

KEEPING YOUR DRINKING WATER SAFE

SNAPSHOTS TO MONITORING WATER SOURCES



RAINWATER TANK



Source: Pacific Islands Applied Geoscience Commission (SOPAC)

Make sure that the gutter that leads to the mouth of the rainwater tank is clean and free from shrubs, dead leaves, soil and other debris



Source: Live & Learn Environmental Education

Keep the gutter free from algae and mosses. Tank owners need to check gutters and roofing regularly and keep it clean!

Visible contamination of the roof catchment area

Dirty gutters and down pipe can contribute to the poor quality of water in the tank. Bird droppings add contamination and leaves, twigs, soil and dust can deteriorate the quality of the water.

Guttering channels that water sits in

Algae and mosses found growing on the guttering channels for collection of water can also increase algae growth on the walls of the tank, affecting the quality of the water.



RAINWATER TANK

No wire mesh at the tank inlet

Mesh wire over the tank inlet is mainly used to trap larger debris like twigs, leaves, dirt and bird droppings. It also prevents the entry of animals such as mice, rats and birds into the tank, which can drown and contaminate the water.



Source: Live & Learn Environmental Education

Put mesh wire or a sieve on the mouth of the tank to keep rubbish and animals out of the tank or place gravel on top of the wire mesh to prevent rubbish from falling in.

Other points of entry into the tank that are not covered

Any other opening on the rainwater tank that is not covered might allow organisms and dirt to enter the rainwater tank.



Source: Live & Learn Environmental Education

Check your water tank! If the tank has cracks or openings, cover these up and keep closed to prevent water from getting contaminated!

RAINWATER TANK



Cracks on the walls of the tank

Leakage means that a lot of water is wasted and cracks can also be an entry point for contamination.

Source: Live & Learn Environmental Education

All cracks on the walls of the tank should be fixed and tightly sealed to prevent water from seeping outside the tank and germs from entering into the tank!



Other sources of pollution around the tank or water collection area

Other sources of pollution include trees and shrubs beside the tank that drop debris in the water and crack pipes and tanks with their roots.

Source: Pacific Islands Applied Geoscience Commission (SOPAC)

Cut tree branches beside the tank! Maintaining the surrounding area around the tank and water collection area is important! Grasses and shrubs should be kept short at all times so that your water storage area does not become a breeding site for pests!

RAINWATER TANK

Outside wall of tank is not clean

When the outside wall of the rainwater tank is not clean and plants are growing on the sides then leakage is indicated. Water quality is best in a totally sealed tank.

Keep the outside walls of the tank clean! Remove grasses and shrubs from the walls, find out where the tank is leaking from and fix it. The state of the outside wall can sometimes tell you what the inside wall of the tank may look like! If the outside walls are mouldy, check inside!



Source: Live & Learn Environmental Education

Inside wall of tank not clean

The wall inside the tank may get dirty due to algae and mould growth or mud that will affect the water quality. Tanks need to be occasionally emptied and cleaned out.

The cleanliness of the wall inside the tank is very important, as this is where your water is stored! Rainwater should be flushed out and the tank cleaned once a year to maintain the water quality.



Source: Live & Learn Environmental Education



Source: Live & Learn Environmental Education

RAINWATER TANK



Source: Live & Learn Environmental Education

Concrete floor under the tap is dirty

If the concrete floor under the tap is not clean and collection of the water not done properly then contamination of the water in the bucket is possible.

The concrete floor under the tap should be kept clean and the bucket that

is used to draw water should be placed in a safe place- not within the reach of small children and animals. Remove any rubbish from around the tap area!



Source: Live & Learn Environmental Education

Water collection area not drained properly

If the water collection area is not properly drained, algae are encouraged to grow under the tap. Also the sitting water can be a source of contamination and breeding area for mosquitoes.

The water collection area should have a good outlet so that water can freely flow out of the water collection area. Water collecting in ponds is unhygienic and unsanitary, and will attract mosquitoes and other pests!

OPEN DUG WELL

WHAT TO CHECK FOR?

- * Toilet within 10m of the well
- * Nearest toilet on lower ground than the well
- * Poor drainage, causing non-movement of water within 2m of the well
- * Wall around the well cracked
- * Concrete floor less than 1m wide around the well
- * Walls of the well inadequately sealed at any point



Source: Live & Learn Environmental Education

NO OPEN WELL IS FREE FROM CONTAMINATION!

When the mouth of the well is not covered, water inside is exposed to bacteria, animals, leaves and dust.

Keep the well covered! Build a shelter over the well, or cover the opening with a piece of timber or clean sheet of roofing iron or canvas.

OPEN DUG WELL



Source: Live & Learn Environmental Education

Water entry points

Cracks in the concrete floor around the well can allow contaminated water from the ground to seep into the well water.

Make sure that the cracks on the floor of the well are well sealed and when installing a new well ensure that the concrete floor area are well established and have no cracks on the floor.



Source: Live & Learn Environmental Education

Protecting your well

Fencing would protect the well from animals and other possible sources of contamination. The rope and bucket being used to draw water from the well are left in a position where they may become contaminated by animals.

Keep wells fenced and hang buckets on a post!

RIVERS AND STREAMS



Source: Fiji Institute of Technology (FIT)

Color of water

If the water looks green then this indicates high algal growth and that the quality of the water is poor. Algal growth is boosted by high levels of nutrients like nitrates and phosphates that come from wastewater and inland runoff.

Agricultural activities near the riverbank could result in run-off of harmful chemicals and nutrients from land to river. Make sure that there is a buffer zone on the bank of the river. This is 'free area' about 15 metres from the river edge inland where no agricultural activities take place, and may also be a belt of trees along a riverbank.



Source: Live & Learn Environmental Education

Bank erosion

When trees growing along the riverbank are removed this can cause soil erosion, changing the color of the water to a dirty brown. This sediment in the water prevents sunlight filtering through, impacting aquatic plants.

Plant native trees or trees that have the ability to absorb nutrients and hold soil together on the banks of the river. The root system of the trees will help stabilise the banks of the river, preventing erosion.

RIVERS AND STREAMS



Source: Live & Learn Environmental Education

Solid waste pollution

Examples of solid waste often found in water include plastics, cans, bottles and food wrappers. Throwing rubbish carelessly beside the riverbank is a sign of land pollution but this solid waste will end up in the water affecting the quality.



Source: Fiji Institute of Technology (FIT)

Remove rubbish, litter from the river and surroundings to prevent water from being polluted! Don't treat riverbanks as a rubbish dump. The waste will eventually end up in the water.

RIVERS AND STREAMS



Wastewater

Wastewater from homes and industries affect water quality, increasing levels of nutrients such as nitrates and phosphates, which promote algae growth. Too much algae growth will result in organisms such as river fish dying or moving to other areas.

Wastewater from homes is not for drinking, but can be reused in gardens or toilets.



RIVERS AND STREAMS



Source: Live & Learn Environmental Education

Home discharge pipes

Household discharge pipes that empty directly into a waterway deliver wastewater with detergents from washing, soap and other contaminants that increase the level of nutrients. The nutrient phosphate, from detergents and soaps, and fertilizers in land runoff, causes water pollution and the growth of algae and waterweeds.

Household discharge pipes can direct wastewater into a “soak pit” instead of into rivers and streams. Wastewater drained into rivers and streams can increase the level of phosphate and nitrates in the water, and negatively affect living organisms.

RIVERS AND STREAMS



Source: Live & Learn Environmental Education

Pigpens beside a waterway

Pigpens built beside a river or mangrove swamp lead to increased levels of nutrients in the water from the pig waste. This contaminates the water, destroys habitat and kills some organisms.

Pig pens beside a river causes pollution, contaminates water, kills mangroves, coral reef and marine life, and leads to major health hazards! Farmers should move pigpens away from rivers and streams or try other types of pig farming like compost piggery.



LIVE & LEARN ENVIRONMENTAL EDUCATION



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