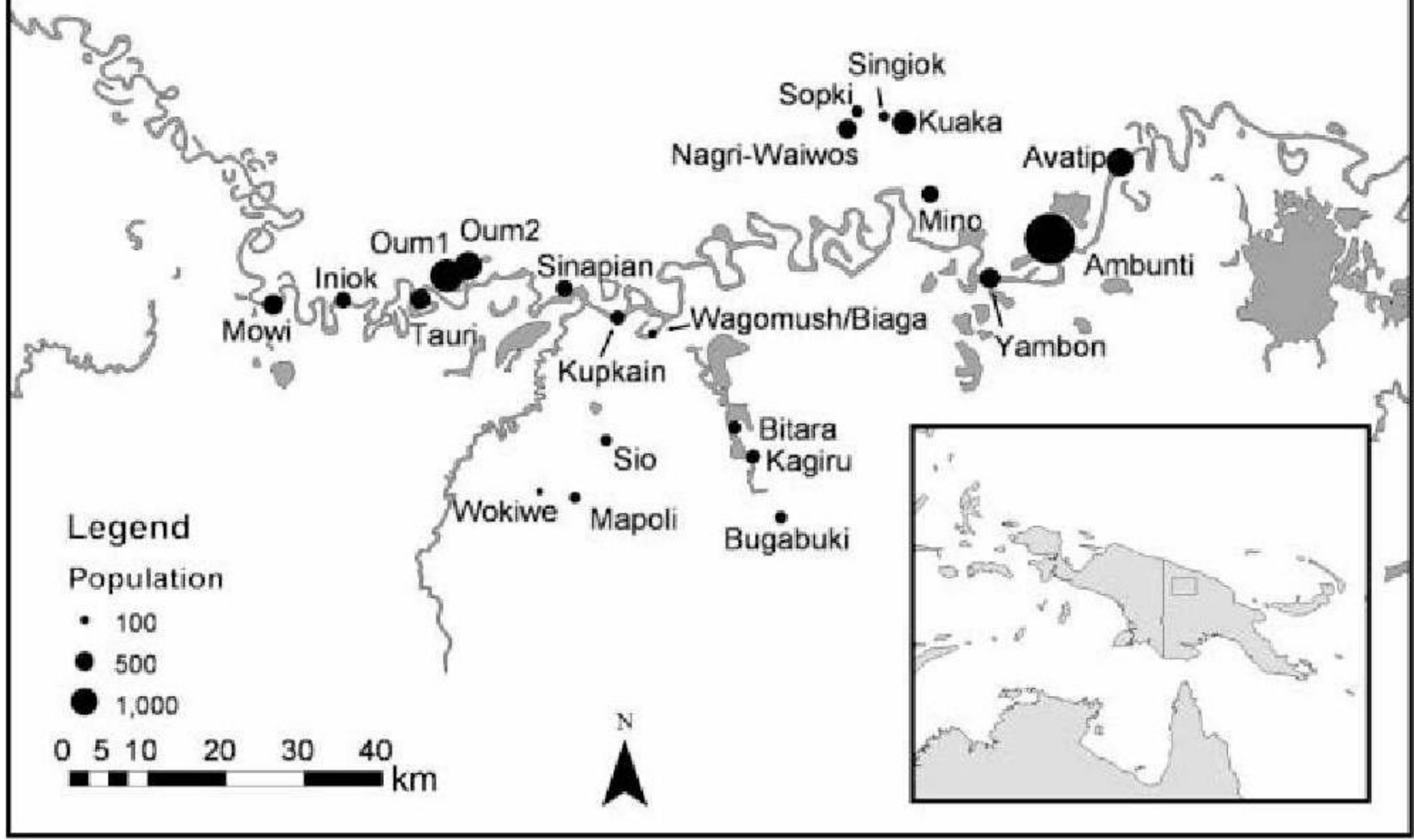


Fig 1



(1) Stream



2009/9/2 10:57

(2) Well



2009/ 9/ 3 10:19



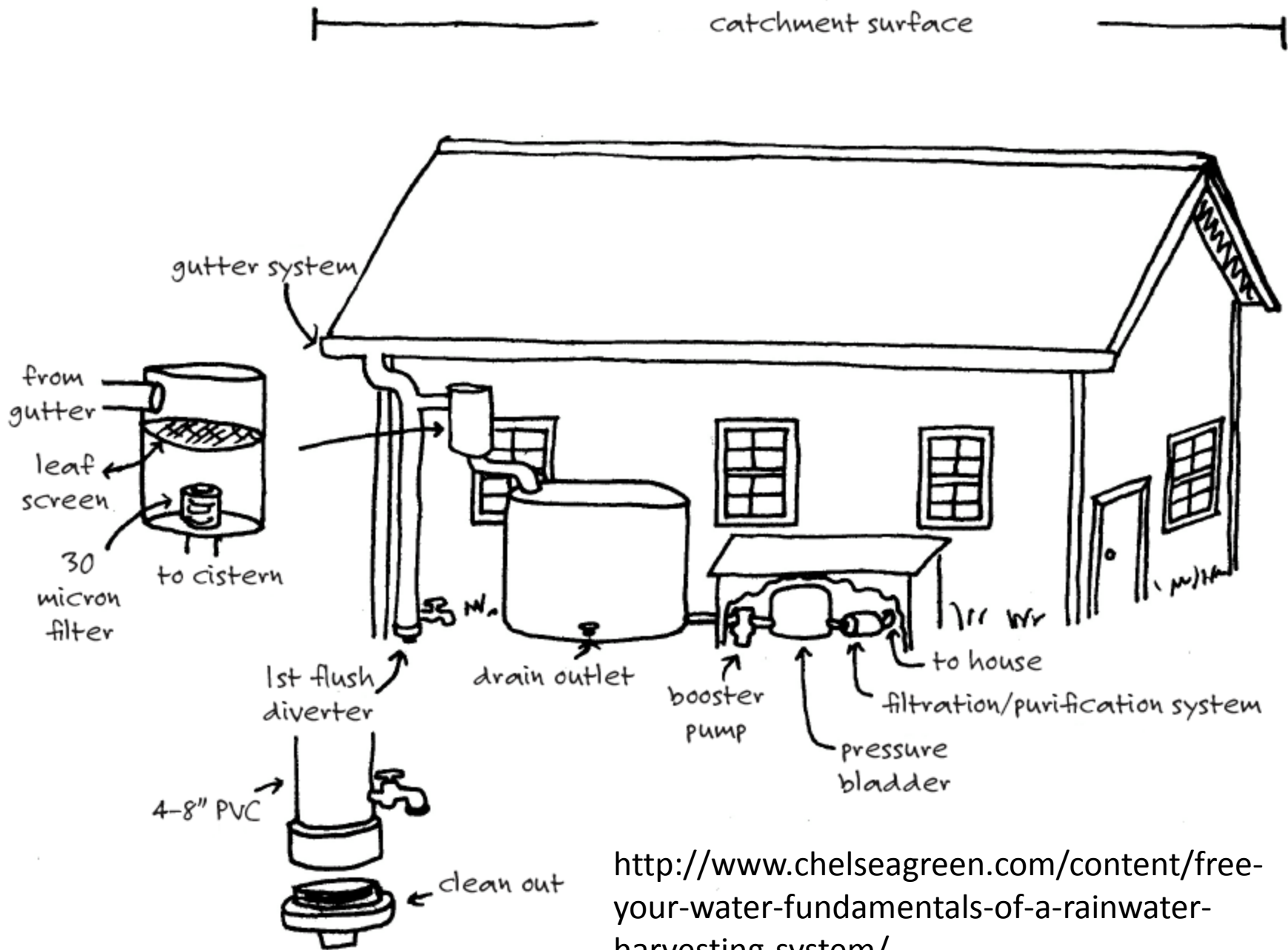
(3) Sepik

2009/ 9/ 3 11:41



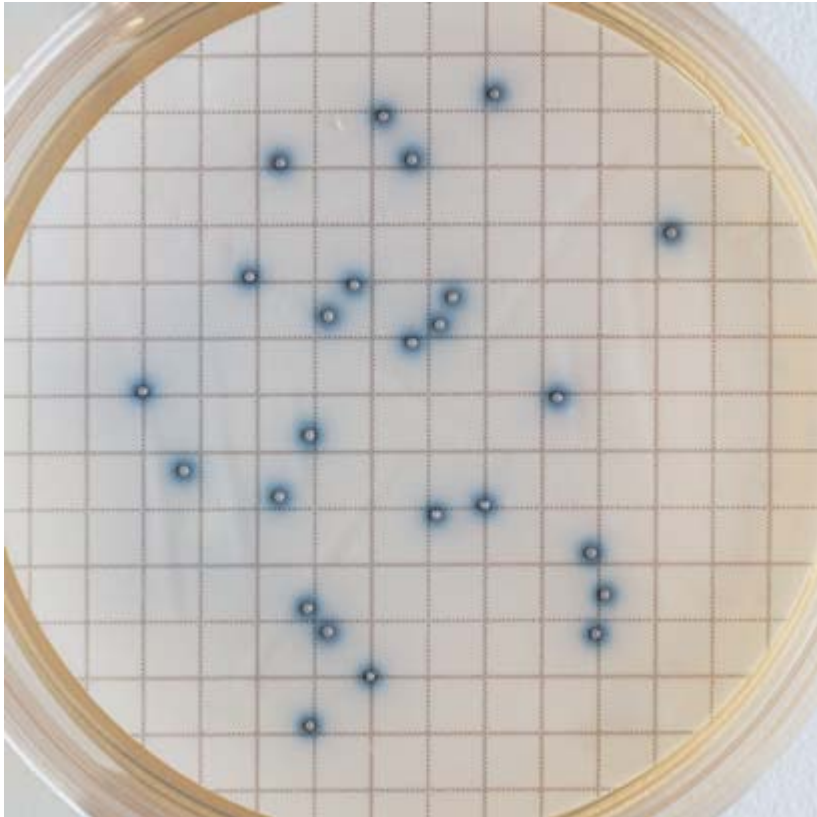
(4) Catchment

http://www.salvationarmy.or.jp/english_site/news_e/090528_png_project_photos.html

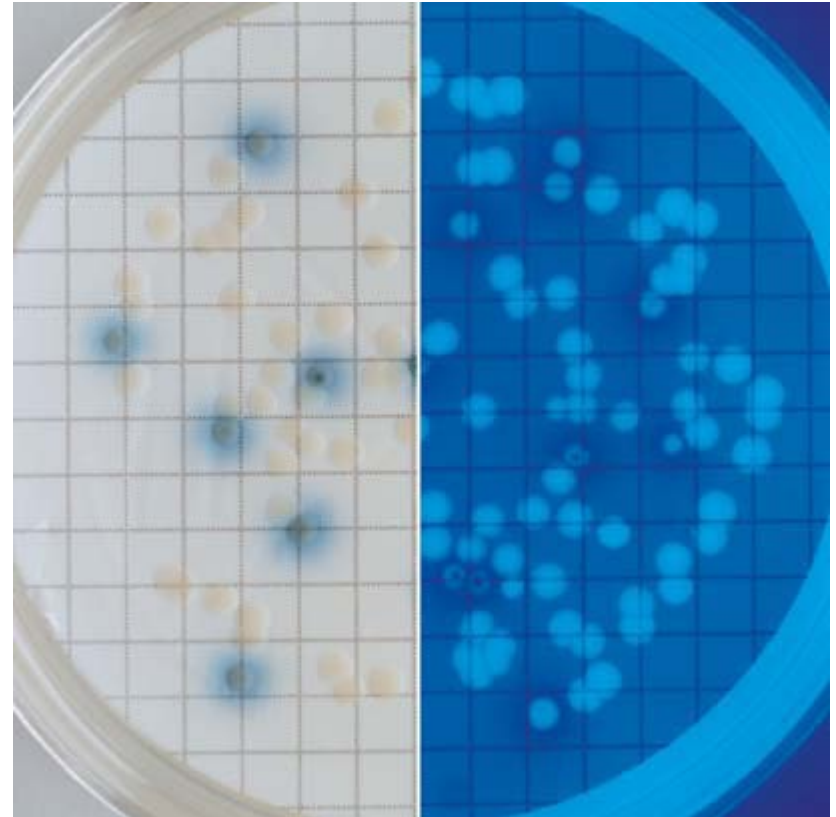


<http://www.chelseagreen.com/content/free-your-water-fundamentals-of-a-rainwater-harvesting-system/>

mEI Agar is a selective culture medium used for the chromogenic detection and numeration of enterococci in water by the single-step membrane filtration technique.



MI Agar* is a chromogenic/fluorogenic medium used to detect and enumerate *Escherichia coli* and total coliforms in drinking water by the membrane filtration technique.

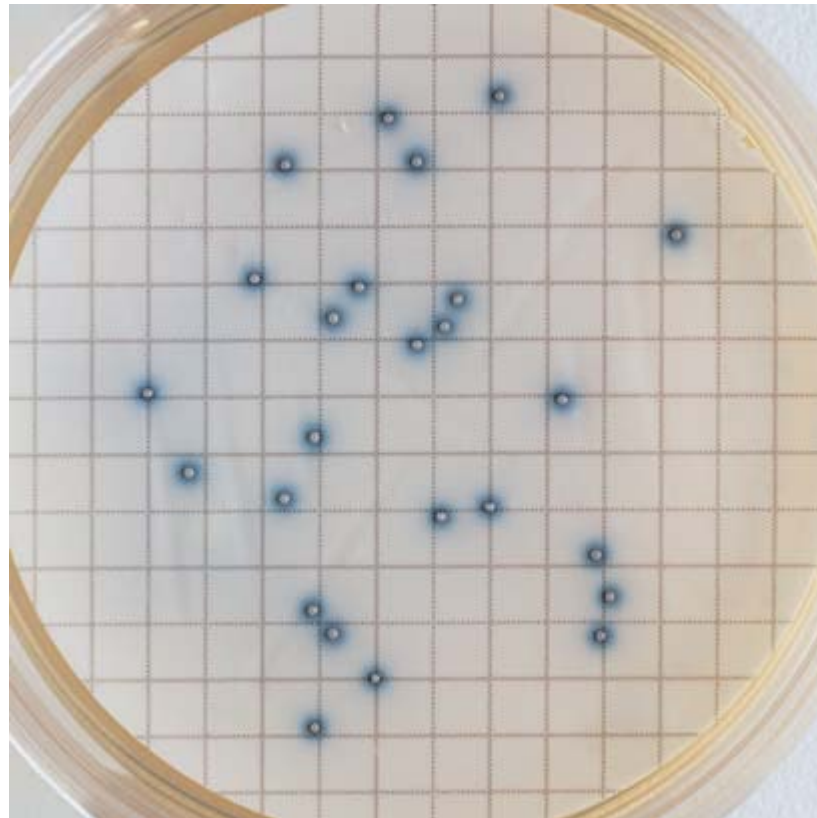


A 50 ml aliquot, 35°C for 24 h

WHO Water Quality Guidelines for Rural Drinking Water Supplies (WHO 1997)

- (1) water with 10 CFU/100 ml as good indicating low risk,
- (2) 10–100 CFU/100 ml as questionable indicating intermediate risk,
- (3) 100 CFU/100 ml as poor indicating high risk

50 ml of water samples



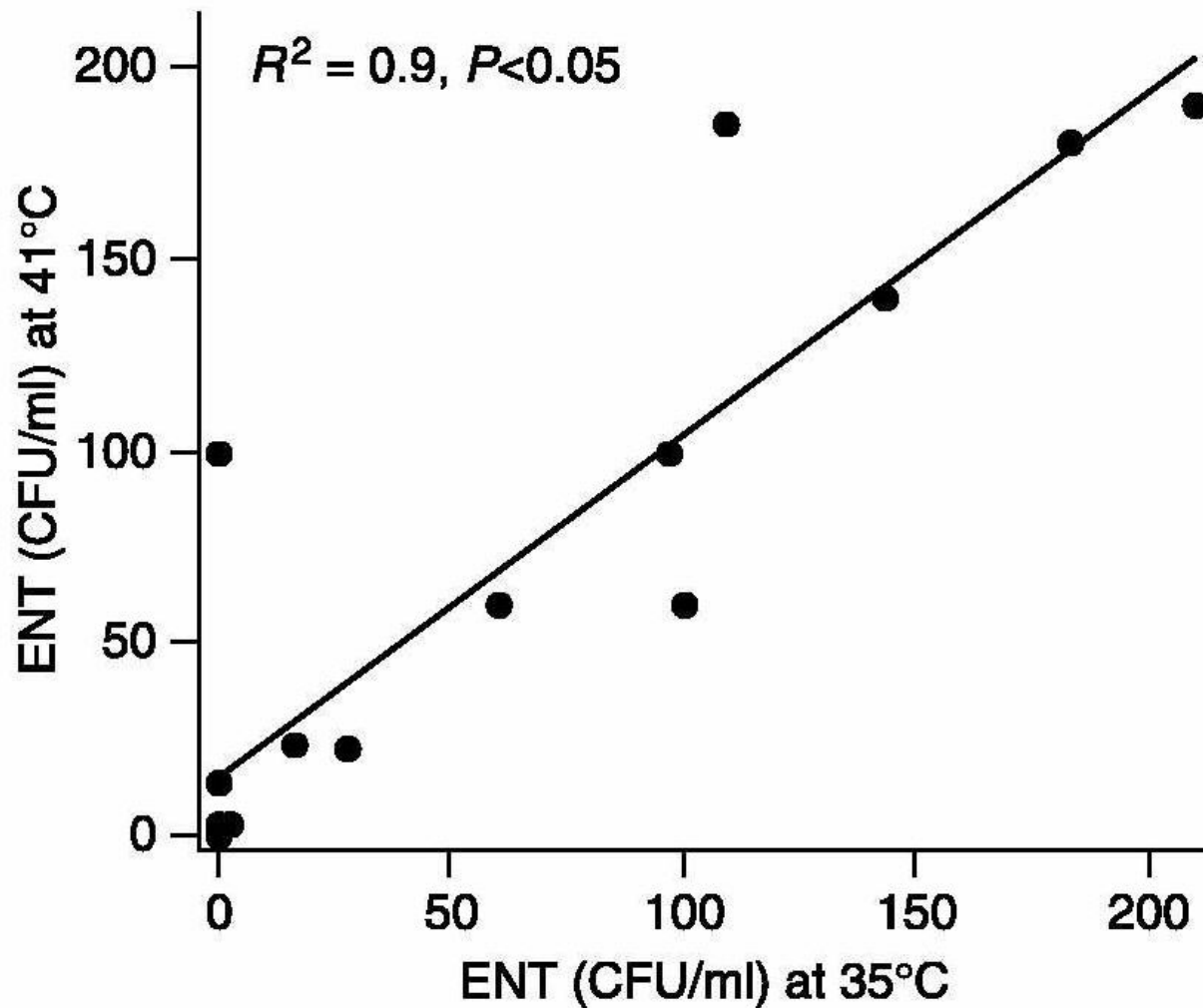


Figure 2 | Comparison of two incubation temperatures (35°C and 41°C) for determining concentrations of enterococci in water samples. Identical volumes of the same water sample were filtered, placed on mEI agar, and incubated either at 35°C (x-axis) or 41°C (y-axis). Line shows least-squares regression.

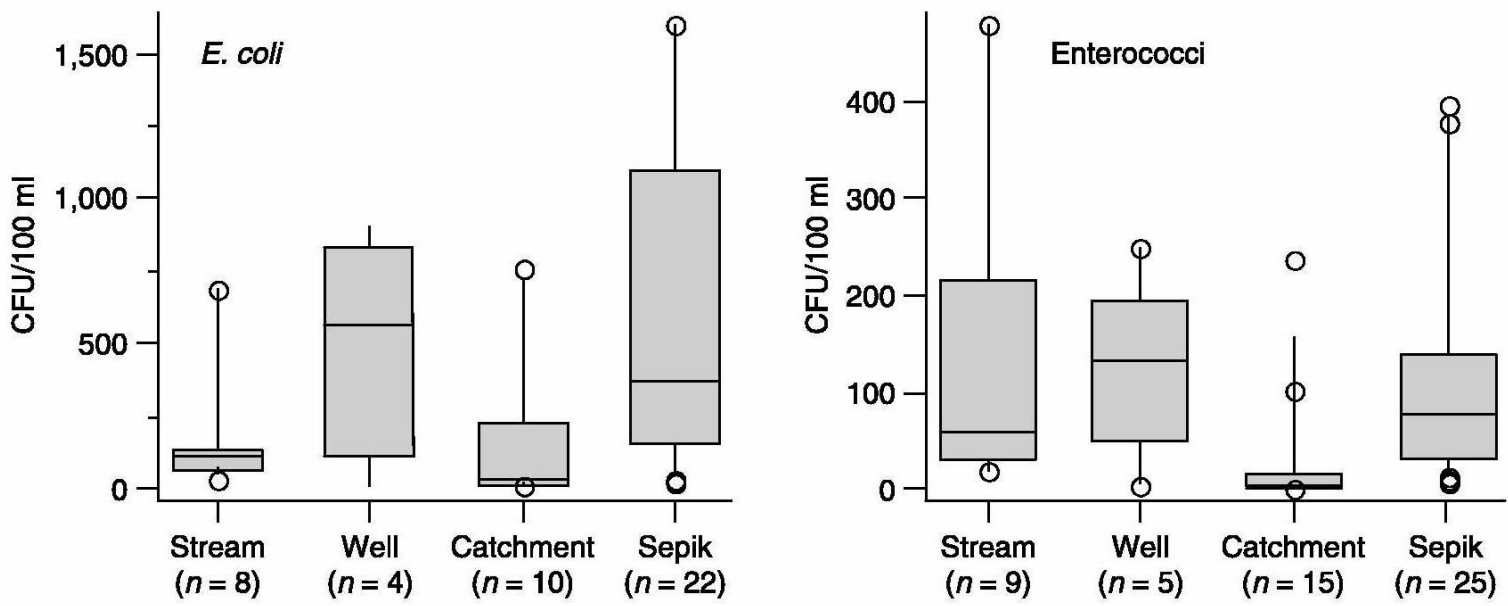


Figure 3 | Box and whiskers plots illustrate the range of concentrations of *E. coli* (left) and enterococci (right), measured in the different water source categories: stream, (dug) well, catchment and Sepik. For each box, the line within the box represents the median, the top and bottom of the box represent the 75th and 25th percentiles, respectively, and the top and bottom whisker extend to the 90th and 10th percentiles, respectively. Observations beyond the 10th and 90th percentiles are shown as open circles.

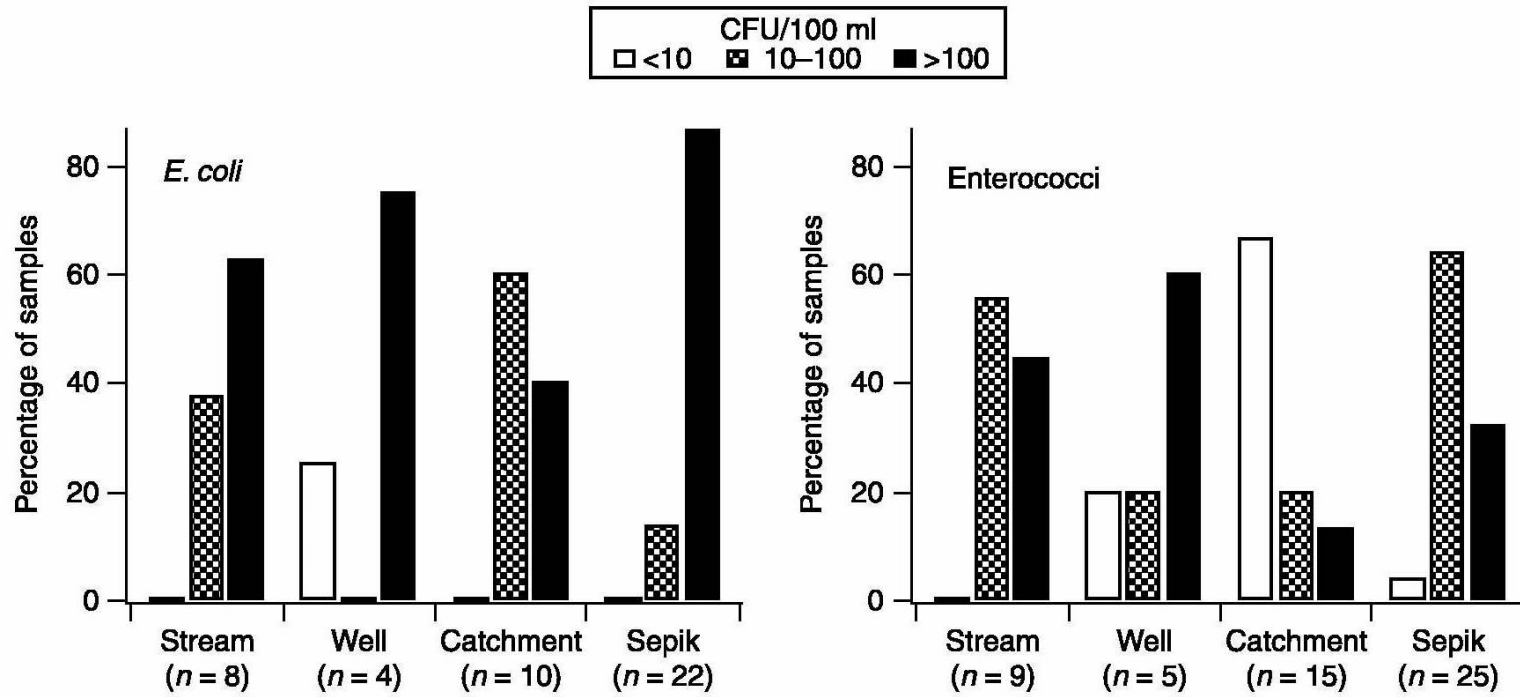


Figure 4 | Percentage of samples with concentrations of *E. coli* (left) and enterococci (right) of < 10, 10–100 and > 100 CFU/100 ml for each water source. Number of samples in each category is also denoted.

Bank > Middle

Table 1 | Water sources are classified into good (<10 CFU/100 ml), questionable (10–100 CFU/100 ml) and poor (>100 CFU/100 ml) using enterococci (columns) and *E. coli* (rows) as separate indicators. Water sources are represented by the percentage in each classification. In parenthesis, the ratio of the number of samples in that classification over the total samples in that water source. All samples have enterococci measurements. Samples without *E. coli* measurements are listed as ‘No measure’

<i>E. coli</i> (CFU/100 ml)	Enterococci (CFU/100 ml)		
	< 10 Good	10–100 Questionable	>100 Poor
< 10 Good	–	–	Well 20% (1/5)
10–100 Questionable	Catchment 33% (5/15) Sepik 4% (1/25)	Sepik 4% (1/25) Stream 33% (3/9) Well 20% (1/5)	Catchment 13% (2/15) Sepik 4% (1/25)
> 100 Poor	Catchment 13% (2/15)	Catchment 13% (2/15) Sepik 48% (12/25) Stream 11% (1/9)	Sepik 28% (7/25) Stream 44% (4/9) Well 40% (2/5)
No Measure	Catchment 27% (4/15) Well 20% (1/5)	Catchment 7% (1/15) Sepik 12% (3/25) Stream 11% (1/9)	–

Table 2 | Mean, median and ranges for metal content from all drinking water sources. WHO and EPA standards are listed, as well as percentage of samples which exceed these standards

Metal content of drinking water (mg l⁻¹)				Standard (mg l⁻¹)		% Above	
Metal	Mean	Median	Range	WHO	USEPA	WHO	USEPA
Silver*	0.2622	0.2730	0.0387–0.4563	N/A	0.1000		94
Aluminium*	0.1329	0.1366	0.0464–0.2078	N/A	0.2000		4
Arsenic	0.0014	0.0010	<0.0000–0.0063	0.0100	0.0100	0	0
Calcium	6.9470	6.2863	0.0569–26.535	N/A	N/A		
Cadmium	0.0010	0.0000	<0.0000–0.0078	0.0030	0.0050	15	6
Chromium	0.0008	0.0005	<0.0000–0.0039	0.0500	0.1000	0	0
Copper	0.0061	0.0023	0.0001–0.1745	2.0000	1.3000	0	0
Iron*	0.1647	0.1013	0.0101–0.6478	N/A	0.0500		59
Mercury	0.0005	0.0001	<0.0000–0.0047	0.0060	0.0020	0	6
Magnesium	3.8957	2.6528	0.0064–19.65	N/A	N/A		
Nickel	0.0034	0.0031	<0.0000–0.0123	0.0700	N/A	0	
Phosphorus	0.0170	0.0100	<0.0000–0.0981	N/A	N/A		
Selenium	0.0017	0.0003	<0.0000–0.0079	0.0100	0.0500	0	0
Zinc*	0.4433	0.1525	0.0231–2.5535	N/A	5.0000		0

*National Secondary Drinking Water Standards, United States Environmental Protection Agency. N/A, no published WHO or EPA standard.

Table 3 | Population and primary water source for each village. Patients are grouped into under five years of age, five-or-greater years of age, or unknown/undocumented age. The final column combines patients of all ages. Percentage of patients in each age group that visited the clinic with diarrhoeal complaints. In parenthesis, the number of patients with diarrhoeal complaints is expressed over the total number of patients seen. N/A indicates that no individuals in given category attended the clinic

Village number	Village pop.	Primary water source	% < 5 years old with diarrhoea	% ≥ 5 years old with diarrhoea	% Unknown age with diarrhoea	% All ages with diarrhoea
1	249	Catchment	N/A (0/0)	0 (0/1)	0 (0/1)	0 (0/2)
2	527	Catchment	0 (0/7)	0 (0/26)	N/A (0/0)	0 (0/33)
3	198	Catchment	N/A (0/0)	0 (0/2)	0 (0/2)	0 (0/4)
4	211	Catchment	0 (0/3)	6 (1/18)	0 (0/1)	4.5 (1/22)
5	1,500	Catchment	100 (3/3)	0 (0/11)	0 (0/1)	20 (3/15)
6	280	Catchment	25 (1/4)	50 (2/4)	N/A (0/0)	37.5 (3/8)
7	67	Stream	0 (0/7)	0 (0/8)	0 (0/6)	0 (0/21)
8	182	Stream	18 (4/22)	5 (3/58)	0 (0/5)	8.2 (7/85)
9	406	Dug well	0 (0/6)	7 (1/15)	N/A (0/0)	4.8 (1/21)
10	260	Sepik	0 (0/3)	0 (0/3)	N/A (0/0)	0 (0/6)
11	385	Sepik	20 (1/5)	0 (0/1)	N/A (0/0)	16.7 (1/6)
12	590	Sepik	43 (3/7)	9 (1/11)	0 (0/4)	18.2 (4/22)
13	545	Sepik	100 (2/2)	0 (0/5)	0 (0/3)	20 (2/10)
14	1,059	Sepik	50 (2/4)	14 (1/7)	0 (0/1)	25 (3/12)
15	100	Sepik	43 (3/7)	0 (0/2)	0 (0/1)	30 (3/10)
16	389	Sepik	50 (1/2)	50 (1/2)	0 (0/1)	40 (2/5)