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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

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

1. Waste monitoring challenges

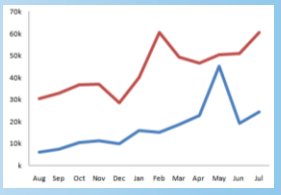
Why monitoring waste prevention?

- → 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!

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.)

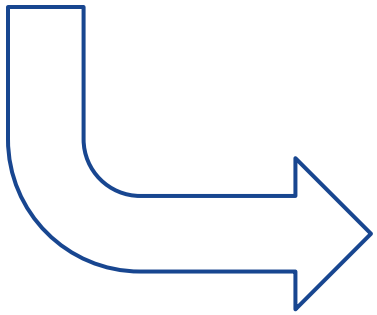
Diagnosis / Follow-up

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

European projects providing monitoring webtools for cities and regions

pre-waste

INTERREG IVC

- on-line tool

www.prewaste.eu

Mini WASTE

Life

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

www.miniwaste.eu

2. Miniwaste

Advice before starting with the tool

❶Lower the macro security so that the tool can be used
❷Read 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

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)

Structure: diagnosis & monitoring

Module ❶

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

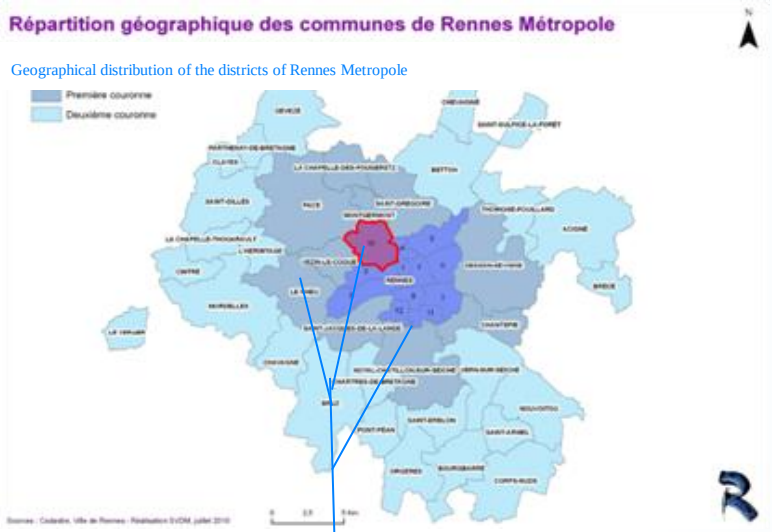
Module ❷

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

Module ❸

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

1- The diagnostic module: 2 levels of data



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*

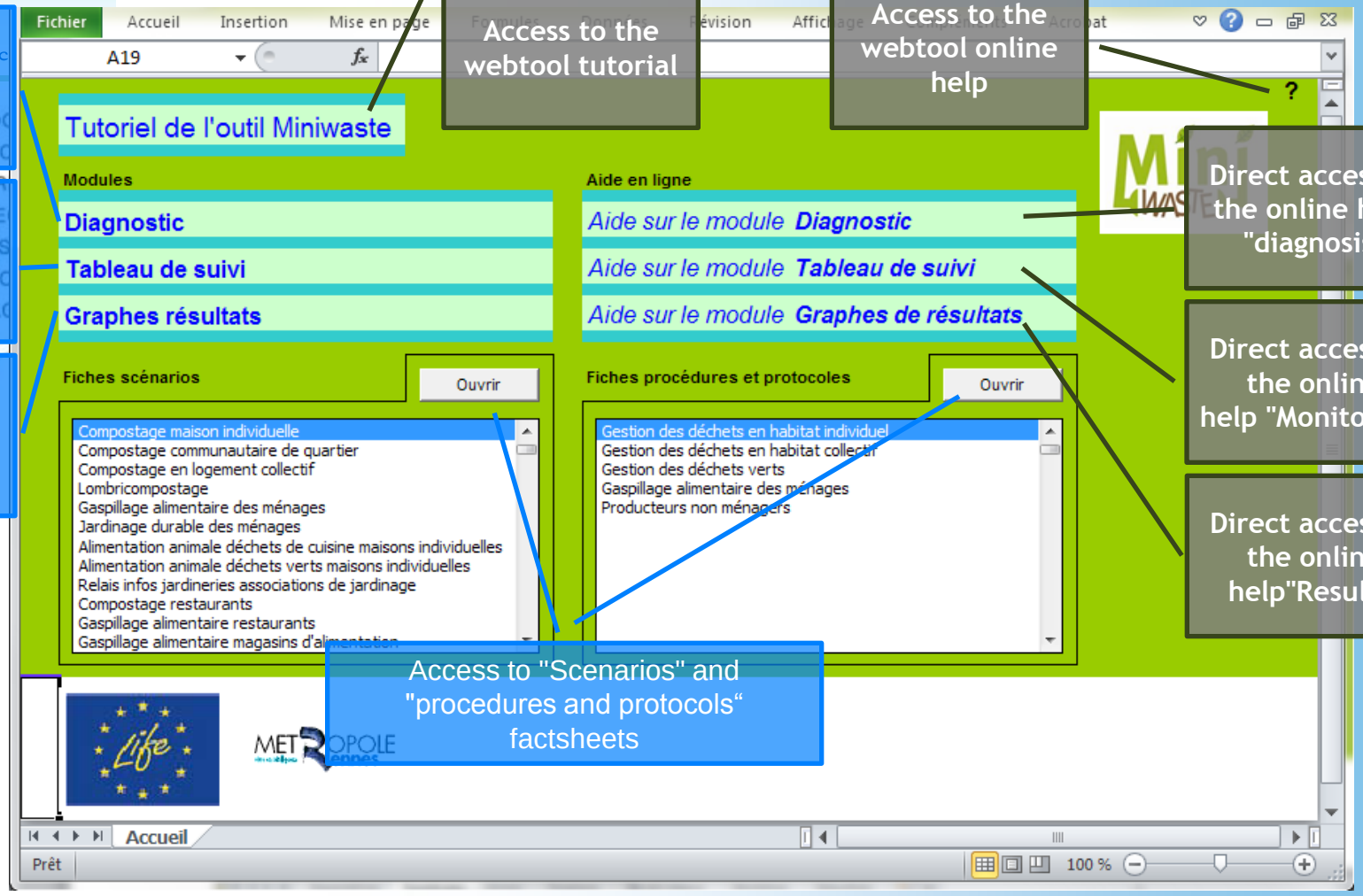
+

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"

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

1- The diagnostic module: the data level for territories

Territorial indicators

To add sectors

Help

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	km²	*INSEE*
S4	Age moyen	35	ans	
S5	Présence de commerces d'alimentation	☑		
S6	Présence d'entreprises de restauration (bars, café, cantines et traiteurs)	☑		
S7	Présence d'associations de jardinage, d'horticulture et de protection de l'environnement ou magasins de jardinage	☑		
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	m²	
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*

Information obligatoire

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 houshold 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*

1- The module diagnosis: Results tab

Ability for users to access scenario records classified by family actions

Synthèse des actions choisies

Accéder aux fiches scénarios

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 jardineries 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 jardineries associations de jardinage			c - Gaspillage alimentaire restaurants
Relais infos jardineries associations de jardinage				d - Gaspillage alimentaire magasins d'alimentation

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 Rennes Métropole Date : 41232			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	Gaspillage alimentaire envers les ménages	Prévention des bio-déchets auprès des producteurs non ménagers			
							a	b	c	d
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 ?		☐	☐	☐	☐			☐	
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 ?		☐	☐	☐	☐			☐	

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
Synthèse des actions choisies	Le Rheu	Bruz	Bruz Le Rheu		
Accéder aux fiches procédures	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

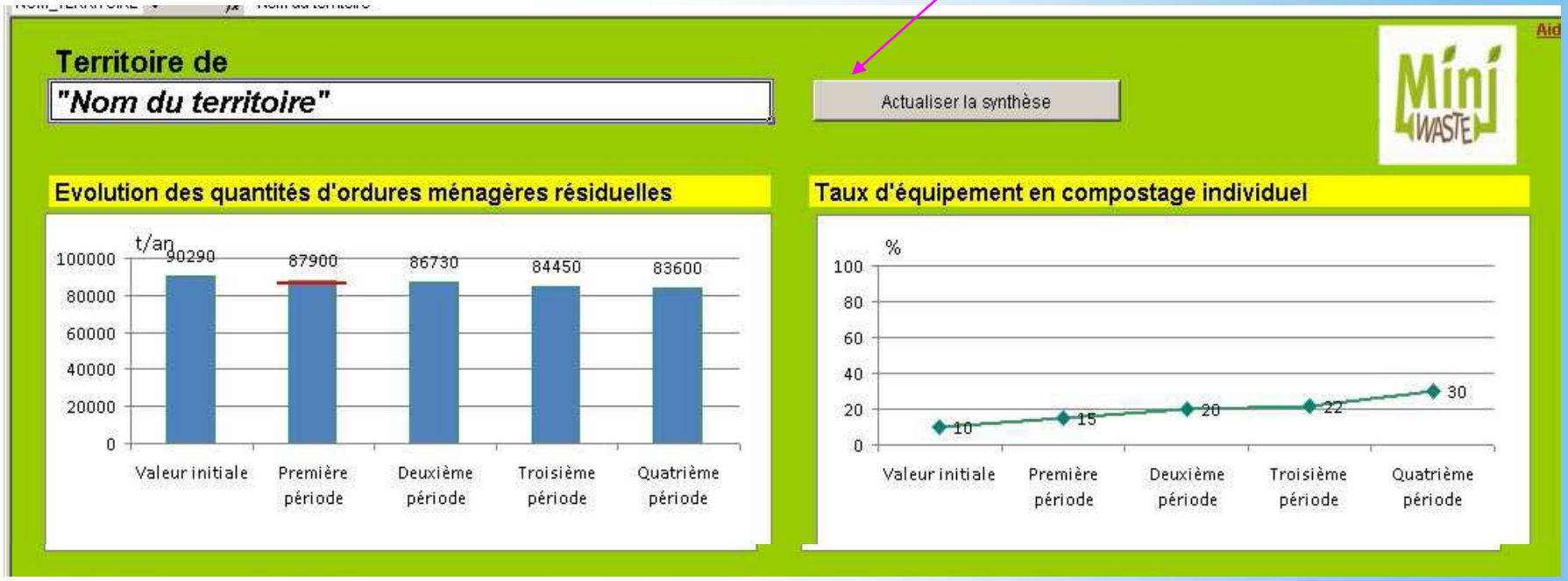
Access to “procedures” factsheets to detail the steps of action implementation

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 GA	5 : Producteur non ménager			
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 collectée	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

3- The graphical presentation module of results

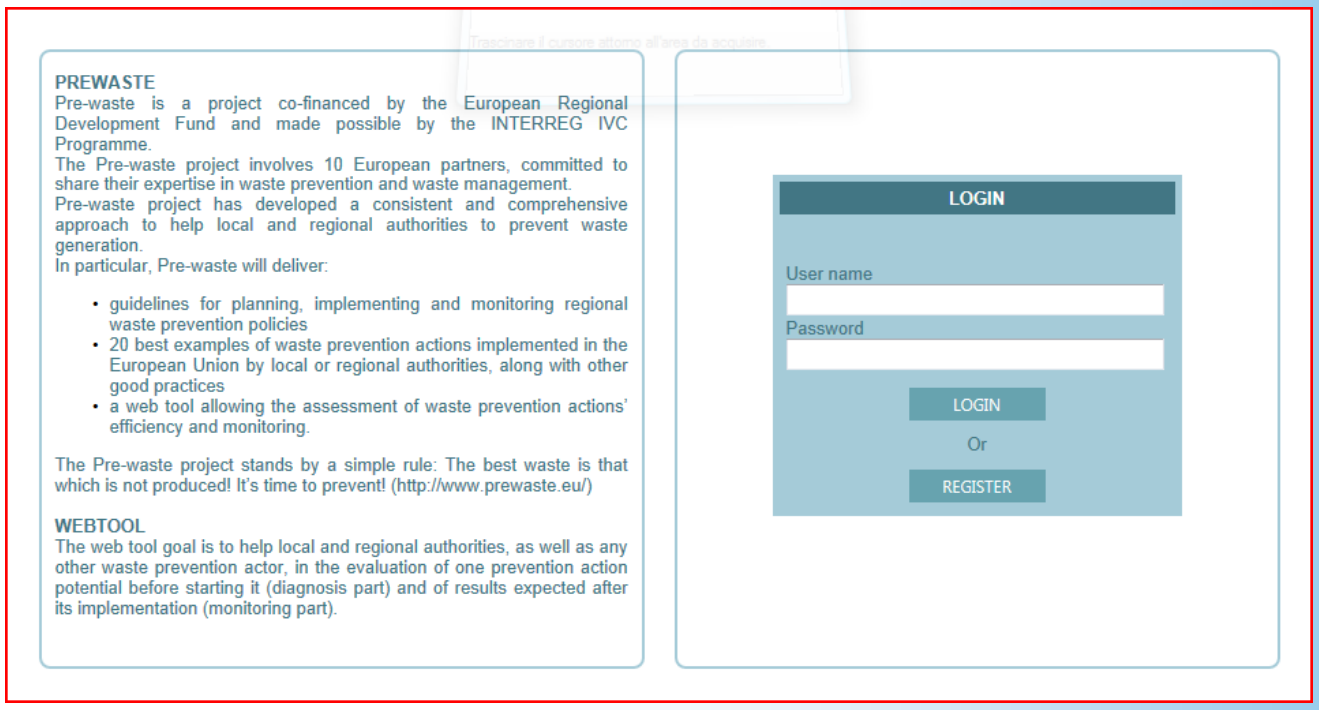
Each monitoring indicator can be presented graphically



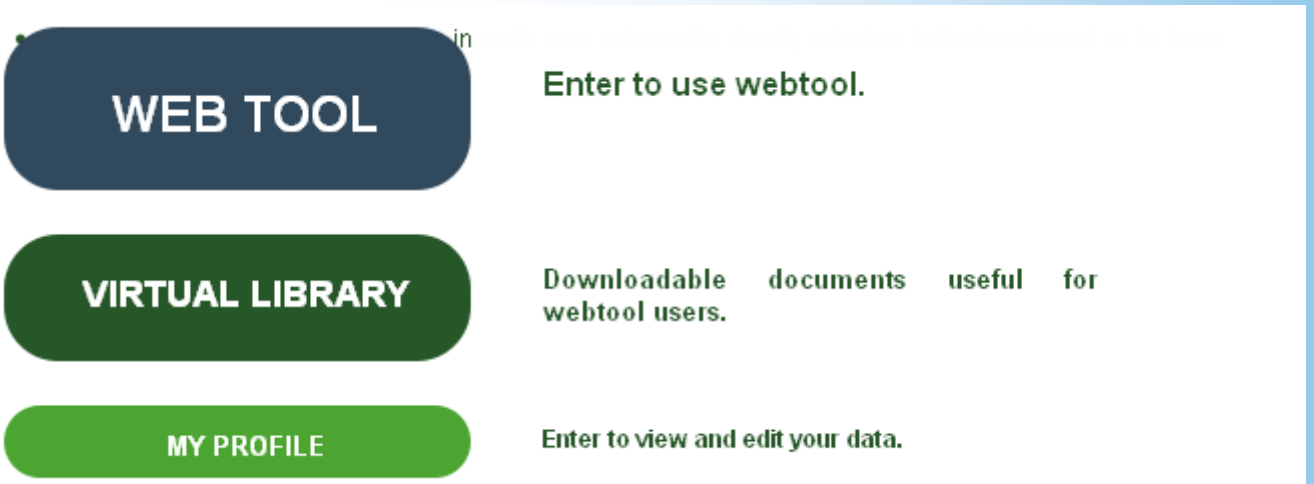
3. Pre-waste

Main page: how to access

To enter you must register yourself.



General menu



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.

Approaches

Two approaches are proposed for both diagnosis and monitoring parts:

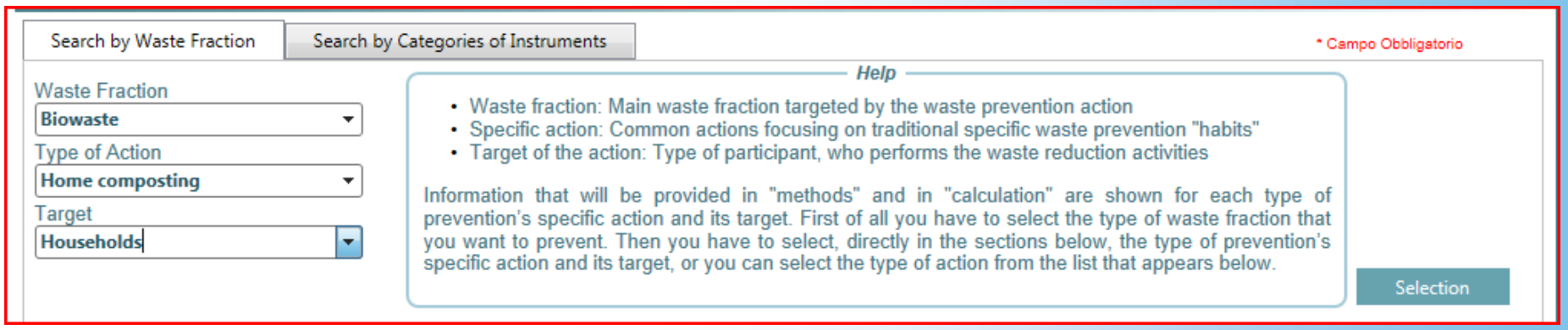
Methods: the user will be able to look through general and specific methods, presenting sets of indicators and clear definitions and methods to assess them (data to be collected, calculation methods...); moreover quantitative elements easing these assessments are proposed (if available from previous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

Diagnosis

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

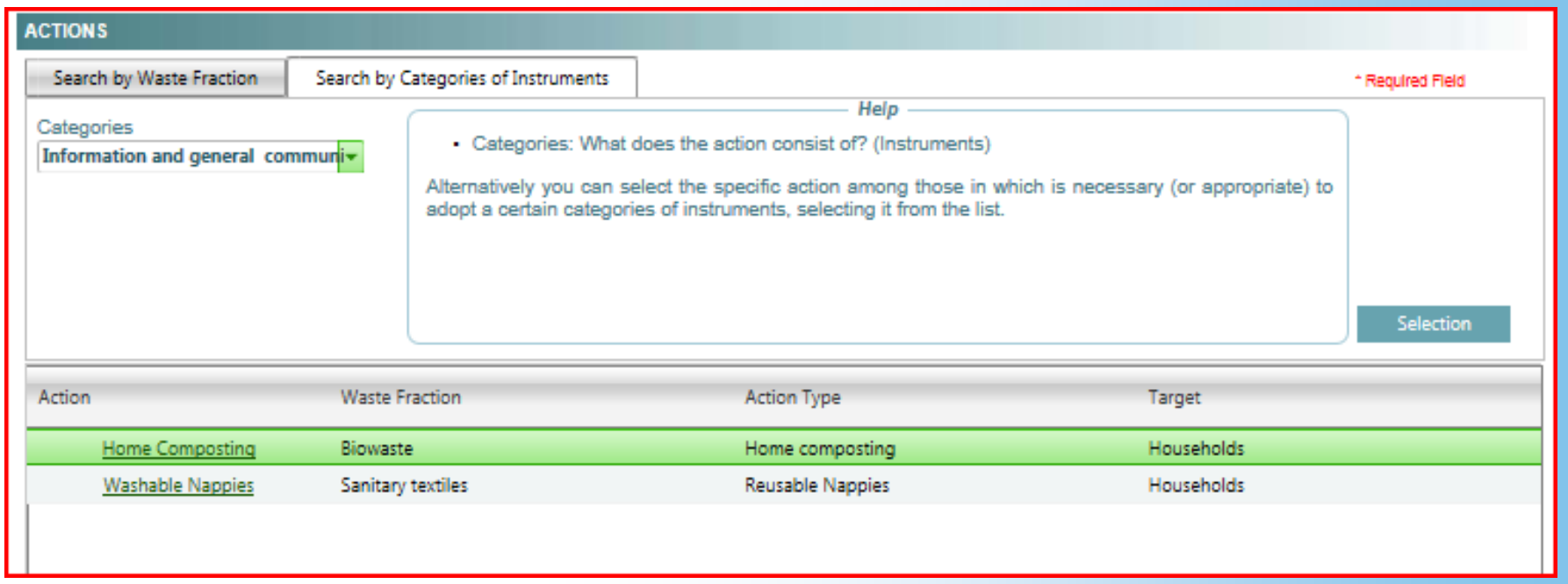
First of all the users have to select the type of **waste fraction** that they want to prevent. Then they have to select, directly in the sections below, the type of prevention’s specific action and its target, or can select the type of action from the list that appears below.



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.



Diagnosis methods

Three steps:

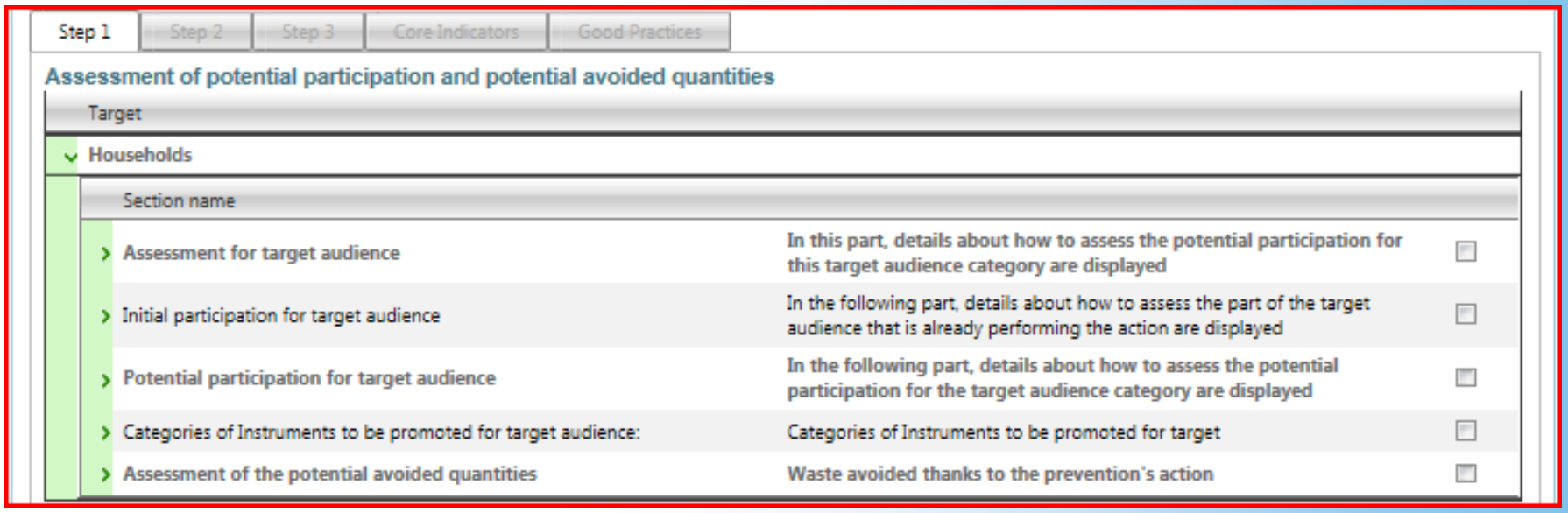
- Assessment of potential participation and potential avoided quantities: based on template ORDIF with some innovation (insertion of categories of instruments for each action/target, with detection of categories “must” and “appropriate”, insertion of success factors, assessment of the potential avoided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

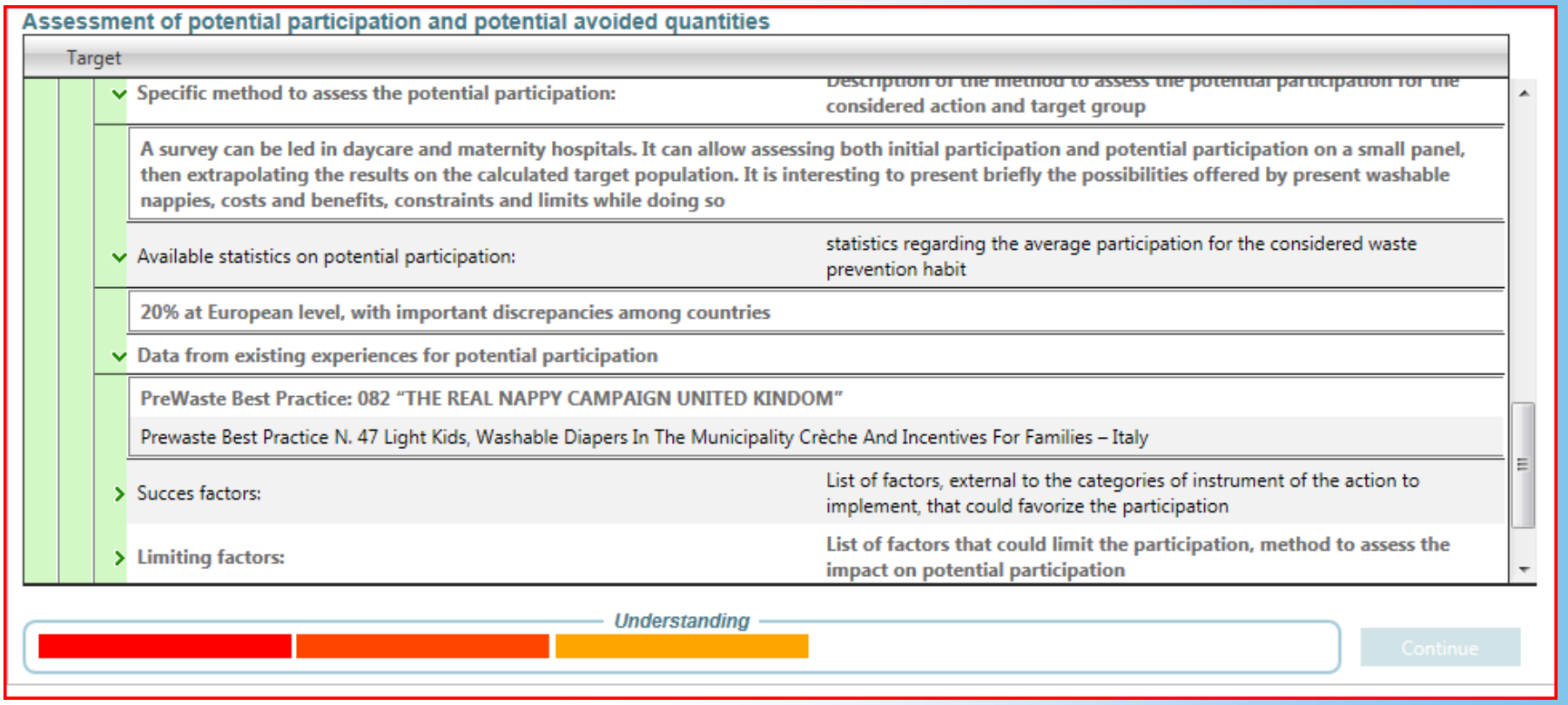
Diagnosis methods – step 1

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').



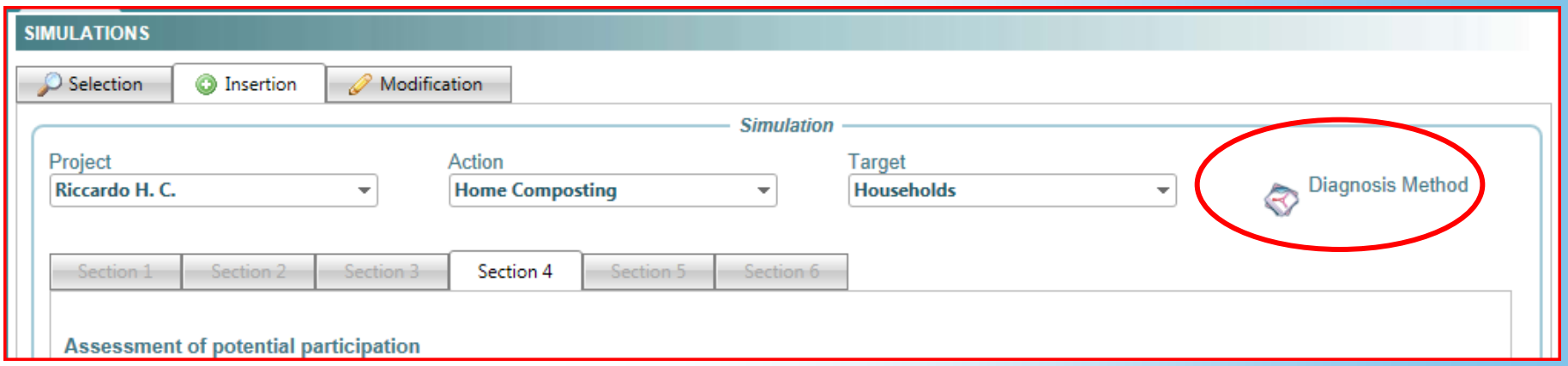
Diagnosis methods – step 1

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



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



Diagnosis simulation

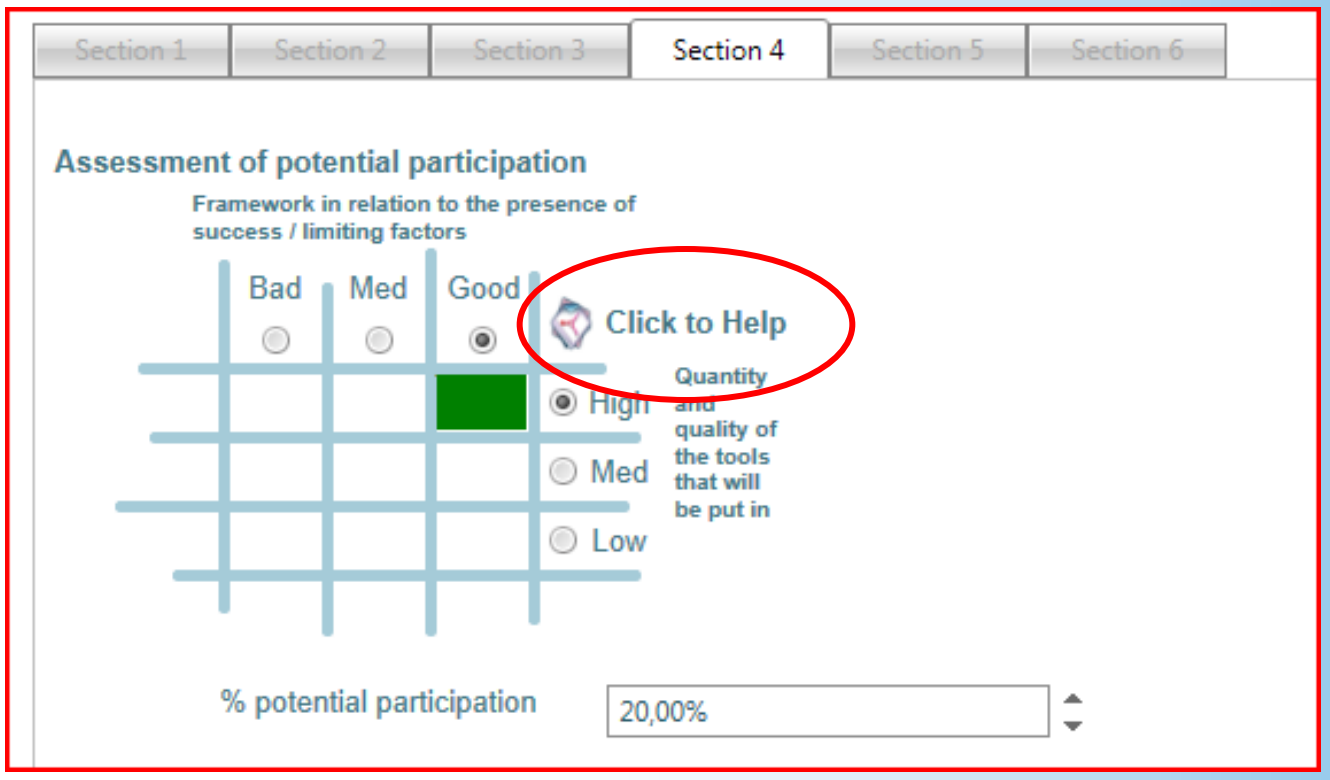
Six sections:

- 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

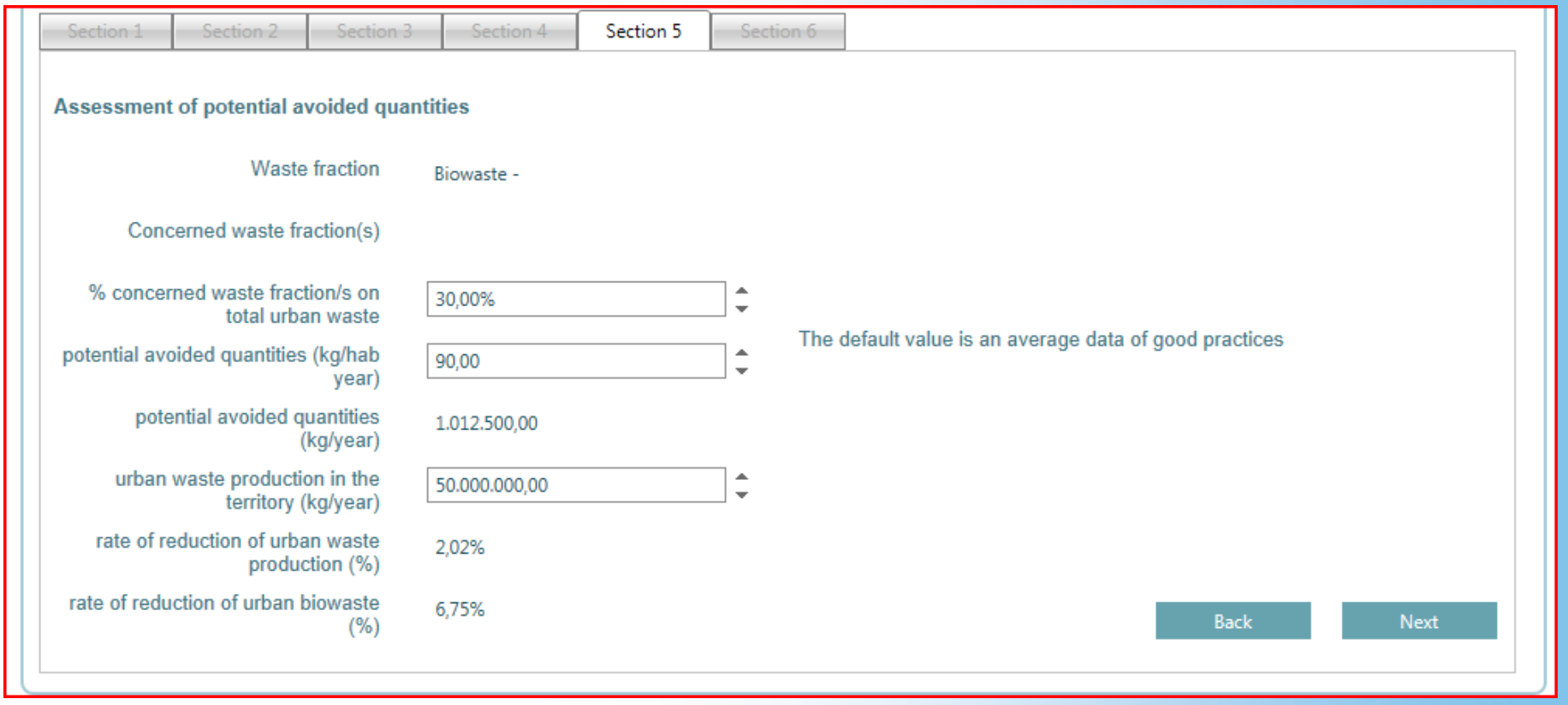
Diagnosis simulation – section 4

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



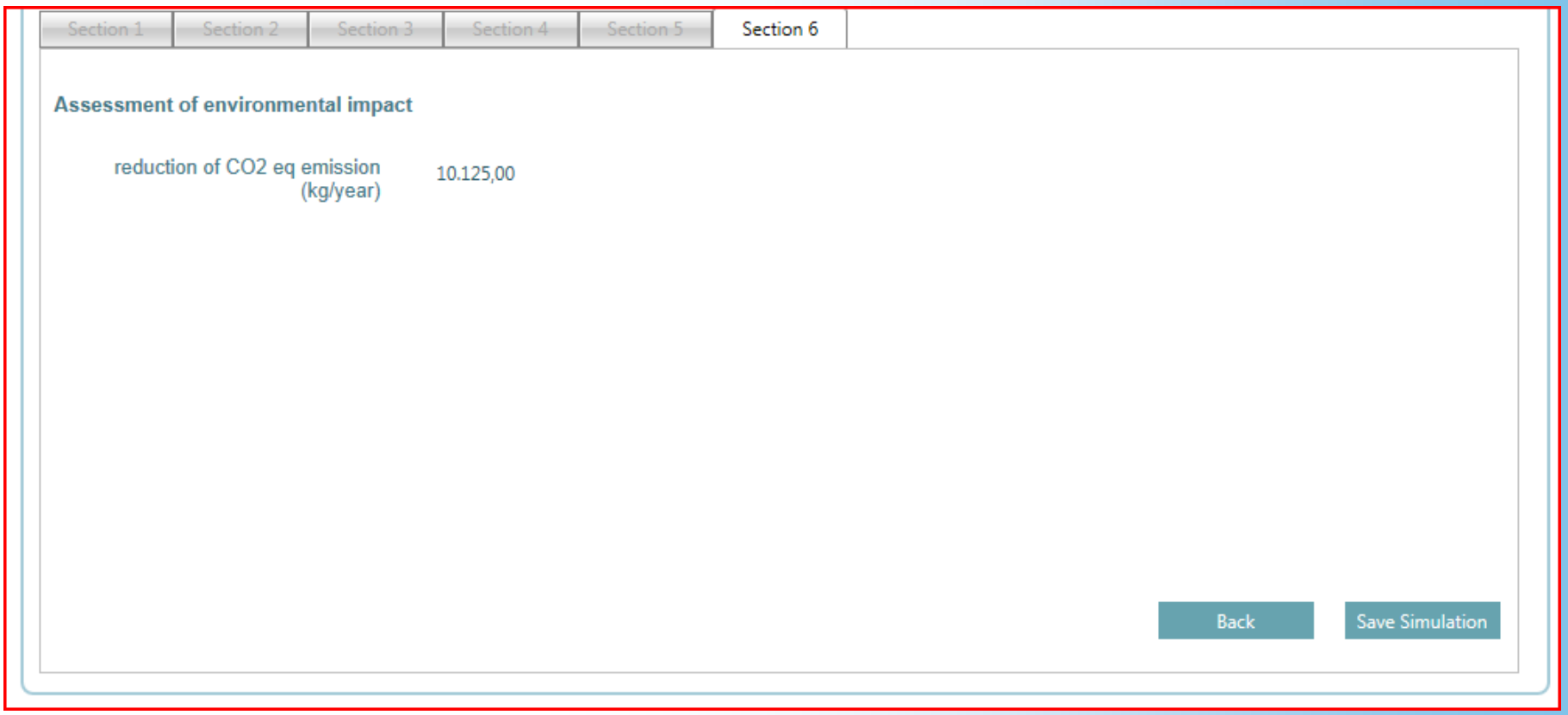
Diagnosis simulation – section 5

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



Diagnosis simulation – section 6

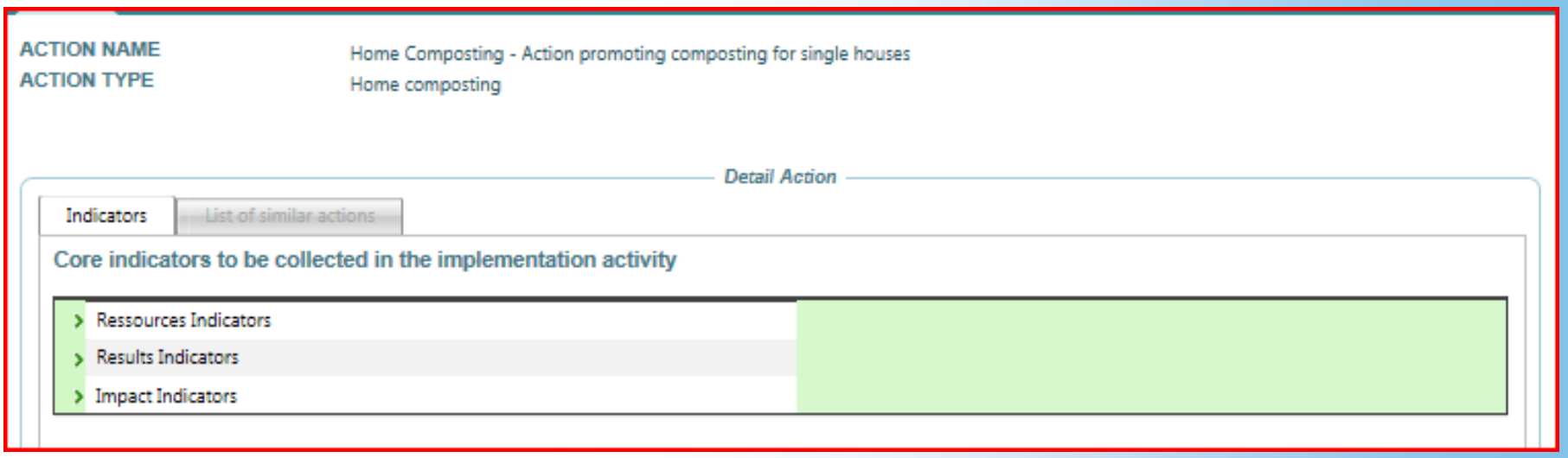
… and the assessment of environmental impact (CO_2 reduction).
At least the users can save the simulation



Monitoring methods

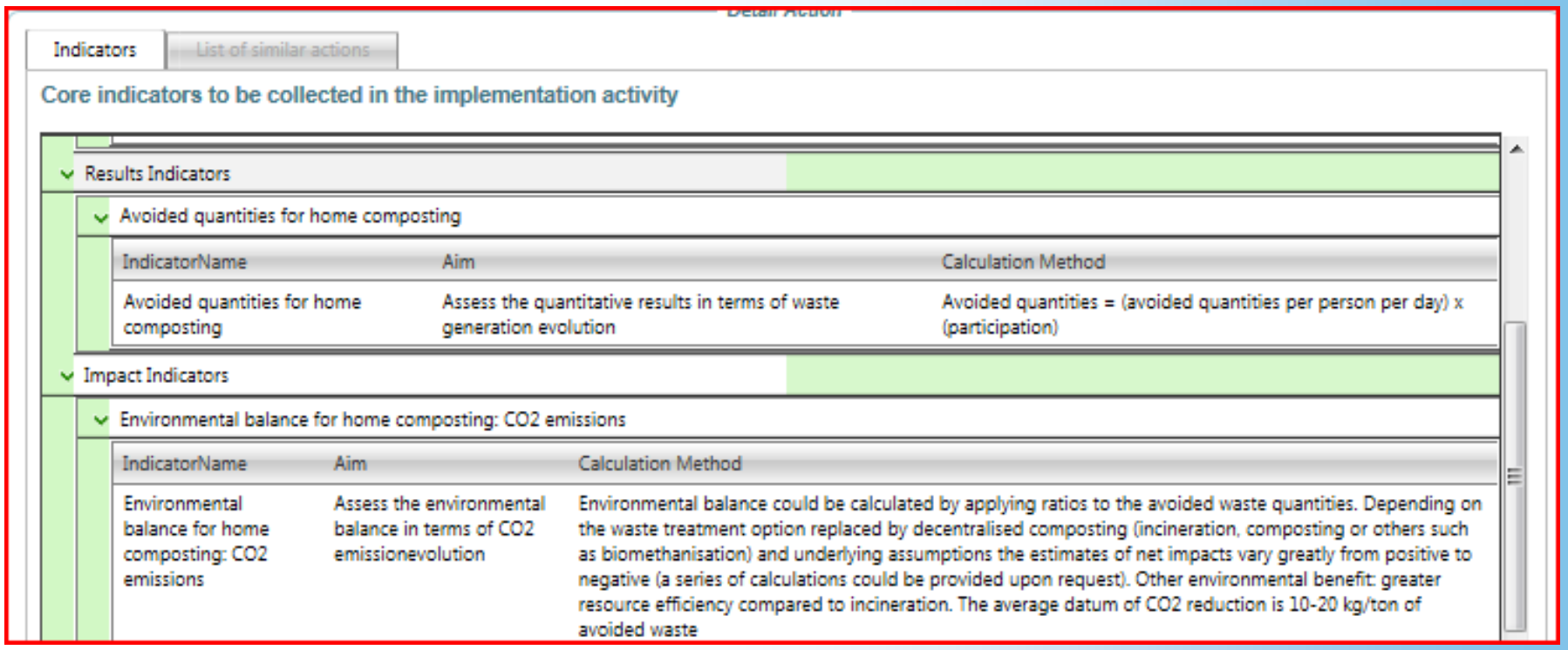
This part provides users with a set of indicators linked to the waste prevention specific action he is interested in and examples of existing similar action (Pre-waste best and good practices)

Sections to expand:



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').



Indicators | List of similar actions

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 emissionevolution	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

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:

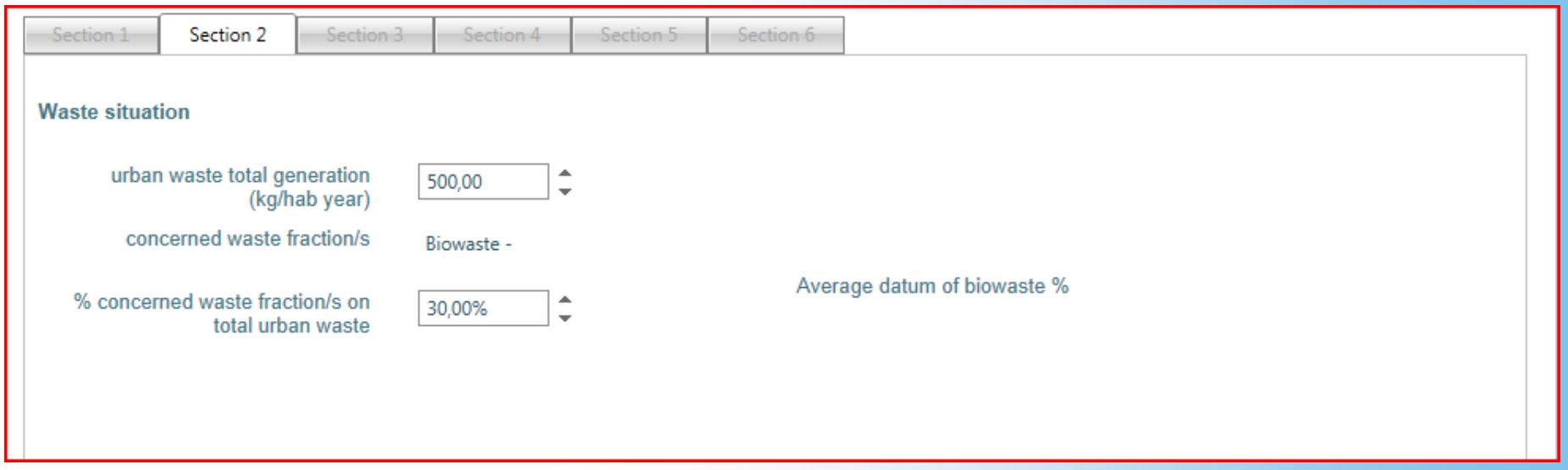
- Section 1: Territory and target
- Section 2: Waste situation
- Section 3: Waste prevention action – Categories
- Section 4: Waste prevention action – Resources
- Section 5: Waste prevention action – Results
- Section 6: Waste prevention action – Impacts

Monitoring simulation

We have:

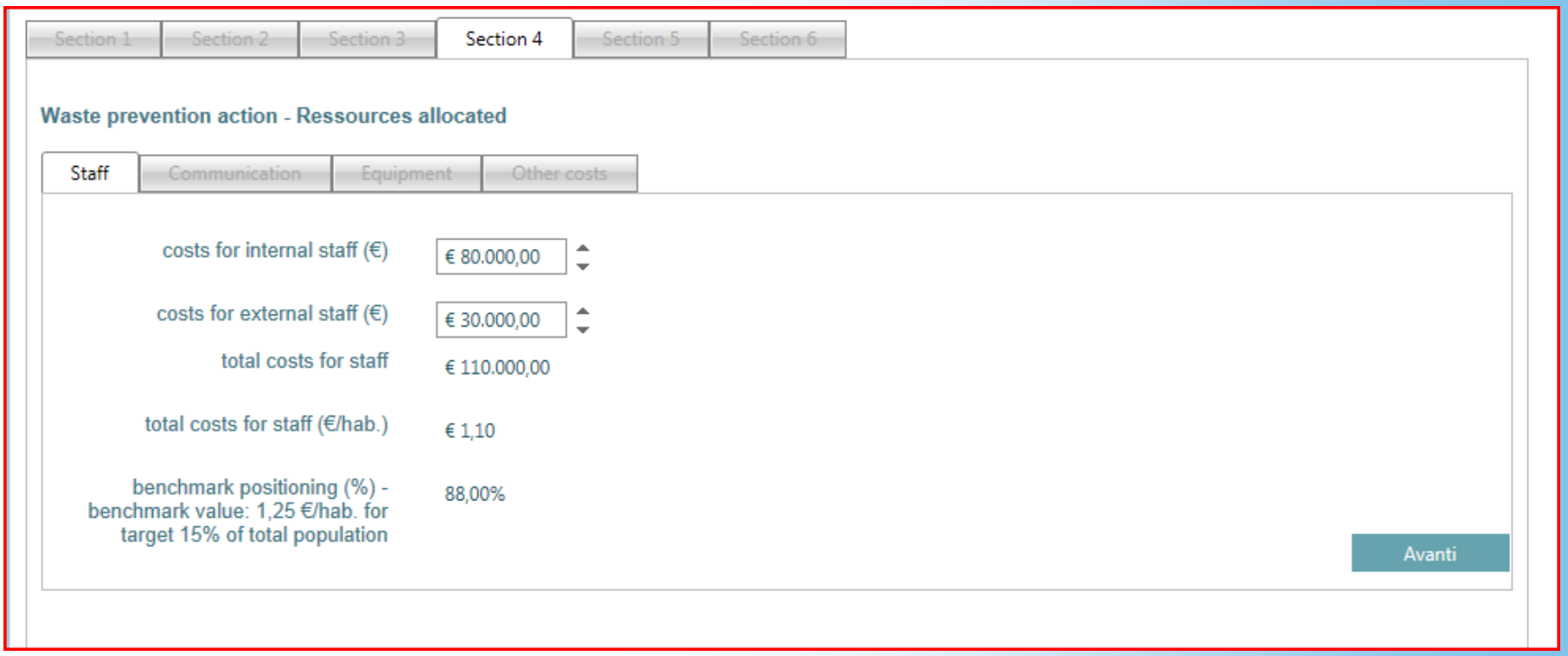
- data to insert by the users (sometime default data, amendable)
- data calculated by the webtool
- benchmark data for comparison

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



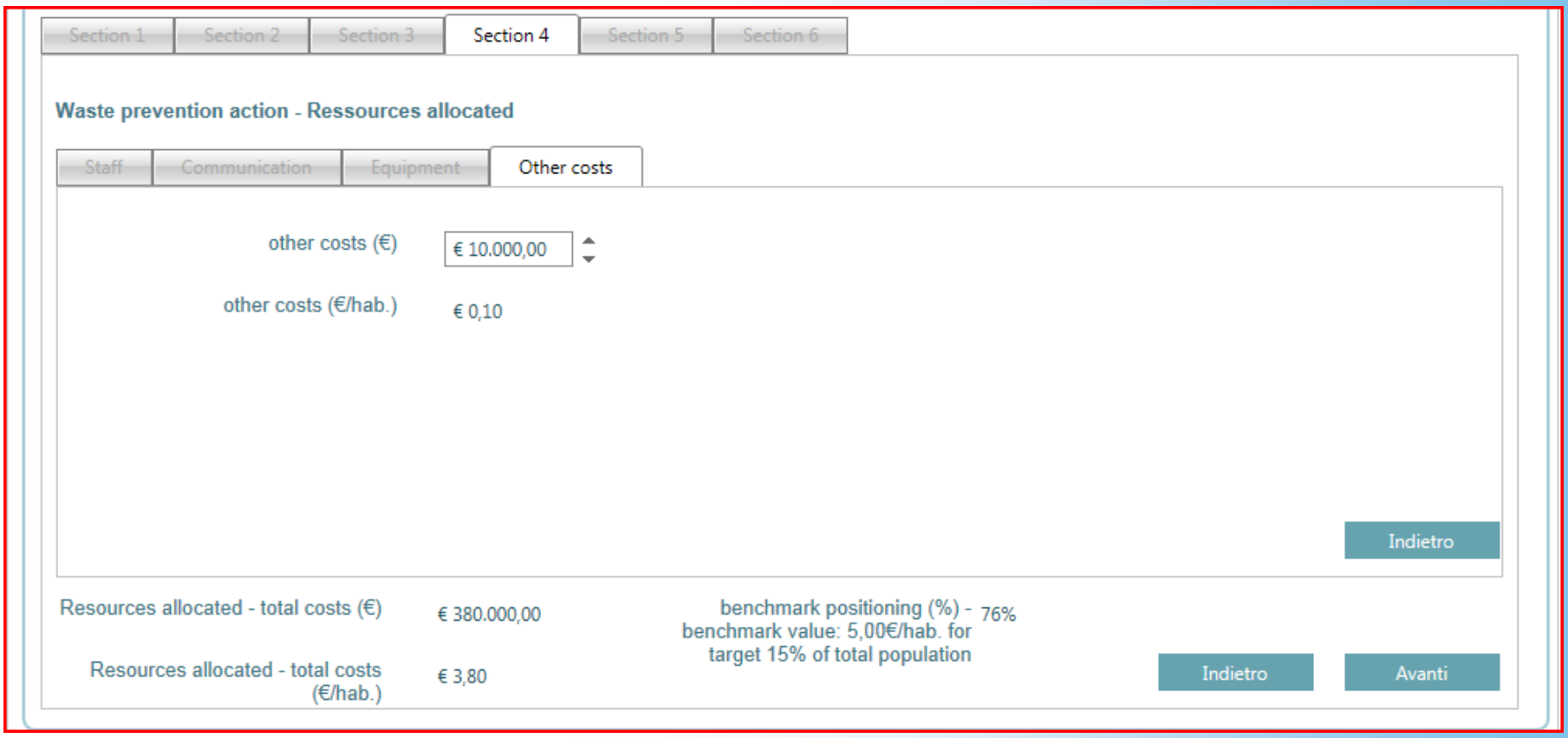
Monitoring simulation

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)



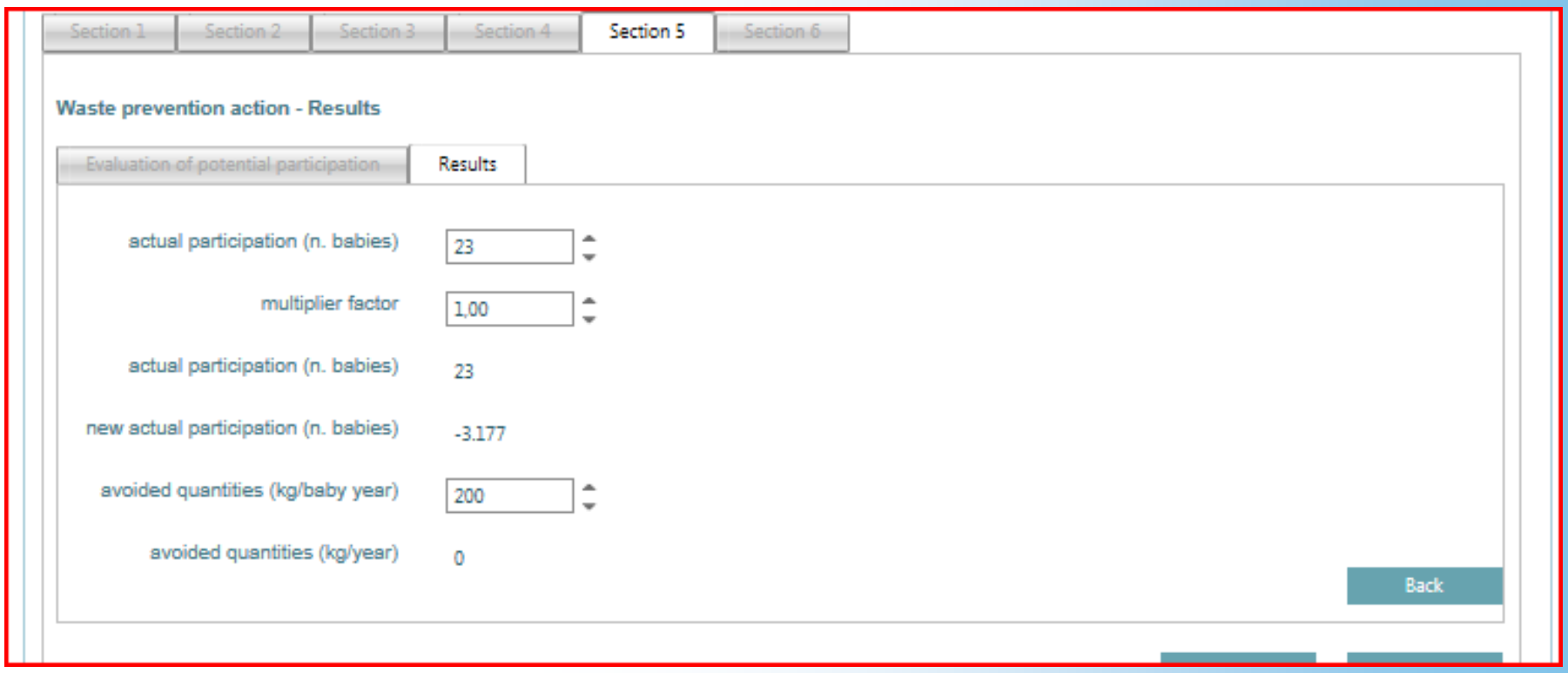
Monitoring simulation

The tool calculates total costs and compares them with relative benchmark



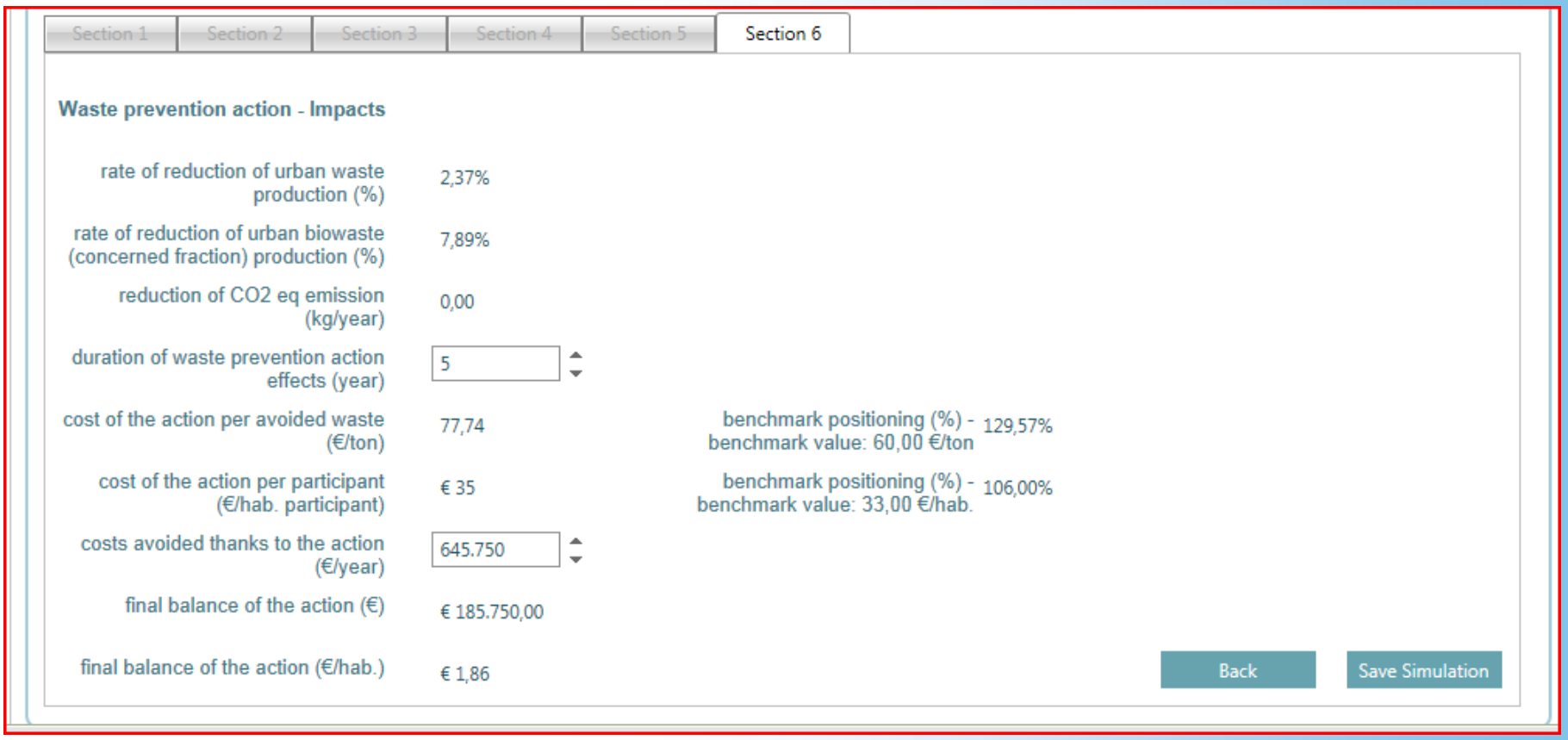
Monitoring calculation

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



Monitoring simulation

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



4. Some conclusions

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

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

Thank you for your attention!

Contact:
Philippe Micheaux Naudet
pmn@acrplus.org

www.acrplus.org