FRESH WEBINAR 3/2019

Managing Operation and Maintenance – what does it take to reach the SDGs for WASH in Schools?

Dr. Bella Monse, Ing. Ubo Pakes, Jan Schlenk

Agenda

- WinS within the SDGs, Targets and Indicators – What does it take to reach them?
- O&M Concept for Wins: Use it! Clean it! Maintain it! – Introducing a tool to estimate cost for O&M
- The development of the O&M Costing Tool App
- Q&A Session

SDG target for Wins

	Drinking water	Sanitation	Hygiene
	Advanced service *Additional criteria may include quality, quantity, continuity, and accessibility to all users*	**Advanced service** *Additional criteria may include student per toilet ratios, menstrual hygiene facilities, cleanliness, accessibility to all users, and excreta management systems*	**Advanced service** *Additional criteria may include hygiene education, group handwashing, menstrual hygiene materials, and accessibility to all users*
SDG Target	**Basic service** Drinking water from an improved source is available at the school	**Basic service** Improved facilities, which are single-sex and usable at the school	**Basic service** Handwashing facilities, which have water and soap available
	Limited service There is an improved source (piped water, protected well/spring, rainwater, bottled water), but water not available at time of survey	**Limited service** There are improved facilities (flush/pour flush, pit latrine with slab, composting toilet), but not sex-separated or not usable	**Limited service** Handwashing facilities with water, but no soap
	No service No water source or unimproved source (unprotected well/spring, tanker-truck surface water source)	**No service** No toilets or latrines, or unimproved facilities (pit latrines without a slab or platform, hanging latrines, bucket latrines)	**No service** No handwashing facilities at the school or handwashing facilities with no water

All schools should reach Basic WASH Service by 2030

Basic drinking water

Drinking water from an **improved** source is **available** at the school

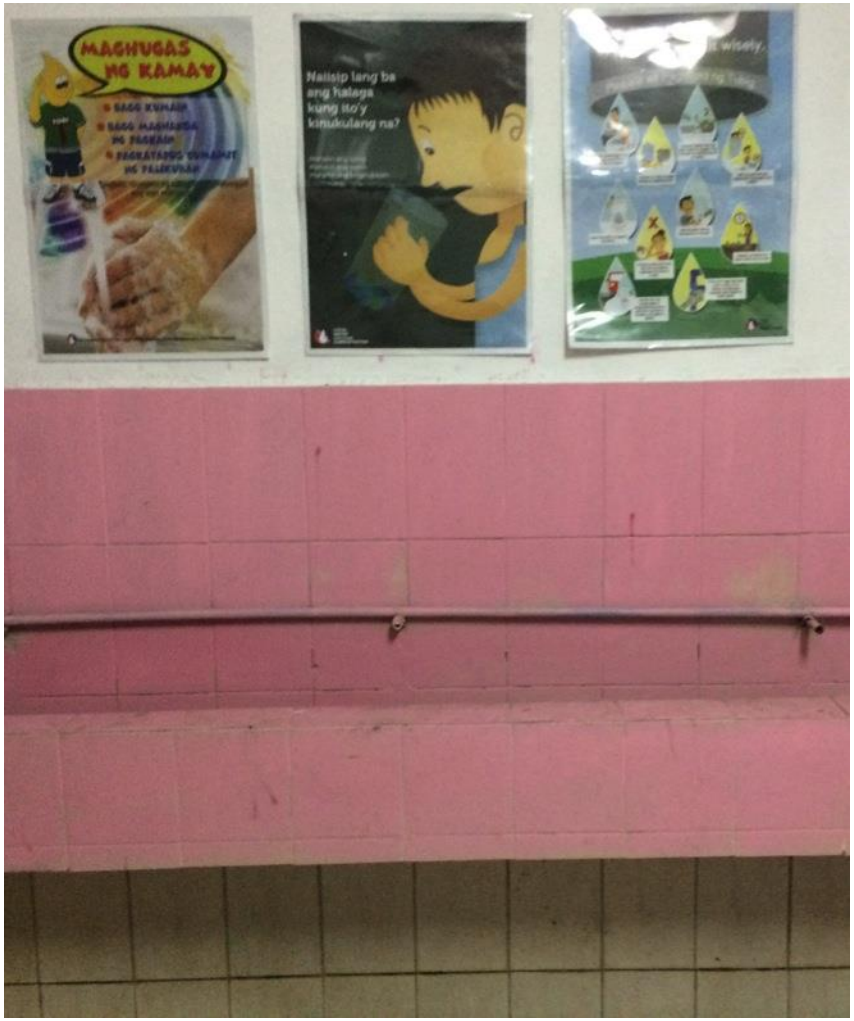
Basic sanitation

Improved facilities, which are single-sex and usable (**accessible, functional, private**) at the school

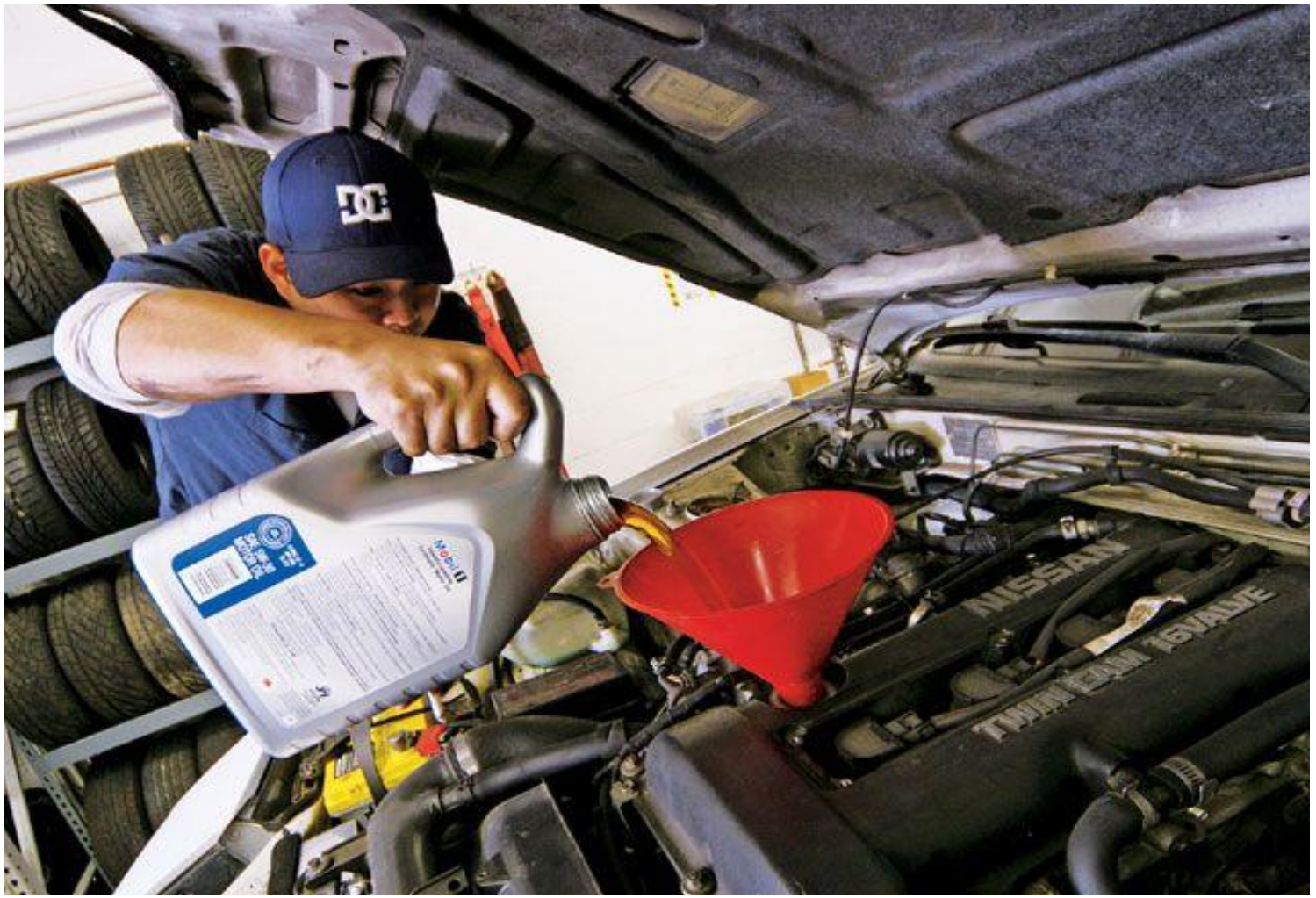
Basic handwashing

Handwashing facility with **water and soap** at the school

SDGs and Reality – O&M is a management task for the school



O&M – essential to sustain functionality



Cost for O&M depends on type of facility

Type of toilet impact on Cost for O&M

Photo Credit: Mohini Venkatesh

How do Infrastructure standards influence resources needed for O&M?

Water	Pond	Borehole with electric Pump	Piped
O&M Costs	$	$$	$$$
SANITATION	**Pit latrine**	**Pour Flush**	**Cistern Flush**
O&M Costs	$	$$	$$$
HYGIENE	**Tippy tap**	**WASHaLot**	**Basin and faucet**
O&M Costs	$	$$	$$$

Calculating Costs for O&M
What to count in?

- This costing framework calculates the cost for a **desired O&M status**.
- The tool helps to calculate and plan for cost
- Cost estimation is the base for **budget allocation and resource mobilization.**

What are the cost to **keep WinS running**?

- The presented costing tool is intended to define the need and calculate the cost for O&M.

- The calculations are based on the assumption that the infrastructure is functional and access to water is given. **Major, unpredictable repairs are not part of this planning tool.**

- Cost depend on local setting with huge variety even within countries

- Government funds for O&M are allocated per school based on number of children and vary between countries

WinS O&M Cost Calculation - in response to SDGs and National Guidelines

Categories	Needs / Input
WATER	
For drinking	1 Liter drinking Water per Day / Student
For Cleaning and hygiene	5 Liter per Day / Student
SANITATION	
User Kit	Materials
Cleaning kit	
HYGIENE	
Consumables	180 g Soap / Student / per year

Cleaning and Maintenance – what does it take?

Tools

Communal and Cubical

Cleaning agent

Labor for Cleaning

User kit and Cleaning kit

Interviews, observation and focus group discussion resulted to identification of these kits:

- **User kit**: 1 trash bin, 1toilet brush, 1 dipper/mug

– sufficient for the usage of 1 toilet cubicle for one year

- **Cleaning kit**: 1 floor brush, 2 brooms, 1 bucket, 10 sponges, 5 hand gloves and 50 face mask

– sufficient to regularly clean 3 toilet cubicles for one year

User Kit - 6 $ per cubicle/ year

Cleaning Kit – 30$ per toilet block = 10$ per toilet cubicle/ year

Cleaning agent – 15$ - 25 $ / toilet / year

Maintenance Kit – 9 $ / toilet / year

Base for calculation: User kit / Cleaning kit per year

Tools needed (replenishment recommended once a year)		
User kit per cubicle	1 Trash Bin1 Toilet Brush 1 Dipper/ Mug	6 $
1 Cleaning kit for 3 toilet cubicles	1 Floor Brush 2 Brooms 1 Bucket 10 Sponge	17 $
	5 x Hand Gloves 50 Face Masks	13$
	For 1 Cubical	**10 $**
	TOTAL	**16 $**

Base for calculation: cleaning per cubicle/ year

Cleaning agent/ bleach	• 30 ml for inside of toilet bowl • 35 ml diluted to water for cleaning other surfaces and fixtures for toilet block • (65 ml x 200 days = 13 l)	Average price per liter 1,80 $ = **23 $**

What is needed to **keep a toilet clean** and how much does it cost per cubicle /year?

Costs per year (Cleaning 1 Cubical)	
Materials for user kit	6 $
Tools for cleaning kit	10 $
	16 $
Cleaning agents	23 $
Total Materials	**39 $**

*Costs based on Philippine Market Prices

O&M cost per child per year

WATER			
For drinking	1 Liter drinking Water per day / Student (huge variation in cost)	0,12 $	**0,72 $**
For cleaning	5 Liter per day / Student	0,60 $	
SANITATION			
Materials	User kit per cubicle / year Cleaning kit per cubicle / year Cleaning agent / bleach per cubicle / year	0,12 $ 0,20 $ 0,47 $	**0,79 $**
HYGIENE			
Consumables	180 g Soap / Student		**0,50 $**
Total			**2,01 $**

Resource Mapping within School community

Checklists support developing Routine

Transparent responsibility for supervision

Toilet Checklist

Supervising Teacher: Maria de Guzman Week: 25

Toilet Cleaned

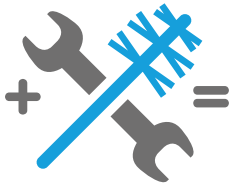
	Time	Name and Signature	Remarks
Monday	3:13 pm	Edward Dy	Faucet cannot be fully closed and leaking
Tuesday	3:05 pm	Lovely Reyes	Some toilets were not flushed
Wednesday	3:34 pm	Ryan Dinlayan	OK
Thursday	3:10 pm	Lani Grace Chavez	No water. Faucet under repair. Need fetch.
Friday	3:19 pm	Edwin Crusio	OK

Hygiene Patrol (yes/ no)

		Water available	Soap available	Trash bin available	Toilet brush available	Dipper / bucket available	Name and Signature	Remarks
Monday	AM	Yes	No	Yes	Yes	Yes	Mac Escudero	New soap made available
	PM	Yes	Yes	Yes	Yes	no Dipper	Mac Escudero	Dipper missing.
Tuesday	AM	Yes	Yes	Yes	Yes	Yes	Ellen Nobi	Water leaking

- Regular visual inspection by school head and teachers
- Assignment of supervision areas
- Routine checklist and SOP for Cleaning and Maintenance

Cleaning following Standard Procedure



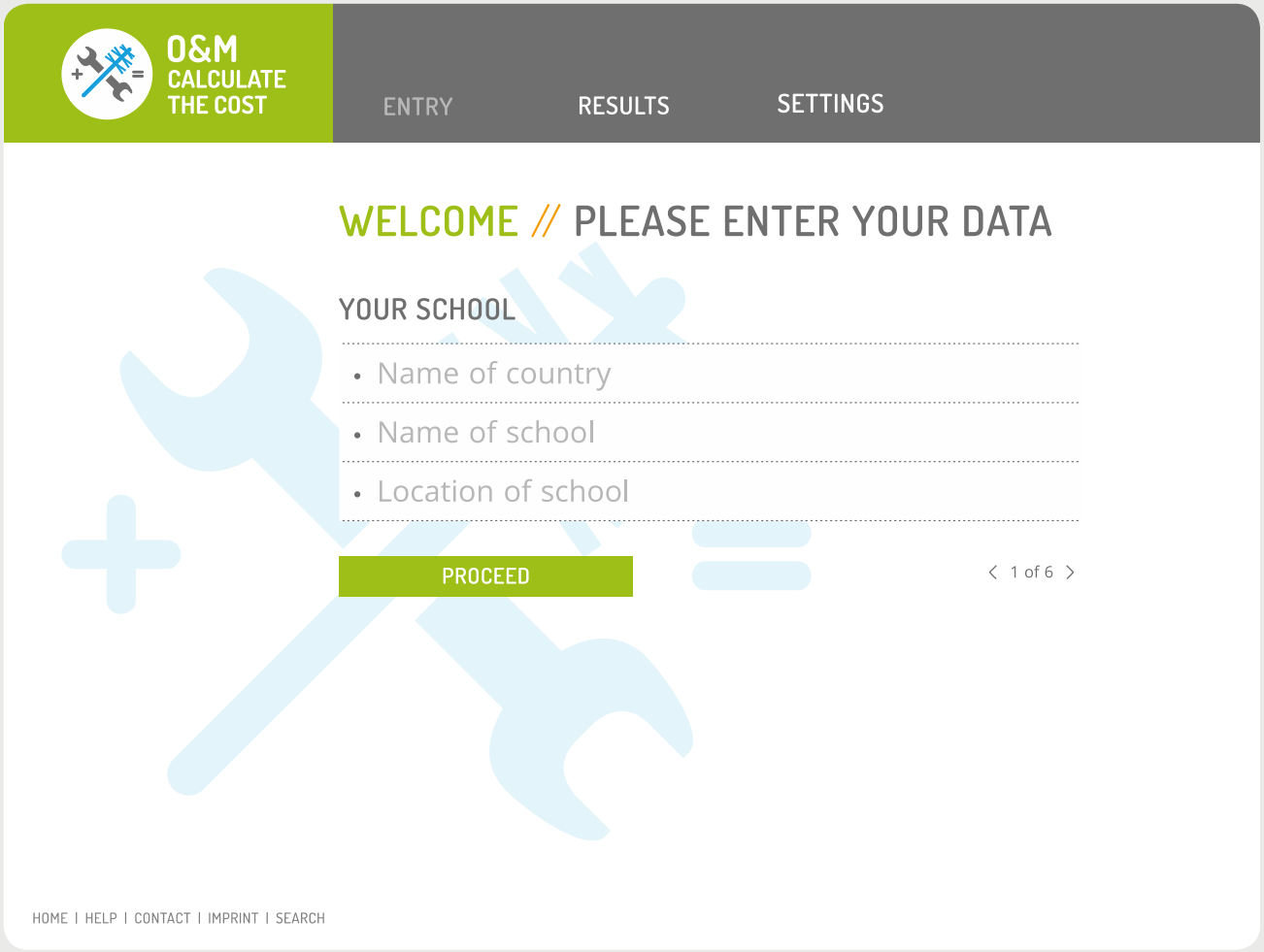
O&M
CALCULATE THE COST

german cooperation
DEUTSCHE ZUSAMMENARBEIT

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

sustainable sanitation alliance

FIT FOR SCHOOL


O&M
CALCULATE
THE COST
ENTRY
RESULTS
SETTINGS
WELCOME // PLEASE ENTER YOUR DATA
YOUR SCHOOL
• Name of country
• Name of school
• Location of school
PROCEED
1 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH

O&M
CALCULATE
THE COST

ENTRY RESULTS SETTINGS

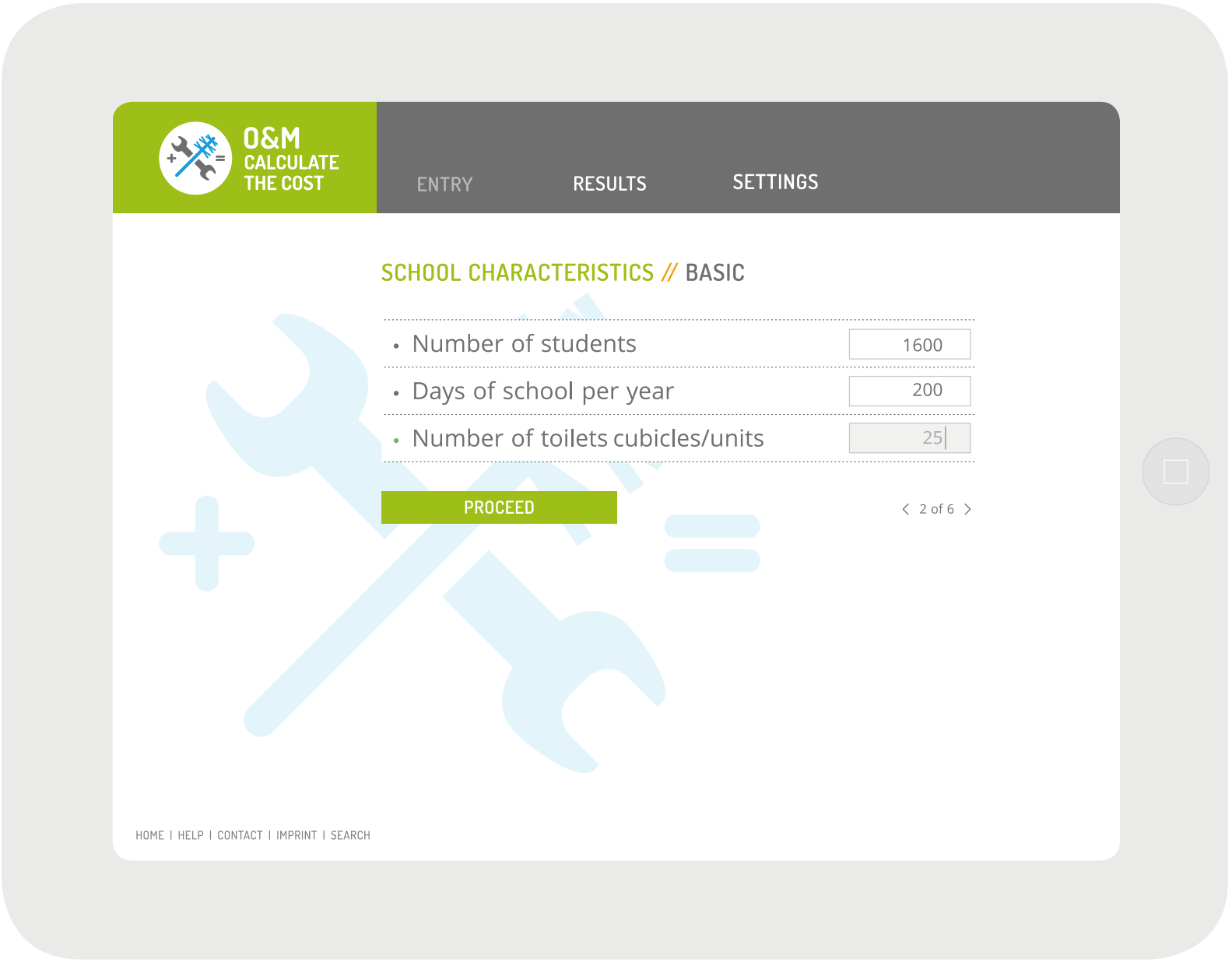
SCHOOL CHARACTERISTICS // BASIC

- Number of students: 1600
- Days of school per year: 200
- Number of toilets cubicles/units: 25

PROCEED

< 2 of 6 >

HOME | HELP | CONTACT | IMPRINT | SEARCH


O&M
CALCULATE
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ENTRY
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SETTINGS
SCHOOL CHARACTERISTICS // BASIC
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• Days of school per year
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• Number of toilets cubicles/units
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PROCEED
2 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH

O&M
CALCULATE
THE COST

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SCHOOL CHARACTERISTICS // BASIC

- Number of students: 1600
- Days of school per year: 200
- Number of toilets cubicles/units: 32

PROCEED

< 2 of 6 >

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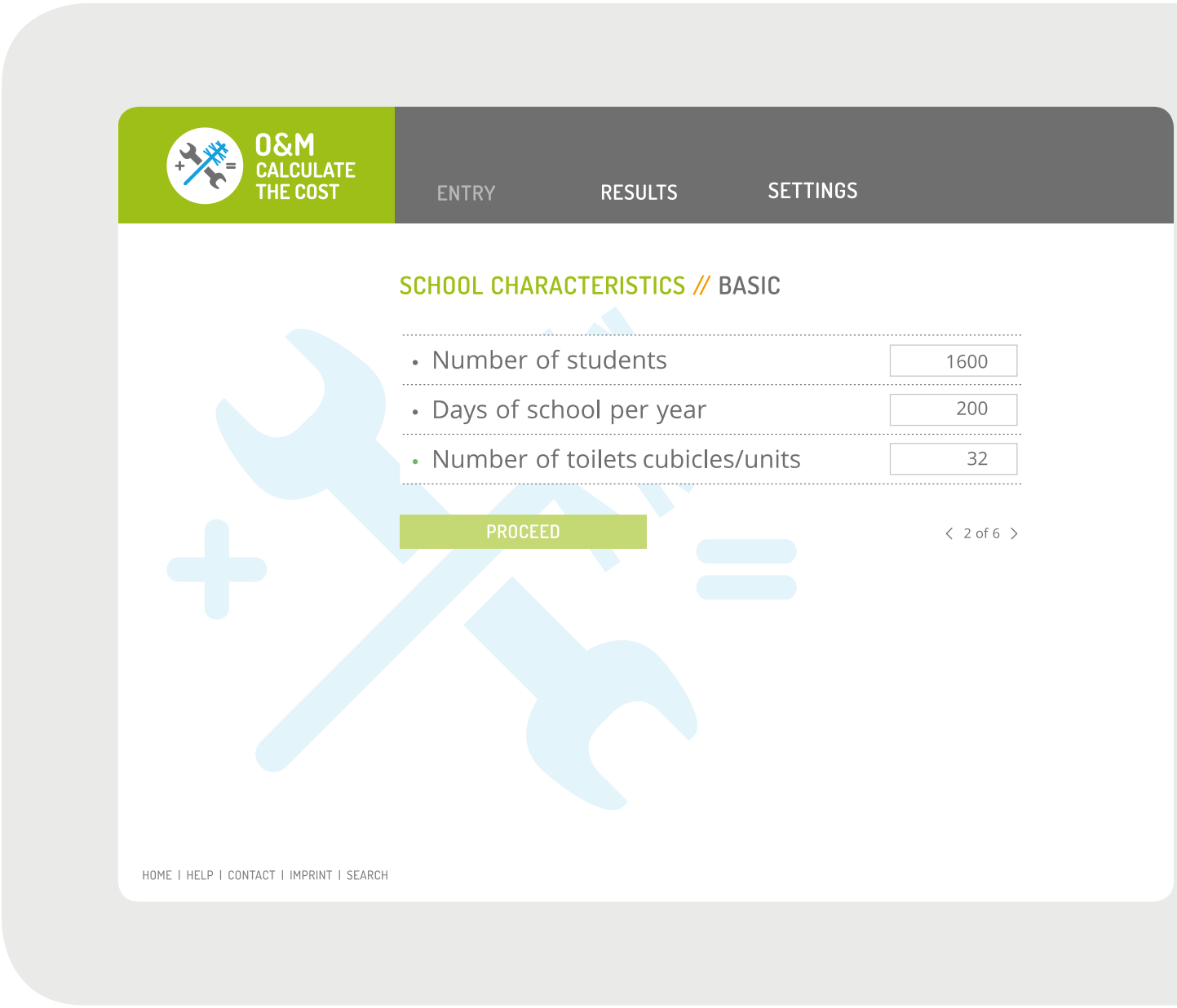
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PROCEED
2 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH

O&M
CALCULATE
THE COST

ENTRY RESULTS SETTINGS

SCHOOL CHARACTERISTICS // DRINKING WATER SUPPLY

- Piped water supply ☐
- Protected well/spring ☐
- Rainwater ☐
- Unprotected well/spring ☐
- Packaged bottled water ☐
- Tank-truck or cart ☐
- Refill drinking water station ☐
- No water source ☐
- Other ☐

PROCEED

< 3 of 6 >

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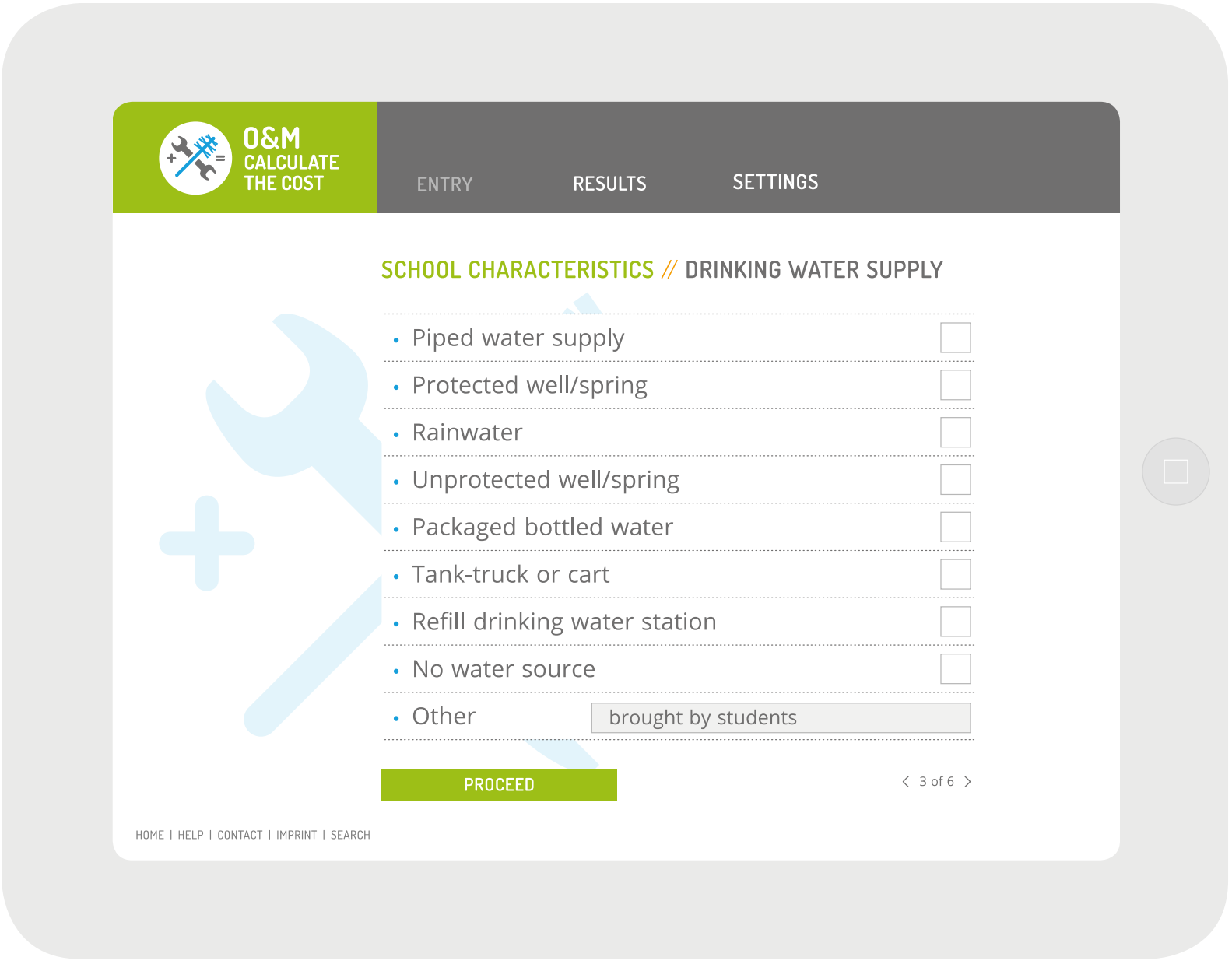
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• Rainwater
• Unprotected well/spring
• Packaged bottled water
• Tank-truck or cart
• Refill drinking water station
• No water source
• Other
brought by students
PROCEED
3 of 6
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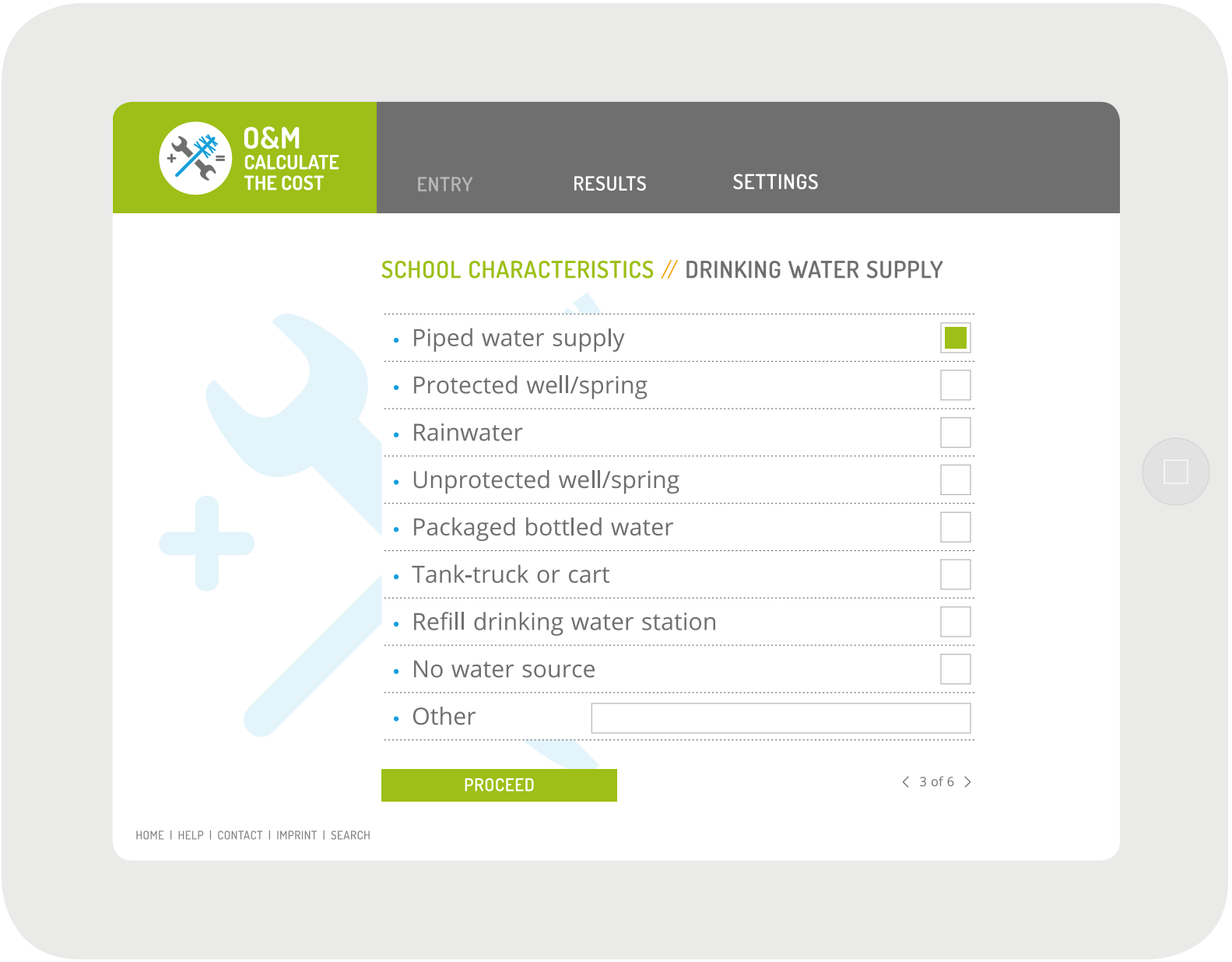
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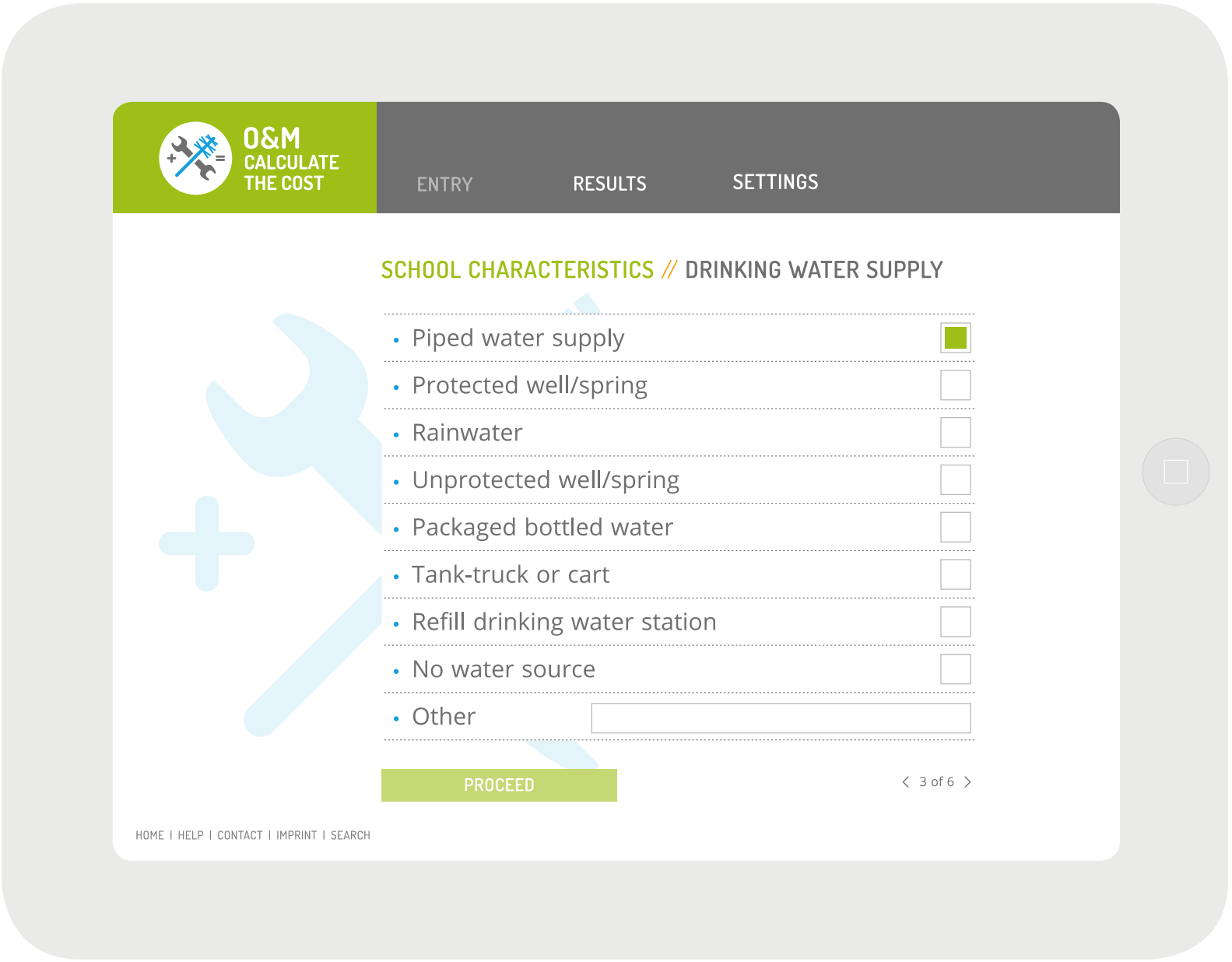
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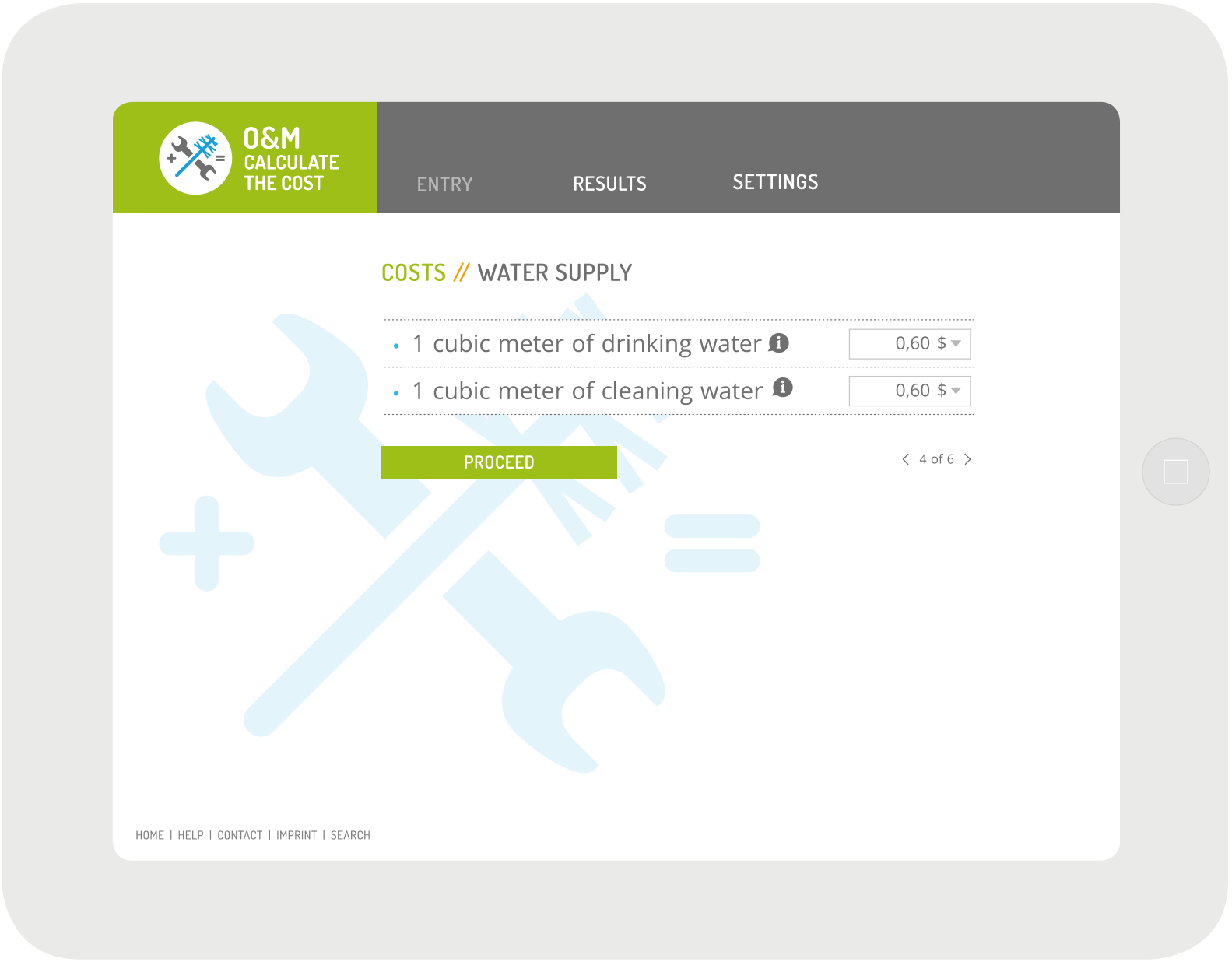
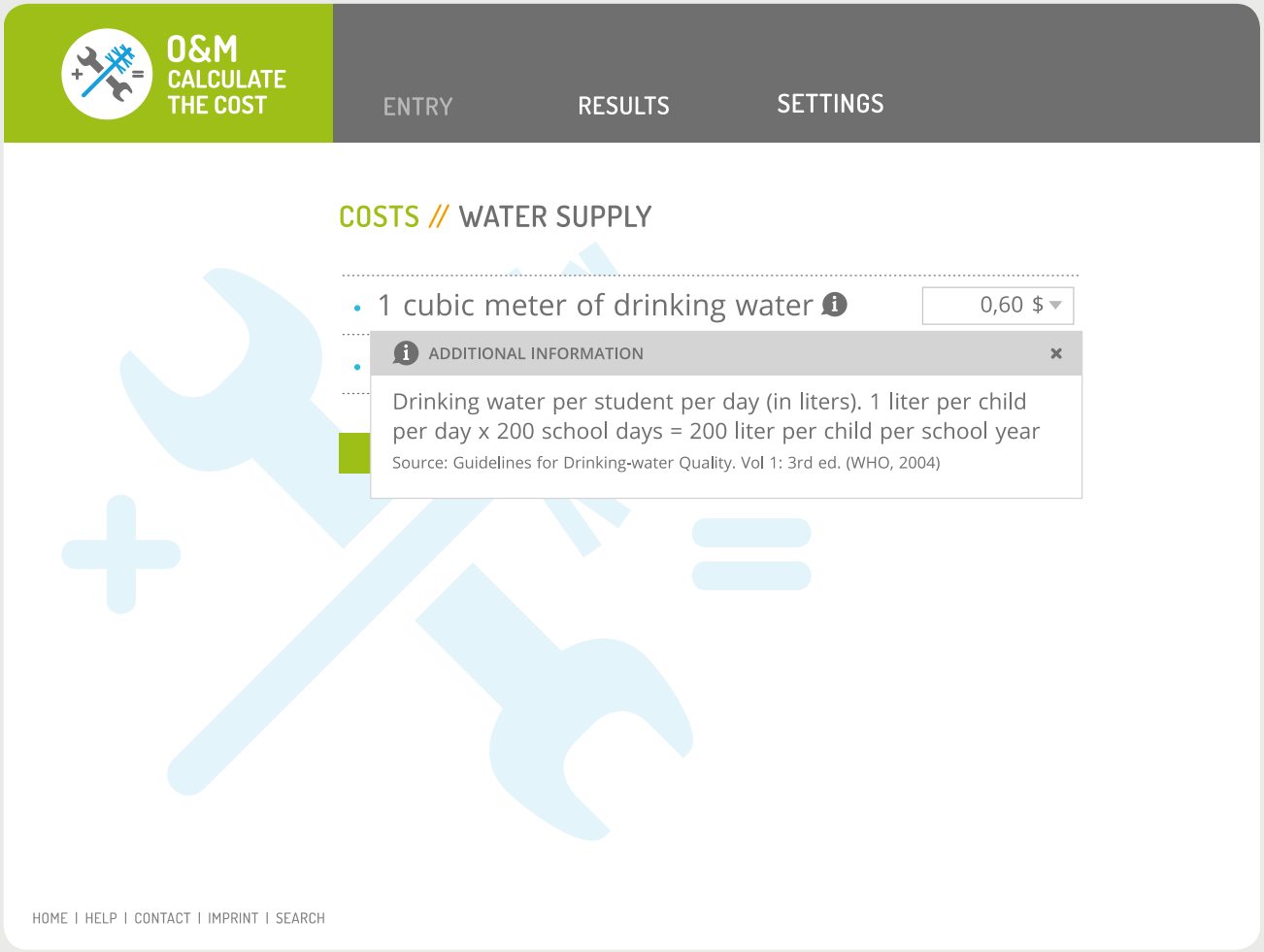

O&M
CALCULATE
THE COST
ENTRY
RESULTS
SETTINGS
COSTS // WATER SUPPLY
• 1 cubic meter of drinking water
0,60 $
• 1 cubic meter of cleaning water
0,60 $
PROCEED
4 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH


O&M
CALCULATE
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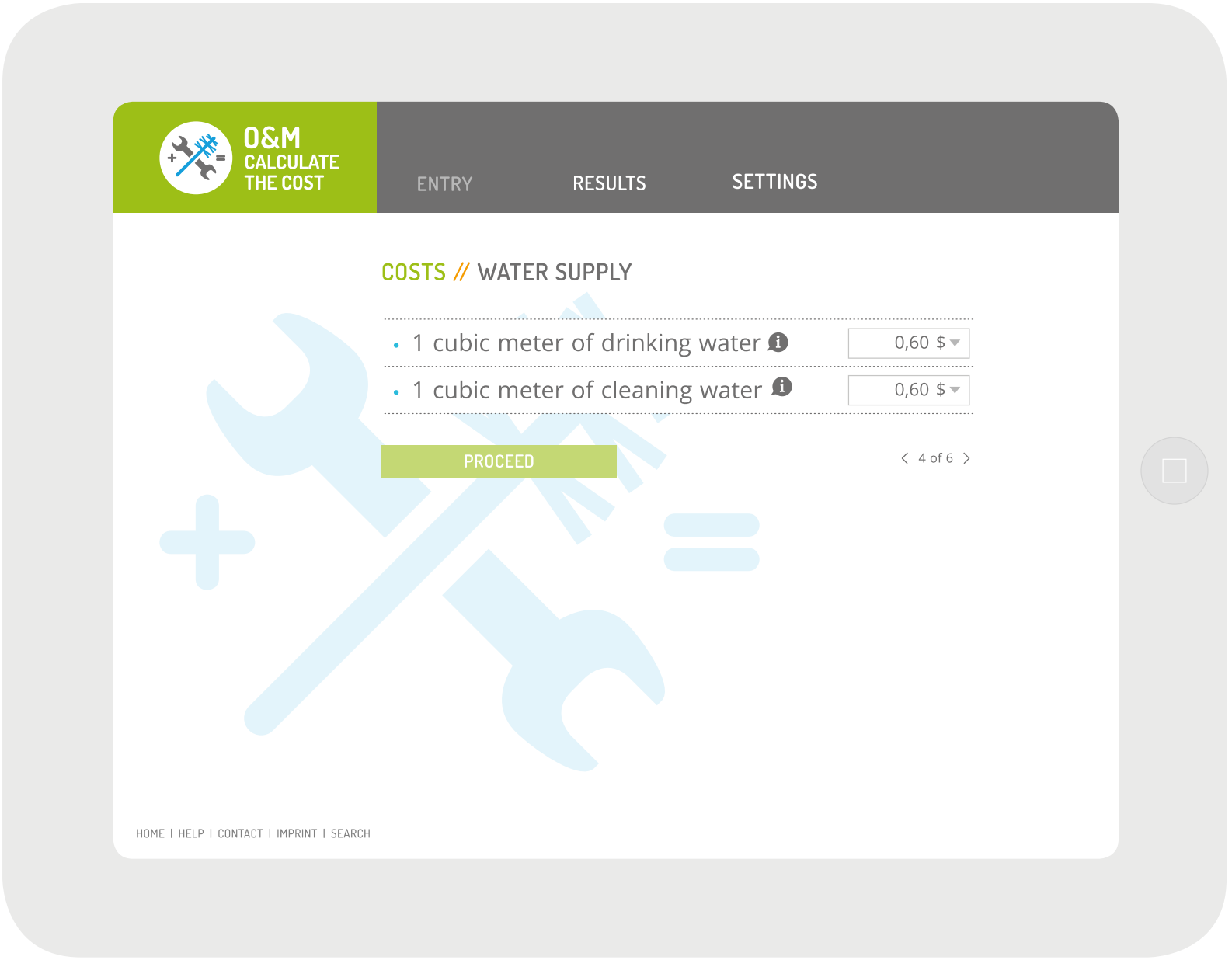
SETTINGS
COSTS // WATER SUPPLY
1 cubic meter of drinking water
0,60 $
ADDITIONAL INFORMATION
Drinking water per student per day (in liters). 1 liter per child per day x 200 school days = 200 liter per child per school year
Source: Guidelines for Drinking-water Quality. Vol 1: 3rd ed. (WHO, 2004)
HOME | HELP | CONTACT | IMPRINT | SEARCH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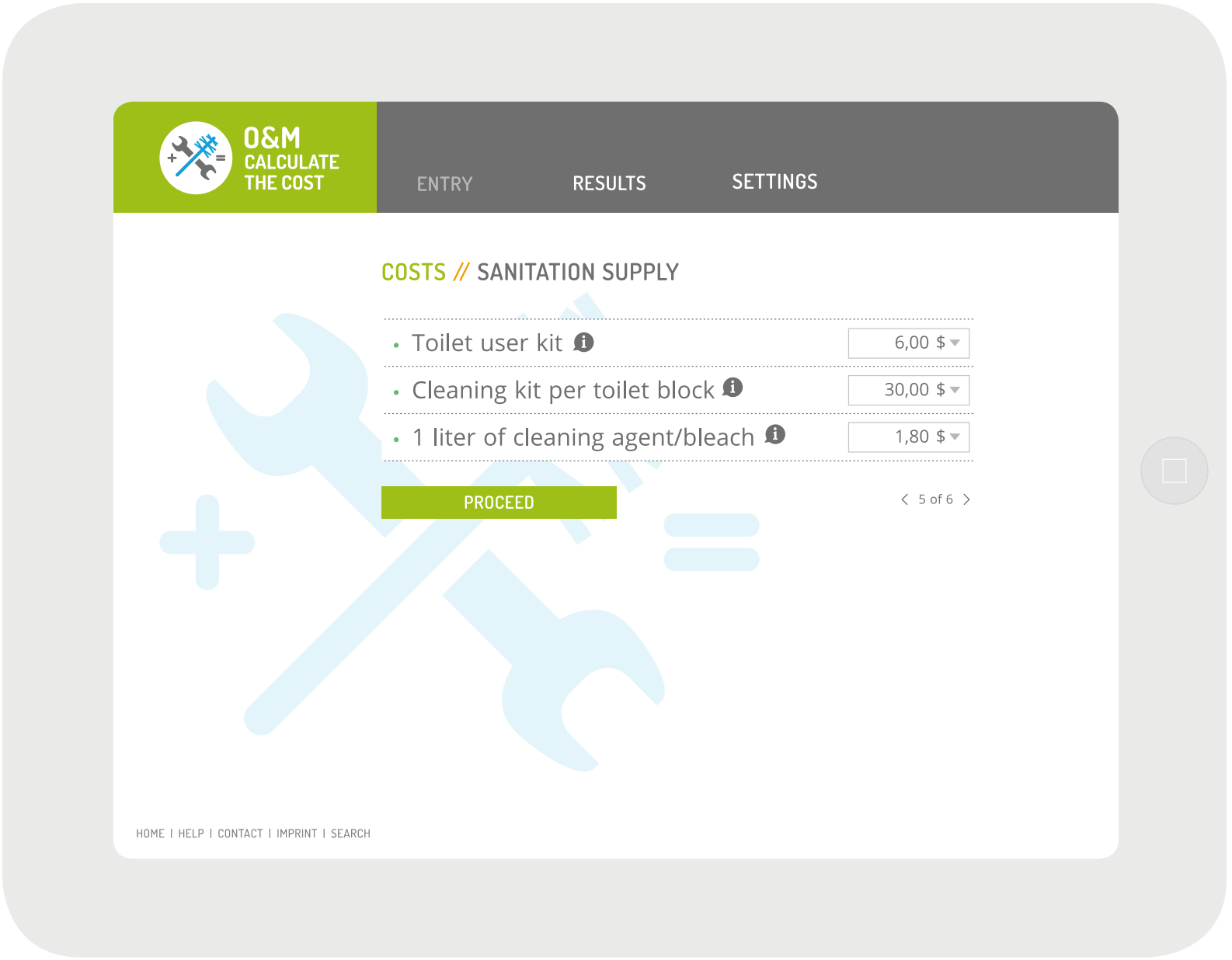
O&M
CALCULATE
THE COST
ENTRY
RESULTS
SETTINGS
COSTS // SANITATION SUPPLY
• Toilet user kit
6,00 $
• Cleaning kit per toilet block
30,00 $
• 1 liter of cleaning agent/bleach
1,80 $
PROCEED
5 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH


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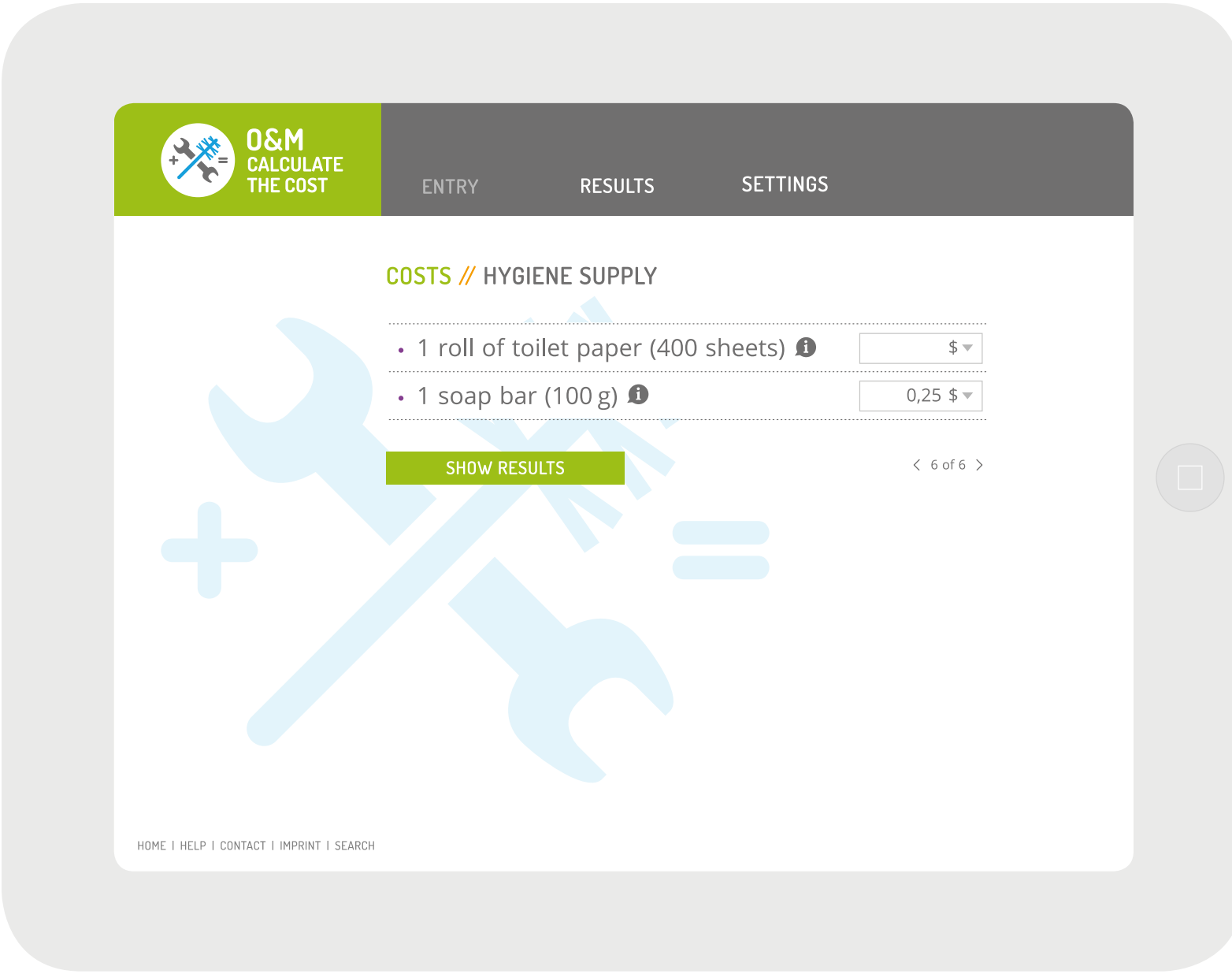
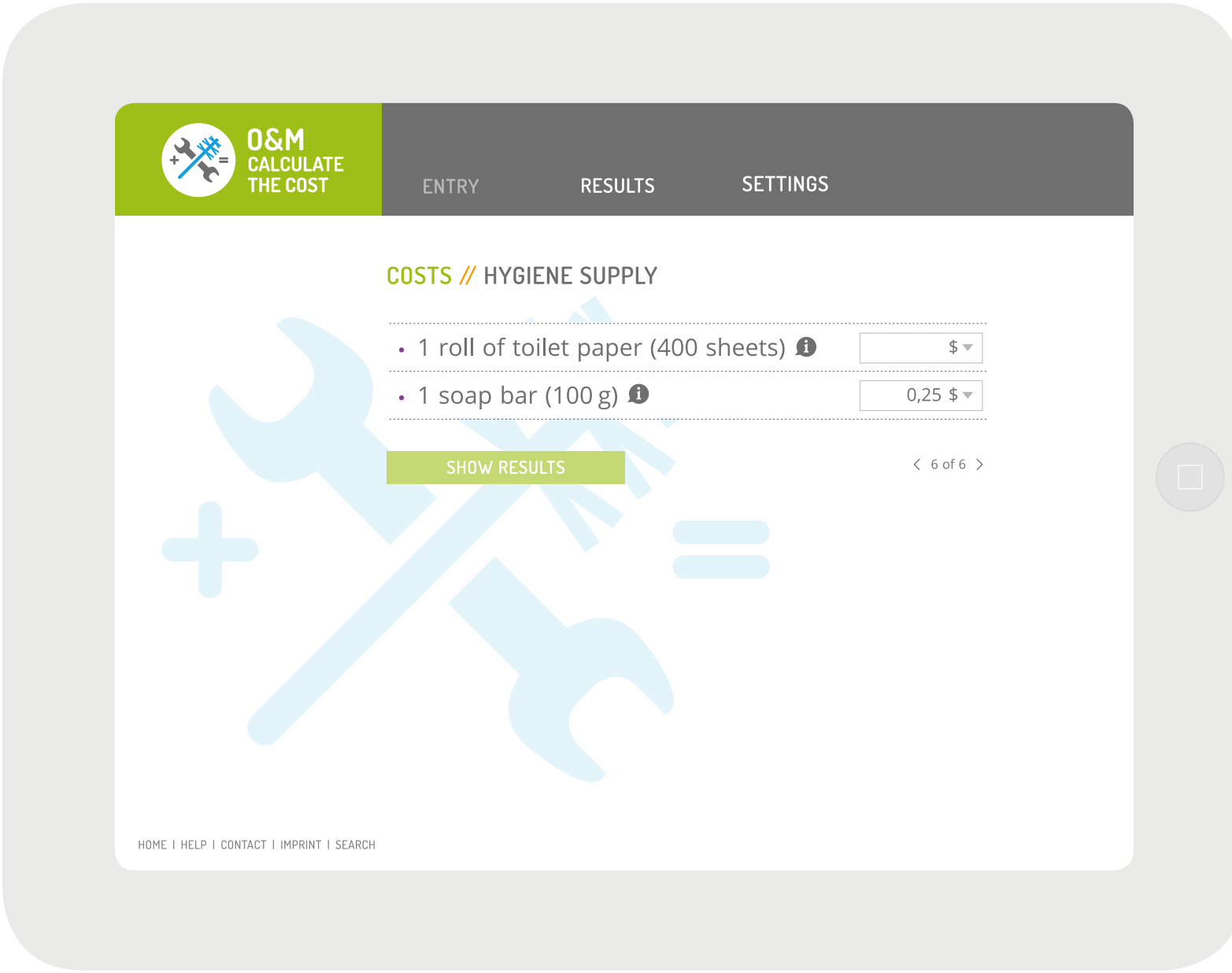

O&M
CALCULATE
THE COST
ENTRY
RESULTS
SETTINGS
COSTS // HYGIENE SUPPLY
• 1 roll of toilet paper (400 sheets)
$
• 1 soap bar (100 g)
0,25 $
SHOW RESULTS
6 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH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SHOW RESULTS
6 of 6
HOME | HELP | CONTACT | IMPRINT | SEARCH

O&M CALCULATE THE COST

ENTRY | RESULTS | SETTINGS

RESULTS // COSTS FOR O&M

	Per unit	Total per school year	Per student per school year
WATER SUPPLY			
• Drinking Water (in liters)	0,0006 $	192,00 $	0,12 $
• Cleaning Water (in liters)	0,0006 $	960,00 $	0,60 $
SANITATION SUPPLY			
• Toilet user kit	6,00 $	192,00 $	0,12 $
• Cleaning kit	30,00 $	320,00 $	0,20 $
• Cleaning agent/bleach (in liters)	1,80 $	748,80 $	0,47 $
HYGIENE SUPPLY			
• Toilet paper (per roll)	– $	– $	– $
• Soap bar (100 g)	0,25 $	800,00 $	0,50 $
TOTAL		3.212,80 $	2,01s $

SHOW DETAILED RESULTS

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Management of O&M – take home message

- O&M is essential but totally underrated!
- Cleaning and Maintenance is at least of same importance as innovation and new construction
- Transparent assignment or areas of supervision / responsibility is of utmost importance
- Type of infrastructure determines O&M cost
- Keeping a toilet usable (clean and functional) takes 30$ - 50$ / year
- Strong advocacy needed for long term solution: Allocation of sufficient budget for O&M within government systems

More ressources

WASH IN SCHOOLS OPERATION AND MAINTENANCE MANUAL 2017.PDF (2.05 MB)

This manual supports schools with practical approaches on how to improve usability of school toilets.

Download:
http://www.fitforschool.international/resource/wash-in-schools-operation-maintenance-manual/

Thank you

www.fitforschool.international

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Responsible
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