Supplementary information

Table S.1: TCO calculations for six scenarios

Scenario 1

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m^3]
Clean water buffer (2)	5000 m^3	983080	1356650	79019	33916						1.76
Raw water buffer (concrete pond)	14000 m^3	316967	437414	25477	10935						0.57
Self cleaning filters	10 m^3/uur	9750	13455	784	336	77					0.02
RO membrane unit	400 m^2	40000	55200	3215	1380	47	13	1200			0.09
Conditioning / pH correction	1.25 m^2	13500	18630	1085	466	256			50		0.03
UV disinfection	10 m^3/uur	3900	5382	313	135	256	0			32	0.01
Distribution pump	15 m^3/uur	2659	3669	214	92	77					0.01
Absolute filter	0.73 m^2	759	1047	61	26						0.00
Building	50 m^2	10000	13800	804	345						0.02
Staff	6720 €/jaar										0.10
PLC	55000 €	55000	75900	4421	1898						0.10
Total		**1435615**	**1981148**	**115393**	**49529**	**713**	**13**	**1200**	**50**	**32**	**2.71**

Scenario 2

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m^3]
Clean water buffer (2)	5000 m^3	983080	1356650	79019	33916						1.76
Raw water buffer (concrete pond)	14000 m^3	316967	437414	25477	10935						0.57
Booster pump	10 m^3/uur	1500	2070	121	52						0.00
Rapid sand filter	1.25 m^2	13500	18630	1085	466	256			50		0.03
Peroxide dosing	0.3 L/uur	526	726	42	18	256	3394				0.06
UV / H_2O_2 AOP	10 m^3/uur	15300	21114	1230	528	38460	962			480	0.65
Activated carbon filter	1.65 m^2	15000	20700	1206	518	256			4950		0.11
pH correction	1.3 m^2	13500	18630	1085	466	256			50		0.03
Distribution pump	15 m^3/uur	2659	3669	214	92	77					0.01
Absolute filter	0.73 m^2	759	1047	61	26						0.00
Building	50 m^2	10000	13800	804	345						0.02
Staff	6720 €/jaar										0.10
PLC	55000 €	55000 €	75900	4421	1898						0.10
Total		**1427701**	**1970227**	**114757**	**49256**	**39563**	**4355**	**0**	**5050**	**480**	**3.43**

Scenario 3

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m³]
Clean water buffer (2)	20 m³	17291	23861	1390	597						19.86
Raw water buffer	12 m³	4800	6624	386	166						5.51
Self cleaning filter	1.25 m³/uur	3500	4830	281	121	0					4.02
RO membrane unit	40 m²	17500	24150	1407	604	1	0	160			21.71
Remineralisation / pH correction	1.25 m²	1500	2070	121	52	1			5		1.78
UV disinfection	1 m³/uur	1900	2622	153	66	1	0			3	2.22
Distribution pump	1 m³/uur	931	1285	75	32	0					1.07
Absolute filter	0.73 m²	759	1047	61	26						0.87
Building	10 m²	2000	2760	161	69						2.30
Staff	1440 €/jaar										14.40
PLC	10000 €	10000	13800	804	345						11.49
Distribution pump		**60181**	**83049**	**4837**	**2076**	**3**	**0**	**160**	**5**	**3**	**85.24**

Scenario 4

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m³]
Clean water buffer (2)	20 m³	17291	23861	1390	597						19.86
Raw water buffer	12 m³	4800	6624	386	166						5.51
Booster pump	1 m³/uur	500	690	40	17	0					0.57
Rapid sand filter	0.17 m²	1500	2070	121	52	1			7		1.79
Peroxide dosing	0.1 L/uur	426	588	34	15	1	1188				12.37
UV / H_2O_2 AOP	1 m³/uur	4300	5934	346	148	120	2				5.55
Activated carbon filter	0.17 m²	1400	1932	113	48	1			495		6.56
pH correction	0.13 m²	1500	2070	121	52	1			5		1.78
Distribution pump	1 m³/uur	931	1285	75	32	0					1.07
Absolute filter	0.73 m²	759	1047	61	26						0.87
Building	10 m²	2000	2760	161	69						2.30
Staff	1440 €/jaar										14.40
PLC	10000 €	10.000	13800	804	345						11.49
Distribution pump		**45407**	**62661**	**3650**	**1567**	**123**	**1189**	**0**	**507**	**0**	**84.76**

Scenario 5

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m^3]
Clean water buffer	2 m^3	946	1305	76	33						1.09
Raw water buffer	20 m^3	2392	3302	192	83						2.75
Booster pump	0.01 m^3/uur	931	1285	75	32	0					1.07
Bag filter 25 μm	0.19 m^2	568	784	46	20	0			17.6		0.83
RO. activated carbon filtration & UV disinfection	0.01 m^3/uur	855	1222	71	31	1	0	210			3.12
Remineralisation / pH-correction	0.01 m^3/uur	58	81	5	2	1			58		0.66
Distribution pump	0.01 m^3/uur	931	1285	75	32	0					1.07
Absolute filter	0.73 m^2	759	1047	61	26						0.87
Building	4 m^2	800	1104	64	28						0.92
Staff	1440 €/jaar										14.40
PLC	10000 €	10000	13800	804	345						11.49
Distribution pump		**18271**	**25214**	**1469**	**630**	**2**	**0**	**210**	**76**	**0**	**38.27**

Scenario 6

Process	Dimensions	Building costs [€]	investments [€]	Interest & depreciation [€/y]	Operation and maintenance [€/y]	energy [€/y]	chemicals [€/y]	Membrane replacement [€/y]	Filter [€/y]	Lamp [€/y]	[€/m^3]
Clean water buffer	2 m^3	946	1305	76	33						1.09
Raw water buffer (concrete pond)	20 m^3	2392	3302	192	83						2.75
Booster pump	0.01 m^3/uur	931	1285	75	32	0					1.07
Bag filter 25 µm	0.19 m^2	568	784	46	20	0			17.6		0.83
Cartridge filter 5 µm	onbekend	116	160	9	4	1			7		0.21
Peroxide dosing	0.01 m^3/uur	500	690	40	17	1	32				0.90
UV / H_2O_2 AOP	0.01 m^3/uur	190	263	15	7	120	2				1.43
Activated carbon filter	onbekend	137	189	11	5	1			17		0.33
pH correction	onbekend	58	81	5	2	1			58		0.66
Distribution pump	0.01 m^3/uur	931	1285	75	32	0					1.07
Absolute filter	0.73 m^2	759	1047	61	26						0.87
Building	4 m^2	800	1104	64	28						0.92
Staff	1440 €/jaar										14.40
PLC	10000 €	10000	13800	804	345						11.49
Distribution pump		**18329**	**25294**	**1473**	**632**	**123**	**33**	**0**	**99**	**0**	**38.02**

Table S.2: comparison of composition of harvested rainwater and Malaysian [1] and Dutch drinking water standards [40]

parameter	unit	rainwater		Drinking water standards	
		Min.	Max.	Malaysia	The Netherlands
pH		3.10	11.40	6.5-9.0	7.0 – 9.5
Alkalinity	mg/L	0.50	61.00		
Hardness	mg/L	0.00	270.00	500.0	> 1 (mmol/L)
conductivity 25° C	µS/cm	3.00	1017.00		1250
Turbidity	NTU	0.20	303.50	5	4
Color	Mg/L Pt-Co	0.40	310.50	15.0	20
Total dissolved solids (TDS)	mg/L	1.00	750.00	1000.0	
Total suspended solids (TSS)	mg/L	1.00	153.00	*)	*0
Total solids (TS)	mg/L	20.00	200.00		
BOD	mg/L	0.00	3.00		
COD	mg/L	8.74	23.83		
TOC	mg/L	0.00	0.00	**)	**)
N	mg/L	0.45	1.92		
P	mg/L	0.21	50.00		
NH_3-N	mg/L	0.00	0.00	1.5	
NO_3^- – N	mg/L	0.00	72.40	10.0	50
NO_2^- - N	mg/L	0.00	2.45		0.1
Totaal N Kjeldhl	mg/L	0.00	0.00		
Dissolved O_2 (DO)	mg/L	4.41	6.79		>2000
Al	µg/L	80.20	336.00	200	200
NH_4^+	µg/L	0.00	35400.00		200
As	µg/L	0.00	27.10	10.0	10
B	µg/L	11.00	56.00		500
Ba	µg/L	0.00	11.20		
Cd	µg/L	0.00	0.40	3.0	5
Ca	µg/L	0.00	31150.00		
Cr	µg/L	0.00	4.80	50.0	50
Cl^-	µg/L	0.00	164000.00	250000.0	150000
Cu	µg/L	1.10	4500.00	1000.0	2000
F	µg/L	0.00	1000.00	600.0	1000
Fe	µg/L	0.00	1390.00	300.0	200
Pb	µg/L	2.00	271.00	10.0	10
Mg	µg/L	0.00	9350.00	150000	
Mn	µg/L	0.50	533.0	100.0	50
Hg	µg/L	0.00	0.00	1.0	1
Ni	µg/L	0.00	12.20	20.0	20
K	µg/L	0.00	8730.00		
PO_4^{3-} - P	µg/L	0.00	620.00		
Na	µg/L	0.00	32320.00	200000.0	150000
Zn	µg/L	0.50	3200.00	3000.0	3000

Table S.3: inorganic parameters in directly harvested rainwater (min., max., median), (min-max), (mean ± std. dev.)

Location	pH	Cl^- (mg/L)	SO_4^{2-} (mg/L)	NO_2^- (mg N/L)	NO_3^- (mg N/L)	Na^+ (mg/L)	sampler material	reference
Paris, city center	No data	0 – 140 – 2.5	0.2 – 65 - 3	0.01 – 0.33 – 0.04	0.1 – 38 - 2	0.1 – 81.5 – 1.4	PVC	[2]
Denizly, Turkey	6.66 – 7.645	No data	No data	No data	No data	No data	PE	[3]
Izmir. Turkey	5.6 – 6.5	2.8 - 4.1	1.5 - 2.7	No data	0.9 - 1.7	1.4 - 2.0	Polycarbonate and HDPE	[4]
Caatinga. Brazil	4.59 – 7.16	1.0- 15.3	0.2- 4.9	No data	0.1– 1.8	0.3 - 7.3	PE	[5]
Srinagar. India	5.06 – 7.69 – 6.53	0.0 - 4.4 - 1.5	0.8 – 6.4 – 12.2	No data	1.8 - 15.8 - 8.5	0.4 - 2.5 -1.0	PE	[6]
Mohan. India	4.21 – 6.93 – 5.25	0.2 – 1.6 - 0.6	0.0 – 3.4 - 1.3	No data	0.0 – 11.2 - 4.0	0.0 – 2.0 - 0.4	PE	[6]
Jodhpur. India	5.36 – 8.20 – 6.91	1.3 – 19.1 - 4.8	0.5 – 12.2 - 4.5	No data	0.2 – 16.3 - 6.7	0.9 – 9.3 - 3.1	PE	[6]
Allahabad	3.67 – 7.61 – 5.99	0.3 – 3.7 - 1.7	0.5 – 14.4 - 2.9	No data	2.7 – 19.1 - 7.6	0.6 – 5.1 - 1.9	PE	[6]
Nagpur	3.84 – 6.89 – 5.41	0.2 – 3.1 - 1.4	0.1 – 9.4 - 2.5	No data	0.2 – 13.5 - 4.7	0.3 – 1.9 - 0.9	PE	[6]
Pune	5.32 – 7.21 – 6.03	1.0 – 4.5 - 2.2	0.6 – 3.1 - 1.6	No data	1.0 – 8.8 - 3.1	0.1 – 2.7 - 1.3	PE	[6]
Visakhapatnan	4.01 – 6.94 – 5.28	0.6 – 10.5 - 4.7	0.0 – 10.9 - 3.5	No data	0.6 – 19.3 - 8.2	1.2 – 8.6 - 4.3	PE	[6]
Port Blair	4.46 – 6.47 – 5.77	1.2 – 4.8 - 2.7	0.2 – 2.6 - 1.0	No data	0.2 – 6.3 - 1.7	0.9 – 2.4 - 1.7	PE	[6]
Kodaikanal	4.66 – 6.60 – 5.64	0.3 – 1.2 - 0.7	0.1 – 2.5 - 0.8	No data	0.0 – 3.0 - 1.0	0.1 – 1.4 - 0.5	PE	[6]
Minicoy	4.66 – 7.42 – 6.27	1.5 – 8.2 - 4.8	0.2 – 4.3 - 1.4	No data	0.3 – 5.7 - 2.1	1.5 – 5.7 - 3.0	PE	[6]

Table S.4: heavy metals in directly harvested rainwater (min.. max.. median). (min-max). (mean ± std. dev.)

Location	Al (mg/L)	Cu (mg/L)	Pb (mg/L)	Zn (mg/L)	Fe (mg/L)	Sampler material	reference
Paris. city center	No data	0.002 – 0.0 – 0.0054	0.005 – 0.008 – 0.008	0.005 – 0.49 – 0.04	0.005 – 0.18 – 0.005	PVC	[2]
Denizly. Turkey	0.039 ± 0.008	0.021 ± 0.004	0.010 ± 0.002	0.090 ± 0.017	0.024 ± 0.006	PE	[3]
Izmir. Turkey	0.085 – 0.129	0.008 – 0.010	0.005 – 0.007	0.019 – 0.032	0.057 – 0.114	PE	[4]

Table S.5: physico-chemical parameters in harvested rainwater (min.. max.. median). (min-max). (mean ± std. dev.) after first flush

Location	pH	Ec (µS/cm)	Turbidity (NTU)	TOC (mg/L)	TH (mmol/L)	Sample	reference
Seine Maritime. France	6.9-8.9 7.1-8.7	117-188 119-197	0.8-2.0 1.3	<0.03 <0.03	0.3-0.8 0.4-0.7	T PoU	[7]
Ain. France	4.5-6.5 4.2-6.4	10-32 18-31	0.7-3.4 0.6-1.8	166-8800 170-3500	<0.08-0.1 <0.05-0.1	T PoU	[7]
Île-de-France. France	1.2 1.2	32 24	1.7 1.2	1.5 0.1	0.04 0.04	T PoU	[7]
Rual Village. France (SW)	6.5 (5.6-10.4)	56.2 (13.5-235)	2.4(0.5-6.1	2.3 (0.5-5.1)	0.16 (<0.01-0.58)	T	[8,9]
Sidney (4 sties). Australia	6.60±0.50	62.2±54.5	2.96±6.16	No data	0.24±0.21	T	[10]
Seoul (3 tanks). Korea	7.04 (6.8-8.2) 8.71 (7.7-9.9) 8.56 (6.7-9.7)	45 (42-56) 88 (75-109) 286 (152-428)	3.4 (1.4-10.8) 5.7 (0.41-8.56) 4.90 (1.31-11)	No data	No data	T T T	[11]
Seoul. Korea	6.5 (6.3-7.1) 7.3 (7.1-7.6) 7.1 (6.7-7.4) 6.0 (5.9-6.3)	No data	No data	16 (13-19) 10 (9-12) 10 (8-12) 2 (2-5)	No data	T.Wd T.Con T.Clay T.GSteel	[12]
Greece NE (6 sites)	6.75±0.46 6.64±0.58 6.99±0.57 6.65±0.51 6.63±0.49 6.76±0.63	63±31 68±20 143±25 37±10 46±22 31±13	No data	No data	0.26±0.09 0.36±0.13 0.48±0.11 0.21±0.10 0.27±0.12 0.27±0.11	T T T T T T	[13]
Ballinabrannagh Ireland SE	7.21 (6.26-8.21)	No data	1.11 (0.0-4.60)	No data	0.35 (0.1-0.6)	T	[14]
Exeter.UK	7.6-10.4	43.5-261	0.3-2.8	No data	0.16-0.27	T	[15]
UAB University Barcelona. Spain	7.59±0.07	85.0±10.0	No data	11.6±1.7	No data	T. 4 roofs	[16]

Austin. Texas USA	6.8 6.5 7.6 7.1 7.3	36.3 25.5 74.5 35.3 235.3	No data	11.7 4.8 6.1 6.5 25.5	No data	T.Asph T.AlZnStl T.ConT T.Bit T.Green	[17]
Texas	8.7 – 9.3 6.2 – 6.5 6.5 – 8.0 6.7 6.5 – 6.8 6.6 – 6.8	No data	**0.6 – 3** **0.3 – 0.6** **0.2 – 0.5** **0.2 – 0.5** **0.4 – 0.5** **5 - 15**	1 – 10 1.6 – 2.4 0.1 – 1 0.4 – 1 0 - 0.5 7 - 19	No data	1 2 3 4 5 6	[18]

[1]T = Tank; PoU = Point of Use; T.Wd = Tank. water collected at wood tile roof. T.Con = Tank. water collected at Concrete roof; T.Clay = Tank. water collected at clay tile roof; T.GSteel = Tank. water collected at galvanised steel roof; T.Asph = Tank. water collected at asphalt shingle roof; T.AlZnStl = Tank. water collected at Aluminium-zinc coated steel. T.ConT = Tank. water collected at concrete tile roof; T.it = Tank. water collected from bituminous cool roof. T.Green = Tank. water collected at unfertilized green roof.
[2] All samples taken from water stored after first flush

1 Galvalume roof. aluminum gutter. cistern coated with fiberglass
2 Idem
3 Galvalume roof. PVC gutter. cistern coated with fiberglass
4 Galvalume roof. galvalume gutter. cistern coated with fiberglass
5 Galvalume roof. aluminum gutter. cistern coated with polyethylene
6 Asphalt fiberglass shingle. PVC gutter. cistern coated with fiberglass

Table S.6: inorganic parameters in harvested rainwater (min.. max.. median). (min-max). (mean ± std. dev.) after first flush

Location	Cl^- (mg/L)	SO_4^{2-} (mg/L)	NO_2^- (mg N/L)	NO_3^- (mg N/L)	Na^+ (mg/L)	Sample	reference
Texas	No data	No data	No data	No data	No data	1 2 3 4 5 6	[18]
Seoul. Korea	No data	0.1-1.5 0.1-0.8 0.1-0.5 0.0-0.1	No data	0.06 0.06 0.02 0.00	No data	T.Wd T.Con T.Clay T.GSteel	[12]
Greece NE (6 sites)	7.29±3.97 5.05±2.93 4.16±2.81 3.54±2.25 3.48±3.28 3.61±2.28	10.65±3.14 13.56±4.34 15.70±6.43 8.28±2.69 8.84±5.31 10.25±3.98	0.08±0.10 0.05±0.12 0.05±0.10 0.03±0.07 0.04±0.10 0.01±0.02	0.83±0.71 0.84±0.71 0.58±0.52 0.71±0.57 0.66±0.51 0.58±0.55	5.15±2.08 4.42±1.57 6.91±1.90 3.26±1.89 3.78±2.14 4.15±1.77	T T T T T T	[13]
Ballinabrannagh Ireland SE	5.06 (1.50-22.49)	7.50 (0.0-31.7)	0.01 (0.0-0.15)	0.33 (0.0-0.64)	4.60 (0.0-8.6)	T	[14]
Exeter.UK	3-28	No data	<0.01-0.22	1.32-17.74	2.8-4.3	T	[15]
UAB University Barcelona. Spain	8.86+2.38	3.54±0.39	0.040±0.015	0.395±0.059	No data	T. 4 roofs	[16]
Austin. Texas USA	No data	No data	0.03 0.02 0.03 0.02 0.03	1.0 1.1 1.1 1.1 1.5	No data	T.Asph T.AlZnStl T.ConT T.Bit T.Green	[17]

[1] T = Tank; PoU = Point of Use; T.Wd = Tank. water collected at wood tile roof. T.Con = Tank. water collected at Concrete roof; T.Clay = Tank. water collected at clay tile roof; T.GSteel = Tank. water collected at galvanised steel roof; T.Asph = Tank. water collected at asphalt shingle roof; T.AlZnStl = Tank. water collected at Aluminium-zinc coated steel. T.ConT = Tank. water collected at concrete tile roof; T.it = Tank. water collected from bituminous cool roof. T.Green = Tank. water collected at unfertilized green roof.

[2] All samples taken from water stored after first flush

Table S.7: heavy metals in harvested rainwater (min.. max.. median). (min-max). (mean ± std. dev.) after first flush

Location	Al (mg/L)	Cu (mg/L)	Pb (mg/L)	Zn (mg/L)	Fe (mg/L)	Sample	reference
Texas	No data	No data	No data	No data	No data	1 2 3 4 5 6	[18]
Sidney (4 sties). Australia	0.115±0.143	0.221±0.294	0.011±0.013	2.63±2.2	No data	T	[10]
Seoul. Korea	0.043 0.099 0.036 0.033	0.009 0.012 0.015 0.016	0.003 0.005 0.003 0.003	0.018 0.038 0.019 0.074	0.023 0.048 0.024 0.027	T.Wd T.Con T.Clay T.GSteel	[12]
Ballinabrannagh Ireland SE	No data	No data	0.002(0.0-0.025	No data	0.022(0.0-0.095)	T	[14]
Exeter.UK	0.080-0.108	0.218-0.290	0.026-0.064	0.193-0.480	0.009-0.027	T	[15]
Austin. Texas USA	0.36 0.31 0.48 0.46 0.21	0.035 0.0 0.0 0.0 0.0	0.001 0.001 0.003 0.001 0.004	0.045 0.186 0.135 0.105 0.345	0.262 0.244 0.349 0.349 0.070	T.Asph T.AlZnStl T.ConT T.Bit T.Green	[17]

[1]T = Tank; PoU = Point of Use; T.Wd = Tank. water collected at wood tile roof. T.Con = Tank. water collected at Concrete roof; T.Clay = Tank. water collected at clay tile roof; T.GSteel = Tank. water collected at galvanised steel roof; T.Asph = Tank. water collected at asphalt shingle roof; T.AlZnStl = Tank. water collected at Aluminium-zinc coated steel. T.ConT = Tank. water collected at concrete tile roof; T.it = Tank. water collected from bituminous cool roof. T.Green = Tank. water collected at unfertilized green roof.
[2] All samples taken from water stored after first flush

Table S.8: microbiological parameters in harvested rainwater (min.. max.. median). (min-max). (mean ± std. dev.) after first flush

Location	Total/faecal coliforms (N/100 ml)	E. coli (N/100 ml)	Enterococci (N/100 ml)	PC22°/PC37°C N/ml	Sample	reference
Texas*)	<1 400 – 2000 <1 – 3 2– 400 30 – 130 6 - 630	<1 <1 – 25 <1 <1 <1 – 1 <1 - 125	<1 <1 – 500 1 – 13 <1 – 30 <1 – 40 3 - 500	<1 – 300 3.1E5 – 1E7 6300 – 31600 10.000 – 100.000 10.000 – 60.000 1E5 – 3 E6	1 2 3 4 5 6	[18]
Seine Maritime. France	30-1.800/— and illegilble results	No data	No data	56-480/40-450 and illegilble results	T PoU	[7]
Ain. France	<30-230/— 12-92/—	No data	No data	133-8.800/3-10.400 170-3.500/6-5.000	T PoU	[7]
Île-de-France. France	1200/— 1200/—	No data	No data	>100/400 >100/250	T PoU	[7]
Rual Village. France (SW)	40 (<10->10.000)	2 (<10-5.500)	45(<10->10.000)	10-632.000/25-368.000	T	[8,9]
Sidney (4 sites). Australia	426/77	11	12	No data	T	[10]
Seoul. Korea	12/— 12/— 2/— <1/—	1 2 <1 0	Not detected Not detected Not detected Not detected	No data	T.Wd T.Con T.Clay T.GSteel	[12]
Greece NE (6 sites)	0-7750/— 0-3250/— 0-2800/— 0-2050/— 0-1600/— 0-4700/—	5-200 0-3 0-2 — — —	No data	103-104/103-104 30-100/240-104 20-30/8-60 — — —	T T T T T T	[13]
Austin. Texas USA	540/28.1 440/1.9 780/4.7 530/10.8 50/4.7	No data	No data	No data	T.Asph T.AlZnStl T.ConT T.Bit T.Green	[17]

[1] *T = Tank; PoU = Point of Use; T.Wd = Tank. water collected at wood tile roof. T.Con = Tank. water collected at Concrete roof; T.Clay = Tank. water collected at clay tile roof; T.GSteel = Tank. water collected at galvanised steel roof; T.Asph = Tank. water collected at asphalt shingle roof; T.AlZnStl = Tank. water collected at Aluminium-zinc coated steel. T.ConT = Tank. water collected at concrete tile roof; T.it = Tank. water collected from bituminous cool roof. T.Green = Tank. water collected at unfertilized green roof.*

[2] *All samples taken from water stored after first flush*

Table S.9: use of drinking water in the Netherlands in L/person/day in 2016 [19]

Bath	1.9
Shower	49.2
Sink	5.2
Toilet flushing	34.6
Laundry	15.4
Dish washing	6.0
Food	1.2
Drinks	1.3
other	4.5

References Supplementary Information

1. Dallman, S.; Chaudhry, A.M.; Muleta, M.K.; Lee, J. The Value of Rain: Benefit-Cost Analysis of Rainwater Harvesting Systems. *Water Resources Management* **2016**, *30*, 4415-4428, doi:10.1007/s11269-016-1429-0.
2. Beysens, D.; Mongruel, A.; Acker, K. Urban dew and rain in Paris, France: Occurrence and physico-chemical characteristics. *Atmospheric Research* **2017**, *189*, 152-161, doi:10.1016/j.atmosres.2017.01.013.
3. Cukurluoglu, S. Sources of trace elements in wet deposition in Pamukkale, Denizli, western Turkey. *Environmental Forensics* **2017**, *18*, 83-99, doi:10.1080/15275922.2016.1263899.
4. Yatkin, S.; Adali, M.; Bayram, A. A study on the precipitation in Izmir, Turkey: chemical composition and source apportionment by receptor models. *Journal of Atmospheric Chemistry* **2016**, *73*, 241-259, doi:10.1007/s10874-015-9325-1.
5. Deusdará, K.R.L.; Forti, M.C.; Borma, L.S.; Menezes, R.S.C.; Lima, J.R.S.; Ometto, J.P.H.B. Rainwater chemistry and bulk atmospheric deposition in a tropical semiarid ecosystem: the Brazilian Caatinga. *Journal of Atmospheric Chemistry* **2017**, *74*, 71-85, doi:10.1007/s10874-016-9341-9.
6. Bhaskar, V.V.; Rao, P.S.P. Annual and decadal variation in chemical composition of rain water at all the ten GAW stations in India. *Journal of Atmospheric Chemistry* **2017**, *74*, 23-53, doi:10.1007/s10874-016-9339-3.
7. De Gouvello, B.; Nguyen-Deroche, N.; Lucas, F.; Gromaire, M.C. A methodological strategy to analyze and improve the French rainwater harvesting regulation in relation to quality. *Water Sci. Technol.* **2013**, *67*, 1043-1050, doi:10.2166/wst.2013.664.
8. Vialle, C.; Sablayrolles, C.; Lovera, M.; Huau, M.C.; Jacob, S.; Montrejaud-Vignoles, M. Water Quality Monitoring and Hydraulic Evaluation of a Household Roof Runoff Harvesting System in France. *Water Resources Management* **2012**, *26*, 2233-2241, doi:10.1007/s11269-012-0012-6.
9. Vialle, C.; Sablayrolles, C.; Lovera, M.; Jacob, S.; Huau, M.C.; Montrejaud-Vignoles, M. Monitoring of water quality from roof runoff: Interpretation using multivariate analysis. *Water Res.* **2011**, *45*, 3765-3775, doi:10.1016/j.watres.2011.04.029.
10. Van Der Sterren, M.; Rahman, A.; Dennis, G.R. Quality and quantity monitoring of five rainwater tanks in Western Sydney, Australia. *J. Environ. Eng.* **2013**, *139*, 332-340, doi:10.1061/(ASCE)EE.1943-7870.0000614.
11. Amin, T.; Han, M.Y. Microbial quality variation within a rainwater storage tank and the effects of first flush in Rainwater Harvesting (RWH) system. *Australian Journal of Basic and Applied Sciences* **2011**, *5*, 1804-1813.
12. Lee, J.Y.; Bak, G.; Han, M. Quality of roof-harvested rainwater – Comparison of different roofing materials. *Environ. Pollut.* **2012**, *162*, 422-429, doi:10.1016/j.envpol.2011.12.005.
13. Gikas, G.D.; Tsihrintzis, V.A. Assessment of water quality of first-flush roof runoff and harvested rainwater. *Journal of Hydrology* **2012**, *466-467*, 115-126, doi:10.1016/j.jhydrol.2012.08.020.
14. O'Hogain, S.; McCarton, L.; McIntyre, N.; Pender, J.; Reid, A. Physicochemical and microbiological quality of water from a pilot domestic rainwater harvesting facility in Ireland. *Water and Environment Journal* **2011**, *25*, 489-494, doi:10.1111/j.1747-6593.2010.00244.x.
15. Ward, S.; Memon, F.A.; Butler, D. Harvested rainwater quality: The importance of appropriate design. *Water Sci. Technol.* **2010**, *61*, 1707-1714, doi:10.2166/wst.2010.102.

16. Farreny, R.; Morales-Pinzón, T.; Guisasola, A.; Tayà, C.; Rieradevall, J.; Gabarrell, X. Roof selection for rainwater harvesting: Quantity and quality assessments in Spain. *Water Res.* **2011**, *45*, 3245-3254, doi:10.1016/j.watres.2011.03.036.
17. Mendez, C.B.; Klenzendorf, J.B.; Afshar, B.R.; Simmons, M.T.; Barrett, M.E.; Kinney, K.A.; Kirisits, M.J. The effect of roofing material on the quality of harvested rainwater. *Water Res.* **2011**, *45*, 2049-2059, doi:10.1016/j.watres.2010.12.015.
18. Kim, T.; Lye, D.; Donohue, M.; Mistry, J.H.; Pfaller, S.; Vesper, S.; Kirisits, M.J. Harvested rainwater quality before and after treatment and distribution in residential systems. *J Am Water Works Assoc* **2016**, *108*, E571-E584, doi:10.5942/jawwa.2016.108.0182.
19. Vewin. Water supply statistics 2017 (in Dutch: Drinkwaterstatistieken 2017). Availabe online: http://www.vewin.nl/SiteCollectionDocuments/Publicaties/Cijfers/Drinkwaterstatistieken-2017-NL.pdf (accessed on 8 August 2018).