



ACR+

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ASSOCIATION
OF CITIES
AND REGIONS
FOR RECYCLING
AND SUSTAINABLE
RESOURCE
MANAGEMENT

Waste prevention monitoring at local/regional level

To help you prepare or improve your local waste prevention plan

Philippe Micheaux Naudet, ACR+, Friday 22 March 2013



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- 1. Waste monitoring challenges**
- 2. Miniwaste**
- 3. Pre-waste**
- 4. Some conclusions**



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1. Waste monitoring challenges



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Why monitoring waste prevention?

→ European/national targets



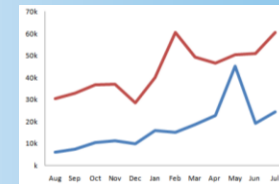
→ Costs-benefits assessment (ROI)



→ Improvement of waste prevention strategies



→ Follow-up of the evolution of the trends



Don't be afraid of the truth, avoid blindness!



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How to measure it?

- **Indicator** = measure providing insight of a process, a system or a phenomenon
 - from the beginning
 - qualitative/quantitative
 - often a compromise between precision and simplicity

- **Methods** for calculation (consumption patterns, benchmarks, etc.)

- Practical **tools** to monitor waste prevention (online / offline calculator, default values, etc.)

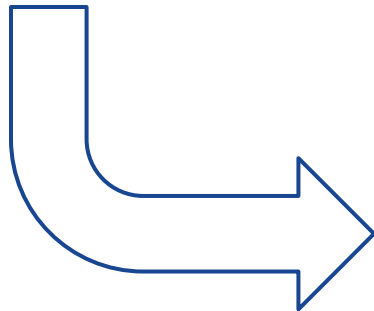


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Diagnosis / Follow-up

1. Diagnosis

- Initial assessment
- Advices on strategies to adopt
- Reduction potential (benchmarks)



2. Follow-up

- Monitor the results with targeted indicators
- Graphical presentation or Similar actions



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European projects providing monitoring webtools for cities and regions

pre-waste



- on-line tool

www.prewaste.eu



- focus: bio-waste
- Excel spreadsheets to download (off-line)

www.miniwaste.eu



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2. Miniwaste





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Advice before starting with the tool

- ❶ Lower the macro security so that the tool can be used
- ❷ Read the tutorial that guides the user step by step

The founding principles of the tool

- ❶ Multilingual tool (available in English, French, Czech and Portuguese)
- ❷ Fully customizable tool (ability to translate the titles, change reference values, thresholds and rates, changes in formulas, etc.)
- ❸ Downloadable tool on the Miniwaste website and usable offline



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How to get the tool

- Go on www.miniwaste.eu - Tools / events
- Fill in the form and download the version of the tool that suits you (depending on the version of Excel used)

The screenshot shows the Miniwaste website interface. At the top, there is a green header with the 'Mini WASTE' logo and a 'Life' logo. Below the header is a navigation bar with four orange tabs: 'Le projet', 'Les partenaires', 'Outils', and 'Médias / Événements'. The main content area is divided into three columns. The left column contains links for 'Bonnes pratiques', 'Protocoles', 'Outil de suivi', and 'Outil Miniwaste'. The middle column features a registration form titled 'Créer mon compte d'accès' with a text box explaining the benefits of creating an account. The form includes fields for 'Civilité *', 'Nom *', 'Prénom *', 'Nationalité *', 'Organisme *', and 'Email *'. The right column has a section for 'Accès partenaires' with input fields for 'Identifiant' and 'Mot de passe', and a 'Newsletters' section with links for 'Newsletter Mai 2012 (FR)', 'Newsletter May 2012 (EN)', 'Abonnez-vous >>', and 'Archives >>'. A search bar with a 'Rechercher' button is located at the bottom right.

FR | EN | C

Le projet Les partenaires Outils Médias / Événements

Bonnes pratiques
Protocoles
Outil de suivi
Outil Miniwaste

La création d'un compte vous permet de recevoir des mises à jour de l'outil Miniwaste et de venir le télécharger autant de fois que vous le souhaitez, notamment si vous voulez l'utiliser sur différents postes de travail.

Créer mon compte d'accès

Pour créer un compte utilisateur, merci de remplir le formulaire ci-dessous.
Une fois validé, un email vous sera adressé avec vos identifiant et mot de passe.
Merci de l'intérêt que vous portez à notre site.

* : champs obligatoires

Civilité * : Mr
Nom * :
Prénom * :
Nationalité * :
Organisme * :
Email * :

Identifiant :
Mot de passe : OK

Newsletters

Newsletter Mai 2012 (FR)
Newsletter May 2012 (EN)

Abonnez-vous >>
Archives >>

Rechercher



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Structure: diagnosis & monitoring

Module ①

Diagnostic module allowing to choose actions to develop (5 family of possible actions) based on the studied territory characteristics and the potential reduction of the kitchen and organic expected waste

Module ②

Monitoring module through various indicators of actions implemented on different sectors of the territory

Module ③

Module of graphical presentation of the monitoring indicators of each of the actions developed



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1- The diagnostic module: 2 levels of data

Répartition géographique des communes de Rennes Métropole

Geographical distribution of the districts of Rennes Metropole

■ Première couronne
■ Deuxième couronne



13 territorial indicators
to be filled in
(including 7 compulsory)

24 indicators to be
filled in for each
sector

(including 9
compulsory)

For each
sector, and
calculation:

a degree of
relevance*

+

a reduction
potential**

* Relevance expressed in %

** potentiel de réduction en kg/hab./an

Homepage



Access to the module "Diagnosis"

Access to the module "Monitoring"

Access to the module "Results"

Access to the webtool tutorial

Access to the webtool online help

Direct access to the online help "diagnosis"

Direct access to the online help "Monitoring"

Direct access to the online help "Results"

The screenshot shows the homepage of the ACR+ webtool. The browser address bar displays 'A19'. The page layout includes a top navigation bar with menu items: Fichier, Accueil, Insertion, Mise en page, Formules, Paramètres, Révision, and Affichage. The main content area is divided into several sections:

- Tutoriel de l'outil Miniwaste**: A highlighted link at the top left.
- Modules**: A list of three items: **Diagnostic**, **Tableau de suivi**, and **Graphes résultats**.
- Aide en ligne**: A list of three links: *Aide sur le module Diagnostic*, *Aide sur le module Tableau de suivi*, and *Aide sur le module Graphes de résultats*.
- Fiches scénarios**: A list of various waste management scenarios, including 'Compostage maison individuelle', 'Gaspillage alimentaire des ménages', and 'Jardinage durable des ménages'. An 'Ouvrir' button is next to the list.
- Fiches procédures et protocoles**: A list of procedures and protocols, including 'Gestion des déchets en habitat individuel' and 'Gaspillage alimentaire des ménages'. An 'Ouvrir' button is next to the list.

At the bottom of the page, there are logos for 'Life' (European Union) and 'METROPOLE Rennais'. The browser status bar at the bottom shows 'Prêt' and 'Accueil'.

Access to "Scenarios" and "procedures and protocols" factsheets



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1- The diagnostic module: the data level for territories

Territorial indicators

To add sectors

Help

Territoire de

Générer la synthèse

Source

T1	Nombre de communes / secteurs du territoire	<input type="text"/>	<input checked="" type="radio"/> s.u
T2	Nombre de communes / secteurs du diagnostic	<input type="text"/>	<input checked="" type="radio"/> s.u
T3	Population globale	<input type="text"/>	<input checked="" type="radio"/> habitants
T4	Quantité totale de déchet collectée par la collectivité	<input type="text"/>	<input checked="" type="radio"/> kg/hab/an
T5	dont quantité d'ordures ménagères résiduelles	<input type="text"/>	<input checked="" type="radio"/> kg/hab/an
T6	dont quantité CS emballages	<input type="text"/>	<input checked="" type="radio"/> kg/hab/an
T7	dont quantité CS déchets verts (si CS déchets verts)	<input type="text"/>	kg/hab/an
T8	dont quantité CS déchets alimentaires ménages (si CS déchets alimentaires ménages)	<input type="text"/>	kg/hab/an
T9	dont quantité apportée en déchetterie	<input type="text"/>	<input checked="" type="radio"/> kg/hab/an
T10	dont quantité DV apportée en déchetterie	<input type="text"/>	kg/hab/an
T11	Nombre de composteurs individuels remis sur le territoire	<input type="text"/>	s.u
T12	Nombre de lombricomposteurs remis sur le territoire	<input type="text"/>	s.u

Information obligatoire

Communes / secteurs

Commune 1
Commune 2

Ajouter

Renommer

Supprimer



Aide ?



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1- The diagnostic module: the data level for territories

13 indicators to provide information to characterize the global territory:

- Number of sectors or communal territory *	.....
- Number of sectors or communal for territory diagnostic *	.....
- Total population of the territory *	.....	inhab.
- Total amount of household waste collected *	.....	Kg/inhab/year
- Total amount of RMW collected *	.....	Kg/inhab/year
- Total amount of CS waste collected *	.....	Kg/inhab/year
- Total amount of green waste collected door-to-door.....	.....	Kg/inhab/year
- Total amount of kitchen waste collected door-to-door.....	.....	Kg/inhab/year
- Amount of waste collected in collection points *	.....	Kg/inhab/an
- Amount of green waste collected in collection points.....	.....	Kg/inhab/year
- Number of individual composters on the territory.....	.....
-Number of composting area shared territory	.....
- Number of worm composting bins on the territory.....	.....

** Mandatory indicators*



1- The diagnostic module: the data level by sector

Secteur de Le Rheu



Source ou valeur par défaut

S1	Population du secteur	7694	☉ habitants	
S2	Composition moyenne des ménages	2,51	☉ personnes / foyer	INSEE
S3	Superficie du territoire	18,9	☉ km ²	INSEE
S4	Age moyen	35	ans	
S5	Présence de commerces d'alimentation	<input checked="" type="checkbox"/>		
S6	Présence d'entreprises de restauration (bars, café, cantines et traiteurs)	<input checked="" type="checkbox"/>		
S7	Présence d'associations de jardinage, d'horticulture et de protection de l'environnement ou magasins de jardinage	<input checked="" type="checkbox"/>		
S8	Pourcentage de ménages vivant en maison individuelle	70%	☉ %	
S9	Quantité totale de déchets ménagers collectés sur le secteur	316	☉ kg/hab/an	
S10	dont quantité d'ordures ménagères résiduelles	209	☉ kg/hab/an	
S11	dont quantité de recyclables collectés	85	☉ kg/hab/an	
S12	dont quantité de déchets verts collectés auprès des ménages	0	kg/hab/an	
S13	dont quantité de déchets alimentaires collectés auprès des ménages	0	kg/hab/an	
S14	dont quantité globale apportée en déchetterie	199	☉ kg/hab/an	
S15	dont quantité de déchets verts apportés en déchetterie	22	kg/hab/an	60,5
S17	Pourcentage des déchets de cuisine (DC) dans les OMR		%	27%
S18	Pourcentage des produits alimentaires non consommés (NC) dans les OMR		%	1%
S19	Pourcentage des déchets verts (DV) collectés dans les OMR		%	5%
S20	Surface moyenne des jardins	500	☉ m ²	
S21	Part des ménages vivant en logements individuels pratiquant le compostage	15,3%	%	15%
S22	Part des ménages vivant en logements collectifs pratiquant le compostage en pied d'immeuble	4,8%	%	0%
S23	Nombre de composteurs individuels remis sur le territoire	330	s.u	0
S24	Nombre de lombricomposteurs remis sur le territoire	0	s.u	0

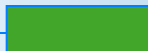
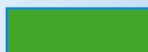
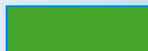
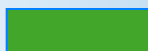
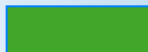


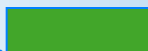


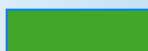

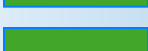


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1 - The diagnostic module: the data level by sector

24 indicators to provide information to characterize the study area

- Population * :		inhab
- Households composition* :		inhab/households
- Territorial area* :		km ²
- Average age.....		years
- Presence of food, shop, restaurant, ..		Yes or No
- % of households living in individual houses *		%
- Total amount of household waste collected on the sector*		%
- % of kitchen waste in the residual household waste		%
- Average garden areas*		
- % of households practicing composting.....		%
- % households practicing community composting		%
- Number of composters on the individual sector.....		
- Lombricomposteurs number of the sector.....		

** Mandatory indicator*



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1- The module diagnosis: Results tab

Ability for users to access scenario records classified by family actions

Suggestion de stratégies de prévention (consultation des fiches scénarios)

Gestion domestique en maison individuelle	Gestion domestique en habitat collectif	Gestion domestique des déchets verts	Gaspillage alimentaire envers les ménages	Prévention des bio-déchets auprès des producteurs non ménagers
Compostage maison individuelle	Compostage en logement collectif	Jardinage durable des ménages	Gaspillage alimentaire des ménages	a - Relais infos jardinerie associations de jardinage
Compostage partagé de quartier	Lombricompostage	Alimentation animale déchets verts maisons individuelles		b - Compostage restaurants
Alimentation animale déchets de cuisine maisons individuelles	Relais infos jardinerie associations de jardinage			c - Gaspillage alimentaire restaurants
Relais infos jardinerie associations de jardinage				d - Gaspillage alimentaire magasins d'alimentation

[Synthèse des actions choisies](#)

[Accéder aux fiches scénarios](#)





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1- The module diagnosis: Results tab

Depending on the data entered for each sector , the display of families actions with their relevance (in%) and avoidance potential (kg / capita / year)

Territoire de		Pertinence et potentiel de réduction selon les actions de prévention par secteur							
		Gestion domestique en maison individuelle	Gestion domestique en habitat collectif	Gestion domestique des déchets verts	Gasillage alimentaire envers les ménages	Prévention des bio-déchets auprès des producteurs non ménagers			
Rennes Métropole						a	b	c	d
Date : 41232									
Bruz 4,1% de la population du territoire	Pertinence de l'action	69%	75%	71%		x	x	x	x
	Potentiel de réduction	DC* 276 t/an	298 t/an						
		DV* 183 t/an		462 t/an					
	Mise en œuvre ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Le Rheu 1,8% de la population du territoire	Pertinence de l'action	69%	75%	75%		x	x	x	x
	Potentiel de réduction	DC* 115 t/an	54 t/an						
		DV* 81 t/an		189 t/an					
	Mise en œuvre ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
		Pertinence > 66%		Pertinence > 33% et < 67%			Pertinence < 34%		
		* DV : Déchets verts			* DC : Déchets de cuisine				



1- The module diagnosis: Results tab

Based on the results of the diagnostics, the user may choose to develop one or more family of actions (of 5) on each sector studied



Résumé des actions que vous avez sélectionnées

Gestion domestique en maison individuelle	Gestion domestique en habitat collectif	Gestion domestique des déchets verts	Gaspillage alimentaire envers les ménages	Prévention des bio-déchets auprès des producteurs non ménagers
Le Rheu	Bruz	Bruz Le Rheu		
Gestion domestique en maison individuelle	Gestion domestique en habitat collectif	Gestion domestique des déchets verts	Gaspillage alimentaire envers les ménages	Prévention des bio-déchets auprès des producteurs non ménagers

Synthèse des actions choisies

Accéder aux fiches procédures

Access to “procedures” factsheets to detail the steps of action implementation



2- The monitoring module actions (independent of diagnosis)



Nom de l'indicateur	Unité / Echelle	Famille d'action concernée					Méthode d'obtention de la mesure	Valeur initiale	2012
		1: GD habitat individuel	2: GD habitat collectif	3: GD déchets verts	4: Réduction du ménage	5: Producteur non			
TS1 Population totale	hab	x	x	x	x	x	INSEE		400756
Indicateurs de réalisation									
TS2 Nombre de composteurs individuels remis	-	x					Basé sur les enregistrements des autorités locales		20765
TS3 Nombre d'aires de compostage partagé en quartier	-	x					Basé sur les enregistrements des autorités locales		15
TS4 Nombre d'aires de compostage collectif en immeubles	-		x				Basé sur les enregistrements des autorités locales		217
TS5 Nombre de lombricomposteurs remis	-		x				Basé sur les enregistrements des autorités locales		45
Indicateurs de flux de déchets collectés et/ou produits									
TS6 Quantité totale de déchets ménagers collectée par la collectivité	Kg/hab/an	x	x	x	x	x	Basé sur les enregistrements des autorités locales		478
TS7 Quantité d'ordures ménagères résiduelles collectées	Kg/hab/an	x	x	x	x	x	Basé sur les enregistrements des autorités locales (extraire les quantités liées aux déchets des activités commerciales (17% à 24,6% de contribution selon référence France))		211
TS8 Quantité de déchets verts collectée auprès des ménages	Kg/hab/an	x	x	x	x	x	Basé sur les enregistrements des autorités locales		6

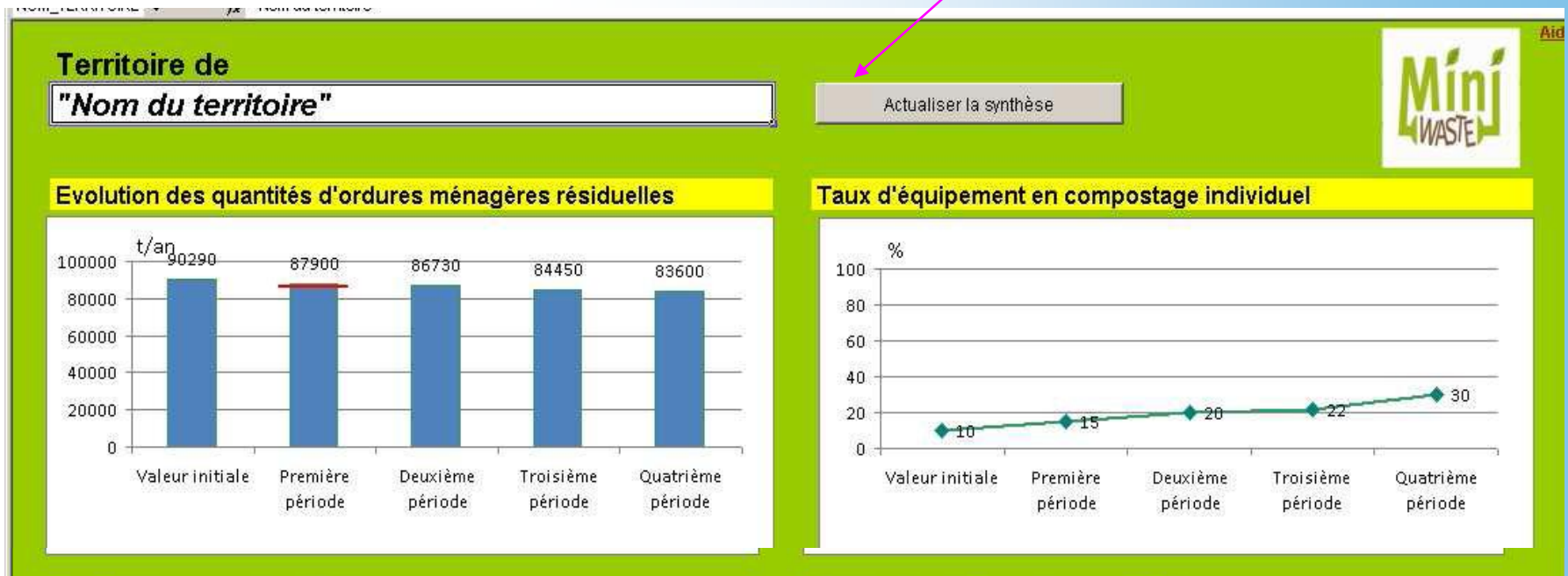


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3- The graphical presentation module of results

Each monitoring indicator can be presented graphically

Updating graphs





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3. Pre-waste

pre-waste

Three fingerprints are shown below the text "pre-waste". The first fingerprint is black, the second is green, and the third is light green.



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Main page: how to access

To enter you must register yourself.

PREWASTE

Pre-waste is a project co-financed by the European Regional Development Fund and made possible by the INTERREG IVC Programme.

The Pre-waste project involves 10 European partners, committed to share their expertise in waste prevention and waste management.

Pre-waste project has developed a consistent and comprehensive approach to help local and regional authorities to prevent waste generation.

In particular, Pre-waste will deliver:

- guidelines for planning, implementing and monitoring regional waste prevention policies
- 20 best examples of waste prevention actions implemented in the European Union by local or regional authorities, along with other good practices
- a web tool allowing the assessment of waste prevention actions' efficiency and monitoring.

The Pre-waste project stands by a simple rule: The best waste is that which is not produced! It's time to prevent! (<http://www.prewaste.eu/>)

WEBTOOL

The web tool goal is to help local and regional authorities, as well as any other waste prevention actor, in the evaluation of one prevention action potential before starting it (diagnosis part) and of results expected after its implementation (monitoring part).

Trascinare il cursore attorno all'area da acquisire

LOGIN

User name

Password

LOGIN

Or

REGISTER



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General menu

WEB TOOL

Enter to use webtool.

VIRTUAL LIBRARY

Downloadable documents useful for webtool users.

MY PROFILE

Enter to view and edit your data.



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Structure: diagnosis & monitoring

PROCESSES

DIAGNOSIS

This part will allow the user to determine the potential of one action before starting it, i.e. assess the potential participation and the quantities of waste that can potentially be avoided.

MONITORING

This part will provide the user with a list of indicators allowing the user to monitor one given waste prevention action and a method to calculate them.



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Approaches

Two approaches are proposed for both diagnosis and monitoring parts:

Methods: the user will be able to look through general and specific methods, presenting sets of indicators and clear definitions and methods to assess them (data to be collected, calculation methods...); moreover quantitative elements easing these assessments are proposed (if available from previous studies or existing good practices)

Simulation: this will allow the user to input its own data and to directly calculate indicators based on its local context.



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Diagnosis

Information that will be provided in “methods” and in “simulation” are shown for each type of prevention’s **specific action** and its **target**.

First of all the users have to select the type of **waste fraction** that they want to prevent. Then they have to select, directly in the sections below, the type of prevention’s specific action and its target, or can select the type of action from the list that appears below.

Search by Waste Fraction Search by Categories of Instruments * Campo Obbligatorio

Waste Fraction

Type of Action

Target

Help

- Waste fraction: Main waste fraction targeted by the waste prevention action
- Specific action: Common actions focusing on traditional specific waste prevention "habits"
- Target of the action: Type of participant, who performs the waste reduction activities

Information that will be provided in "methods" and in "calculation" are shown for each type of prevention's specific action and its target. First of all you have to select the type of waste fraction that you want to prevent. Then you have to select, directly in the sections below, the type of prevention's specific action and its target, or you can select the type of action from the list that appears below.



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Diagnosis

The users can also choose the action by a specific category of instruments involved (administrative, legal, financial, communication etc.).

First of all they have to select the type of **category**. Then they have to select the type of action from the list that appears below.

ACTIONS

Search by Waste Fraction Search by Categories of Instruments * Required Field

Categories
Information and general communi

Help

- Categories: What does the action consist of? (Instruments)

Alternatively you can select the specific action among those in which is necessary (or appropriate) to adopt a certain categories of instruments, selecting it from the list.

Selection

Action	Waste Fraction	Action Type	Target
<u>Home Composting</u>	Biowaste	Home composting	Households
<u>Washable Nappies</u>	Sanitary textiles	Reusable Nappies	Households



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Diagnosis methods

Three steps:

- Assessment of potential participation and potential avoided quantities: based on template ORDIF with some innovation (insertion of categories of instruments for each action/target, with detection of categories “must” and “appropriate”, insertion of success factors, assessment of the potential avoided quantities for each action/target)
- Summary of concerned waste fraction
- Summary of instruments

After:

- List of core indicators to be collected in the future implementation activity
- Similar actions (best/good practices of this action detected by Pre-waste)



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Diagnosis methods – step 1

Set course: click on the left arrows green (>) to see all elements of this part of the webtool. In order to go on webtool consultation tick off all boxes on the right ('read and understood').

Step 1	Step 2	Step 3	Core Indicators	Good Practices
Assessment of potential participation and potential avoided quantities				
Target				
✓ Households				
Section name				
>	Assessment for target audience	In this part, details about how to assess the potential participation for this target audience category are displayed	<input type="checkbox"/>	
>	Initial participation for target audience	In the following part, details about how to assess the part of the target audience that is already performing the action are displayed	<input type="checkbox"/>	
>	Potential participation for target audience	In the following part, details about how to assess the potential participation for the target audience category are displayed	<input type="checkbox"/>	
>	Categories of Instruments to be promoted for target audience:	Categories of Instruments to be promoted for target	<input type="checkbox"/>	
>	Assessment of the potential avoided quantities	Waste avoided thanks to the prevention's action	<input type="checkbox"/>	



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Diagnosis methods – step 1

ticking off the boxes on the right ('read and understood'), the bar below changes colour (from red to green)

Assessment of potential participation and potential avoided quantities

Target	
✓ Specific method to assess the potential participation:	Description of the method to assess the potential participation for the considered action and target group
A survey can be led in daycare and maternity hospitals. It can allow assessing both initial participation and potential participation on a small panel, then extrapolating the results on the calculated target population. It is interesting to present briefly the possibilities offered by present washable nappies, costs and benefits, constraints and limits while doing so	
✓ Available statistics on potential participation:	statistics regarding the average participation for the considered waste prevention habit
20% at European level, with important discrepancies among countries	
✓ Data from existing experiences for potential participation	
PreWaste Best Practice: 082 "THE REAL NAPPY CAMPAIGN UNITED KINDOM"	
Prewaste Best Practice N. 47 Light Kids, Washable Diapers In The Municipality Crèche And Incentives For Families – Italy	
> Succes factors:	List of factors, external to the categories of instrument of the action to implement, that could favorize the participation
> Limiting factors:	List of factors that could limit the participation, method to assess the impact on potential participation

Understanding

Continue



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Diagnosis simulation

Tool which allows the user to determine the potential of one action before starting it, i.e. assess the potential participation and the quantities of waste that can potentially be avoided, following the same path of methods part.

The data are shown for each type of prevention's **specific action** and its **target**.

The user may find some help by opening a pdf file about methods

The screenshot displays the 'SIMULATIONS' interface. At the top, there are three buttons: 'Selection', 'Insertion', and 'Modification'. Below these, a 'Simulation' section contains three dropdown menus: 'Project' (Riccardo H. C.), 'Action' (Home Composting), and 'Target' (Households). To the right of these menus is a 'Diagnosis Method' icon, which is circled in red. Below the simulation configuration, there are six tabs labeled 'Section 1' through 'Section 6', with 'Section 4' currently selected. At the bottom of the interface, the text 'Assessment of potential participation' is visible.



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Diagnosis simulation

Six sections:

- Section 1: Place of the action and population related
- Section 2: Assessment of target audience
- Section 3: Assessment of initial participation
- Section 4: Assessment of potential participation
- Section 5: Assessment of potential avoided quantities
- Section 6: Assessment of environmental impact

The users are aided by notes and further information appeared when the mouse is on each element



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Diagnosis simulation – section 4

For the evaluation of potential participation, the user is provided with double input table and informative pdf file

Section 1 Section 2 Section 3 **Section 4** Section 5 Section 6

Assessment of potential participation

Framework in relation to the presence of success / limiting factors

	Bad	Med	Good	
	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	 Click to Help
			<input checked="" type="radio"/>	High
			<input type="radio"/>	Med
			<input type="radio"/>	Low

Quantity and quality of the tools that will be put in

% potential participation



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Diagnosis simulation – section 5

The outputs are:
the assessment of potential avoided quantities of waste

Section 1 Section 2 Section 3 Section 4 **Section 5** Section 6

Assessment of potential avoided quantities

Waste fraction	Biowaste -
Concerned waste fraction(s)	
% concerned waste fraction/s on total urban waste	<input type="text" value="30,00%"/>
potential avoided quantities (kg/hab year)	<input type="text" value="90,00"/>
potential avoided quantities (kg/year)	1.012.500,00
urban waste production in the territory (kg/year)	<input type="text" value="50.000.000,00"/>
rate of reduction of urban waste production (%)	2,02%
rate of reduction of urban biowaste (%)	6,75%

The default value is an average data of good practices

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Diagnosis simulation – section 6

... and the assessment of environmental impact (CO₂ reduction).
At least the users can save the simulation

The screenshot shows a software interface with a navigation bar at the top containing six tabs: Section 1, Section 2, Section 3, Section 4, Section 5, and Section 6. Section 6 is currently selected. Below the navigation bar, the main content area is titled 'Assessment of environmental impact'. It displays a single data point: 'reduction of CO2 eq emission (kg/year)' with a value of '10.125,00'. At the bottom right of the interface, there are two buttons: 'Back' and 'Save Simulation'.

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
					Assessment of environmental impact reduction of CO2 eq emission (kg/year) 10.125,00

Back Save Simulation



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Monitoring methods

This part provides users with a set of indicators linked to the waste prevention specific action he is interested in and examples of existing similar action (Pre-waste best and good practices)

Sections to expand:

ACTION NAME Home Composting - Action promoting composting for single houses
ACTION TYPE Home composting

Detail Action

Indicators | List of similar actions

Core indicators to be collected in the implementation activity

- > Ressources Indicators
- > Results Indicators
- > Impact Indicators



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Monitoring methods

Set course: Click on the left arrows green (>) to see all elements of this part of the webtool. In order to go on webtool consultation tick off the bottom box ('read and understood').

Detail Action

Indicators

Core indicators to be collected in the implementation activity

✓ Results Indicators

✓ Avoided quantities for home composting

IndicatorName	Aim	Calculation Method
Avoided quantities for home composting	Assess the quantitative results in terms of waste generation evolution	Avoided quantities = (avoided quantities per person per day) x (participation)

✓ Impact Indicators

✓ Environmental balance for home composting: CO2 emissions

IndicatorName	Aim	Calculation Method
Environmental balance for home composting: CO2 emissions	Assess the environmental balance in terms of CO2 emissions evolution	Environmental balance could be calculated by applying ratios to the avoided waste quantities. Depending on the waste treatment option replaced by decentralised composting (incineration, composting or others such as biomethanisation) and underlying assumptions the estimates of net impacts vary greatly from positive to negative (a series of calculations could be provided upon request). Other environmental benefit: greater resource efficiency compared to incineration. The average datum of CO2 reduction is 10-20 kg/ton of avoided waste



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Monitoring simulation

Tool which allows the user to calculate the impact indicators of its prevention action and to compare own core indicators with benchmark indicators. You can input your own data and directly to calculate indicators based on your local specificities.

Six sections:

- Section 1: Territory and target
- Section 2: Waste situation
- Section 3: Waste prevention action – Categories
- Section 4: Waste prevention action – Resources
- Section 5: Waste prevention action – Results
- Section 6: Waste prevention action – Impacts



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Monitoring simulation

We have:

- data to insert by the users (sometime default data, amendable)
- data calculated by the webtool
- benchmark data for comparison

The users are aided by notes and further information appeared when the mouse is on each element

Section 1 Section 2 Section 3 Section 4 Section 5 Section 6

Waste situation

urban waste total generation (kg/hab year) ▲▼

concerned waste fraction/s Biowaste -

% concerned waste fraction/s on total urban waste ▲▼

Average datum of biowaste %



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Monitoring simulation

The part on financial resource indicators is more detailed, due to its importance. Values are calculated in €/hab. In order to compare it with a reference value (from benchmarks, reference average data of good practices)

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
Waste prevention action - Ressources allocated					
Staff	Communication	Equipment	Other costs		
costs for internal staff (€)	<input type="text" value="€ 80.000,00"/>		▲▼		
costs for external staff (€)	<input type="text" value="€ 30.000,00"/>		▲▼		
total costs for staff	€ 110.000,00				
total costs for staff (€/hab.)	€ 1,10				
benchmark positioning (%) - benchmark value: 1,25 €/hab. for target 15% of total population	88,00%				
					<input type="button" value="Avanti"/>



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Monitoring simulation

The tool calculates total costs and compares them with relative benchmark

Section 1 Section 2 Section 3 **Section 4** Section 5 Section 6

Waste prevention action - Ressources allocated

Staff Communication Equipment **Other costs**

other costs (€) € 10.000,00

other costs (€/hab.) € 0,10

[Indietro](#)

Resources allocated - total costs (€)	€ 380.000,00	benchmark positioning (%) - 76%	
Resources allocated - total costs (€/hab.)	€ 3,80	benchmark value: 5,00€/hab. for target 15% of total population	Indietro Avanti



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Monitoring calculation

... after it helps to calculate the main results of the action

Section 1 Section 2 Section 3 Section 4 **Section 5** Section 6

Waste prevention action - Results

Evaluation of potential participation **Results**

actual participation (n. babies)	<input type="text" value="23"/>	↕
multiplier factor	<input type="text" value="1,00"/>	↕
actual participation (n. babies)	23	
new actual participation (n. babies)	-3.177	
avoided quantities (kg/baby year)	<input type="text" value="200"/>	↕
avoided quantities (kg/year)	0	

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Monitoring simulation

...finally it calculates the main indicators of the impacts of the action

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	
Waste prevention action - Impacts						
rate of reduction of urban waste production (%)	2,37%					
rate of reduction of urban biowaste (concerned fraction) production (%)	7,89%					
reduction of CO2 eq emission (kg/year)	0,00					
duration of waste prevention action effects (year)	<input type="text" value="5"/>					
cost of the action per avoided waste (€/ton)	77,74	benchmark positioning (%) - 129,57%	benchmark value: 60,00 €/ton			
cost of the action per participant (€/hab. participant)	€ 35	benchmark positioning (%) - 106,00%	benchmark value: 33,00 €/hab.			
costs avoided thanks to the action (€/year)	<input type="text" value="645.750"/>					
final balance of the action (€)	€ 185.750,00					
final balance of the action (€/hab.)	€ 1,86					
					<input type="button" value="Back"/>	<input type="button" value="Save Simulation"/>



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4. Some conclusions



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A few recommendations

- You need to monitor your actions and strategies, whatever the tool
- Other tools exist: use the ones you need the most
- No tool is perfect, but they can help (decision making and monitoring)
- Read the tutorials and configurate the tools to suit your needs



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Access the tools

→ Miniwaste webtool (EN, FR, PT, CZ)

<http://www.miniwaste.eu/en/tool-box/miniwaste-tool.html>

→ Pre-waste webtool (EN)

<http://webtool.prewaste.eu/Login/Login.aspx>



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Thank you for your attention!

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