

# TUNZA

The UNEP Magazine For Youth



Vol 1 No 1



**FACTS**  
**Acti<sup>o</sup>N**  
projects  
AROUND  
the w<sup>o</sup>RLD

star  
interview  
**BERNARD  
LAMA**  
on water

save  
water  
-WHAT  
**YOU**  
can do

For young people, by young people, about young people



# TUNZA

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TUNZA, the UNEP Magazine for Youth

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# CONTENTS

**3** Welcome to Tunza

**5** Freshwater - Your Questions Answered

**6** Fresh or Foul

**8** That's the Way the River Flows... Or is it?

**9** Sacred Waters

**11** Saving the Cranes

**12** How it Works

**14** Star Interview: Bernard Lama

**16** Poster Competition

**17** You Too Can Help

**19** Never Lose Hope

**20** Story of Lucy

**21** Playing for Water

**22** Seven Water Wonders of the World



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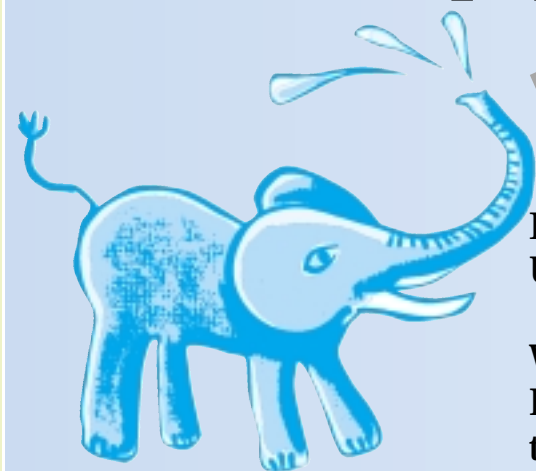
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# Welcome to TUNZA



**W**elcome to the first of what we are sure will be the coolest enviro-magazine on the globe, packed with facts, fun and thought-provoking ideas.

It has been christened *Tunza*, which is the same name as UNEP's new young person's initiative. Why *Tunza*?

Well, UNEP is headquartered in Kenya, East Africa, where Kiswahili is the regional language. So we wanted a dynamic, trendy-sounding name that says something about you and something about us.

*Tunza* means 'to treat with care and affection'. So all in all it seemed the right name, with the right message which will guarantee we are right on track.

2003 is the International Year of Freshwater. *Tunza* is being launched to coincide with the annual World Environment Day whose theme is Water: Two Billion People are Dying for It!!

It doesn't matter where you look. Water is the top environment, health, agricultural, security issue of the 21st century. Disease-ridden water daily claims the lives of 6 000 – mainly children, mainly in developing countries. It is the equivalent of a quarter of a big city like London being wiped out every year. Try out the maths yourself on your own village, town or city. It is scary stuff.

Meanwhile the world is going to have to get used to a new word – hydro-diplomacy – so as to avoid squabbles that could boil over into conflict over increasingly scarce water resources.

We hope this first issue of *Tunza* wins your vote. The plan is to have up to four editions a year. The magazine is 'what it says on the tin'. For young people, by young people and about young people.

We look forward to your feedback. If we are ever boring, if something is rubbish, let us know. If we are getting it right, let us know too. Your views, your questions on the environment, are what will make *Tunza* tick.

We want to hear from you – your views, your news and your ideas.  
E-mail  
[tunza@ourplanet.com](mailto:tunza@ourplanet.com)

# WHICH IS MOST VALUABLE



Bottled Water: \$1.19 / litre

Milk: \$0.75 / litre

Canned drink: \$0.64 / litre

Petrol: \$0.45 / litre

In most countries, a litre of bottled water costs more than a litre of milk, a canned drink, or even petrol. Surprised?

All prices are in US dollars for 2002 average except petrol (2003).

ANSWERS YOUR  
QUESTIONS ABOUT

## freshwater

**Q:**  
so 2003 is  
the UN year  
of freshwater.  
What is  
actually being  
done this year  
to solve the  
water crisis?

Taona Matsveru,  
Zimbabwe

**A:** One of the centre pieces has been the 3rd World Water Forum held in Kyoto, Japan, in March. Here, more than 100 plans were approved. These include over \$500 million to Asian cities for water and sanitation projects, around \$50 million for community water projects, and an International Flood Network to boost flood warnings for an estimated 4.8 billion people.

**Q:**  
How much  
would it  
really cost in  
total to get  
clean water to  
all the people  
in the world?  
Is this  
something we  
can  
accomplish?  
Why aren't we  
doing it?

Isabelle Dérobert,  
France

**A:** Maybe as much as an extra \$30 billion a year. But putting a precise figure on this can be misleading as it will ultimately depend on how wisely the funds are spent. Progress has been made in some areas in recent years. The percentage of people being served with improved water supplies increased from 4.1 billion, or 79 per cent, in 1990 to 4.9 billion, 82 per cent, in 2000.

**Q:**  
How should  
people store  
water for  
future  
generations?

Ratikanta Sahu,  
India

**A:** It doesn't have to be high tech and super pricey. One way is rainwater harvesting. In China for example, 17 provinces are now harvesting enough rainwater using mini dams, containers and such like to provide drinking water for 15 million people and back-up irrigation for 1.2 million hectares. UNEP, with Tonji University, will be replicating this blue-print across poor countries. In Kenya, we are working with the Maasai people to carry out similar harvesting to reduce the long and time-consuming treks women make in search of water.

**Q:**  
if so much  
of our  
freshwater is  
locked away  
in icebergs,  
why can't  
we make that  
water  
available  
to people?

Suhail Abdul  
Hameed,  
India

**A:** Towing icebergs from the poles to thirsty places has so far been a pipe dream. But a Canadian company, Iceberg Corp, has signed a deal with Greenland to harvest icebergs so let's see what happens. It is probably only a goer for Arctic bergs. Ones from Antarctica would be likely to melt away in the warmer southern seas before getting to water-needy nations.

**Q:**  
if global  
warming is  
melting the  
icebergs,  
shouldn't that  
increase the  
amount of  
freshwater  
available for  
our use?

Reynaldo Cuneta,  
the Philippines

**A:** You can't actually harvest the melting water of an iceberg. All that meltwater is doing is making the sea a little less salty and sea levels a bit higher.

**Q:**  
Why don't  
we desalinate  
seawater on  
a large scale  
for areas  
that suffer  
droughts?

Serena Mansfield,  
UK

**A:** Some countries can afford this technology. Saudi Arabia for example. There are also proposals for California. But in most countries it is too expensive. And often, areas suffering droughts are simply too far away from the sea. So it is impractical from that angle too.

# 6 *fresh*water



The water in your glass may have fallen from the sky as rain just last week; but the water itself has been around pretty much as long as the Earth itself. So maybe you have been sharing a drink with a dinosaur.

For most of us, water comes out of a tap. But many millions of people have to walk many kilometres to a well and then carry the water home each morning, before their families can drink. For others, their only source of water is a dirty pond or river. One in every six of us – more than a billion people – do not have reliable clean drinking water.

However it comes, water is essential for people, for plants, and for animals. We need water to drink, to cook, to wash – and to flush the lavatory. We need roughly 50 litres of it every day to lead a healthy life.

And that does not include the water many communities need to irrigate fields and make their crops grow. In a lot of countries, watering crops uses up to 80 per cent of freshwater supplies.

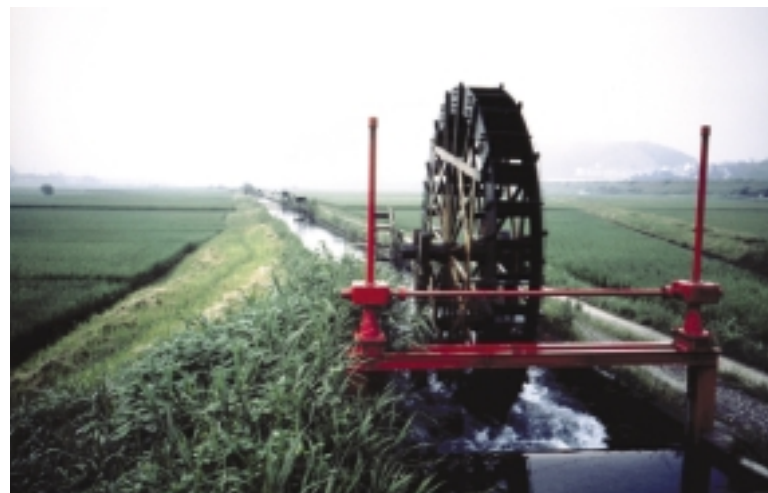
For large numbers of people, especially the rural poor in developing nations, gathering water is an essential part of their daily routine. During the dry season, the nearest water may be an hour's walk away. Often, children are kept off school to go and collect water for their families.

In shanty towns and poor urban areas, people may have to queue for hours to get water from a communal tap – or from a water seller, who may charge more for a can of water than richer people pay for a regular piped supply.

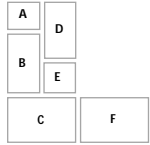
The United Nations says that the proportion of people without clean drinking water must be halved in the next 12 years. Governments promise to spend more to bring clean water to every community, alley and household. But many communities are doing the job themselves, sinking wells, catching rain from roofs and building small dams to stop rainwater running away.

	A
B	C
D	E

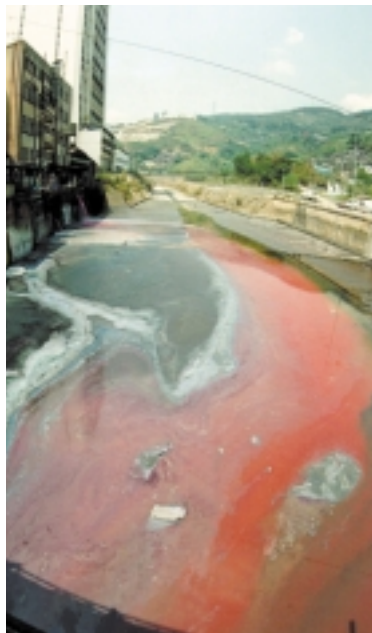
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A. DAYO N GASTONI/UNEP/TOPHAM  
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C. UNEP/TOPHAM  
D. DOAN DUC/UNEP/TOPHAM  
E. IWAO YAMAMOTO/UNEP/TOPHAM



# foul water



PHOTOS:  
 A. ANGEL CAROLLO/UNEP/TOPHAM  
 B. PEACE CHILD INTERNATIONAL  
 C. LISA MANISCALO/UNEP/TOPHAM  
 D. SIU WOON-YING/UNEP/TOPHAM  
 E. YANG ZI JIANG/UNEP/TOPHAM  
 F. JOTA CORNEA/UNEP/TOPHAM



**W**e depend on water to live. But we also pollute our water by using it to take our waste away. Dirty, smelly liquids trickle down shanty alleyways; city sewers empty into rivers; and big factories dump their waste into the sea. We all do it.

Chemicals and oil kill wildlife. We've all seen the pictures of big pollution disasters from oil tankers. But for humans the big killer is sewage. When it pollutes drinking water, it brings epidemics of diseases like cholera and typhoid, and diarrhoea.

Doctors say that, at any one time, half of the poor people in developing countries in Africa and Asia are sick because of diseases caused by dirty water.

That's mainly because some 2.4 billion people do not have proper sanitation, whether a flush lavatory attached to a sewer pipe or a properly designed dry lavatory or cesspit. Every day, around a billion people squat at squalid pit latrines in shanty towns. And another billion make do with fields or streams, railway lines or roadsides, buckets or plastic bags.

Many women and girls, shamed by this, wait till the night time before they go at all.

The United Nations has promised to try and halve the proportion of people without safe sanitation by the year 2015. But however you do your toilet, doctors say the most important thing is to wash your hands afterwards – in the cleanest water you can find.



# Or is it?

## The World's Largest Rivers

**BY TOTAL ANNUAL DISCHARGE (KM<sup>3</sup>/YR)**

River	Discharge	Rises	Outflow
1. Amazon	6 923	Andes Peru	Atlantic Ocean
2. Ganges	1 386	Himalayas	Bay of Bengal
3. Congo	1 320	Congo	Atlantic Ocean
4. Orinoco	1 007	Serra Parima Mts. Venezuela	Atlantic Ocean
5. Yangtze	1 006	Yangtze Tibetan Plateau	Yellow Sea
6. La Plata	811	Argentina/Bolivia	Atlantic Ocean
7. Yenisey	618	Tannu-Ola Mts. Western Tuva Russia	Arctic Ocean
8. Lena	539	Baikal Mts. Russia	Arctic Ocean
9. Mississippi	510	Lake Itasca USA	Gulf of Mexico
10. Mekong	505	Tibetan Highlands	South China Sea

**RISES**

1. Nile  
6 670

2. Mississippi  
6 420

3. Amazon  
6 280

4. Yangtze  
5 520

5. Mackenzie  
5 472

6. La Plata  
4 700

7. Huang Ho  
4 670

8. Mekong  
4 500

9. Lena  
4 400

10. Congo  
4 370

Tributaries of Lake Victoria, Africa

Lake Itasca, USA

Andes, Peru

Yangtze Tibetan Plateau, China

Great Slave Lake, Canada

Argentina/Bolivia

Kunlan Mts., West China

Tibetan Highlands

Congo

**OUTFLOW**

Atlantic Ocean

Arctic Ocean

South China Sea

Gulf of Chihili

Atlantic Ocean

Beaufort Sea

Yellow Sea

Atlantic Ocean

Gulf of Mexico

Mediterranean Sea

Rivers look like they will flow forever. But not so. Not even for the world's mightiest river, the Amazon, which carries a fifth of all the world's water that drains from the land to the sea.

Hundreds of millions of years ago, the Amazon flowed west into the Pacific Ocean. Then movements in the Earth's crust pushed up the Andes mountains and blocked its route. So one day, the Amazon turned round. First, it backed up to form a vast freshwater lake; then it forced its way east, flowing into the Atlantic. To this day, its fish are more like those in Pacific than Atlantic rivers.

Modern engineers have tried to repeat that amazing feat. In 1900, American engineers decided to reverse the Chicago River, which carried the sewage from the city of the same name into Lake Michigan. It was causing epidemics of typhoid and cholera. So they forced the river into a canal that went south to join the Mississippi. It took the sewage on a 2 000-kilometre journey to the Gulf of Mexico. But it stopped the epidemics.

More usually, engineers have just emptied rivers – sometimes with disastrous results. The old Soviet Union took most of the water out of two great rivers to irrigate cotton fields. They were so successful that the Aral Sea, once the world's fourth largest inland sea, has all but dried up. Fishing boats are still stranded in ports

that are now 80 kilometres from the sea. Several other great rivers no longer reach the sea all year round because we have taken so much water out. They include the Nile in Egypt, the Indus in Pakistan, the Yellow River in China and the Colorado, which is now only a trickle when it crosses the border from the United States of America into Mexico.

Now engineers want to connect up rivers so they are more like the water mains in a city than a natural river system. First up, China is diverting part of the flow of the River Yangtze a thousand kilometres north into the dry Yellow River. And India wants to connect up more than 30 rivers to take water from the wet north to the dry south.



# sacred WATERS

Sheikh Adil Abbas & Jagan Devaraj



70 per cent  
of an elephant  
is water

Water is sacred for most Indians. Many of our rivers are holy, and the holiest of them all is the River Ganges. Hindus believe that bathing in the Ganges washes away their sins. And if their ashes are scattered on the river when they die, it will carry them straight to Heaven.

Many sick people also bathe in the Ganges. They believe that the River God will cure them. At Varanasi, one of the seven sacred Hindu cities in India, over a million pilgrims come every year to bathe in the Ganges or to scatter the ashes of loved ones on the river.

In Hindu myths, the water God is called Varuna, a fair-skinned man riding a monster fish called a *makara* which has the legs and head of an antelope. He and his wife Varuni sit on thrones of diamonds. They hold court over the gods and goddesses of the different rivers, lakes and natural springs.

All this shows the vital importance of water to all aspects of life in India.

Too much of it causes terror when the floods, which follow the monsoon rains every year in Bengal and Bangladesh, are too high. But too little also causes hardship, for instance for those who live in the deserts of Rajasthan.

And for almost all Indians, we increasingly pollute our sacred waters. A recent league table of water cleanliness put India 120th out of 122 countries. All over India, we use our rivers to take away untreated sewage and waste from factories. Around 900 million litres of raw sewage are dumped in the Holy Ganges alone every day. Sewage has turned some of our most beautiful lakes into a mass of stinking algae. Even our springs and wells are sometimes filthy.

Waterborne diseases cause millions of deaths every year in India. Nearly half of the people admitted to hospital are suffering from waterborne diseases, like typhoid, cholera, hepatitis and dysentery. The economic cost to our country of all this illness must be staggering. →

// ...we all  
have to  
regain our  
respect for  
water...



Meanwhile, we use so much water that shortages are causing big disputes. In the dry south, the normally peace-loving Tamil and Karnatak peoples are arguing over the Cauvery River.

The river rises in the state of Karnataka, but for 80 years that state shared its water equally with Tamil Nadu, which is downstream. However, since severe water shortages in the late 1980s, Karnataka has started holding back more water. There have been water riots in Tamil towns and a long legal dispute. Matters have been made worse because the monsoon rains have failed twice in the last three years. The rivers have been drying up, crops shrivelling and people going hungry.

So what are the solutions? First, we have to regain our respect for water. We have to stop the pollution and treat our sewage, so that the rivers can run clean again. Second, we have to think about ways of saving water and using it better. A lot of water leaks from our city water pipes. We could save it by plugging the leaks. And third we have to think again about how we get our clean water. We cannot always rely on the rivers – and especially not on big dams. India has thousands of big dams. But millions of people have been flooded from their homes by dams and not properly compensated. So

whenever another dam is proposed, there are huge protests.

There could be more trouble if the plan to connect up all our main rivers goes ahead. The idea is to take water from the Ganges and other rivers in the wet north to the dry parts of the country in the south. Some people say this will solve our water problems. But others say it will be far too expensive and will force millions more people to leave their homes.

Maybe there are other ways. We could, for instance, catch the rain before it gets into the rivers and when it is still clean. Lots of people already collect the rain water that falls on the roofs of their houses. We could all do it.

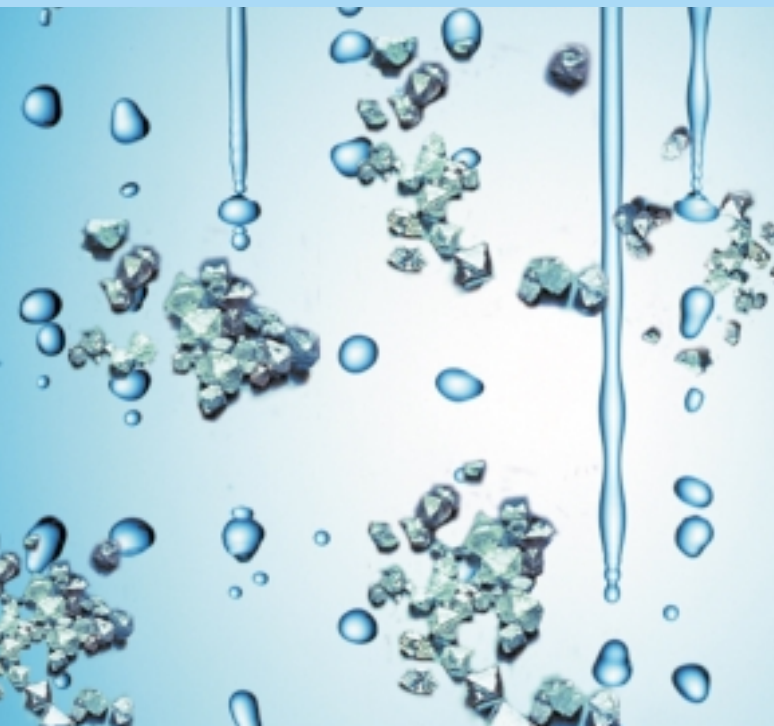
In the days before big dams, Indians dug thousands of small tanks and ponds to collect the rain. Many of them are now abandoned and silted up. But if we could clean them out, Indians would have their own water ready to use in the dry months.

We all have a duty to preserve our precious water heritage. Otherwise, when our children ask us what happened to the holy rivers that our ancestors worshipped, our answers will not be in words but in tears.



PHOTOS:  
PREVIOUS PAGE: DAVID WOOLLCOMBE/PCI  
ABOVE: SHEIK ADIL ABBAS; DAVID WOOLLCOMBE/PCI

## Water is the world's best friend



Everything depends on water. We need water to drink, to wash, to swim, to grow food, and to do any number of things vital to the life of any living thing, anywhere. However, we cannot meet these needs unless we learn how to treat our water. We are misusing it. We are using too much, wasting too much, polluting too much.

Over a third of the world's population does not have enough access to clean freshwater. People are literally dying for it. If we don't find a way to sustain the world's population with our water resources, clean freshwater could become more precious than the most precious of stones.



# SAVING the cranes

## the story of WWF wetland ambassador Min Qin

PHOTOS:  
CUTOUT: WWF-CANON/WWF-JAPAN/MIMA JUNKIC  
BELOW: MIN QIN/WWF

I live in a village near one of China's most important wetland nature reserves, at Yancheng on the east coast. It is a big reserve covering nearly 600 kilometres of mud flats along the shore. About 3 million birds from 200 species visit it every winter.

It was here that I became a wetland ambassador for WWF, sleeping in a tent on the beach and learning about the beauty of the wetlands and how to save them.

The Yancheng National Nature Reserve is famous for its red-crowned cranes. Its centre is very natural and wild. But a million people live round the edges of the wetland. There are rice fields and fish and shrimp ponds. Maybe because of this, the cranes are disappearing.

I study environmental engineering at university. And it was there, two years ago, that I heard WWF wanted to appoint some student ambassadors to study and help protect wetlands. I decided to apply to study the Yancheng Reserve.

I formed a team by putting up posters and asking my friends. One week later, we had eight people and we presented our proposal just one day before the deadline!

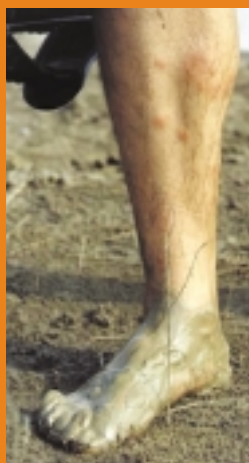
We were selected.

The job was hard. After training, we spent a lot of time living at the wetland, surveying the wildlife. At night, we froze in our tents. But the worst time was the evening, when we were bitten by thousands of mosquitoes. I had lumps all over my legs!

One day, we had the biggest snows there for 13 years. Our team all caught cold, and one member later developed a lung disease. We were all very sorry for him. But he said: 'It's nothing because I am serving nature.'



We went to the reserve for two years. In the second year, we gave environmental lessons to a nearby school. One student answered all our questions. Later, he said he had met our team the previous summer and remembered what we had said. That made me very happy.



I had thought that we could save the wetland just by telling people the problems. But I soon realized that it was more complicated. The people needed the wetland to live. Our studies found that a serious problem for the cranes was local people destroying the vegetation. They did this by digging up the mud to collect clamworms, which they sell.

But we hope that our studies will help the managers of the reserve, as well as local people, to understand better how the wetland works and how to protect it.

The work taught me many things. I learned about wetlands, of course, and how to be a nature lover. But I also learned how to organize a team and cooperate with others. I am proud to have been a wetland ambassador and I will continue to devote myself to wetlands and nature.

## A drop

11

Nothing more  
than a drop in it –  
Everything!  
A whole world transparent  
but full, wet and alive  
One sphere meets a universe  
of water glowing in brilliant colours  
Unattainable and always present.  
Listening to the moving waves,  
I feel the peace inside myself.  
But the perfume-flavoured,  
man-made drop I cannot swallow  
Toilets flush  
House water bubbles  
The inebriated captain  
crashes the tanker

Anon, USA

*Rescue Mission: Planet Earth*, Kingfisher  
Books and Peace Child Charitable Trust, 1994

## Take Care

*The earth is dead without water  
Man is dead without water  
Birds, fish, sheep, goats, cows and all  
They are dead without water  
The sea and the river  
They give us love and joy  
The ocean keeps the world together  
Where are we without these?  
I will reach out  
in my boat to yonder land  
Because the sea gives me road  
The oceans and rivers give me road  
So take care of our water  
Please! Take care!*

Dudley Fewry,  
Sierra Leone

*Rescue Mission: Planet Earth*, Kingfisher  
Books and Peace Child Charitable Trust, 1994

## Water is Life, Water is Death!

A drop glistens on my finger  
I long to taste it, to ease the fire  
on my cracked lips  
Water is life  
Without it I should die,  
yet water is also death.  
This drop is full of bacteria –  
trachoma, bilharzias – names  
that strike terror in my young heart.  
Safe water is free in some places.  
Here, it costs more than milk,  
more than Coca-Cola!  
Is that fair? Is that wise?  
Is that sustainable?

Anon, Mozambique

*Rescue Mission: Planet Earth 2002*, Peace  
Child International, 2002

# How it Works

The world isn't running out of water. Nature keeps purifying it and bringing it around one more time. But too often it's not where we need it. It is in the oceans or the glaciers or deep underground or in raging rivers far from where people live.

Greenland's 60 000 inhabitants have more water than anyone else. They don't need it. But people in the driest countries do. They need huge amounts of water to irrigate their crops as well as to quench their thirst.

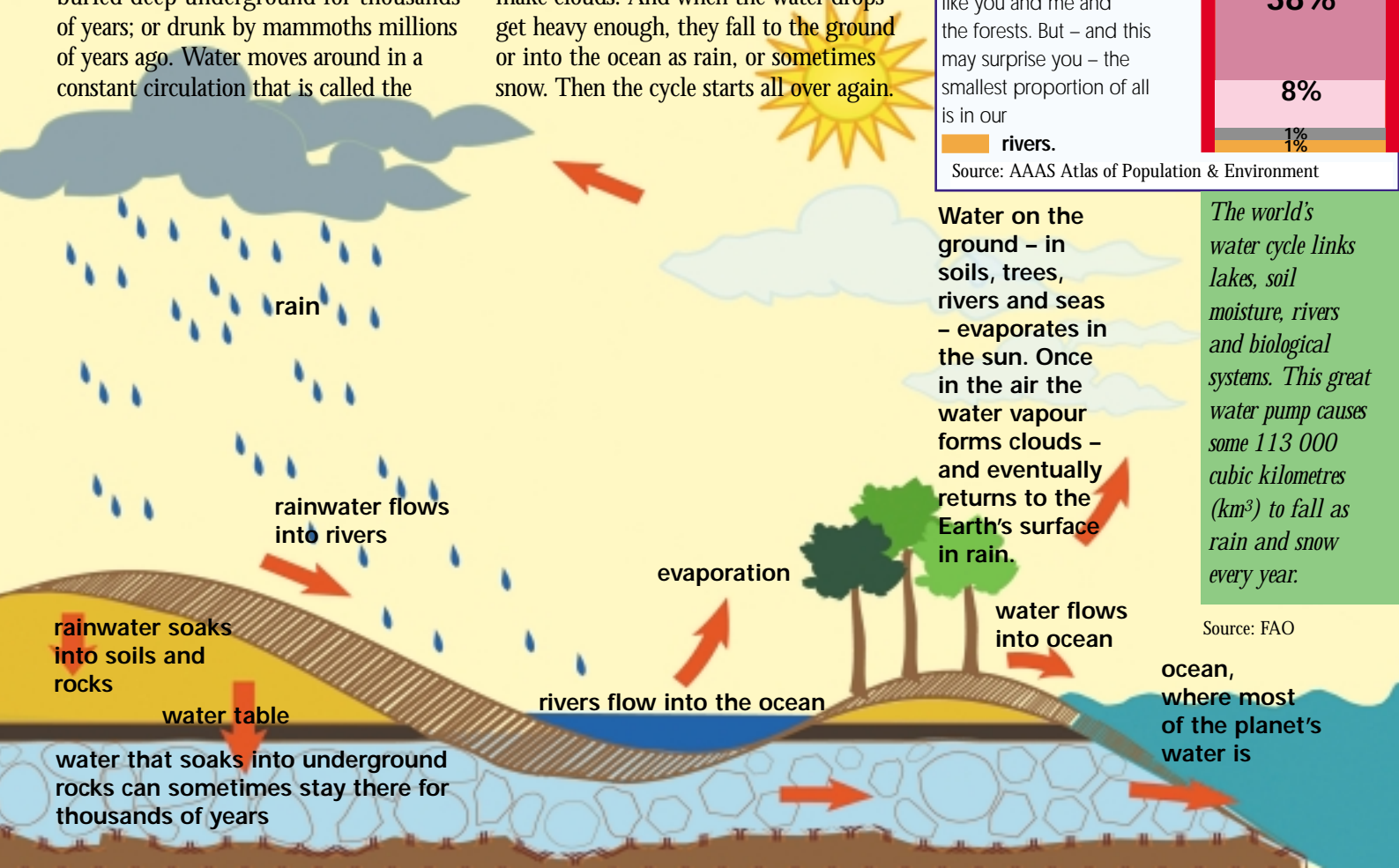
And water is hard to get to where it is needed. Think how much a single bucket of the stuff weighs. Think how many buckets a village or a town or a city uses in a day. To make matters worse, our precious water is often dirty. More than a billion people in the world can't drink a glass of clean water when they are thirsty.

During the 21st century, water is destined to become as precious as oil. We will need to take care of every drop. So here is your essential briefing guide to the new world of water.

## thewatercycle

From the very earliest times, our planet has probably had the same amount of water. It just keeps moving around. That water in your glass might have been in the oceans for hundreds of years; or buried deep underground for thousands of years; or drunk by mammoths millions of years ago. Water moves around in a constant circulation that is called the

water cycle. Water on the Earth's surface or in the oceans can evaporate in the sun making water vapour. When there is enough water vapour in the air, it forms drops of water that collect together to make clouds. And when the water drops get heavy enough, they fall to the ground or into the ocean as rain, or sometimes snow. Then the cycle starts all over again.



## WHERE THE WATER IS

Most of the world's water is in the

**oceans.**

It is salty and we can't drink it. But a small amount is

**freshwater.**

We could drink it, except that most of this freshwater is in...

ALL WATER

97.5%

2.5%

OF WHICH

79%

**ice caps and glaciers.**

But after that we are in luck. A fifth of the world's freshwater is in

**rocks underground,**

that we can pump to the surface. And a smaller amount is right at

**the Earth's surface.**

Of that surface water, about half is in...

20%

1%

OF WHICH

52%

**lakes.**

Most of the rest is in

**soils.**

Some is in the

**air,**

waiting to fall as rain, or in

**living organisms**

like you and me and the forests. But - and this may surprise you - the smallest proportion of all is in our

**rivers.**

38%

8%

1%

Source: AAAS Atlas of Population & Environment

Water on the ground - in soils, trees, rivers and seas - evaporates in the sun. Once in the air the water vapour forms clouds - and eventually returns to the Earth's surface in rain.

*The world's water cycle links lakes, soil moisture, rivers and biological systems. This great water pump causes some 113 000 cubic kilometres (km<sup>3</sup>) to fall as rain and snow every year.*

Source: FAO

ocean, where most of the planet's water is

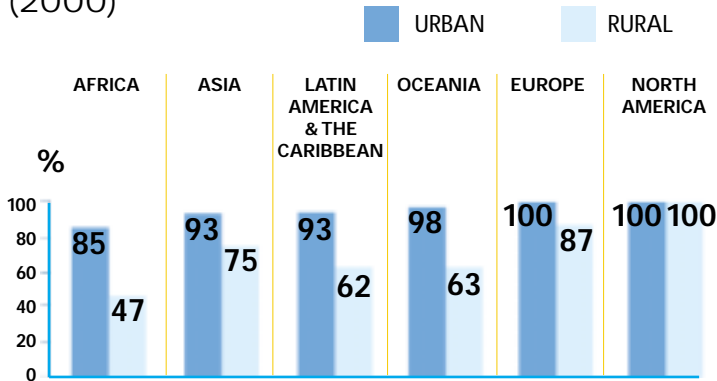
2 700 litres

# Are you one of the lucky ones?

If you live in Europe or North America, chances are that you have clean drinking water on tap. But that's not true everywhere. In rural Africa, the majority of families still don't have clean drinking water anywhere nearby.

## populations

with access to improved water supply (2000)



Source: WHO/Global Water Supply and Sanitation Assessment

# freshwater rich, freshwater poor

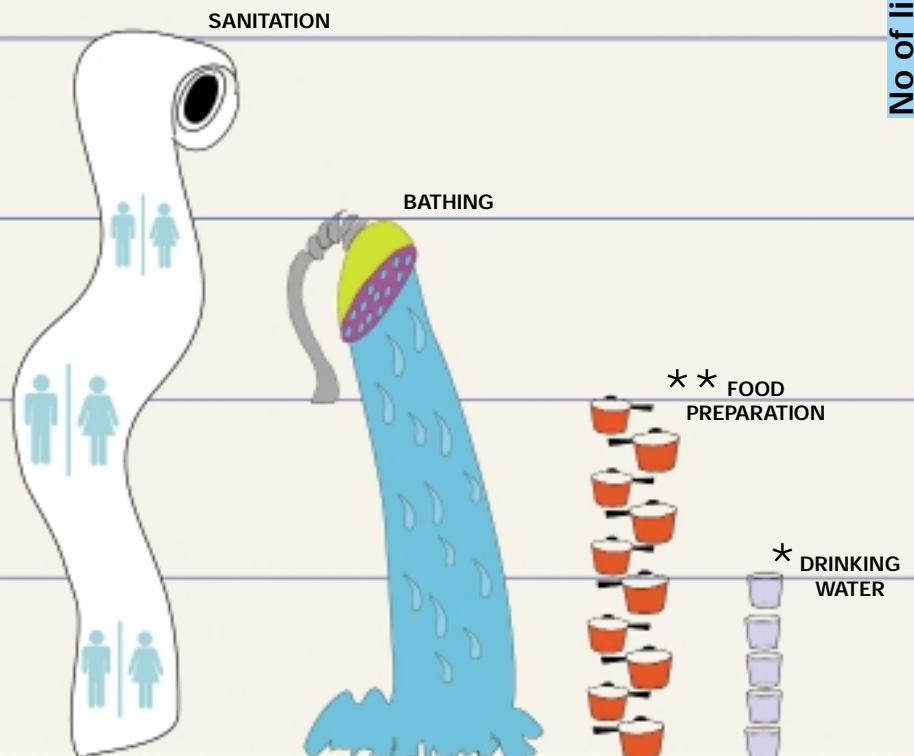
TOP 10	Litres available per person per day		BOTTOM 10
GREENLAND	29 503 928	27	KUWAIT
FRENCH GUIANA	2 225 211	142	GAZA STRIP
ICELAND	1 669 534	159	UNITED ARAB EMIRATES
GUYANA	867 727	181	BAHAMAS
SURINAME	801 631	258	QATAR
CONGO	755 360	282	MALDIVES
PAPUA NEW GUINEA	456 382	310	LIBYA
GABON	365 332	323	SAUDI ARABIA
SOLOMON ISLANDS	274 000	353	MALTA
CANADA	258 572	408	SINGAPORE

Source: United Nations World Water Development Report, 2003

# How much water do we need?

★ ★ **GROWING FOOD**  
The daily water requirement per person for growing food prior to preparation averages 2 700 litres.

How many litres of water do you use in a day? Drinking is not a lot, however thirsty you get. Probably cooking your food uses more. So does bathing and showering. And flushing the lavatory is most likely the biggest water user in your house. But watch where the graph goes next. For all that is tiny compared to the huge amounts used to irrigate the crops and water the animals that make up your daily diet.



**Recommended basic freshwater requirement**  
Litres per person per day

★ Minimum for sustaining life in a moderate climate and with average activity.

**TOTAL: 50 litres**

**Bernard Lama won more than 40 caps as the French national goalkeeper, until he made a mistake that cost him his international career. Now he can spend more time in French Guiana, where he was brought up and learned his football. And he has a new interest – cleaning that country’s water. Here he talks exclusively to Tunza.**

**?** You were a sporting hero for France. But that wasn’t where you were brought up, was it?

**A:** No. I was born in France, but I went to French Guiana in South America with my family when I was three years old. And I lived there till I was 18.

**?** What was it like?

**A:** It was a very nice life, with no troubles. We lived near the sea in the capital city, Cayenne. And I used to go travelling with my father. We used to go to Brazil. There was really nothing better than travelling with my father.

Guiana is a very beautiful country. You see wild animals on the road. You can really get out of the human world and visit nature.

**?** When did you get interested in football?

**A:** Football started for me when I saw the World Cup on television in 1970. I was about seven years old. I knew then that was what I wanted to do. My hero then was Pele – the best player ever in the world. He played for Brazil in that World Cup and they won. He is still my footballing hero.

**?** Do you have other heroes?

**A:** Well, my other heroes are Nelson Mandela and the Dalai Lama. Of course, the Dalai Lama has the same name as me. But it’s not only because of that.



PHOTOS:  
ABOVE AND BELOW RIGHT: EMPICS SPORTS PHOTO AGENCY  
ABOVE RIGHT: JOEP MOONEN/UNEP/TOPHAM



What happened then?

**A:** Then I made a mistake. I gave a positive drug test for cannabis the next year and I was suspended. I lost my place in the French team. That's what happens in life when you make a bad mistake, and I regret it. My message to your readers would be not to do what I did.



And now you are taking an interest in water, the subject of our magazine, aren't you?

**A:** Yes. French Guiana has more water than nearly anywhere in the world. It is part of the Amazon rainforest. Even so, we have problems. Because of the gold mining in my country there is mercury pollution. Mercury is used by people to get the gold from rivers. But it poisons the water. People in the forests have to drink that water and they get ill.

One new thing I am doing is to set up a factory to purify the water. In fact, by the end of the year I will have two water factories. Soon you will be able to buy my water in bottles in the town.



Were you a good footballer when you were young?

**A:** I don't know. I was a goalkeeper. I started playing football in Guiana when I was 12, playing on the beaches of Cayenne. And when I was 18, I went to Lille in France to become a professional. I stayed there for eight years. After that I played for several clubs before I went to Paris Saint-Germain when I was 29. Soon I was playing for France. I played in Euro 96, when we got to the semi-final.



That's when Fabien Bartez took over. And he was still the number one French keeper the next year when France won the World Cup in 1998. What did you do?

**A:** After my suspension, I went back to playing and I did well. I played for France a few more times. I got 44 caps in all. But after you have played at the highest level, it is difficult when you start to go down. I stopped playing two years ago, when my wife had a baby. It seemed like a good time. I still live in Paris. But now I can do other things, like going back to Guiana when I want. I have a sports shop there.



So what does water mean for you?

**A:** For me water is life. When you have it you can live. I am making the water clean for people to drink.

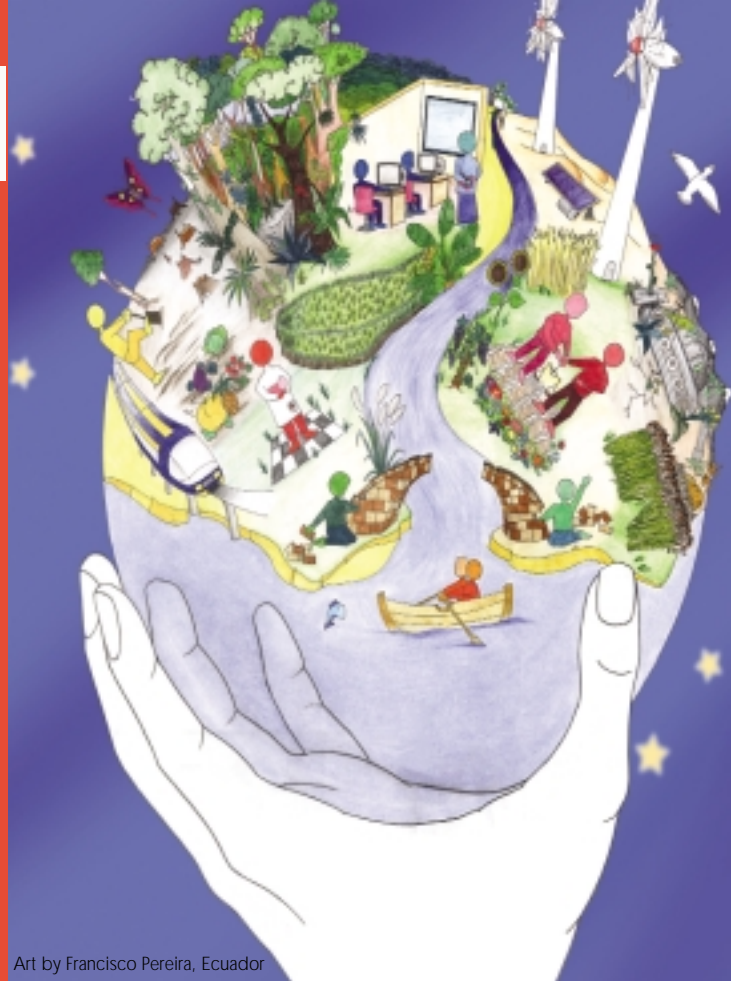


## SHOWCASE YOUR TALENT!

- WHO:** Young people up to age 18
- WHAT:** A poster with the theme of WATER FOR THE FUTURE
- HOW:** Use your artistic talent in painting, drawing, design or photography to create a poster, A4 size (210mm x 297mm or 8½ x 11 inches) about WATER FOR THE FUTURE
- WHY:** The winner will receive 50 postcards of their poster and publication in *Tunza*. 2nd place will receive 25 postcards of their poster. The schools of both winners will receive a copy of the UNEP publication *Pachamama: Our Earth, Our Future* and a teacher's guide with CD ROM
- WHEN:** Entries must be received by 1 October 2003
- WHERE:** By e-mail in jpeg format to [posters@ourplanet.com](mailto:posters@ourplanet.com)  
By mail to  
Tunza Poster Competition  
27 Devonshire Road  
Cambridge, CB1 2BH, UK

Be sure to put your name, age, and address CLEARLY on the back of the poster.

Questions? Contact [posters@ourplanet.com](mailto:posters@ourplanet.com)



Art by Francisco Pereira, Ecuador

## WATER FOR THE FUTURE

### The Tunza Poster Contest

Sponsored by the United Nations Environment Programme

# Seeing is Believing



s a v e w a t e r

[www.unep.org/vitalwater/foreword.htm](http://www.unep.org/vitalwater/foreword.htm)  
[www.unep.org](http://www.unep.org)  
[www.ourplanet.com](http://www.ourplanet.com)  
[www.americanwater.com/49ways.htm](http://www.americanwater.com/49ways.htm)  
[www.savewater.com.au](http://www.savewater.com.au)  
[www.wateruseitwisely.com](http://www.wateruseitwisely.com)



# YOU TOO CAN HELP!

Young people around the world can make a difference, and so can you!



Simple things you can do to save water



**Be sure to check all your taps and water pipes for leaks and fix them. A dripping tap wastes water and, if you have a meter, will cost you money!**

## VIET NAM

Seventeen-year-old Vu Thuy Ahn has already won her campaign to get water to her town, Hoa Ma Hai Noi in Viet Nam. And, as a result, girls there can now go to school all year round.

The problem for Vu Thuy Ahn and her friends was that for six months every year the town's water supply dried up. The girls had to spend their days walking 30 kilometres to collect water for their families from the nearest source. Then she won a grant and sponsorship from her town to build a proper water tank and pipes to bring the water to the town. Now the girls get their education, and the town gets its water.

## CHINA

Catching and storing rainwater is the simplest of all methods of making sure you have water. In China, they have installed more than 5 million tanks to store rain collected from roofs, yards and fields. The tanks now supply an estimated 15 million people with drinking water and help irrigate over 1 million hectares of farmland.

## KENYA

Take the Ushindi youth group in Nairobi, the capital of Kenya. They are 10 young people between the ages of 16 and 23. They are digging a well for their local community. Right now, people there have to walk 2 kilometres to get water. And in the dry season, water is in very short supply. When people don't have enough water to wash, diseases quickly spread.

The new well should provide water all year round. The group still needs money to finish the job. But they say when it is done, they will maintain the well and sell the water cheaply to local residents, making life much easier for the people who collect water. They also want to start a large community garden to provide vegetables. The group don't plan on failing in their task. Ushindi is Kiswahili for 'victorious'.



**Save water that comes off the roof of your house. Catch it in a gutter and store it in a water pot or butt. That way you can water your garden plants in hot, dry weather without wasting tap water.**



**Only use the dishwashers and clothes washers when they are full. You use less water and don't have to spend so much time loading and unloading!**



**If your family buys a new lavatory, see if you can get a water-efficient version. It should use about 5 litres per flush.**



**Water your plants and lawn in the evening as the sun goes down. That way, the water doesn't evaporate and gets to the roots of the plant. So you can use less water.**



**Save on flushing. The lavatory is probably the largest water user in your home. Most use 10 litres or more water every time they flush. To reduce this, put a brick in the cistern. It will fill up with less water and usually flush just as well.**

## NIGERIA

During heavy rains in Nigeria, villagers collect water from the broad leaves on certain trees – banana leaves, for instance. They divert the water down hollow bamboo shoots into a pot for drinking, cooking and washing.



*art by Mesime Njume-Ebong, Cameroon*

## Water doesn't grow on trees

**B**ut it does depend on them. Healthy, natural forests are essential to maintaining rivers and watersheds, which are the lifblood of the world's water supply. When forests are cut down, rivers and lakes can be damaged along with them, and the risk of flooding is increased. If we are going to maintain and protect our water supply, we must also work on maintaining and protecting our forests. So water doesn't grow on trees, but our water supplies can't survive without them.

For more information on water and trees, visit [www.treeswaterpeople.org/links.html](http://www.treeswaterpeople.org/links.html)

# Never lose *hope* <sup>19</sup>

Wang Jingzhong, a journalist for China's Xinhua News Agency, explains how a frightening case of pollution in his home town turned him into an environmentalist.



I was born 30 years ago in Lingbi, a small town in eastern China. There is a small lake in the centre of the town, and when I was young, my brother took me there to swim and catch fish to take home and show off to our parents.

The lake water was clear, and covered in water lilies. Every day, women brought clothes to wash on stone slabs in the lake, while boys brought buckets to fetch water for their homes.

Evening was the best. Everybody would sit by the lake chatting, singing and playing games. I remember that my great aunt, who was blind, would dangle her feet in the water and sing folk songs to us.

But everything changed after a plastics factory was built near the lake. We were told that the factory would bring great benefits to our poor, farming area. But our excitement turned to horror when we saw waste from the plant pouring into our lake.

The blue water started to turn black and a strange smell gradually filled the air. Soon the fish and water lilies had gone. Even the birds that used to hover over the lake disappeared. People hurried past the lake with their hands covering their noses.

After about a year, the lake had filled with a pitch-black muddy substance that seeped into a river that circled the town. Trees along the river died and the lush reed beds disappeared.

We used to say the river was like a beautiful jade belt round the town. But it had become a hideous black serpent tightening its coils. People could no longer take pride in the town, and young people started to look for jobs elsewhere.

The nightmare of my home town is not unique. After I went to university and travelled more, I found many parts of China were badly polluted because of our zeal to industrialize our country. When I taught English in a college in Nanjing City, I often had to ask my

students to shut the windows to stop heavy smoke from a steel plant filling the classroom. Such things convinced me that industrialization had to take the environment into account or it would bring more disasters than benefits.

And now I am a journalist, I write stories that heighten the environmental awareness of both governments and the general public.

But things have changed in China in the last few years. Seeing the problems, the Government has started to protect the environment. And the best news of all is that the factory in my home town has shut down. The pollution has stopped and the lake and the river are clean again.



Water expands by 9 per cent when it freezes. This is why ice is lighter than water and floats in water.



“Women quarrelled, beat or injured each other and broke each other's containers and calabashes in the 'mad' rush for water.”

# story of LUCY

*Lucy Akanboguure, a teacher from Kandiga in Ghana, tells how water has changed her life.*

art by Felicity Batten, UK

I used to have to get up at 3 a.m. every day and walk to collect water from a river 5 kilometres away. The earliest I got back was 10 a.m. which meant I was often late for work. This angered the head teacher. I always went alone so that my children could go to school. Sometimes they had water to wash with and for preparing breakfast. Sadly, sometimes they did not. They often went to school late without food because of my absence.

In my community women were expected to provide water every morning for their husbands. Lack of it often resulted in quarrels – I often had it hectic with my husband when there was no water.

Fetching water took up most of women's days. Some were bitten by snakes during their dark dawn journey to the river, others fell down from fatigue – injuring themselves and breaking their water pots and calabashes. Girls were also expected

to carry water and so very few enrolled in schools. In many deprived communities only one woman is educated for every 30 men. Female teachers were rare – I was the only one in my school.

We suffered most from water shortages during the long dry season from November to March. Women quarrelled, beat or injured each other and broke each other's containers and calabashes in the 'mad' rush for water. As it was so scarce we were forced to collect dirty water which posed severe health hazards. Sanitary facilities were generally non-existent. Diarrhoea, dysentery, Guinea worm and cholera were rife and often killed because we didn't have health facilities. My children and others in the neighbourhood were severely malnourished.

In 1994 I heard about the work of the charity WaterAid in Ghana. I quickly organized our community and applied



for assistance. After several meetings, the project was agreed and the first two wells were dug by hand.

The community provided labour, contributed funds and bought the handpumps. WaterAid provided skilled labour and materials and Rural Aid, its partner, monitored the project, provided support and lined the wells. The community maintains and manages the handpumps, using funds that the people contribute monthly to pay for repairs.

On the first day after the handpump was installed, I woke at 6 a.m. and cried aloud thinking I was too late to

fetch water from the river. Then I realized that, in their excitement, my children had already woken, filled the pots with clean water and were already preparing breakfast.

I felt so happy having water at my doorstep, 24 hours a day, and knowing that I was safe from waterborne diseases. More value was added to my life when I had access to a toilet.

Life in my community has been peaceful since. Fighting, quarrels, snakebites, tiredness and waterborne diseases are things of the past. Men and children fetch water for their needs and there is a remarkable increase in school enrolment for both boys and girls. Our primary school is now fully staffed: teachers accept jobs because there is water nearby.

My children and I now go to school as early as 7 a.m. I have time to organize groups of children for extra-curricular activities like science clubs, drama groups, sports and clean-up campaigns. I help train teachers and teach women in my community and

am also educating people about the need for toilets.

Because of WaterAid's approach, women's lives, in particular, have been greatly enhanced. They now have time to look after their families and earn money by weaving or farming.

Previously they were seen as unintelligent: now they are seen as equals. They are involved in decision-making and can take leadership – unthinkable before. I have been elected to represent my community in the District Assembly.

Debates and decision-making have been strengthened and communities are encouraged to manage local and environmental resources. This, in turn, has led to industry, improved living conditions and better health.

Life without water used to be awful, I had no time for myself and was always depressed, worrying where I could get it. I didn't think I was capable of anything. Now I am so surprised by what I can do – and very happy.



PHOTOS: WATERAID



Two-thirds of the human body is water. And you have even more water on the brain: your brain cells are 75 per cent water

# playing For Water

In South Africa, as in many other countries around the world, children are responsible for collecting water for their families. Collecting water is a difficult, time-consuming and tiring task.

In some places, children cannot go to school because they have to spend so much time fetching water from a source that is sometimes tens of kilometres away. Even if the source is nearby, the job of pumping water from the community well is not a job these children look forward to.

A South African organization called Roundabout Outdoor is trying to change that. They have created a fun way for kids to play and pump water for their families at the same time. It comes in the form of a merry-go-round, but if you look closer you will see there is more to it than just a way to get dizzy.



The Playpump, as it is called, supplies water and eases the workload for the children and young women collecting water. The colourful spinning wheel is connected to a community water tank.

As the kids play by spinning the wheel, they power the pump, and clean water pours out of a nearby tap for collection.

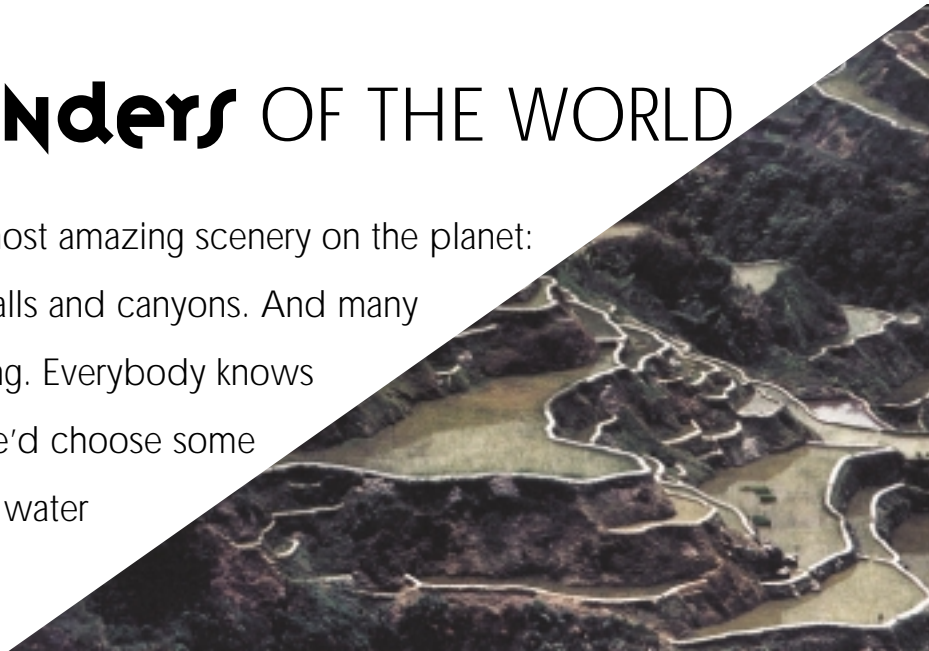
Roundabout Outdoor created this system to make it easier and fun for kids to collect water. The organization supplies and installs the roundabout with the help of local government and the community. Each pump supplies water to about 2 500 people. Roundabout Outdoor already has 200 Playpumps up and running and 320 more set to open before the end of 2003.

PHOTO: ROUNDOABOUT OUTDOOR

# 7 water wonders OF THE WORLD

Water is responsible for some of the most amazing scenery on the planet: great rivers and wetlands, giant waterfalls and canyons. And many man-made waterworks are also amazing. Everybody knows about the big dams, so we thought we'd choose some others for our list of the seven greatest water wonders on Earth.

Which is your favourite?



## 1. rice terraces of the philippines

They look like a staircase for giants. But these stone-walled steps down a mountainside in the Philippines are actually narrow fields where farmers grow rice. And each step is kept watered by a complicated network of channels that takes water on to each terrace, starting from a spring near the top.

This brilliant engineering – seen here at Banaue where the terraces have been declared a World Heritage Site – creates fertile land out of steep slopes. The first terraces were built on Luzon by the Ifugao people around 2 000 years ago. That was when the Romans were building their water aqueducts in Europe. But, unlike Roman waterworks, the terraces remain in use, constantly maintained and extended by the Ifugao farmers of today.

## 2. grand canyon in the usa

Want to see the power of rivers to eat away the land? Or just visit one of the most dramatic places on Earth? Go to the Grand Canyon in the United States. Here, over millions of years, the waters of the Colorado River have cut a canyon more than a kilometre deep in the plateau of northern Arizona. The canyon is 400 kilometres long and up to 25 kilometres wide. Peer over the rim and you look down past layer after layer of ancient rocks. The ones at the bottom are 1.7 billion years old.

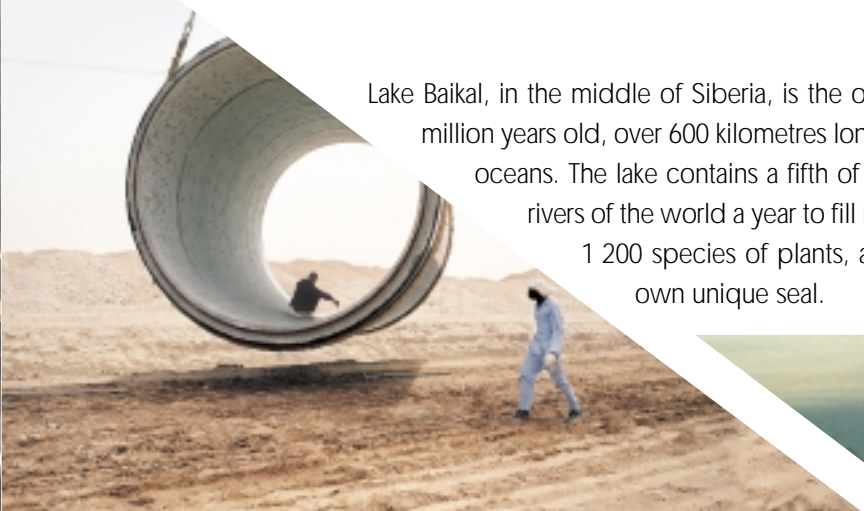
## 3. the qanats of iran



In the deserts of Iran, they find water by digging tunnels deep into the hillsides. The tunnels, called qanats, tap water that collects underground after the region's occasional rains. In some places, the Iranians have dug them for more than 40 kilometres into the hillsides before finding water. The Iranians have been digging qanats for 2 000 years. There are around 40 000 of them, enough to circle the Earth 20 times. In some places, they have been replaced by modern pumps. But elsewhere their waters still irrigate fields and orchards – and sometimes supply whole towns.

## 4. Lake baikal in siberia

Lake Baikal, in the middle of Siberia, is the oldest and largest body of freshwater on the planet. It is 25 million years old, over 600 kilometres long and in places 1.6 kilometres deep – almost as deep as the oceans. The lake contains a fifth of all the liquid freshwater on the planet. It would take all the rivers of the world a year to fill it. And the lake, a World Heritage Site, is home to an amazing 1 200 species of plants, animals and fish found nowhere else on Earth, including its own unique seal.



## 5. the great man-made river project of Libya

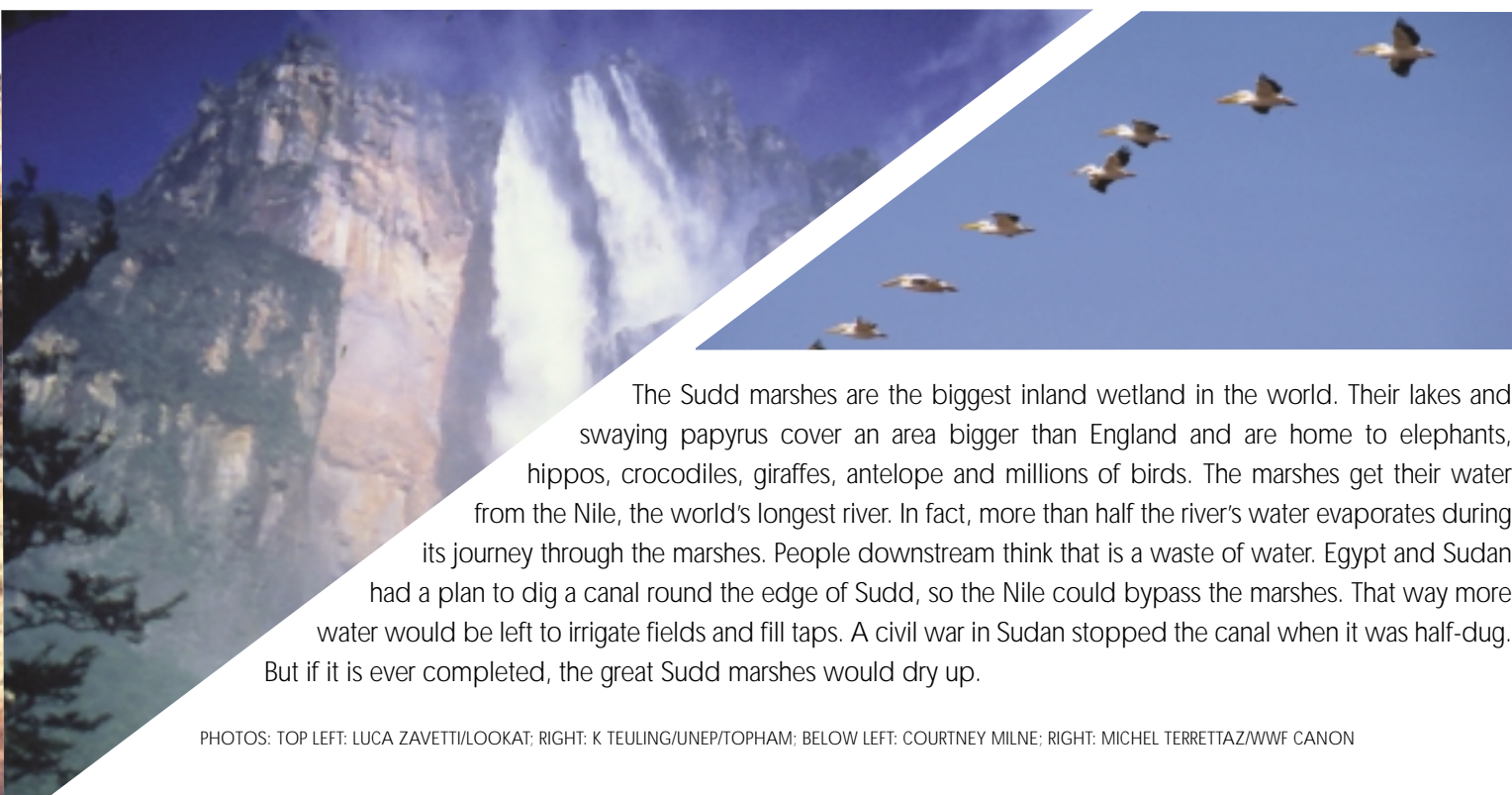
The Sahara may be a desert today, but once it was wet. And underneath it still lie huge amounts of water. Most of it is 30 000 years old. For the last 10 years, Libya has been pumping this water up from hundreds of wells sunk into the desert sands, and sending it in huge pipes to farms on the distant coast. The pipes are so big you could drive a truck through them. And they carry as much water as a river like the Mersey in England or the Rio Grande in America. In fact, this is Libya's only river.



## 6. Angel falls in venezuela

Jimmy Angel found the Angel Falls deep in the Devil's Canyon in the rainforests of Venezuela back in 1933. He was looking for gold, but instead found the world's tallest waterfall. It is almost a kilometre high, falling straight off Auyan Tepui mountain into the jungle below. Of course the local Indians, the Pemones people, knew about the falls long before Jimmy Angel flew his bush plane down the canyon and saw it. They called it the Churún Merú. But Jimmy told the rest of the world so it bears his name.

## 7. the sudd marshes of sudan



The Sudd marshes are the biggest inland wetland in the world. Their lakes and swaying papyrus cover an area bigger than England and are home to elephants, hippos, crocodiles, giraffes, antelope and millions of birds. The marshes get their water from the Nile, the world's longest river. In fact, more than half the river's water evaporates during its journey through the marshes. People downstream think that is a waste of water. Egypt and Sudan had a plan to dig a canal round the edge of Sudd, so the Nile could bypass the marshes. That way more water would be left to irrigate fields and fill taps. A civil war in Sudan stopped the canal when it was half-dug. But if it is ever completed, the great Sudd marshes would dry up.

~~YOU~~

can live 40 days without food,

PHOTO: PAIBOON PATTANASITUBOL/UNEP/TOPHAM

but ~~just~~  
5 days  
~~without~~  
water.

