

# Rainwater Harvesting in the Caribbean

## RWH Technical Fact Sheet 4A: *Tips for water safety*

### Catchment and conveyance maintenance

- Use **appropriate roofing material** and ensure that it is kept clear of dirt and soot.
- Use a clean brush to **sweep roofs and gutters** especially before the start of the rainy season and at other times as necessary;
- **Replace rusted roofing** as needed. Fix any holes to realize maximum runoff. If minor rusting is present, **paint using lead-free paint**;
- **Remove branches** from overhanging trees to prevent leaf debris from falling on and accumulating on the catchment area. Branches also provide roosting for birds (with the increased opportunity for defecation), and access to the roof by rodents and other animals;
- **Keep gutters clear**; repair leaking and sagging gutters (sagging gutters will retain water, providing breeding sites for mosquitoes)
- **Install a coarse filter and/or first-flush device** to prevent dirt and debris entering the tank. Inspect and clean/drain these devices periodically;
- **Cover all openings** to tanks with mosquito mesh to prevent insects, frogs, toads, snakes, small mammals or birds entering the tank.
  - Inspect and clean the mesh periodically

### In the home – managing the stored water

- Place storage containers out of reach of small children and animals
- Ensure containers are clean and keep them covered or sealed.
- Draw water from containers in a hygienic manner; pour, do not dip other vessels in storage container
- Boil water if contamination is suspected.



### Tank maintenance

- Install taps or draw-off pipes **above the tank floor** - avoid uptake of settled material into the water flow;
- If the tank (above-ground, plastic type) is exposed to sunlight make sure that it is **covered or made of opaque materials** or painted with opaque paint - prevent the growth of algae and micro-organisms;
- **Clean and disinfect** the tank annually (cisterns);
- **Monitor for leaks** and repair as needed;
- **Prune nearby trees** – roots can break cistern walls;
- **Mosquito control** (presence of larvae)
  - If mosquito breeding is observed in the tank (larvae present), it is best to seek advice from your environmental health department for assistance on control measures
- In the event of contamination by a **dead animal, drain tank immediately**, clean and disinfect with chlorine;
- Do not mix water from other sources with that in the rainwater tank;

Collaborative production between the Caribbean Environmental Health Institute and the United Nations Environment Programme



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## RWH Technical Fact Sheet 4B: Chlorination guidelines

### Chlorine disinfection procedure

- Calculate the volume of water in your tank.
- Add 125 ml (1/2 cup) of plain **household-grade unscented and uncoloured bleach** (with 4% active chlorine; if 8% active chlorine, halve the dose) to every 1,000 litres (approx. 200 gallons) of water in the tank. Use the table to the right as a guide.
  - Different bleaches have different levels of active ingredient, which is usually marked on the container.
- Wait 24 hours after putting in the chlorine to allow enough time to disinfect the water before drinking.
- Any chlorine smell and taste in the water will go away after a short time. If you find the taste of chlorine unacceptable, an option is to boil the water for at least 5 minutes before drinking it.

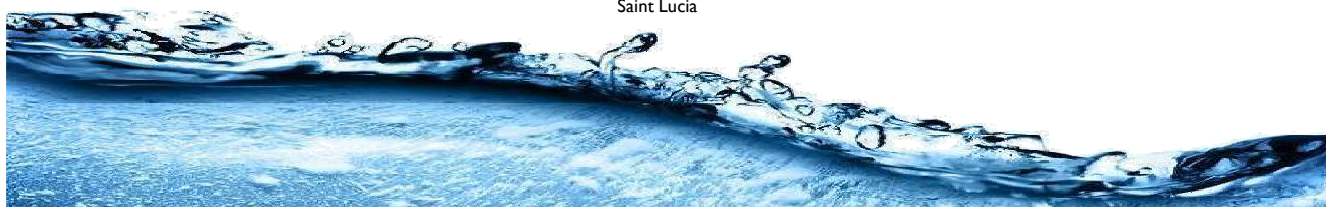
### Chlorine disinfection mixing ratios for stored water

Source: South Pacific Applied Geoscience Commission (2004)

Volume of water in tank			Amount of bleach (with 4% active ingredient) (cups)
US gallons	Imp. gallons	litres	
264	220	1,000	0.5
528	440	2,000	1.0
792	660	3,000	1.6
1,056	880	4,000	2.1
1,320	1,100	5,000	2.7
1,584	1,320	6,000	3.2
1,848	1,540	7,000	3.7
2,112	1,760	8,000	4.2
2,376	1,980	9,000	4.8
2,640	2,200	10,000	5.3
2,904	2,420	11,000	5.8
3,168	2,640	12,000	6.4



Source: Chemical Manufacturing and Investment Company Limited, Saint Lucia



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