context

- Other relevant information about the territory

Public subsidies

Two Belgian reference **public institutions** for all matters **relating to children subsidise childcare centres.**



active for the **French-speaking** part of Belgium



active for the **Dutch-speaking** part of Belgium



City/Region general figures and context

- Other relevant information about the territory

Competence in waste management

In the 19 municipalities of Brussels, waste management is the responsibility of a **REGIONAL public institution** :



propreté.brussels 
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City/Region general figures and context

Legal framework

How are disposable nappies managed ?

- Collected ONLY with residual waste
- Not permitted in organic waste
- Not collected at waste collection centers either

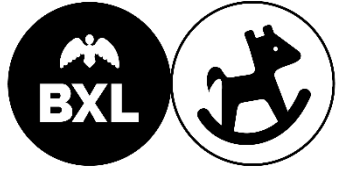
- to sort disposable nappies selectively
- to use washable nappies

NO LEGAL
OBLIGATION

What happens to them ?

They are **incinerated** with other general waste →





City/Region general figures and context

• Legal framework

No specific regulations on disposable nappies

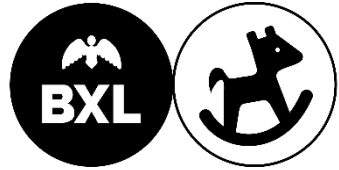
Disposable nappies are covered by the "general safety requirement laid down in European legislation on consumer products", which means that there are no particular restrictions on their use.

Extended Producer Responsibility (EPR) exists but disposable nappies are not covered.

→ **Need** for a **legal obligation** to force manufacturers to offer an "**ecological and healthy**" nappy.

→ The **EPR** approach **should be boosted**, being applied to disposable nappies.





City/Region general figures and context

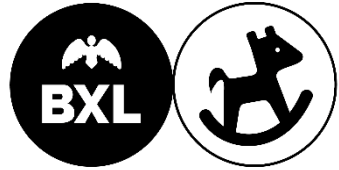
• Legal framework



Washable diapers bonus

A large number of municipalities in Belgium offer public **incentives to encourage young parents** to choose a more environmentally-friendly formula for changing their baby.

The City of Brussels gives a **bonus for the purchase or rental** (collection and cleaning included) **of washable nappies**.



Nappy reuse

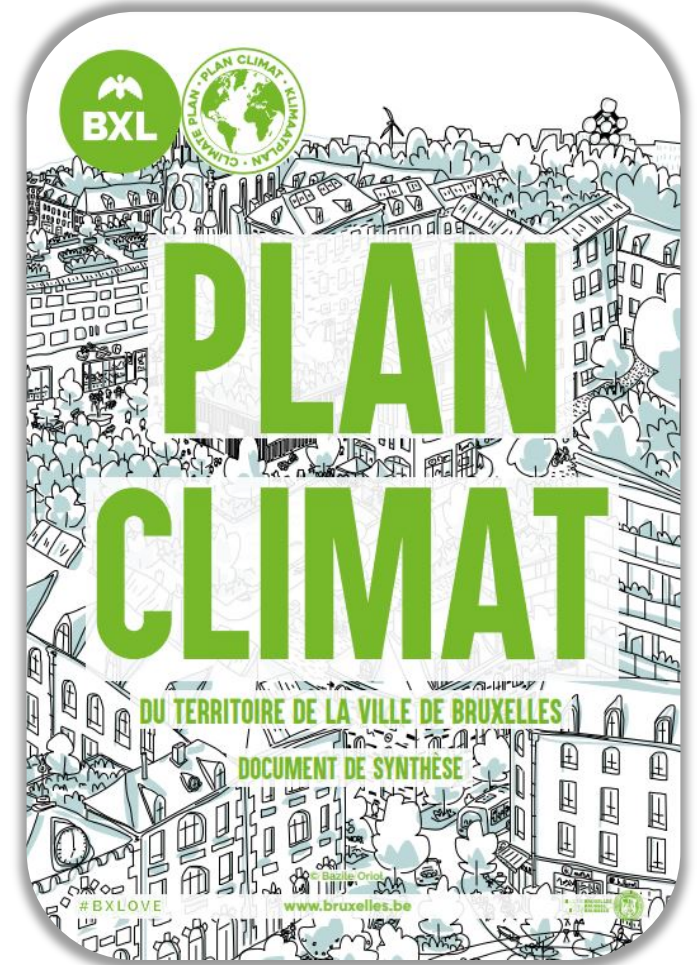
- How does the project work?

“Eco-crèche : the future is now”

#YOUTH

2030 OBJECTIVES

 100% of the city's nurseries use washable nappies	 100% organic, local and seasonal food for children	 0 PMD in regular schools and nurseries activities
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In line with the Brussels City's **Climate Plan**



Nappy reuse

- How does the project work?

The birth of the eco-crèche project

The project was born in 2019 in the context of the construction of **2 new nurseries in an eco-district** on our municipal territory.





Nappy reuse

• How does the project work?

The eco-crèche project

The project was an immediate success. So that the municipality quickly decided to apply this new model to all the **40 existing nurseries**, representing **1.700 children**.

From 2020, a whole process of **gradual transition of crèches into eco-crèches** has been taken place. Today, 100% of our nurseries have become 'eco-crèches'.

The City of Brussels has both **French-speaking** (85%) and **Dutch-speaking** nurseries (15%).



Nappy reuse

• How does the **eco-crèche project** work?

Change management

GENERAL OBJECTIVES

- Taking into account the importance of **children's first 1,000 days of life**
- A response to **environmental, social and health issues**
- **Improving** working conditions for staff and the quality of childcare
- **Cost-neutral** because no additional costs either for the City of Brussels or for parents
- A **participative and progressive approach** that inspires and raises awareness among staff and parents



Nappy reuse

How does the **eco-crèche project** work?

Methodology

ADKAR





Nappy reuse

• How does the **eco-crèche project** work?

5 key actions

100% ORGANIC AND BALANCED MEALS

ZERO WASTE

ZERO PLASTIC

ECO-RESPONSIBLE ENVIRONMENT

SUSTAINABLE EQUIPMENT

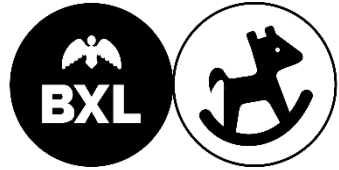


Nappy reuse

• How does the **eco-crèche project** work?

In practice

- Local and seasonal **organic food**
- **Tap water** for older children and bottled glass water for toddlers who still drink from baby bottles
- Durable **plastic-free tableware** and baby bottles (glass, porcelain, stainless steel)
- Equipment, care and cleaning products with **ecolabels**
- **Waste sorting**
- **Eco-friendly** disposable **nappies provided by the nursery** and gradually moving to washable nappies



Nappy reuse

• How does the **eco-crèche project** work?

In practice

100% ORGANIC meals

Served in stainless steel dishes
1 vegetarian meal per week
Reducing food waste





Nappy reuse

How does the **eco-crèche project** work?

In practice

Tap water

each year, **reducing** plastic waste by **50.000 plastic water bottles**

Controlled tap water for older children



Parameters monitored :

- ✓ Microbiological (bacteria)
- ✓ Chimiques (pH, Nitrates, Sodium, Nickel, Lead)



BRU LABO
 Rapport d'analyse n° 19280
 Date d'émission 17/02/20
 Page 1 / 1

Lieu de prélèvement : Prégardienne Magnolias
 Mme Sophie DUPAIX
 Avenue des Magnolias 7
 1020 Bruxelles

Echantillon(s) prélevé(s) le 10/02/20 à 09:00, par S. Desses, et réceptionné(s) le 10/02/20 à 10:00

N° échantillon chimie	N° échantillon bactériologie	Nature eau	Localisation du prélèvement	Type eau	Température (°C)
150954	150953	eau de distribution	cuisine	trouée	7
150953		prélèvement de 1 litre après écoulement de minimum 1 litre sans désinfection du point de prélèvement direct de 1 litre			
150954		prélèvement direct de 1 litre			

Paramètres microbiologiques

Paramètres (méthodes)	Unités	150953	Résultats
Germes totaux 20 °C 72h	ufc/ml		
Coliformes aérobie	ufc/100ml		
Coliformes fécaux	ufc/100ml		
Coliformes totaux	ufc/100 ml		
Coliformes totaux	ufc/100 ml		
Coliformes totaux	ufc/100 ml		
Coliformes totaux	ufc/100 ml		

Paramètres chimiques

Paramètres (méthodes)	Unités	150954	Résultats
pH		7,7	
Nitrates	mg/l	1,1	
Chlorure	mg/l	17	
Sodium	mg/l	20	
Nickel	µg/l	12	
Plomb	µg/l	10	

Remarques et commentaires (pas couverts par l'accréditation)
 Eau rapportée aux critères chimiques et bactériologiques définis par l'AGRIC du 24/01/2002 (eau de distribution/Région Bruxelles) pour les paramètres mesurés. Les limites indiquées pour le sodium et les nitrates sont celles qui sont conseillées pour la préparation des bébés (recommandations AIN 4 grains).

Le Directeur,
 Jacques VIVEDINS

Les valeurs suivies d'un astérisque (*) indiquent un résultat supérieur à la valeur recommandée.
 Les paramètres précédés du symbole (†) sont sous des valeurs limites.
 Les valeurs suivies du symbole (†) sont couverts par l'accréditation.
 Les valeurs suivies du symbole (†) indiquent la présence d'une flore aérobie pouvant soulever le résultat.
 (a) Température, exprimée en °C, mesurée après écoulement.
 Ce rapport est confidentiel ; toute diffusion, utilisation ou copie est sous la responsabilité du destinataire.



Nappy reuse

• How does the **eco-crèche project** work?

In practice

Bottled glass water

For toddlers still drinking from baby bottles





Nappy reuse

• How does the **eco-crèche project** work?

In practice

Sustainable tableware

Plastic-free materials

Glass - Porcelain - Stainless steel





Nappy reuse

- How does the **eco-crèche project** work?

In practice

Care products with ecolabels

Eco-responsible baby changing

All the time, standard practice: wash the seat with **clean water and a washcloth**.

Occasionally, if necessary: if 'sticky' stools, wash with clean water and **soap** using a washcloth.

Exceptionally, only if redness (erythema): apply nappy **cream**.



No wipes for baby's toilet



Nappy reuse

• How does the **eco-crèche project** work?

In practice

Cleaning products with ecolabels

Eco-responsible cleaning

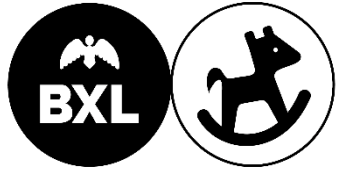
Dosing: just enough but not too much = follow the instructions for use.

Stock: order regularly and stock small quantities. Just what's needed.

Packaging : use large cans (5 litres) and transfer into smaller bottles (reusable)

→ Reduce the volume of waste that pollutes the environment.





Nappy reuse

• How does the **eco-crèche project** work?

In practice

Natural cleaning products

We encourage the use of :

- ✓ Vinegar
- ✓ Bicarbonate of soda
- ✓ Soda crystals
- ✓ Black soap (soft soap)
- ✓ Lactic acid



Disinfectant



Cleaner



Nappy reuse

• How does the **eco-crèche project** work?

In practice

Selective sorting of waste



by type of waste

PMD / RESIDUAL / GREEN / CARTON-PAPER / ORGANIC



Nappy reuse

How does the **eco-crèche project** work?

In practice

Ecological nappies provided by the nursery



Ecological (Moltex)
basic stage

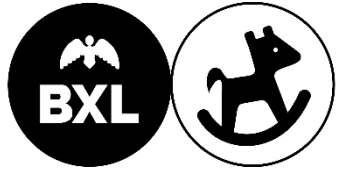
OR

Washable
improved stage



Outsourced
cleaning
service





Nappy reuse

How does the **eco-crèche project** work?

Composition disposable nappies

Numerous **studies** on the composition of disposable nappies **show** that **they contain** dangerous and **toxic chemical substances** :

- Volatile organic compounds (VOCs)
- Pesticides
- Formaldehyde, dioxins, furans and PCB-DL.
- Perfuming substances

1 disposable nappy = 1 cup of petrol

Components of disposable nappies

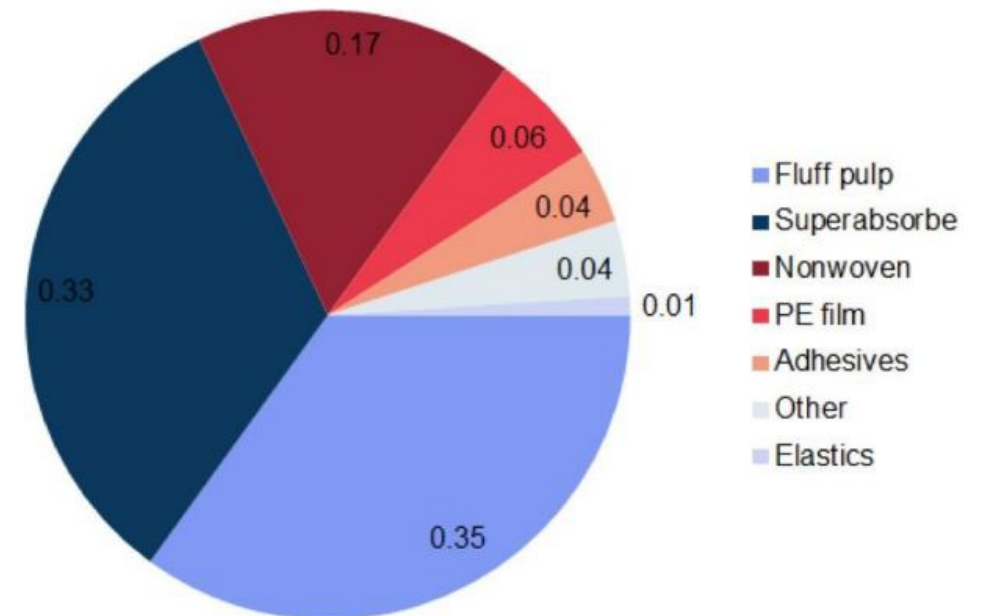


Illustration n° 1 : composition d'une couche pour bébé standard. Source : Edana, 2008¹⁴



Nappy reuse

How does the **eco-crèche project** work?

Composition washable nappies

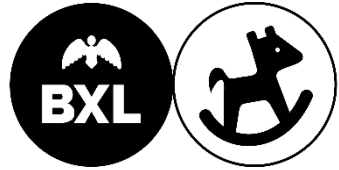


2 IN 1



Outer layer made of 'PUL' (PolyUrethane Laminate), a soft, flexible, resistant and waterproof fabric.

Inner layer made of bamboo viscose fibre and polyester microfibre.



Nappy reuse

- How does the **eco-crèche project** work?

Life cycle of nappies

1 washable nappy can be reused 500 times

DISPOSABLE is about 2,5 times more polluting than WASHABLE

DISPOSABLE compared to WASHABLE

3.5 times more **energy**
 2.8 times more **water**
 8.3 times more **non-renewable raw materials**
 60 times more **solid waste**

	DISPOSABLE	WASHABLE
Production (Kg Co ² equivalent/ year)	663	38
Life cycle (Kg Co ² equivalent/ year)	840	330
Per nappy change (Kg Co ² equivalent)	0,384	0,151
Part of production (Kg Co ² equivalent/ year)	79%	12%



Source : online French medium Qqf.fr



Nappy reuse

- How does the **eco-crèche project** work?

Change management

MONITORING

Creation of a tool to assess nurseries in their process of becoming eco-crèches and provide them with appropriate support.





Nappy reuse

• How does the **eco-crèche project** work?

Change management

MONITORING

25 indicators :

- for each, an **eco-responsible action** and an expected result to meet an objective
- for each, a number of **points** (either 1 or 2 or 3 or 5 or 6 or 8) earned when the result is achieved
- for all, a **total of 100 points**

9 categories of indicators :

AIR – EATING – WATER – WASTE – NAPPIES – ENERGY – MOBILITY – ECO-AWARENESS – ECO-MATERIAL

ECO CLASSIFICATION

5 levels of assessment

5	from 81% to 100%
4	from 61% to 80%
3	from 41% to 60%
2	from 21% to 40%
1	from 0 % to 20%



Nappy reuse

- How does the **eco-crèche project** work?

Change management

MONITORING

NUMBER & PERCENTAGE NURSERIES

ECO CLASSIFICATION	2020		2021		2022	
	5					
4					1	3%
3			2	5%	2	5%
2	2	5%	13	33%	24	60%
1	38	95%	25	63%	13	33%
<i>TOTAL NURSERIES</i>	<i>40</i>		<i>40</i>		<i>40</i>	

ECO CLASSIFICATION

5 levels of assessment

5	from 81% to 100%
4	from 61% to 80%
3	from 41% to 60%
2	from 21% to 40%
1	from 0 % to 20%



Nappy reuse

How does the **eco-crèche project** work?

Change management

MONITORING

NURSERY	YEAR	2	1	2	2	6	8	3	8	3	2	8	3	8	8	6	3	3	1	1	5	1	8	1	5	2	No. of points to move up		
		CO2	NOISE	ACOUSTICS	WAVES	GOOD FOOD	H2O	VEGETABLE PLOT	FOOD WASTEFULNESS	WATER DISTRIBUTION	RAINWATER	WASTE SORTING	COMPOST	WASHABLE NAPPIES	ORGANIC DISPOSABLE NAPPIES	BUILDINGS INSULATION	PHOTOVOLTAICS	ENERGY CONSUMPTION	BIKE PARKING	KIDDYBUS	ECO EDUCATIONAL ACTIVITY	GIVE BOX	ORDINARY BUDGET	TOTEBAG	SUSTAINABLE TABLEWARE	MACHINE REPAIRS		TOTAL ECO POINTS	ECO CLASSIFICATION
Wangari Maathai	2020	0	0	2	0	0	8	0	0	0	0	0	0	8	0	0	3	0	1	0	0	0	0	0	5	2	29	2	12
Wangari Maathai	2021	0	0	2	0	6	8	0	0	0	8	0	8	8	0	3	0	1	1	0	0	0	0	5	2	52	3	9	
Wangari Maathai	2022	0	0	2	0	6	8	0	8	0	8	0	8	8	0	3	0	1	1	5	1	0	1	5	0	65	4	16	



Nappy reuse



WITH SUPPORT FROM
**bruxelles
 environnement**
 .brussels

Process of switching to washable nappies

TIMELINE

	2021	2022	2023		2024		2025		2026		2027	
			2023-S1	2023-S2	2024-S1	2024-S2	2025-S1	2025-S2	2026-S1	2026-S2	2027-S1	2027-S2
	pilote stage		gradual switch to washable nappies								achieved	
NBR CHILDREN	124		124 to 424		424 to 834		834 to 1253		1253 to 1623		1623	
NBR NURSERIES	2		9		20		31		40		40	
AWARENESS ACTIVITY			CF - W1	ZWS & WN-W	CF - W2	CF - W3						
NBR STAFF			213	720	135	87						
			Subsidy period									

Legend

- CF : Climate Fresk
- ZWS : Zero Waste Show
- WN-W : Washable Nappies Workshop
- W : Wave



Nappy reuse

- Process of switching to washable nappies

Awareness activities

WAVE 1 results :

Voluntary participation of the nurseries staff : 26%

French-speaking employees : 24%

Dutch-speaking employees : 37%

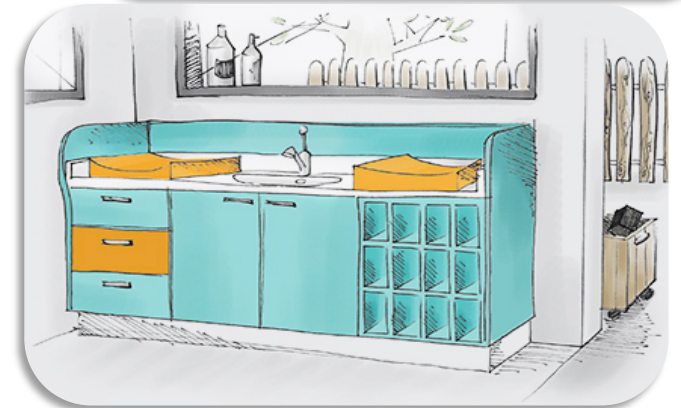
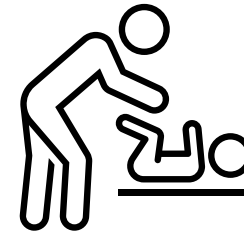


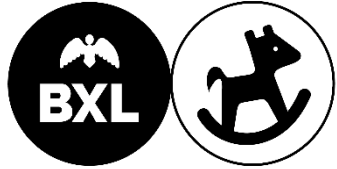


Nappy reuse

- Process of switching to washable nappies

Awareness activities





Nappy reuse

Washable diapers bonus

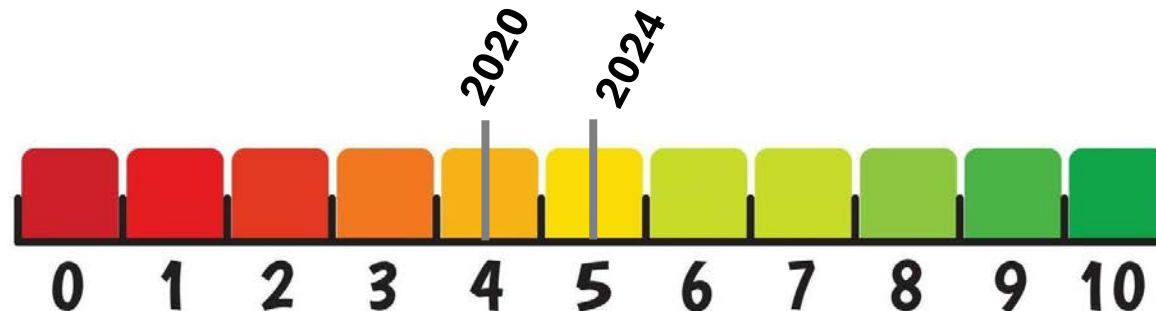
Progress of the staff on board with the project

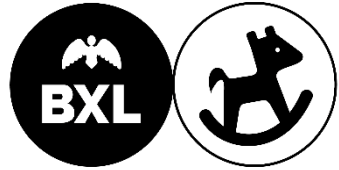
Regular survey of the team's position on the switch to washable nappies.

Nurseries staff indicate **how much** they are **in favour of washable** nappies, on a scale of 0 to 10.

2020 : 4,4 / 10

2024 : 5,5 / 10





Nappy reuse

- Washable diapers bonus

Worthwhile action to maintain financial neutrality

The project is intended to be **financially neutral**, both for the municipality and for parents.

!! Outsourced cleaning service with Snappies = higher cost than buying disposable nappies !!

→ **Need** the nurseries to work on **reducing** of the **ordinary cost items** without reducing the quality of childcare.

Food costs are about **50% to 60%** of the ordinary costs of nurseries.

Reducing food waste means **unspent money** that can be used **to pay for the nappy service**.





Nappy reuse

Results: tons of avoided waste

NAPPIES AS WASTE

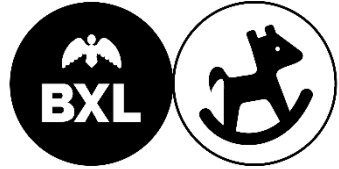
TIMING	NBR NURSERIES	GRADUAL TRANSITION	NBR CHILDREN	NBR NAPPIES CHANGES
END 2021	2	2 PILOTE NURSERIES	124	71.000
END 2022	2	2 PILOTE NURSERIES	124	76.000
END 2023	9	2 PILOTE NURSERIES + 7 NURSERIES GRADUALLY	424	129.000
April 2024	12	9 NURSERIES + 3 NURSERIES GRADUALLY	560	84.000

TOTAL NBR OF CHANGES with reuse nappy 2021 to 2024 360.000

Weight (TONNES) disposable nappies avoided 72

1 USED DISPOSABLE NAPPY

Weight (kg)	0,200
-------------	--------------



Nappy reuse

- Results: tons of avoided CO2 emissions

CO₂ IMPACT

TIMING	NBR NURSERIES	GRADUAL TRANSITION	NBR CHILDREN	NBR NAPPIES CHANGES
END 2021	2	2 PILOTE NURSERIES	124	71.000
END 2022	2	2 PILOTE NURSERIES	124	76.000
END 2023	9	2 PILOTE NURSERIES + 7 NURSERIES GRADUALLY	424	129.000
April 2024	12	9 NURSERIES + 3 NURSERIES GRADUALLY	560	84.000

TOTAL NBR OF CHANGES with reuse nappy 2021 to 2024 360.000

TONNES CO2 equivalent for disposable nappies 138,1

TONNES CO2 equivalent for washable nappies 54,2

TONNES équivalent CO2 avoided 83,8

Per nappy change (Kg Co² equivalent)

DISPOSABLE 0,384

WASHABLE 0,151



Overall reflections

• New goals and next steps

Following of studies about compostable nappies

We are in contact with the French company 'les Alchimistes'.

Still single-use product, but which allows the organic matter (excrement) to be returned to the soil.

Need for a comparative study of the environmental impact of washable nappies and compostable nappies.

Designing **compostable nappies** 100% compostable, but also as effective and affordable as disposable nappies, remains a **major challenge for manufacturers**.



les Alchimistes

a French company committed to the circular economy with composting of food waste as well as compostable baby nappies.



Overall reflections

• New goals and next steps

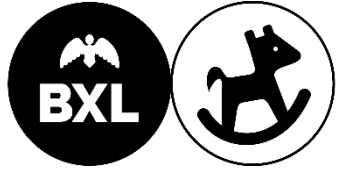
Cleaning solution with water only

We are also studying the advantages of using an ecological cleaning method.

We are in contact with the Belgian company Raypath.



Using a high-quality **memory microfibre pads** that allow you to clean **all washable surfaces** in buildings **without any detergent products.**



Overall reflections

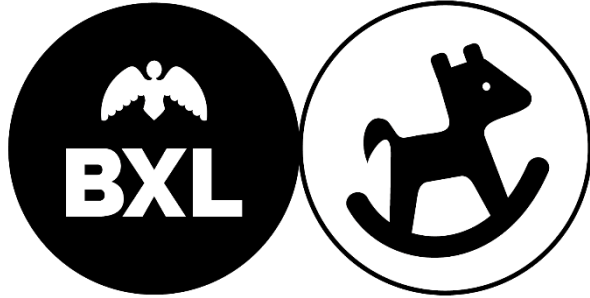
Conclusion

Difficulties

resistance to change
lack of legislation

Successful

the municipality's political commitment
reliable partners
teams on board
letting go



NAPPIES REUSE



Bénédicte HUBINON
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