2023 Edition 120

Footsteps

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About Footsteps

Featuring practical solutions to development challenges, *Footsteps* magazine inspires and equips people to work with their local communities to bring positive change.

Footsteps is published by Tearfund, a Christian relief and development agency working with local partners and churches to meet basic needs and address injustice and poverty. *Footsteps* is free of charge.

Cover photo: Edna lives in a dry part of northern Brazil. She and her children used to walk seven kilometres to collect water. They now have running water at their home, the children are in school and Edna has time to earn money as a hairdresser. Photo: Tom Price-Ecce Opus/Tearfund

A note from the editor

We all know what a relief it is to have a drink of water when we are thirsty. But for many millions of people, getting enough safe water to drink is a daily challenge.

This edition of *Footsteps* discusses different aspects of community water provision including cost, ownership and water safety. It also considers the relationship between drinking water and health, and how to reduce the amount of plastic in our water sources.

I hope you find the edition useful. Please let me know if you have any ideas for future editions.

'Jesus stood and said in a loud voice, "Let anyone who is thirsty come to me and drink. Whoever believes in me, as Scripture has said, rivers of living water will flow from within them."'

John 7:37–38

Jude Collins, Editor

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Keeping the water flowing

By Frank Greaves, Charles Macai and Rachel Stevens

A village handpump in Sierra Leone. Photo: Ralph Hodgson/Tearfund

Reliable access to enough safe and affordable drinking water is crucial for the health and wellbeing of us all.

However, about a quarter of the world's population do not have this, according to the 2022 World Health Organization report, *State of the world's drinking water*. Instead, they have to work hard to obtain even small amounts of water from sources that are often contaminated.

> **'Each year, contaminated drinking water is a major contributor to the death from diarrhoea of more than 1.5 million people.'**

Each year, contaminated drinking water is a major contributor to the death from diarrhoea of more than 1.5 million people, many of them babies and young children. In addition, illness caused by water-borne diseases results in children missing school, adults missing work, reduced household income and increased medical expenses.

In 2010, the United Nations General Assembly recognised that access to safe drinking water and sanitation is a human right. And one of the 2015 United Nations Sustainable Development Goals states that member nations will 'by 2030 achieve universal and equitable access to safe and affordable drinking water for all'.

But despite years of global and local investment, the water services experienced by millions of people around the world remain very poor. ▶

A study by WaterAid in rural Malawi, Ethiopia and Nepal showed that many people have to walk up to eight kilometres to collect water, often twice a day. As a result, children miss out on school and adults have less time to earn money and take part in other activities.

The physical act of carrying water on the head or back or by hand can result in pain and injury to the neck and spine. Women who are pregnant or breastfeeding are particularly at risk of injury and exhaustion, with potential long-term health implications for them and their babies. Walking long distances to collect water may also increase their risk of being exposed to sexual and gender-based violence.

Water management

Having water infrastructure available, such as community tap stands, is just one part of a water service. To keep the water flowing through wells, tap stands and handpumps, good management structures need to be in place to enable routine operation and maintenance tasks to happen, as well as more complex repairs.

Water management arrangements vary across the world. They may include:

- **household self-supply**, where a family has a water supply on their own land (eg a well, borehole or rainwater tank) and are either responsible for maintaining and repairing it themselves, or they pay someone else to do it
- **no set collective management structure**, where decisions about how to carry out and pay for repairs are only made by groups of users when something breaks down
- **community management**, where a community has a structure in place, usually run by volunteers, which may include collecting payments for water on a regular basis, according to use or when a repair is needed
- **formal management**, where people pay a set amount of money to an organisation (local, regional or national), which is responsible for providing a water service.

Although tasks such as changing worn parts in a handpump can be quite straightforward, they depend on people with the right skills and tools being available when needed. And the large number of non-functioning water points around the world shows that community-based management that relies on volunteers often does not work.

Water businesses

In response to this, a growing number of communities are starting to use business-based approaches to improve the safety and reliability of their water services. These approaches usually include:

- the recruitment of trained and paid staff
- clear legal, policy and accountability agreements between the water service provider, the water authority (usually a government department) and the users.

Sometimes a community may decide to use contractors to maintain and repair their water supply. For example, the Catholic Diocese of Lodwar in Kenya has set up an insurance scheme where communities pay an annual amount and the diocese employs mechanics to carry out the work.

Boreholes with handpumps are charged an annual subscription of approximately US$50, and motorised pumps are charged an annual subscription of approximately US$100. If the cost of a repair exceeds US$300 then the community is required to contribute 30 per cent of the cost, and the diocese covers the rest.

Income generation

As well as making a water service safer and more reliable, having a business-based management arrangement in place can provide opportunities for families to increase their income. This may be through direct employment in the business, or because a reliable water source close to home means they have more time to work, rather than walking long distances to collect water.

> **‘Having water infrastructure available, such as community tap stands, is just one part of a water service.’**

In semi-urban locations in the Democratic Republic of Congo, Tearfund has piloted a water management model called ‘Associations des usagers des réseaux d’eau potable’ (ASUREP: Drinking water network user associations). An ASUREP is a legally recognised structure, which mixes private-sector management practices with community membership and governance. This includes a general assembly made up of community members and paid staff responsible for the daily operation and management of the water supply.

Since it was established in 2021, the ASUREP in Beni has collected over US$30,000 in user tariffs. This has been used to cover maintenance and salary costs, and also to provide low-interest loans to more than 20 community groups. These loans are used for many purposes including small-business development and to cover education and health expenses. The ASUREP uses income from the repayment of these loans to improve and expand the water service.

Juma Idi is a plumber in South Kivu, Democratic Republic of Congo. He helps to maintain his local ASUREP water network.
Photo: Jane Beesley/Tearfund

Frank Greaves, Charles Macai and Rachel Stevens are water, sanitation and hygiene specialists in Tearfund’s Thematic Support Team

Orbisa Hando (left) and her friend arrive home after collecting water in Afar, Ethiopia.
Photo: Chris Hoskins/Tearfund

Case study
Local advocacy in Brazil

It is the responsibility of governments to provide their citizens with adequate access to safe water and sanitation. Without these services, little progress can be made in other areas such as health, education, gender equity and poverty alleviation.

Communities, churches and other local organisations are well placed to advocate for better public services. This includes holding governments to account when promises about water provision are not kept.

Water is scarce in the north-east region of Brazil. Photo: Tom Price-Ecce Opus/Tearfund

Influencing change

When the north-east region of Brazil suffered a severe drought in 2015, reservoirs collapsed, a major water distribution pipeline fell into disrepair and water supplies became contaminated by human and animal waste. This caused an outbreak of disease and it was difficult for the public health system to cope with the high level of illness.

Local organisation Diaconia gathered together women's groups, trade unions, civil society organisations, youth groups, schools, churches and other members of the affected communities. They all shared their experiences and together they made a plan.

They decided to ask the government to treat the drought as an emergency and they requested a series of public hearings with the State Prosecutor.

Council officials, representatives from the Ministry of Health and representatives from the water companies were all required to attend the public hearings. As a result of the hearings, the National Department for Anti-drought Projects was asked to urgently repair the damaged water pipeline, the Secretary of State for Health decided to regularly check water quality in the area and the water companies were obliged to provide water in tankers to affected communities.

Diaconia insisted that all these agreements were put in writing, in a document called 'Terms of Conduct'. Diaconia also continued to support community leaders and farmers to get involved in municipal councils and other decision-making forums. This led to more people influencing the setting and spending of local government budgets.

For advocacy ideas and guidance, see the Footsteps *edition on* ***'Community-led advocacy'*** *and Tearfund's* **Advocacy toolkit**. *Both are available free of charge at* **learn.tearfund.org**

Bible study

Wise stewards

By Rev Verónica Flachier

Read Genesis 1:9-31

God has provided everything we need for a healthy life, including water. But we do not always look after it.

Across the world, many water sources are polluted by solid waste, sewage and chemicals from industry, mining and agriculture. In addition, the unjust distribution of water means that many people are left without a regular supply, while others have more than they need.

Justice

God wants us to have healthy, equitable relationships, based on justice, that promote dignity and peace (Micah 6:8; Philippians 2:3-4). But this is difficult to achieve when we act as though we own God's creation and can do anything with it.

Instead, we need to recognise that God wants us to serve him by taking care of all that he has given us (Genesis 2:15), and by looking after each other (James 2:15-17).

Discussion questions

- What does the phrase 'rule over' in Genesis 1:26 mean to you?
- How can we serve God by looking after his creation, including essential resources such as water?
- Are there people in your community who do not have reliable access to enough safe water? If so, how can you help to change this situation?

Rev Verónica Flachier is an Ecuadorian Lutheran Pastor and member of the Ecumenical Water Network of the World Council of Churches

Celebrating God's gift of water in Nepal.
Photo: Rabi Rokka (Ray Of Hope Productions)/Tearfund

Women and water

By Gebre Belete

'I am fine during the wet season. I can go and collect water. But during the long dry season I feel tired when I go and fetch water. I also feel sick. It is a lot of work. At times I may have no water at all.' Woman in Konso, Ethiopia.

In rural Ethiopia, as in many parts of the world, it is often the responsibility of women and girls to provide water for their households. However, climate change is resulting in more unpredictable rainfall and many women are finding it increasingly difficult to access safe water.

For example:

- Longer dry periods mean women often need to walk further and spend more time queuing at water points. As well as being tiring, this can increase their risk of sexual and gender-based violence, particularly if they are collecting water when it is dark.
- Spending more time collecting water can affect household food production, childcare and other work that women are involved in (paid or unpaid). It may also reduce the amount of time they have available to rest and sleep. This can cause exhaustion and other health problems, particularly during pregnancy and when they are breastfeeding.
- As the climate changes and water sources become less reliable, girls may increasingly have to miss or drop out of school to help their mothers collect water, contributing to ongoing cycles of gender inequality and poverty.
- More frequent or severe flooding increases the risk of water supplies becoming contaminated and makes it dangerous for people to collect water.

Hindiya is a student in Ethiopia. Photo: Frehiwot Gebrewold/WaterAid

Decision-making

Although these issues tend to affect women more than men, women are often not involved in discussions about community water services. However, when they are given the opportunity to share their concerns and make their own decisions, they can choose options that help them to cope with the demands they face each day.

It is crucial that local government representatives, non-governmental organisations and community groups all take measures to ensure the meaningful participation of women in decisions being made about water.

For example, they can:

- hold meetings and discussions at times and places that work for women as well as men, and provide childcare if needed
- structure meetings so that women and men have the chance to talk in separate groups, as well as together – this can make it easier for women to express their opinions
- help women to record their experiences when collecting water, for example by drawing pictures or taking photographs and videos. These can then be shared with the whole community, helping to shape decision-making processes.

Employment

Women should be fully involved in implementing the decisions that are made. This includes having access to any employment opportunities associated with community water services.

Tiru Getahun, a young woman from Burie Zuria in Ethiopia, is a member of her village water committee. She says: 'I manage three of the water points in my village. I collect money when people get water from the water points. For that I get paid, and I earn 500 Ethiopian Birr (US$9) a month. Also, when there is a problem with the water taps I report that to the chair of the water committee.'

Tiru Getahun, a money collector for her village water committee in Ethiopia, digs a trench for a water pipe extension to her home. Photo: Frehiwot Gebrewold/WaterAid

Gebre Belete is a Climate-Resilient WASH Specialist with WaterAid Ethiopia

Quotes collected by Frehiwot Gebrewold, WaterAid Communications Specialist

WaterAid works with local partners to improve access to safe water, hygiene and sanitation.
washmatters.wateraid.org

Case study
Leading change

By Kathryn Pharr

In 2001, when Gita Roy was 17 years old, she married and moved to her husband's village on the south-west coast of Bangladesh.

Gita's daily chores included collecting water for herself and her 14 family members. As a direct result of climate change there was no safe water source in the village, so this was a time-consuming and exhausting task.

In 2019, Gita learnt of an initiative developed by WaterAid and local organisation Rupantar, in consultation with local communities. Recognising that women in rural Bangladesh are not traditionally involved in decision-making, the initiative responds to women's groups who want to take the lead in improving access to climate-resilient water services.

Delighted to join this initiative, Gita formed a group with ten other women, and they began to advocate for the necessary community agreement for a water treatment plant that makes saltwater safe to drink. Some in the community felt that women should not be business leaders, but the group was determined and went from door to door, explaining the benefits of the project.

Eventually the community agreed to the project, including the water treatment plant being operated exclusively by women. The plant opened in 2020 and many people from the surrounding area attended the ceremony. Gita says, 'I struggle to find words to describe what I felt at that moment... Swarms of people came to our plant throughout the day to collect water and I could see all the hard work coming to fruition.' Today the plant serves nine villages, and it has become increasingly profitable and efficient.

Gita Roy checks equipment at the water treatment plant she helps to run.
Photo: Farzana Hossen/Drik/WaterAid

Well known for her hard work and determination, Gita won a local council election in 2022. She says, 'Having my own identity, earning my own income and not depending on anyone for my needs is very satisfying.'

You can learn more about Gita's story by visiting **gca.org** and searching for 'Stories of resilience'.

> **'Having my own identity, earning my own income and not depending on anyone for my needs is very satisfying.'**

Kathryn Pharr is a Senior Policy Adviser on International Climate Action with WaterAid

Water and health

By Allison Liu

Your body is amazing.

Without you ever having to think about it, your kidneys remove toxins and waste products from your blood, your skin sweats in order to cool you down and your brain gets a wash while you sleep.

Every second of every day your body is hard at work to keep you alive and well, and water plays a crucial role in this.

Did you know?

Your body is approximately 60–75 per cent water. For example, water makes up 25 per cent of your bones, 75 per cent of your muscles and 90 per cent of your lungs.

Bodily fluids, made largely from water, protect you from injury by surrounding your brain, spinal cord and joints. Water carries nutrients through your body via the blood and enables the elimination of waste and toxins through urine and stools.

Water is so important for the health of your kidneys that frequent dehydration, even if it is mild, may lead to permanent kidney damage. And if you are dehydrated your brain will not be able to function properly.

The sensation of thirst reduces as we age so it is important to make sure that elderly people drink enough water. Studies show that dehydration can cause people with dementia to decline more rapidly.

Drinking water is the best way to give your body the liquid it needs. Less liquid stays in the body if you drink tea, coffee, alcohol or fizzy drinks.

The following pages answer some important questions about drinking water.

Allison Liu is a Health Coach based in the UK

Pedro Rojas enjoys a drink in Barranquilla, Colombia.
Photo: Peter Caton/Tearfund

Prevent illness

Many diarrhoeal diseases, including cholera, are caused by drinking unsafe water.

Even if water looks clean, it may contain germs that could make you unwell. If in doubt, boil it for two minutes, leave it in the sun in clean, clear bottles for six hours or use a water filter (see page 22).

Washing hands with soap before preparing food and eating, and after touching animals or going to the toilet, can also help to prevent illness.

Are you thirsty?

Water is essential for life. It makes up about 60 per cent of our bodies, and we can only live three to five days without drinking.

Here are some answers to common questions about drinking water.

How much water should I drink?

Most adults should drink at least two litres of water a day.

You may need to drink more than this if you:

- live in a hot or humid climate
- are pregnant or breastfeeding
- are carrying out physical activity or exercising
- are at an altitude above 2,500 metres
- are unwell

If you are unwell with diarrhoea and vomiting it is very important that you drink more water than usual to avoid becoming dehydrated. Severe dehydration can be very dangerous for babies and young children.

How will I know if I am dehydrated?

If you are dehydrated, you may experience some or all of the following symptoms:

- thirst
- urine that is darker and stronger smelling than usual
- less need to go to the toilet
- constipation
- headache
- stomach cramps
- dizziness
- difficulty concentrating
- tiredness

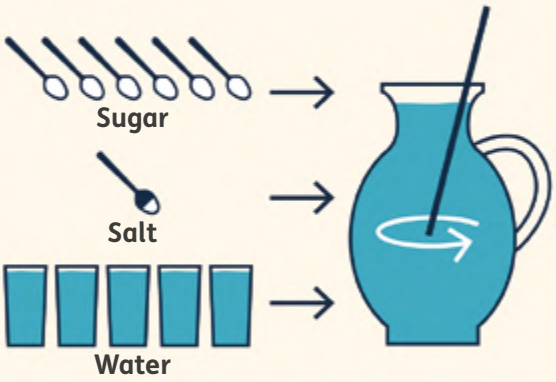
It is important not to ignore these signs. Drink water as soon as possible, preferably in the form of rehydration solution.

Is it possible to drink too much water?

If you have become dehydrated, do not drink too much water at once. Drink a small amount at regular intervals over the course of several hours to allow your body to recover gradually. If you drink too much water at once it can cause mineral imbalances and make you feel unwell.

Make your own oral rehydration solution

Wash hands and utensils carefully. Add six level teaspoons of sugar and half a level teaspoon of salt to one litre (five cups) of safe drinking water. Stir until the sugar dissolves.



Encourage someone who is suffering from diarrhoea to drink as much of this solution as they can to help prevent dehydration and replace essential minerals lost from the body. This is particularly important for children. If they are vomiting, they should take small sips at regular intervals.

How can I increase the amount of water I drink?

It is a good idea to keep a note of how much water you are drinking a day so you can work out if you are drinking enough. If you discover that you need to drink more water, try some or all of the following:

- Link drinking water with a routine that you do every day. For example, drink some water in the morning as soon as you wake up.
- Always take water with you when you travel or go to work, and make sure you drink it.
- Make water more interesting by adding well-washed fruit, cucumber, mint or ginger.
- Increase the amount of water you consume in food, for example by eating soup or fresh fruit and vegetables.

Start right now and have a drink of water – your body will thank you for it!

Allison Liu is a Health Coach based in the UK

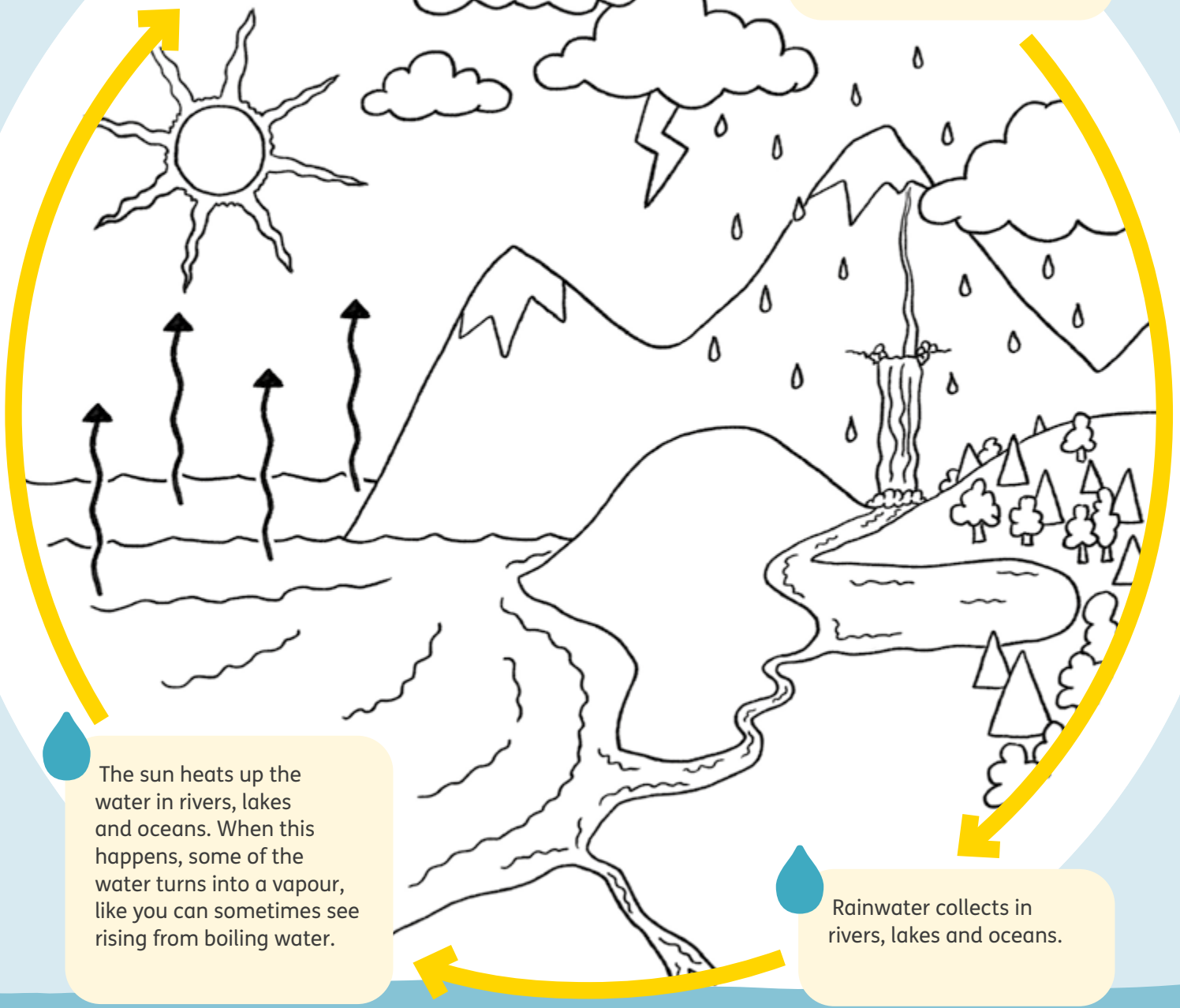
Children's zone

The water cycle

Did you know that water moves between lakes, rivers, oceans, the sky and the land in a continuous loop? Look at the picture below and follow the yellow circle with your finger. Where would you choose to live to make sure you have all the water you need? Add your house to the picture and colour the picture in.

Water vapour rises up high into the sky where it cools and turns into small droplets, forming clouds.

When water droplets in the clouds become too big and heavy for the air to hold them, they fall to earth as rain, snow or hail.



The sun heats up the water in rivers, lakes and oceans. When this happens, some of the water turns into a vapour, like you can sometimes see rising from boiling water.

Rainwater collects in rivers, lakes and oceans.

Water safety

Every drop of water that we drink travels from a catchment area (eg hills and forests), through a source (eg a spring) to the place where it is used (eg a home). This is called the water supply route.

Along the way it might be treated, stored, pumped, piped or carried in a container.

Contaminants that make water unsafe to drink, such as bacteria, viruses or harmful chemicals, can enter at any point along the water supply route.

Water safety plans

Testing can reveal if water is contaminated but it cannot identify where it happened. For example, well water may be tested and found to be safe, but if it is carried in a dirty container or left uncovered in the home, it may no longer be safe.

Water safety plans were launched by the World Health Organization in 2004 to help communities prevent contamination at any point in their water supply route.

A water safety plan identifies:

- **risks** to safe drinking-water supply and
- **preventative measures** that need to be put in place to stop contamination from occurring.

A water safety plan can be used for any type of water supply: rural or urban, new or existing.

The plan should be integrated into the day-to-day operation, management and maintenance of the water supply and should be regularly checked and revised to ensure that it remains effective and up to date. Regular water-quality tests can help to check if the plan is working.

Before developing a water safety plan, community members need to agree on targets, for example: 'total days of diarrhoea in children under five will be no higher than three per month'. They can then work through each of the steps on the following pages with these targets in mind.

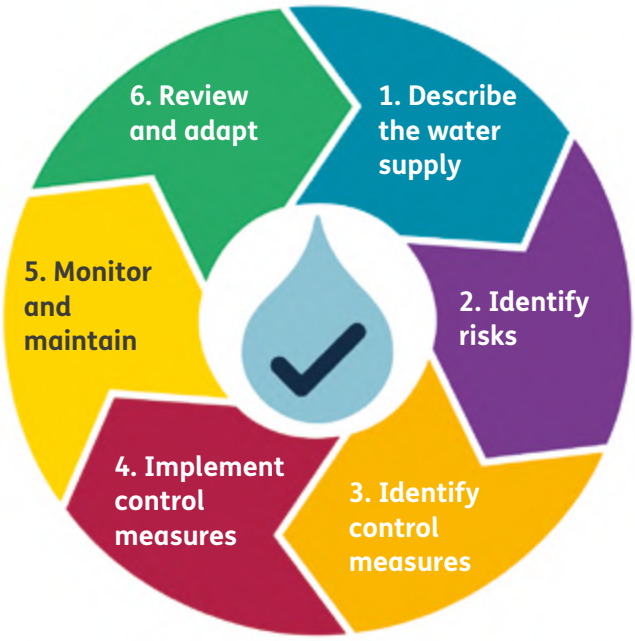
Community members in Burkina Faso collect water from a village water pump. Photo: Jonas Yameogo/Tearfund

Water safety plans

Developing a water safety plan consists of six steps. These steps are designed to be repeated, so the whole process can be viewed as a cycle.

It is important to ensure that as many people in the community as possible are involved in working through these steps: men, women, young people and children.

Elderly people and people with disabilities might access water in different ways to other community members, so make sure that they are included in the conversations.



1 Describe the water supply

Using participatory activities such as a transect walk and mapping, investigate and describe your water supply route from source to use. As you describe it, you will become more familiar with the system and different things that could affect water quantity and quality.

You can use photos, videos, drawings or words to describe the different parts of your water system.

2 Identify risks

Identify what could go wrong at each stage of your water supply route. Think about both current and potential contamination risks. For example, the risks associated with open defecation near an unprotected spring.

Work together to answer these questions:

- What could go wrong with our water supply system, increasing the risk of contamination?
- How and why might it go wrong?
- At what times and where might it go wrong?
- What would be the consequences of it going wrong?
- What is already being done to prevent it from going wrong?

For more information and access to training, visit **learn.tearfund.org** *and search for 'Water safety plan'*

3 Identify control measures

Think about what needs to be done to reduce the risk of contamination at any point in your water supply system. For example, you may need to put a livestock fence around a tap stand or make sure that water is collected in clean containers.

Once you have a list of control measures, discuss which solutions will be the most effective and easiest to carry out. Prioritise the ones that will have the greatest impact. Decide who will do the work, and when.

4 Implement control measures

Put in place the new control measures and monitor and maintain existing water-protection practices.

If you have limited resources and cannot implement all the control measures at once, draw up a step-by-step plan for how you will make the changes as resources become available.

5 Monitor and maintain

Establish systems to monitor and maintain a safe water supply including regular water-quality testing.

Establish procedures for what to do if there is a contamination incident or emergency, eg flooding. Consider: who should be notified; who may need help to respond, such as older people and people with disabilities; how messages will be passed on quickly (eg radio broadcasts and text messages); which alternative safe water supplies can be used.

6 Review and adapt

Document your water safety plan so everyone can confidently follow the correct procedures.

To ensure that the water safety plan is effective and up to date, regularly review what is working well and what needs to be changed.

Transect walk

Involving as many members of your community as possible, walk a route through your local area, visiting places connected with your water supply and water quality. For example: sources; transport routes; water points (wells/handpumps/tap stands); storage areas; markets; livestock-watering sites; drainage courses; waste-dumping sites; open defecation areas. It can be helpful to take photographs or videos during the walk.

With a facilitator, describe your water supply route and discuss places where water could become contaminated.

As a group, you may wish to draw a map of your water supply route (on paper, or on the ground) using symbols or objects to illustrate the different parts of the route and contamination risks.

The cost of water

By Paul Dean and Rachel Stevens

Nearly two-thirds of the earth's surface is covered in water. It fills streams, rivers, lakes and oceans. With so much water available, why do we have to pay for it? Why is it not free of charge?

There are several reasons why providing sufficient, safe water for drinking, cooking, bathing and cleaning is not free. It costs money to:

- find and protect water sources
- find alternative water supplies if sources dry up for a season, or longer
- bring water closer to where people use it (in or near their homes)
- make water safe to drink
- manage, maintain and repair water systems.

However, should people with low incomes pay the same amount as people with higher incomes? What about businesses? Should households that have water piped into their homes pay the same amount as those who collect it from a public water point?

It is possible to work out a payment structure based on what people can afford, as well as the service that is being provided. In some communities, it may be appropriate for low-income households to pay less than higher-income households for what the community agrees is an essential daily amount of water per person. This will reduce the spread of water-borne and other diseases in the community as a whole, while benefiting individual households who would not otherwise be able to access a source of safe and reliable water.

Whatever decisions are made, it is important to calculate a payment structure that is able to cover all the costs for providing water in the long term. These include:

- wages, training and travel costs for water-management staff

Children pump water in Cox's Bazar, Bangladesh. Photo: Ralph Hodgson/Tearfund

- regular running costs, such as generator fuel or electricity
- cost of basic repairs and maintenance
- cost of replacing old and worn-out equipment
- cost of extending the system to new homes and customers
- cost of collecting and analysing information to ensure the smooth running and timely maintenance of the system:
  - amount of water extracted each month, usually measured by fitting meters
  - pressure and rate of water flow at collection points
  - water quality
  - deterioration of equipment.

Transparency

It is important that the water management structure is properly run, in a transparent, accountable and fair way. This should include:

- keeping organised records of money collected, spent and banked, and putting procedures in place so more than one person is responsible for checking the amounts
- considering whether to charge a fixed amount per week or month, or whether to base the charge on the amount of water collected (this may depend on the number of users and the amount of water available)
- potentially charging different rates depending on when people collect water from communal water points; if rates are higher at popular times it may help to reduce queueing times
- considering any seasonal issues that community members may face, for example they may have more funds available to pay for water just after harvest, or they may find it easier to pay 'in kind' (swapping goods instead of money for services). Take a flexible approach for how and when payments are made.

Paul Dean is a water and sanitation engineer, and Rachel Stevens is a WASH specialist in Tearfund's Thematic Support Team

This gravity-fed water tank in Nepal is protected by a fence to keep animals away from the village's water supply. A water and sanitation committee is responsible for the regular testing of the water and the maintenance of the equipment. Photo: Tom Price/Tearfund

Case study
Everflow

In 2017 the International Lifeline Fund launched Everflow, a water-service provider in northern Uganda.

Each community participating in Everflow's water management programme pays a US$25 monthly fee per water point, and they receive four services in return:

- scheduled preventative maintenance of the borehole
- annual handpump checks and maintenance
- emergency breakdowns repaired within 24 hours
- a free-of-charge emergency hotline.

Everflow currently serves around 25,000 people, and external studies show that customers enjoy functioning handpumps for at least 99 per cent of the time.

lifelinefund.org

A flood of plastic

By Lucy Tanner

Plastic is mouldable, light, strong, waterproof and versatile.

Different forms of plastic can help save energy, reduce food waste and support access to healthcare, safe drinking water and household products.

But after it has been used, this same plastic becomes solid waste. And if it is not managed properly it can pollute the soil, water and air, affecting the health of people, domestic animals, fish and wildlife.

Globally, about 2 billion people do not have access to solid waste collection or recycling. This means they have little option but to dump or burn it.

Plastic pollution

Today, half of all the plastic made is designed to be used only once before being thrown away. For example, water sachets.

These have been both a good and a bad thing in many countries. They provide safe drinking water in small quantities for people who otherwise could not afford it. But the sachets are made from a complicated type of plastic that is almost impossible to recycle in a cost-effective way.

When plastic waste, such as sachets and bottles, ends up in rivers or drains it blocks the flow of water, increasing the risk of flooding. Flood water,

This stretch of the Kalamu River in Kinshasa, Democratic Republic of Congo, is full of plastic waste. Photo: Flot Mundala/Tearfund

Plastic waste in Kinshasa is used to make bags, sandals and other items that can be sold for a profit. Photo: Flot Mundala/Tearfund

often contaminated with human waste from flooded latrines and sewers, pollutes wells and other sources of drinking water. This increases the spread of water-borne diseases such as cholera.

As climate change leads to an increase in the likelihood of extreme weather events, such as heavy rain, the need to keep waterways and drains clear of plastic is becoming more and more critical.

What needs to happen?

1 Reduce

We need to substantially reduce the amount of single-use plastic being produced. And at the same time, the management of water resources needs to improve so people can have safe water without having to buy it in plastic sachets or bottles.

2 Recycle

We need to ensure that plastic waste is collected and recycled or disposed of safely and responsibly. Local churches and other community groups can do a lot to help in this area. For ideas, read the *Footsteps* editions on **'Waste'** and **'Community-led advocacy'**.

3 Commit

We need binding, global commitments that hold governments and companies to account for their actions, such as the United Nations plastics treaty.

United Nations plastics treaty

By the end of 2024, leaders from more than 150 governments around the world are hoping to agree on the contents of a global plastics treaty. Tearfund is calling for this treaty to fully address how plastic pollution impacts people living in poverty.

To find out more, visit **learn.tearfund.org** and search for 'plastic pollution'. To get involved in a global movement of Christians taking action on the waste crisis, visit **renewourworld.net**

Lucy Tanner is a Senior Associate (plastics and waste) in Tearfund's Global Advocacy and Influencing Group

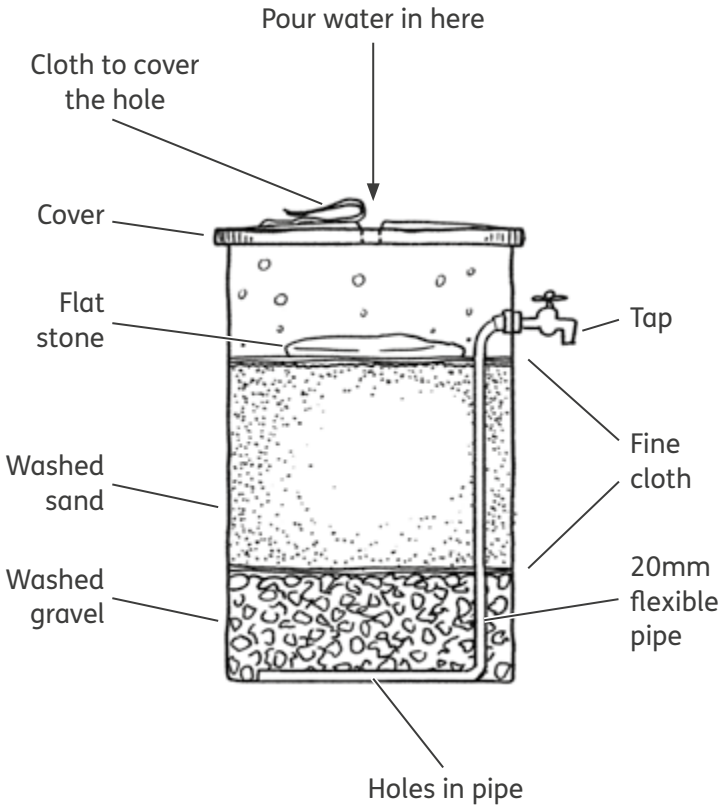
Discussion questions

- What is plastic used for in your community?
- What happens to it when it is thrown away? What are the effects of this?
- How could your community reduce the amount of plastic that is used and thrown away?

Make a sand water filter

Use this household filter to help make water safe to drink

1. Clean a watertight 200-litre container and disinfect it with bleaching powder. Make sure the container did not contain toxic materials.
2. Drill a hole a quarter of the way down from the top of the container for a tap. The hole should be the same size as the fitting on the tap.
3. Fit the tap to the hole and fix it in place.
4. Drill or punch many small holes in the first 35cm of a piece of flexible piping, seal the end and form it into a ring on the bottom of the container, with the holes facing downwards.
5. Connect the top of the pipe (the end with no holes) to the tap. Seal the fitting with a hose clamp or wire.
6. Place a layer of washed gravel 7cm deep on the bottom of the container over the pipe. Be careful not to crush the pipe. Cover the gravel with a fine cloth and fill the container with washed, coarse sand to about 10cm below the tap. Cover the sand with a second fine cloth.
7. Make a cover for the container, with a hole in it to pour water through. Cover the hole when not in use to stop insects entering the filter. Place a flat stone or dish under the hole to avoid disturbing the sand when water is poured in.
8. Before adding water to the filter, allow any particles in the water to settle. Flush the filter with water before first use.



Maintenance

Make sure that the sand is always covered by water to above the level of the tap. Fill the filter daily and only remove water in small amounts. If the water level drops below the level of the tap, the filter will need to be cleaned and refilled.

After a few days of use, a green layer will grow on top of the sand. This must be left undisturbed because it helps to treat the water.

When the water flow from the tap slows down, clean the filter. Drain all the water and remove the green layer and about 1cm of sand from the top. Wash and replace the cloth on top of the sand.

After many cleanings, when more than half of the sand has been removed, replace all the sand and start again. This may be necessary once or twice a year.

Adapted from pages 92 to 99 of A community guide to environmental health *by Hesperian. For more information, visit* **hesperian.org** *and search for 'make water safe'.*

Resources

Tearfund Learn

To find out more about water safety plans, women and water and other related topics, visit **learn.tearfund.org** and use the search function to find the information you want.

Water safety planning e-learning course

Visit **learn.tearfund.org** and search for the course title. Available in English.

Lessons for safer living

By Education Saves Lives

Lessons in multiple languages, covering many health and wellbeing topics. Free of charge online, or buy on DVD. **educationsaveslives.org/online-lessons**

Integrating gender equality into community water, sanitation and hygiene projects

By WaterAid

Visit **washmatters.wateraid.org** and search for the title. Available in English.

Flourishing souls

A video by WaterAid Ethiopia

Search for the title in YouTube. Available in English.

Useful websites

who.int
World Health Organization resources on water safety planning and other health topics.

lboro.ac.uk
Search 'WEDC guides' for information about safe drinking water from Loughborough University, UK.

hesperian.org
Practical health guides on water and sanitation in different languages.

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Visit **learn.tearfund.org** and search for the title you want. Available in English, French, Spanish and Portuguese.

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Footsteps ISSN 0962 28619

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Design Wingfinger Graphics, Leeds

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Interview

Ownership

Leidy Marín Yepes, a Colombian environmental professional and water management specialist, supports Latin American communities to develop sustainable water systems. She currently serves with the Kichua Kawsaypak Yaku Ministry in Ecuador. Here she talks about some of her experiences.

How do you start working with a community?

'Many rural communities in Latin America understand the value of good quality drinking water. For generations they have carried low quality water long distances to their homes before school, work, family time or any other activity. So they are highly motivated to work hard and make sacrifices to improve their water supply.

'When a community asks us to partner with them, we invest time in building relationships and discussing alternative solutions. This is more effective than a group of technicians arriving in a community to tell them what to do, or to provide what they think the community needs.'

Community members in Ecuador prepare the ground for their new water tank. Photo: Codeinse

What happens then?

'Our job is to train, accompany and advise as professionals in engineering, administration and other specific areas. Importantly, the communities own their water system. They elect a community water board to organise the work and they build the system. Once it is built, they establish water use fees to ensure that there is enough money to cover operating costs, repairs and maintenance.

'We find that, in general, communities have all the skills they need to operate a water system successfully; they just need a little technical help, coaching and training.'

What are some of the challenges?

'We cannot overlook the fact that we are working with communities that for generations have carried out activities under conditions different from those we are familiar with.

'Some communities resist disinfecting their water (eg chlorination), because they prefer to drink untreated water. But with time, patience, conversation and listening, we can find solutions to these difficulties.

'Overall, we find that working with a well organised community, aware of their need for safe water and willing to make the sacrifices necessary, largely guarantees the long-term success of a community water system.'

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Registered office: Tearfund, 100 Church Road, Teddington, TW11 8QE. Registered in England: 994339. A company limited by guarantee. Registered Charity No. 265464 (England & Wales) Registered Charity No. SC037624 (Scotland) J839 – (0723)

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