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Elevated Composting Latrines In Kiribati

Xavier Hines-Coombs
Worcester Polytechnic Institute

Donna Murillo
Worcester Polytechnic Institute

Xinyu Teng
Worcester Polytechnic Institute

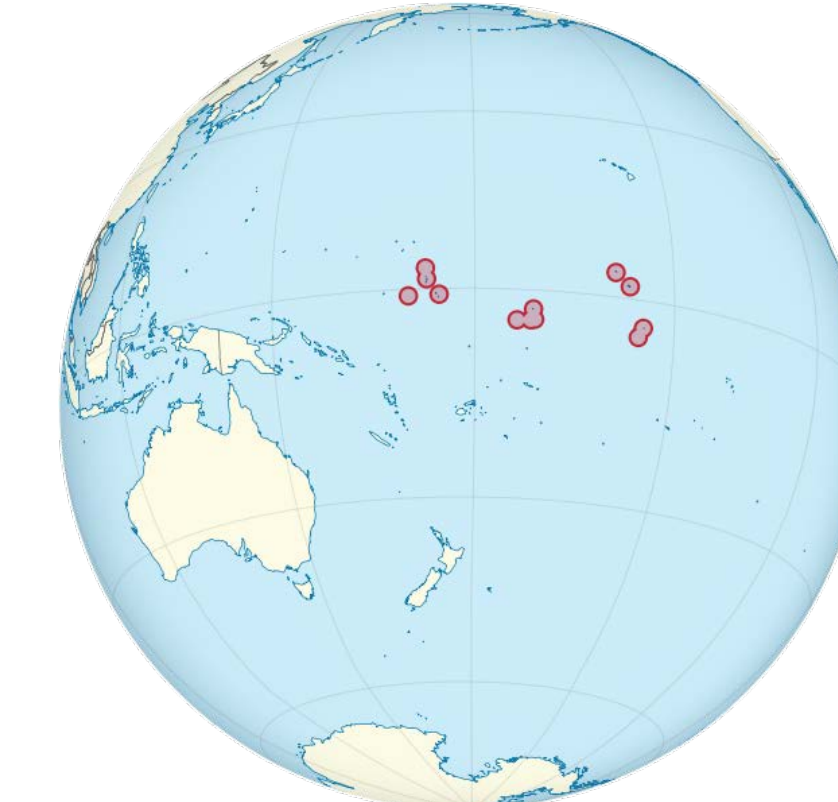
Travis Wold
Worcester Polytechnic Institute

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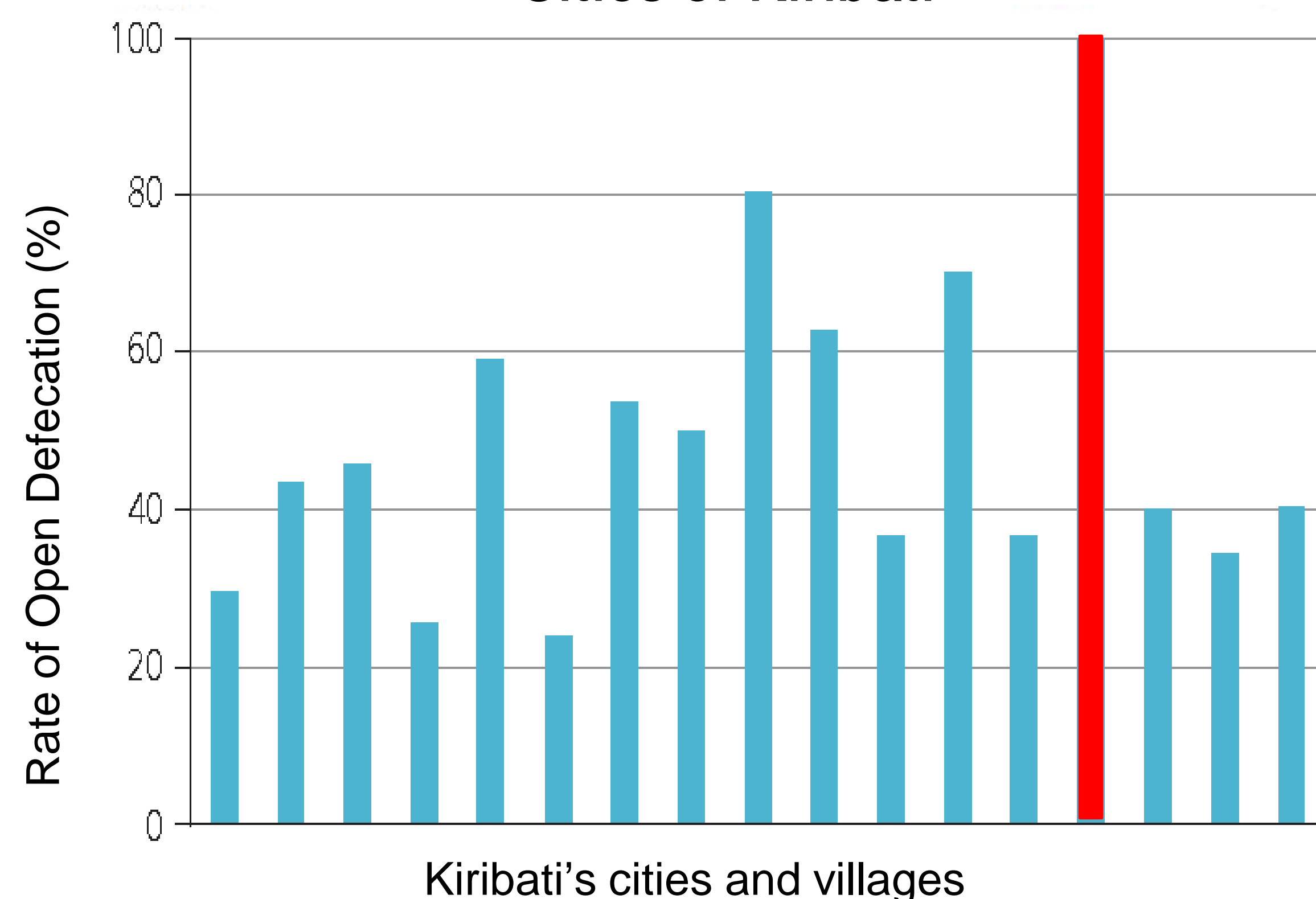
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Diarrheal Outbreaks in Kiribati

- Kiribati - small island nation in the Pacific
 - Tanaea village is located in Tarawa, Gilbert Islands, Kiribati
- Kiribati suffers repeated diarrhea outbreaks, many caused by rotavirus
- *Rotavirus* affects nearly every child under the age of 5 years
- 65% mortality rate for children under 5 due to the prevalence of diarrheal diseases in Kiribati
- *Rotavirus* is the leading cause of severe, dehydrating diarrhoea among infants

Rates of Open Defecation Across Villages and Cities of Kiribati

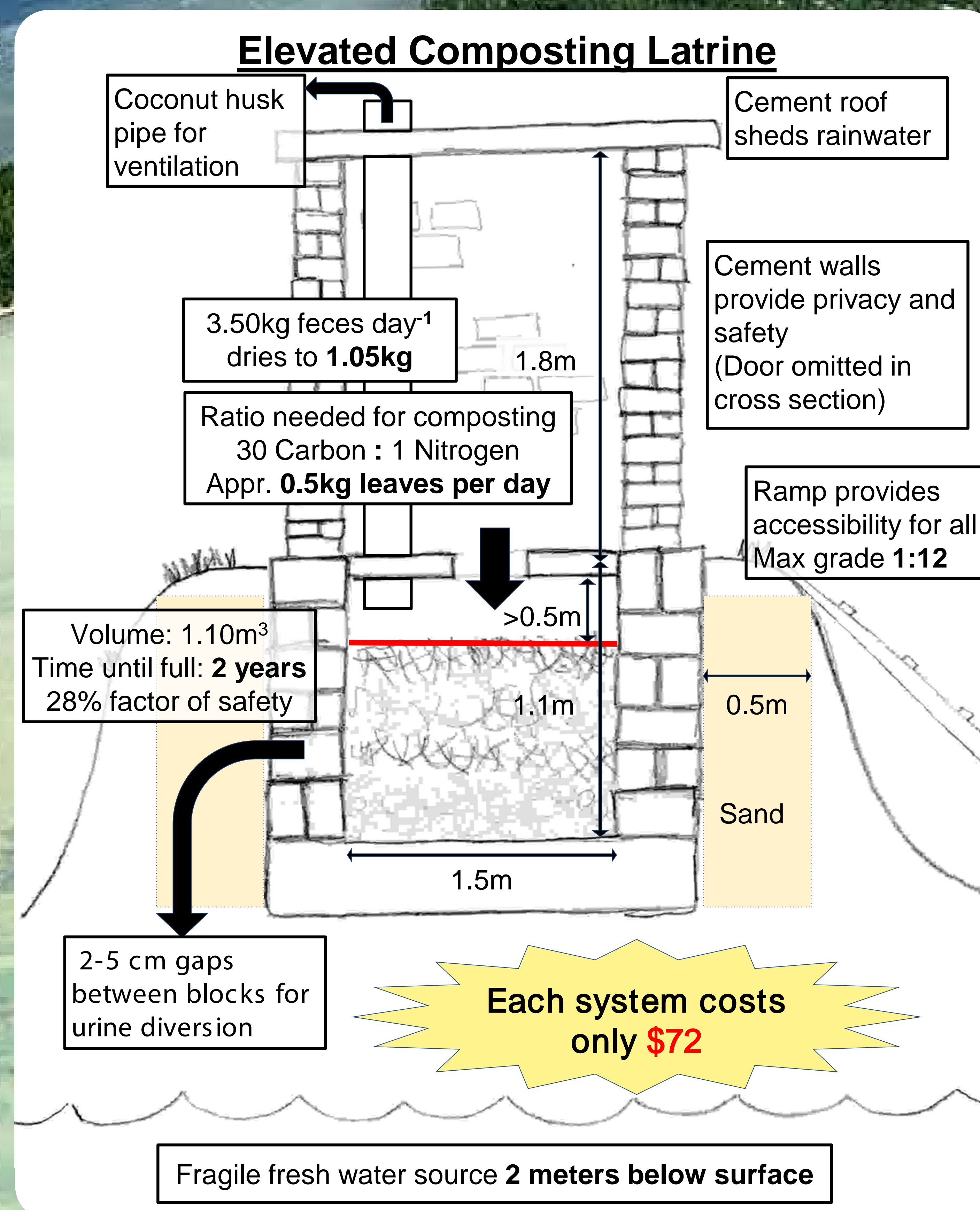


Tanaea (red) has a **100%** open defecation rate due to the slow rate of sanitation progress within the Pacific, its remote location, and ingrained cultural norms.

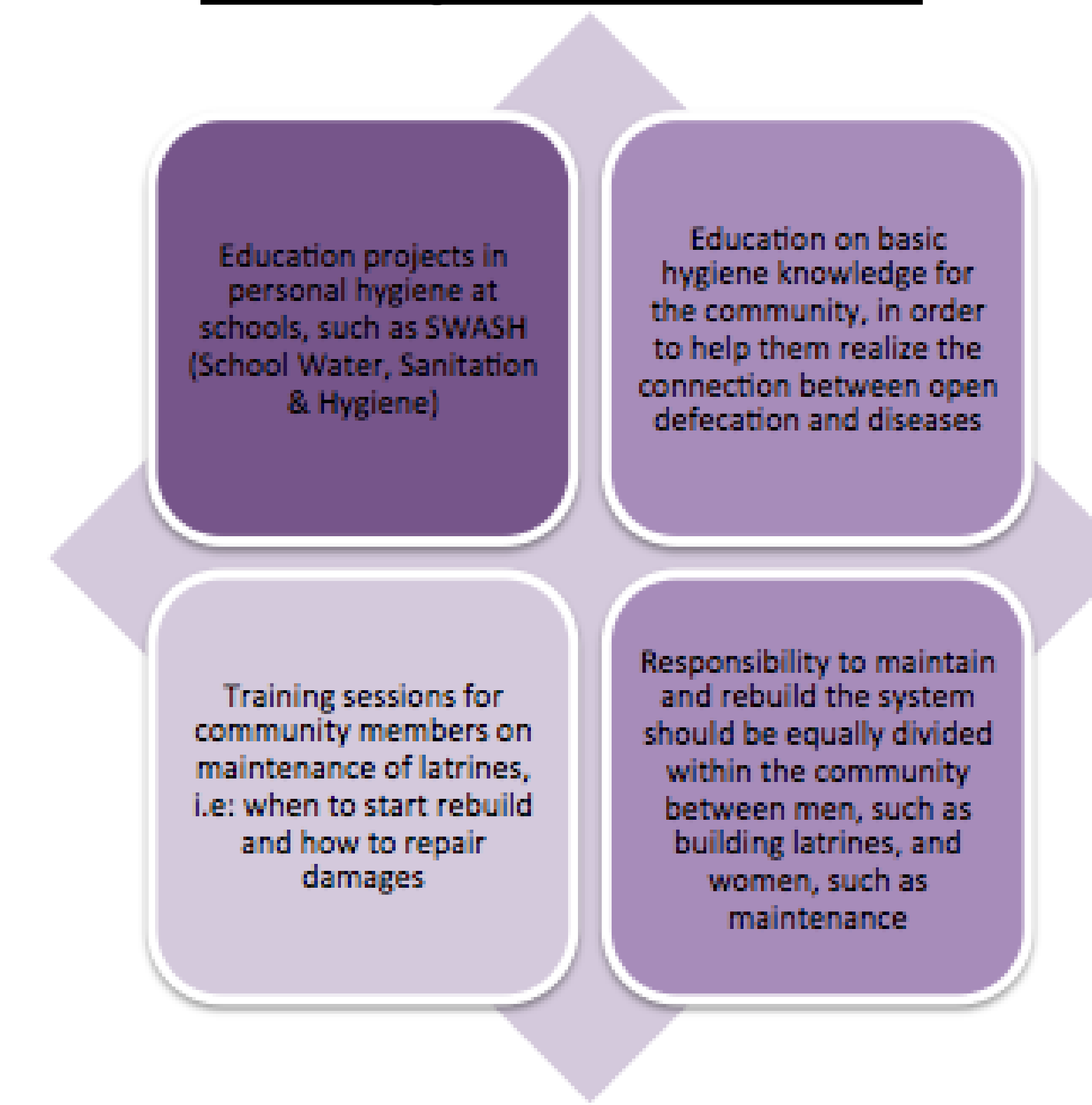


Sea levels surrounding Kiribati are rising at 3 times the global average per year, **depleting** already limited freshwater resources

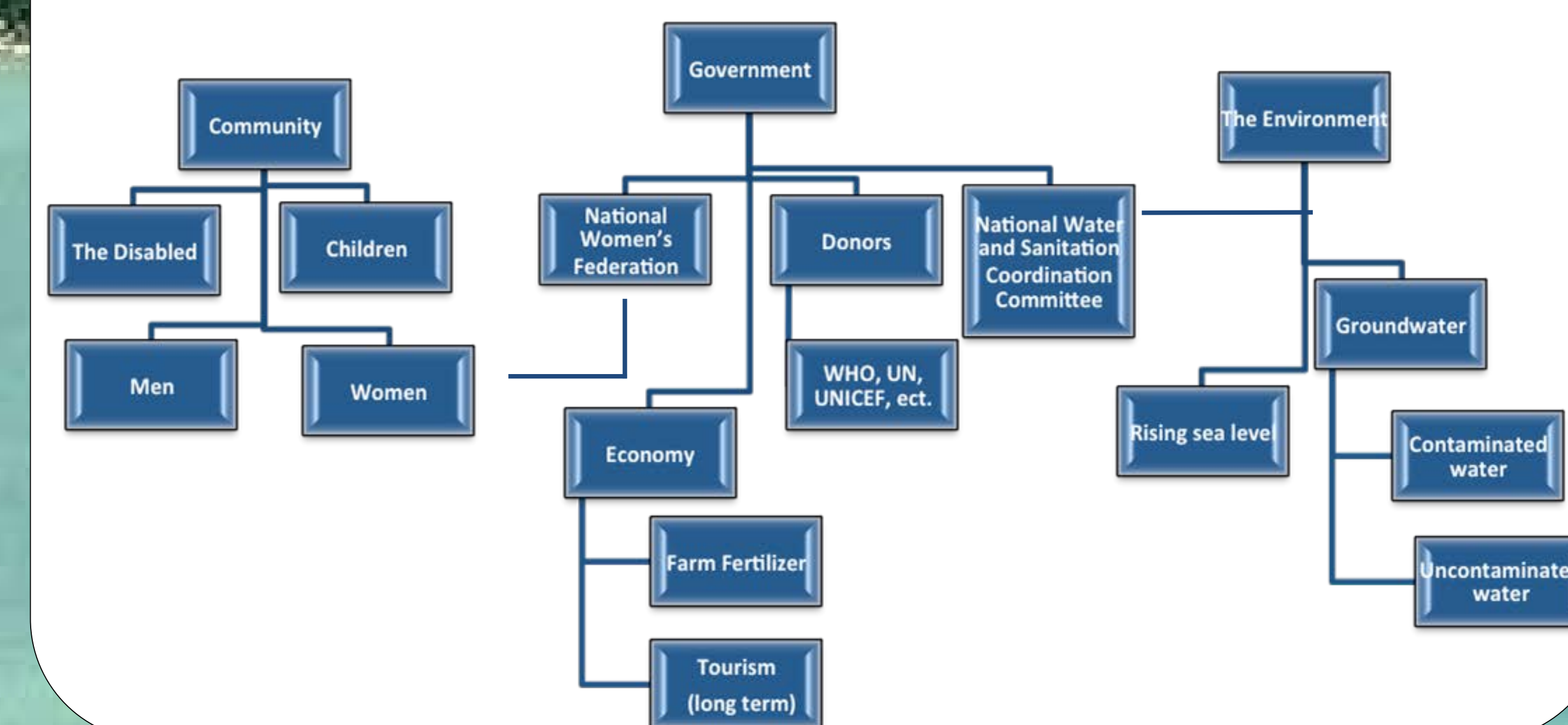
Functions	Solutions	Specifications
Isolate waste from Groundwater	Elevated latrine chamber	1.5 meters above fresh water
Accommodate 280 citizens	1 Latrine per house (8-10 people; 0.429 cubic meters produced per year)	1.1 cubic meters per latrine 55 cement bricks
Drain Fluid	Vertical gaps unmortared, enveloped by sand	Gaps: 2-5cm wide Sand envelope: 0.5m (18 5-gallon buckets sand)
Privacy/Safety	3 Cement brick walls 1 cement door	1.8 meters tall (70 cement bricks)
Sustainable	Rotate latrines every 2 years	2 years of feces dries to usable compost within 120 days Dry compost may be sold or used in agriculture
Composting - maintain 30 carbon:1 nitrogen ratio	Adding leaves of high C:N balances low C:N of feces	Leaves (60C:1N) Feces (15C:1N) 1 unit of leaves per 2 units of feces (0.5kg leaves per day)
Accessible	Ramp meeting standards of 2010 Americans with Disabilities Act	Grade less than 1:12 At least 36 inches wide (0.91 meters) Railing between 34 and 38 inches above ramp (0.86-0.96 meters)



Training and Education



Impact: Stakeholder Analysis



Assessment Plan

- I. Community Curriculum
 - A. Check after a year to ensure curriculum is followed through. Science & engineering of this system, implementation of the design, and maintenance. Connection between open defecation and disease
- II. Personal Hygiene Curriculum in Tanaea Schools
 - A. Elementary schools will only focus on basic hygiene education and connection between open defecation and diseases.
- III. Elevated Composting Latrines
 - A. Evaluate the use and maintenance of the latrines after 1 year of use.
 - B. What work/repairs are required and what design alterations need to be considered; other interventions, if needed, to encourage use
- IV. Educating Community Members
 - A. Annually track the progress of each of our education initiatives.