

Water detectives to the rescue

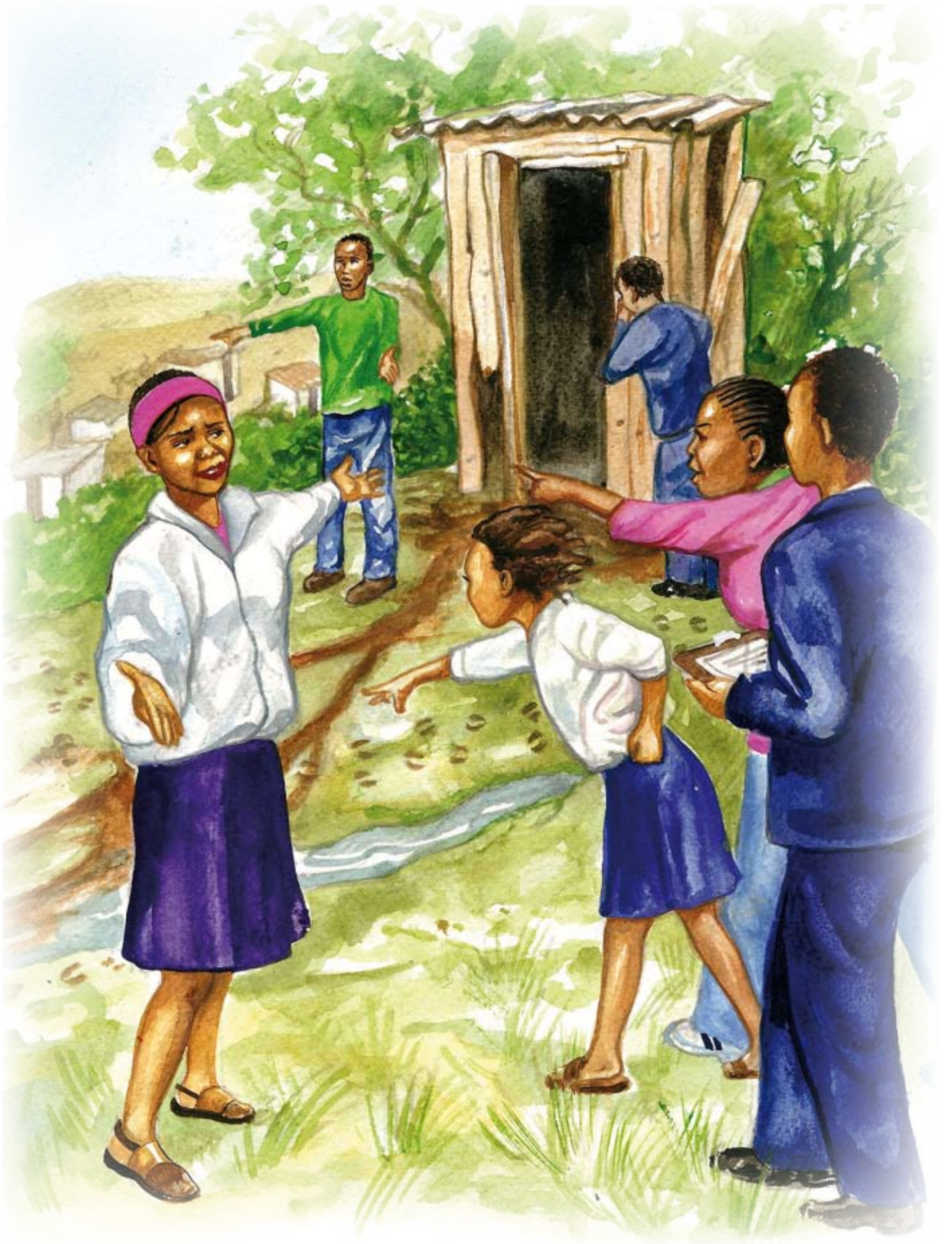
The Water Detectives of Siyanakekela School, who have been hard at work clearing alien vegetation, discover a major health hazard in the community. A few days later, half the population has dysentery and the local clinic is battling to cope. So the Water Detectives get together and come up with a plan to tackle the problem.

This fictional story is a useful tool for raising issues relating to water and sanitation. It looks at problems like waterborne diseases, and the dangers of poorly constructed and badly maintained toilets. The focus is on finding practical solutions to the problems of poor sanitation and lack of access to clean, safe water, for example treating waterborne diseases correctly, preventing groundwater contamination, and rain-water harvesting.

Questions for discussion are integrated at various points in the story, making it easy to facilitate.

Words highlighted in bold are translated in a glossary on the back page.







The Water Detectives first noticed the toilet one afternoon when they were busy with their investigation into alien vegetation.

It stood on the top of a little hill, old and falling to pieces. Although there was no sign of human life, a swarm of flies buzzed happily around the floor where a **foul**-smelling muddy mixture **oozed** from the ground.

“What do you think?” Lebo, teacher and co-coordinator of the Water Detectives club, asked the rest of the group.

“It doesn’t look good,” said Mpo, shaking his head. “It doesn’t look good at all.”

“No, it doesn’t and there’s no way we’re going to walk into that toilet to investigate further without gumboots.” Lebo picked up a stone and handed it to Ben, who walked up to the toilet and, from outside, threw the stone into the pit.

The whole group heard it land with a splash.

“Oh oh! That sounds even worse!” said Fiso. “The pit is full of water!”

“And look!” called Mpo, who had been following the small stream of water which ran over the bare ground from the toilet down the hill, “Here is a spring and the **faeces** and urine from the toilet are running straight into it!”

“Well spotted!” said Lebo. “And what else do you notice?” she asked the group.

“I think this place is used by those homesteads over there,” said Portia, pointing to a group of run down, **dilapidated** houses on the opposite hill. “It looks as if both the people and their animals use it as a source of water. I see hoof marks over here ... goats I think.”

“And evidence of clothes washing over here!” called Fiso.

“This looks like a serious health hazard!” said Mpo.

“And you know what makes it worse,” said Dumi, “We all live in that direction down there.” Turning his back to the sun, he pointed towards their homes. “This place is much higher than us. If this water is contaminated, then surely our water supply is being **contaminated** too.”

“Let’s record our findings, take a water sample for testing, and then head back,” suggested Fiso. “We can report it to the municipality tomorrow. I still need to fetch water and be home before sunset. Who has the gloves?”

A few days later there were long, **desperate, jostling queues** at the toilets at Synakekela School. The hand washing tubs had been knocked over and lay upside down on the floor.

“What is going on?” asked the principal, Mr Poswa, as he looked in amazement from the three teachers in the staffroom to the long queues of learners. “Is this some kind of joke? Where are all the teachers? Why are all the learners outside the toilets? Why are so many absent? We’re supposed to start the exam in 15 minutes!”

“We are the only teachers here today. Most of the others sent an sms. They’re sick or their





children or family members are sick,” replied Lebo, one of the teachers. “I too do not feel ...”

“What! All of them! What’s wrong with them? And what’s ...?” As he spoke, an expression of pain passed over his face and he grabbed his stomach. “Ohhh! Ahhhh! My stomach! I’ve barely slept all night with this stomach trouble. I can’t remember when I last spent so much time in the toilet. It’s so...” He stopped speaking as he put two and two together. “Oh I see! We’ve all got the same trouble!”

“Yes,” said Lebo. “But badly. We’ve all got it badly. It’s a disaster! I suggest we close the school for the day.”

“What? What about the exams? How can we close the school!” exclaimed Dennis, another teacher.

“How can we keep it open? It’s a health hazard! We don’t have enough toilets for this kind of demand. Look at those learners going down the hill into those bushes by the river! That’s so bad! Whatever infection they’ve got will go straight into that river! I’d better go and stop them while you get hold of the clinic and ask for some advice Lebo. We can tell the learners what to do and then send them all home until they are better,” said Mr Poswa.

“Don’t even bother phoning the clinic Mr Poswa,” said Buhle as she walked into the staffroom. “Sorry I am late, but I went past the clinic to get something for my stomach. They are so busy there that Sister Kekana doesn’t know what to do. Kgomotso’s taxis are running an ambulance service to the hospital for all the sick babies.

“I heard that some old people have passed away and that babies are fighting for their lives in the hospital!”

“Has this whole place turned upside down and gone mad! What caused this **dysentery** and how can we get rid of it?” asked Mr Poswa as he turned to leave the room. “Let’s send the learners home. I suppose the best advice is to remind them to wash their hands after using the toilet and to drink lots of water to keep hydrated.”

“Well I’ve got a fair idea about what caused it!” said Lebo. “But let’s deal with the learners first and then we can talk.”





Pause for questions and discussion around:

■ Dehydration, diarrhoea and dysentery

- What are the dangers of diarrhoea?
- What types of people are most vulnerable?
- How do you identify dehydration?
- What must you do to rehydrate?

■ Toilets and sanitation

- Mr Poswa says that learners must not use the bush near the river for toilets. Do you agree with him? Give a reason for what you say.
- Why is it important to wash your hands after using the toilet?

■ Safe water

- Mr Poswa says that learners must drink lots of water to prevent dehydration, but what if the water is contaminated? What must you do to make water safe to drink?

■ Groundwater

- Lebo says she has a fair idea of what caused the problem. What do you think it could be? Brainstorm the issue to identify all the problems raised in the story so far (Groundwater – toilet leaking into water source, animals and washing in same area as drinking water which could all leak into the water source from ground or surface water, problems with water in a pit latrine, etc.). Discuss and explain groundwater and groundwater contamination.

■ Taking responsibility

- Do you think it was good that the Water Detectives noticed that something was wrong and took matters into their own hands by talking to the municipality about the problem?
- Is it our job as citizens to do this?
- Would people in your area respond to the problem in this way?
- We have a right to clean water but this comes with certain responsibilities. What are our responsibilities?

“Well thank goodness the Water Detectives found the main source of our contaminated water supply,” Sister Kekana said.

“Although we would have figured it out and found the cause in the end, your early identification and **proactive** response meant that we could treat the cause and the symptoms at the same time, and really quickly too, which ensured that the problem didn’t get any worse.”



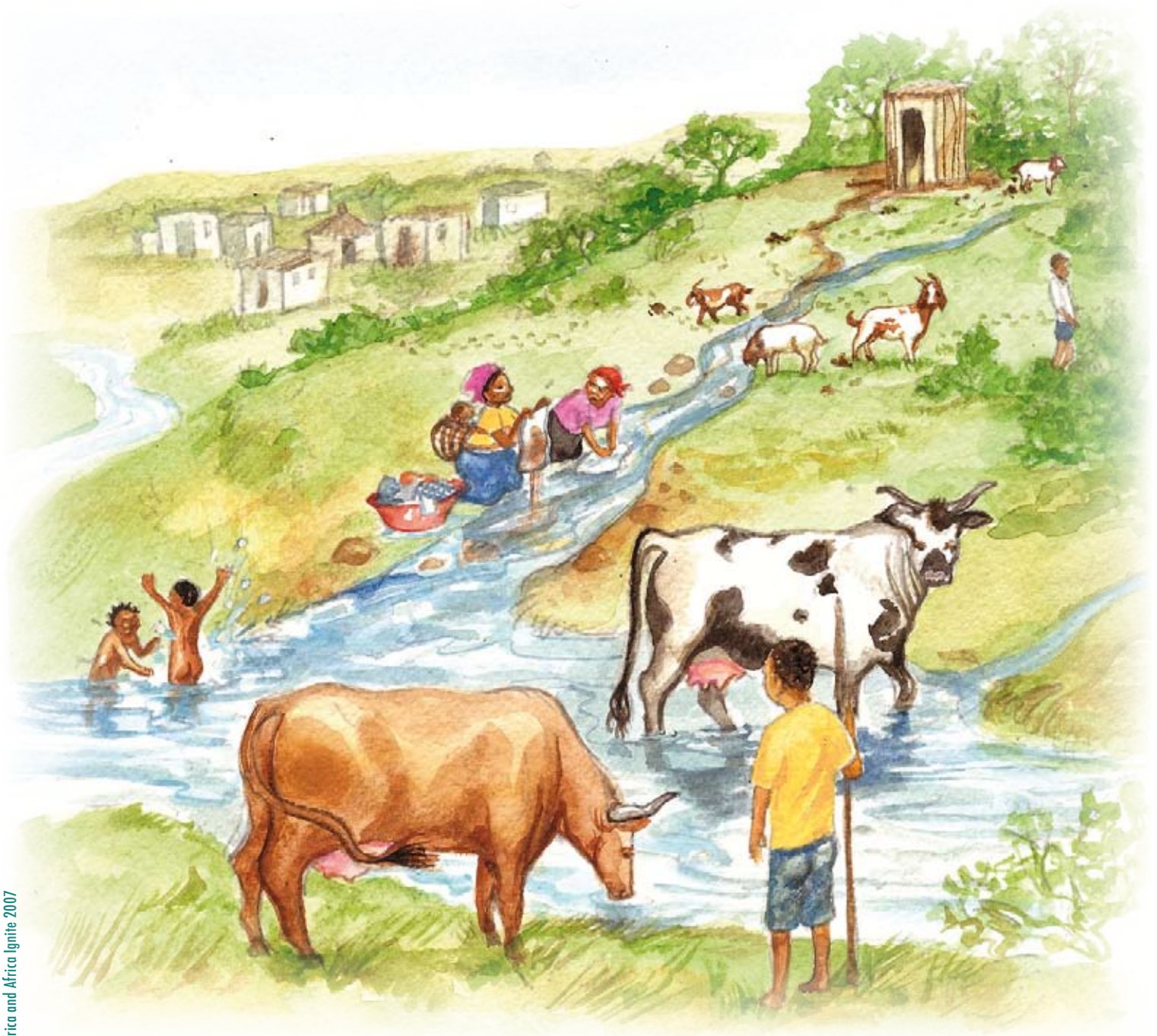


“Yes, well done,” said Mr Poswa. “But as a school, we need to look after the health and well being of our learners, and take the lead in the community to make sure that this problem doesn’t happen again. Ever! Not only did we lose valuable learning and teaching time, but some people lost their lives and many others were terribly ill. Sister Kekana and Lebo, now that the crisis is over, please give us more information. Exactly what caused the dysentery?”

Lebo said, “Well, the Water Detectives found an old and poorly maintained pit toilet which was still being used. We were not looking at sanitation matters that day, so we could have walked on and ignored it, saying that it wasn’t our problem. I’m proud to say that we didn’t. We saw a problem and took action by collecting water to be tested. The municipality was very impressed with us and went to investigate.”

“The problem was that both the groundwater and the surface water were contaminated with germs and bacteria that caused dysentery,” Fiso continued. “The toilet pit was broken and was leaking into the soil and the groundwater as well as pouring out on top of the ground into the spring. Clothes and dirty nappies were being washed in the vicinity. All that dirty water was running down into the spring. Animals were drinking and sharing the water source with people and their faeces were also going straight into the spring.”

Sister Kekana continued, “Of course, none of us knew that this was happening to our water supply, which we’ve drunk from for years without a problem. Because we all drank it without treating it first to make it safe, most of us got sick. That in turn put a terrible strain on our toilet facilities, which just couldn’t cope. So people started using the bushes around the river and contaminated the water even more because of the **bacteria** in their faeces. Then, because they didn’t wash their hands after going to the toilet, they carried the infection to everything they touched. It is terribly **contagious** you know. The most vulnerable of us, like babies, small children, old people and those with weakened **immune** systems got very sick and I’m afraid we lost ten people over this terrible time. “





“Also, when the municipality went to test the water at the dilapidated homesteads near the toilet, they found 12 children living there with no adults. The eldest is only 9 years old! They were all very sick and three of the youngest died. Social Development is now helping them but they were too late to save those small ones. The children had no idea about basic sanitation and hygiene. That is why things got so bad there.”

“But why suddenly now? As you say, the water’s been safe for years and years. How were we to know?” asked Ma Mokoena.

“Well, we use a borehole so we cannot assume that the water is safe to drink. We should always boil the water or treat it with Jik before we drink it,” replied Sister Kekana. “

Mr Kgomotso raised his hand to speak. “I have done some research since the outbreak of dysentery here. I agree that we cannot let this happen again. As a community we need to get involved and take responsibility for our water supply. Before this, I didn’t know where it came from or what happened to it on the way to us.

“If we contact the Department of Water Affairs and Forestry, they will come out and help us to perform a type of **audit** on all the toilets in the area, to tell us what to look for and help us to move the problem ones. I tell you, my eyes have been opened and I see problems everywhere now. For example, the big soapy puddle around the borehole in town is not good. It can soak into the



groundwater so we need to fix that. I saw there by Gumedede's place that his dirty water is running down into the river. That is not good either; we must divert the dirty water. I could go on, but I think we need a broader committee to deal with water and sanitation matters," he concluded.

"I think you are right Mr Kgomo," said Fiso. "The Water Detectives have also been talking about these things. We think that we should get a rain-water tank at the school and encourage others to do the same. We could start with places like the clinic, library, shops and then move on to private households."

"Excellent ideas Mr Kgomo and also Fiso. Thank you. Let us agree that we will contact the Department of Water Affairs and Forestry and get someone from there to pay us a visit or give us more information and direction. We will convene a broader community meeting to discuss out recent problems and to propose solutions," concluded Mr Poswa.

And that is how the community around Siyanakekela School first became aware of issues around safe drinking water and started taking responsibility for the safety of their water supply.





Follow-up questions and discussion around:

- The children had no idea about sanitation matters and, through lack of knowledge, made the water unsafe for everyone.
 - Can you think of other examples where this has happened?
 - Does it happen in your area? (this can include pollution in general)

- Rights and responsibilities. Discuss the right to clean and safe water and healthy environment vs responsibility to look after and protect our natural resources and not damage and harm these precious resources.
 - Whose responsibility is it to make sure that water is safe to use?
 - Whose responsibility is it to look after toilets? (preventative maintenance and regular safety checks)

- Water and sanitation
 - What water and sanitation problems/issues are there in your environment? What can you do about them? (generate action ideas)
 - How informed are people in your area about sanitation matters like hand washing and toilet maintenance? Do you need education around this?
 - Where do you get your water from? Do you need to approach Department of Water Affairs and Forestry or your municipality for assistance in any area? (phone DWAF on 0800 200 200 for advice)

- Groundwater. You've already discussed groundwater contamination. Now, check understanding by discussing the following:
 - How did groundwater become contaminated in this story?
 - Where do you get your water from? Could this be a problem in your area?

- Rain-water harvesting
 - What do you think of Fiso's idea of a rain-water tank?
 - What can it be used for?
 - How does it work?
 - Do you harvest rain-water? If not, why not? If yes, how does it help you?
 - Where can you find out more about harvesting rain-water?

Glossary

foul-smelling	nuka kabi
oozed	phuma
faeces	indle
dilapidated	gugile
contaminated	ngcolile
desperate, jostling queues	imigqa eqeda amandla nenokusunduzana
dysentery	isihudo
Dehydration, diarrhoea and dysentery	Ukuphelelwa ngamanzi emzimbeni, uhudo kanye nesihudo
proactive	ukulawula isimo
bacteria	igciwane
contagious	thathelana
immune	amasotsha omzimba
audit	cwaninga

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