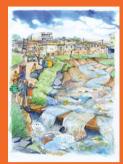
## The Liller Floods

A deadly disease strikes fear in the hearts of all people. In this exciting story, you will find out what the disease is and how it is transmitted. You will also find out what happens to a girl named Mbona when she gets the disease. Will she survive? To get the answer to this question, read on...



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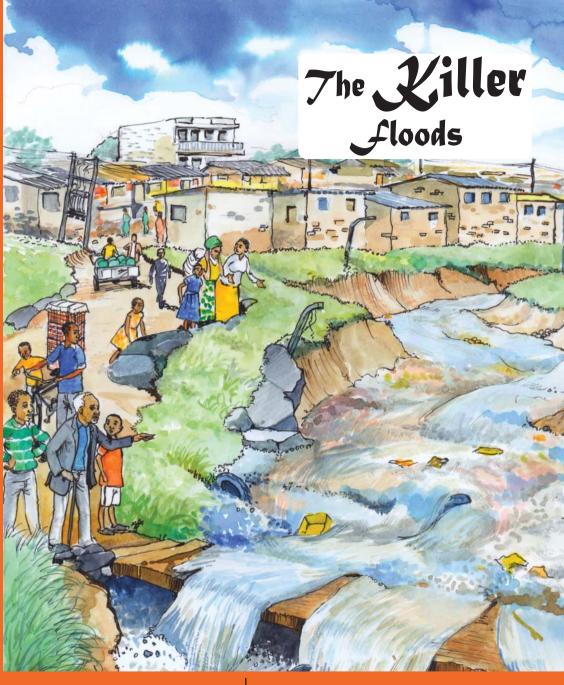
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UN-HABITAT Series on Water and Sanitation for Upper Primary



Water and Sanitation Reader

# The Killer floods

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Mingi watched as the sunny afternoon suddenly grew dark. Fierce winds came sweeping the ground. It was the second week since it had started raining.



She sighed. She liked the rain, but many children were falling sick because the river water, which their families used, was now muddy. The dirt which had been washed down the valleys was taken into the river by the rain.

The wind was furious. It whistled loudly as it swept plastic bags and other litter up into the air and went with them. Mingi smiled. It was funny the way things were flying.

Mingi thought of her best friend Mbona and sighed. She wished Mbona was there to see the flying garbage, but Mbona was in the hospital with stomach pains. The doctor said that Mbona too had dysentery like so many other children.

"Mingi!" Miss Ndimo called sharply, and Mingi nearly jumped.

"Close that window and pay more attention to the lesson!"

Mingi closed the window just as raindrops started falling. Then, in another second, the rain roared on the roof until it was impossible to hear what anyone was saying.

After a short while, Teacher Ndimo stared out of the window worriedly. They looked out as well and gasped. The small river down the valley below their school was already flooded! They could not even see the narrow bridge which everyone used to cross the river. It was already under water!

"My goodness!" Teacher Ndimo exclaimed, "What are we going to do?"

Mingi looked at the skies and shouted, "The skies are turning bright once again, Miss Ndimo!"

"You're right Mingi, the rain is almost over. But I should let

you go home now before the river becomes too flooded to cross," Teacher Ndimo told the class.

Everyone cheered. They liked Teacher Ndimo, but going home early was fun too.

"Teacher Ndimo," Mingi shouted, "how can the river be already flooded yet it only rained for a short time?"

"That's a good question, Mingi," Teacher Ndimo said,
"Remember I caught you enjoying seeing those plastic papers
flying away?" she said.

Mingi smiled, looking a bit embarrassed.

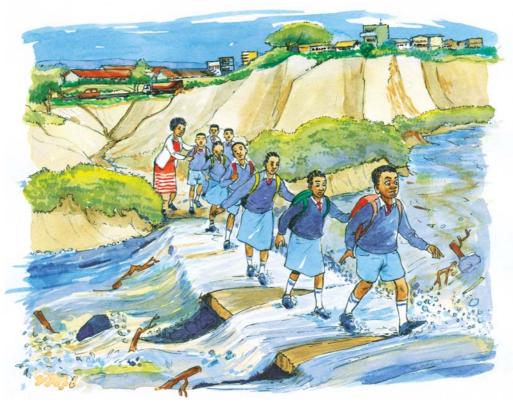
"When people throw rubbish like that around, some of it ends up in rivers. Once in the river, it starts blocking the flowing water until the river floods like that."

"Plastic bags can also kill animals," a boy added. "I once saw a cow die after swallowing a piece of plastic paper."

Teacher Ndimo looked at the boy impressed. "That's right," she said, "There are many other bad things that rubbish can cause. One day, we will discuss them. You go home and think of others. We will discuss them on Monday."

Mingi stared outside as she collected her books.

There were still more paper bags scattered all over the compound. She could even see some in the trees where they were caught by branches. Pupils carried their lunch in those paper bags, then after eating, they simply left them lying around. They looked messy, but Mingi had never realised that they could be dangerous as well.



"There must be many more under the water," she told Teacher Ndimo, "No wonder the river is not flowing properly."

Teacher Ndimo nodded. Then she made sure all the pupils crossed safely to the other side.

"See you on Monday," the teacher told them. "And remember your homework is to find out more reasons why some rivers flood so easily."

Mingi walked with some of the pupils who lived near her home. It was difficult walking on the slippery steep path, and almost everyone kept falling.

Mingi reached the top of the valley and looked back. She was amazed to see that the river looked even deeper now, even though

it had stopped raining. How did that happen? She wondered. Then she noticed that rainwater from up the hills was still running into the river. No wonder the river looked all muddy.

Mingi's father was called Mr. Benga. He was a large jovial man. Until recently, he had been working in the city but now he wanted to become a farmer. Several neighbours thought it was the craziest idea they ever had heard for a long time.

"How can you farm on this soil?" they kept asking him.

"There is nothing wrong with the soil. We've been treating it wrongly," he kept telling them.

Mingi walked into the sitting room, and her father looked up from his newspaper. His face lit up, happy to see that his daughter had not fallen on the muddy ground, and that her uniform was still clean.

"Hello, Mingi," he said brightly, "I hope you didn't get too wet."

"No, dad," Mingi said, "But we almost got stranded in school."

"Stranded? How?" her mother asked as she came out of the kitchen with a mug of hot tea. She gave it to Mingi and she thanked her mother.

"The river was flooded," she explained, sipping the tea gratefully.

"You mean it rained that much at school?"

"No, mum. It is the rubbish blocking the river, and the water from the valleys," Mingi answered.

Mr. Benga put his newspaper away, and looked at Mingi thoughtfully.

"Why does the water run all the way down into the river, Mingi?" he asked.

Mingi thought that was a funny question.

"Of course, because the valley slopes down to the river," she told him.

"Of course, Mingi," Mr. Benga smiled. "But why does it not soak into the ground instead of running away?"



Mingi frowned, now realising the question was not so simple. Her father was testing her.

"Because it runs too fast," she said hesitantly.

"Of course that is also true," her father said. Then he turned to Mingi's mother.

"Please bring a plate, a piece of cloth, and a glass of water. I want to demonstrate something."

Mingi's mother brought the items and Mr. Benga took them outside.

"I'll hold the plate sloping the way our valley slopes, Mingi. Now let's imagine this is rain falling down."

He poured some drops of water and they ran down the plate fast. Mingi was not surprised.

"Now let's put a piece of cloth over the plate and do the same thing," he said, and she watched as he poured some more drops. None of them ran down the plate.

Her father looked up at her. "How is it that this time none of the water ran off the plate?"

"Because the cloth soaked it all up," Mingi said, wondering why her father was asking her such a simple question.

"So, what if our valley was covered by plants the way this plate is covered by a piece of cloth, Mingi?"

Mingi frowned in surprise. Now she knew what her father was demonstrating to her. Their land was bare and so the rainwater ran off down the hills instead of soaking into the soil.

"If there were plants, the rainwater would not be able to run fast," she said happily. "The plants would slow it down making it soak into the ground!"

"Good!" Mr. Benga said, looking proud.

"Now I know two reasons why our river flooded so quickly! I'm going to tell other pupils at school on Monday!" Mingi said excitedly.

"And what will you tell the teacher if she asks you what to do to stop it from flooding so quickly?" Mr. Benga asked, feeling his chin thoughtfully.

"Not to throw dangerous rubbish like plastic papers around, and to plant trees on our land!" Mingi said quickly. Then she frowned. "But dad, everyone says nothing can grow on our land."

"Mingi, this land was once very nice and green. It was all covered by grass and trees," Mrs. Benga said.

"Then what happened?" Mingi asked. It was hard to believe.

"People kept too many animals which ate up all the plants. When it rained, the rainwater carried away all the rich top soil leaving it too poor for anything to grow." Mingi turned to her father worriedly. "So, how are you going to do farming, dad?"

Mr. Benga smiled.

"I'm going to Pungo village to see your uncle tomorrow. I can take you along to see how the people of Pungo village take care of their farms, if you want to go."

"I want!" Mingi said excitedly. She had not been at Pungo for a long time but she still remembered the place. Pungo was a lovely village full of nice trees and green valleys. She also longed to see her cousin Henda again.

"That is a good idea, *Baba* Mingi" Mrs. Benga agreed. "Seeing is the best way for Mingi to learn."

Mingi woke up early and looked outside. It was a nice sunny day, and there were hardly any signs of rain from the previous day. She sighed then went to wash nearby.

"Mingi!" her mother called. "Come and have your breakfast."

Mingi put on a green dress with yellow and orange flowers, then went to the sitting room.

She took a bowl of wimbi porridge.

They walked down the hill towards one valley. Then finally they reached the river. There were several women busy scooping the muddy water into big jerrycans. Mingi saw her best friend's mother among the women.

"How are you, *Mama* Mbona?" Mingi greeted her. "How is Mbona feeling now?"

Mama Mbona stretched up and saw Mingi and her parents. "Oh, hello Mingi. Mbona is much better now. The doctor gave her some medicine to stop the vomiting and diarrhoea. And, how are you Mama and Baba Mingi?"

"We are fine, thank you," Mrs. Benga replied and her husband nodded.

"You all look so smart. Are you on safari?" another woman asked.

"Yes. We're going to visit my brother-in-law in Pungo. He's a farmer, and my husband wants to learn how to farm," Mrs. Benga said.

Laughing, the family walked to the narrow bridge. The water had finally gone down and it was easy to cross. They climbed the slope on the other side.

They went down another valley and up another hill. Soon, there were no more houses to be seen, just shrubs and wild grass. Here and there, were herds of goats and cattle grazing.

"You mean people from far off come to graze here?" Mingi asked in disbelief.



"Yes," her father sighed. "People keep too many herds in these valleys which eat up all the grass. Finally, the valley becomes bare and the soil poor. Now they have to travel far into the greener valleys everyday. Some parents have even taken their children away from school so that they can bring the animals to graze here."

They walked on, and the sun grew very hot. The bus came and Mingi was happy to get a seat by the window. She looked out as they drove down the winding road, past several valleys and hills.

After a long while they came to a shopping centre and the bus stopped. They all climbed out.

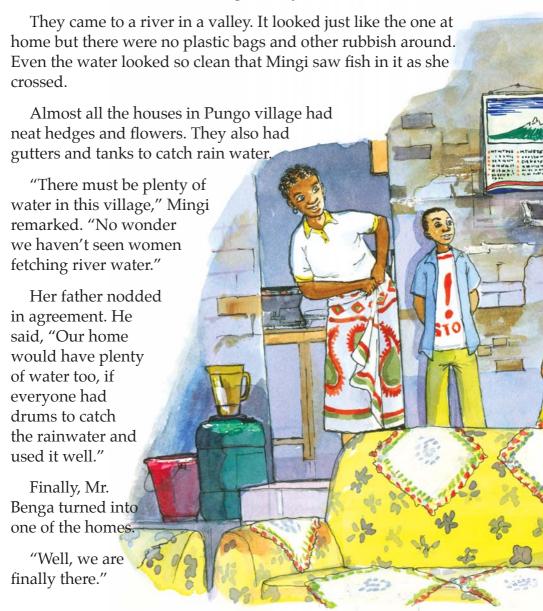
They walked down a sloping path. Soon, they could see the village below the valley. Mingi looked around as they walked. The land was just like theirs but there were many trees, bushes and grass. It looked just like a picture.

"It's so green and cool," she remarked, "not like where we come from."

"It's cool because of all the trees and the vegetation around," her mother told her. "Vegetation makes a place cool and keeps the soil moist."

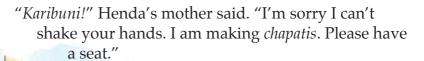
"Would where we come from be this cool if we planted trees and other vegetation?" Mingi asked.

"Of course," Mrs. Benga told her. "In fact, it used to be as green and as cool when I was a small girl like you."



Henda came running and met them at the gate. He was about Mingi's age, and in the same class. He shook hands with everyone then led them into the sitting room.

Henda's mother came out from the kitchen looking excited. Her hands were covered in flour.



Then she turned to her son.

"Henda, go tell your father that our visitors have arrived."

"Where is he?" Mr. Benga asked.

"In the farm," Henda said.

"Then we will go and meet him there. I would like to show Mingi how people should take care of their land."

"You go ahead," Mrs. Benga said, "I will stay and keep *Mama* Henda company."

The farm sloped towards the valley below. It was full of healthy crops, and was divided into sections by lines of hedges. Henda's father was in one section, busy checking tomatoes. As they got closer, he looked up, his face breaking into a broad smile.

They shook hands and he asked about their journey.

"It was very nice and safe," Mr. Benga said.

"Well, are you ready to start learning about farming?" *Baba* Henda asked, laughing.

"Mingi and I are your pupils today," Mr. Benga laughed as well.

They walked around, admiring different crops. There were cabbages, kales and even cassava. They all looked unbelievably green and healthy.

"Uncle," Mingi said thoughtfully, "when you harvest the crops, you leave the farm bare. Why doesn't the rain carry away the soil?"

"I harvest different crops at different times. There are others I harvest without having to destroy the plants. You see that?" he pointed ahead.

Mingi saw what looked like a thick carpet of grass with wide leaves.

"Those are sweet potato plants which trap the rain very well, just like grass. The sweet potato itself grows under the ground so I don't have to uproot the plant when harvesting. And if there is more of it than I need, I can always cut some of it to feed the animals," Henda's father said.

"So your cattle and goats do not have to go far to feed," Mingi said. Her uncle nodded.

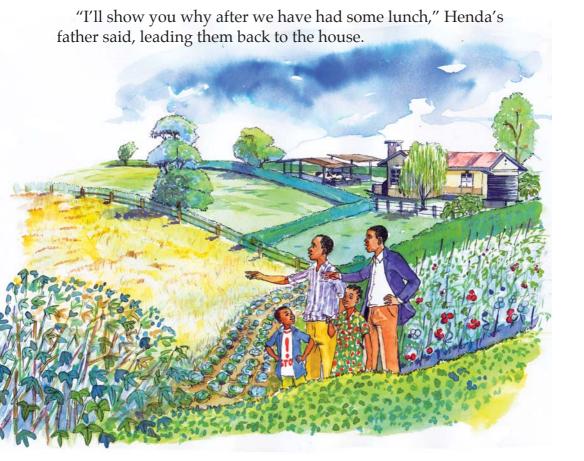


"In fact, they don't have to go anywhere. They feed in their sheds."

They walked to the next section of the farm and Mingi looked around puzzled. "Why do you have so many hedges?" She asked.

"That is hay. I have planted it to hold back soil erosion, and I also use it to feed the cattle," Henda's father replied. "There are many types of crops you can plant to stop erosion as well as for food."

"The soil here must be very fertile," Mingi's father remarked.



After lunch, Henda's father showed Mingi's father a big pit where Mingi's mother threw left-over food and other things such as fruit and vegetable peelings.

"After some time, they become compost manure which we spread on the soil to make it rich. But we do not throw such things like plastic bags on the pit," Henda's father said. "Those ones do not decompose."

Finally, they walked back to the house. Henda's father was now talking about various crop diseases and the right chemicals to treat crops.

"Well, that is all I can show you, brother," Henda's father said as they reached the house. "I hope you have an idea now on how to start farming."

"Yes I do," Mingi's father replied, "Seeing your farm was very useful. Now I am confident I can succeed."





Mingi woke up early the following Monday. She was eager to tell her class what she had learnt about saving water. Mbona was back at school and Mingi was delighted to see her.

"I was terribly lonely when you were away," Mingi told her.

"But you have many friends, Mingi?" Mbona said.

"You are my special friend," Mingi told her. Then she looked at her and saw her friend looked thinner. "How was it?"

"What a bad disease!" Mbona said, "I have never experienced so bad a stomach ache before. I could not even take a sip of water without vomiting!"

Mingi shuddered. She started to say something then stopped. Teacher Ndimo had just walked in.

"Hello Mbona," Teacher Ndimo said happily, "it's good to see you're back. But so many other pupils are still absent," she added, looking at the class.

"Many of them are at home or in hospitals for dysentry and other diseases."

"Teacher Ndimo went on to explain, "I suspect they have been drinking the river water without boiling it first. How can we make everyone know that the river is *contaminated*?"

The pupils stared at one another. They were all wondering what *contaminated* meant.

"Contamination is when dirt gets into water or food," Teacher Ndimo explained. "Diseases like dysentery, and even the more dangerous one called cholera are caused by germs from human waste. When people with dysentery relieve themselves in places like bushes instead of toilets, the germs are sometimes washed into the river by rain."

The pupils stared at her looking both horrified and disgusted to hear they had been drinking such dirty water.

"You can also get sick from using dirty hands or dirty dishes, so you must always wash them thoroughly with soap," Teacher Ndimo went on.

"But what happens when even the river is dry and there is not enough water?" asked one of the girls shyly.

"Anyone with an idea?" Teacher Ndimo asked the class.

"That is why we should learn to save rainwater," Mingi said confidently. "That way, we will have enough water instead of letting it run away with the soil."

"Anything more to tell us, Mingi?" the teacher asked, looking at her impressed. "You sound like you have good ideas to share with the class, come forward and tell us."

Feeling suddenly shy to see everyone looking at her, Mingi stood up and walked to the front of the class.

"I visited my uncle in Pungo Village. I saw what they do there," Mingi said.

"There are several reasons why we do not have enough water so that we can all practise proper hygiene," she started. "First, we should not waste rainwater. All our homes should have gutters and tanks to catch it."

"Yes," the teacher agreed, writing the point on the board, "can you imagine all the rainwater we have lost in the past two weeks?"

The class remembered all the rain and nodded.

"If we had water in tanks at home, we would not have to drink contamitated river water and get sick," Mbona added, struggling with the word contaminated.

"Yes, you're right Mbona," the teacher said, "but river water can also be made safe by boiling it properly."

Then she turned to Mingi and said, "Please continue."

"We should plant crops that help to stop water from running down the valleys," Mingi went on.

"What kind of plants?" Teacher Ndimo asked.

"My uncle says there are many types we can plant, some of which we can also use to feed animals," Mingi said.

The teacher wrote one point down, then looked at the rest of the class.

"We can also plant grass," one boy suggested.

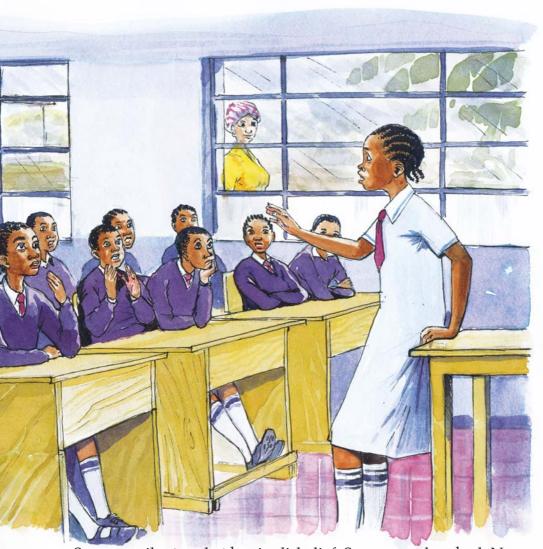
"But what if animals ate it all?" someone asked.

"That is why we should not overgraze," the teacher said.

"What is overgrazing?" another girl asked.

"It's keeping too many animals in one area," the teacher explained. "They eat all the vegetation and do not let new ones grow."

"My mother told me that that is what happened to our land," Mingi said. "This valley was once very green and with plenty of water."



Some pupils stared at her in disbelief. Some even laughed. None of them could imagine the place had ever been green.

"Mingi is right," Teacher Ndimo told them. "This area was once very fertile. Now, what other things can we grow?"

The class listed trees, shrubs, and flowers, then at the end, the teacher turned to Mingi.

"Okay Mingi, we have listed several things we can grow to keep rainwater from running away. How does that help to make sure we have enough water?"

"The rainwater will not be able to run down the valley so fast. Slowly, it will sink deep into the ground, then one day, we will be able to have boreholes," Mingi said confidently.

Some pupils laughed loudly this time.

"Mingi is right," Teacher Ndimo told them severely, "I even remember we had a borehole in this place once."

"What?" the whole class, including Mingi, gasped. "On this dry valley?" they chorused.

"It's true. When I was a small girl," Teacher Ndimo told them, "we used to fetch fresh water from a borehole right here."

"Now, we will write down all the points on how to make sure we have enough water, and how to make sure it is safe for use," she added.

"Yes, Teacher Ndimo!" the whole class shouted.

"Now," Teacher Ndimo said in the end, "I want all of you to copy all those points and go and show them to your parents."