

# WORKING TOWARDS A CLEAN AND HEALTHY COMMUNITY

An information booklet to support community efforts to minimise water pollution from their settlements

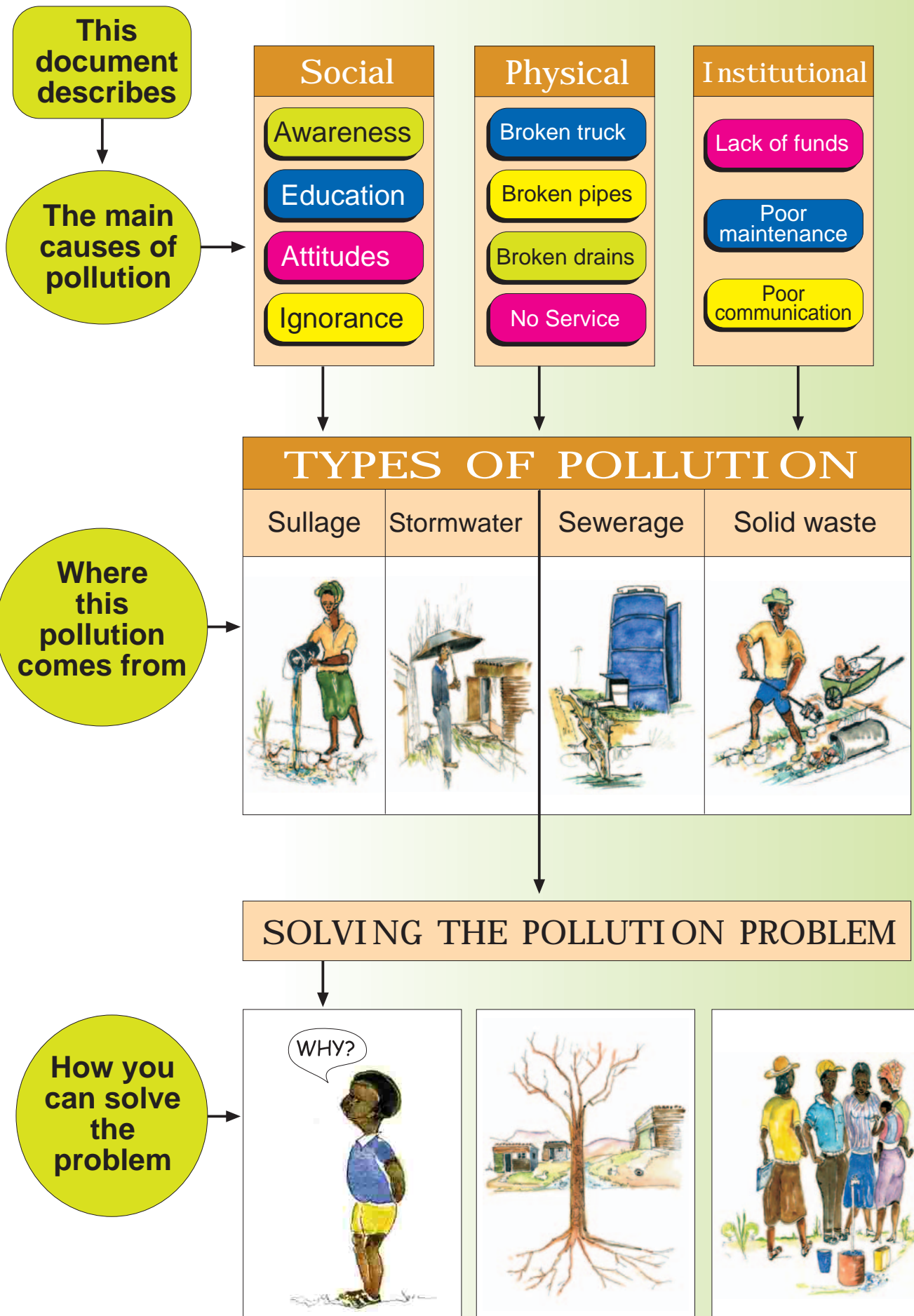


**We all live downstream!**

**The Department of Water Affairs and Forestry**



# HOW DO WE FIND THE MAIN CAUSES OF POLLUTION?



The front cover shows what we all know but sometimes forget: that we are all affected by pollution. The waste that one settlement allows to get into water flows downstream to affect people in other settlements. To address this problem costs the country money, which affects us all.

Do you want to be using water polluted by other people's waste? Are you concerned about other communities being affected by your waste? This booklet helps to show how we can find the main causes of pollution in our communities and how we can all help to make and keep water - the precious source of life - safe and healthy for us and future generations.

## We can only address this problem by working together

### The purpose of this booklet

This booklet has been designed by the Department of Water Affairs and Forestry (DWAF) to help communities identify:

- What water pollution is.
- The problems it can cause.
- How we, can work together to identify the causes of water pollution in our communities
- And how we can all work together to stop that pollution.

# INTRODUCTION

We all need water for survival. We need it for drinking, cooking, washing and sanitation. We need it for growing vegetables and for keeping livestock. It is needed in mining, industry and agriculture, to help them grow and create more jobs.

But we don't just need water, we need clean water. Dirty or polluted water affects our environment and makes us sick, prevents children from growing properly and poisons vegetables and livestock. Dirty water may also have to be cleaned before using it.

Because South Africa is a country with a limited amount of water, and because dirty water is so expensive to clean up, we all have to be careful how we use it.

Our Constitution says we have the right to live in a healthy environment, and keeping our water resources clean - our rivers, dams and boreholes - is one of the most important ways of making sure this happens.

The Government and the local authorities are responsible for making sure we have basic access to water, but we are all responsible for making sure we help to keep that water clean.

However, in many parts of the country there is increasing pollution and damage to our water resources. A lot of pollution is caused by the waste we produce in our daily lives getting into our water. In settlements where sanitation and waste removal services are not working or are not used properly, the waste finds its way into nearby rivers and streams, which then become polluted.

Rivers with small amounts of pollution are able to clean themselves. However, when there is too much waste, the river cannot clean itself naturally, and the water stays polluted. This means the next community living along the river is going to be getting polluted water, and the one after, and so on, all down the river.

When this happens, people in all the settlements suffer health problems, and even death. This especially affects children and the elderly. Most of our common illnesses, such as stomach problems, diarrhoea, cholera, typhoid, and skin and eye diseases, come from polluted water and poor sanitation.

For all our sakes, for the health of our communities and our environment, South Africa's water must be protected.



# CAUSES OF POLLUTION

Water pollution in densely populated areas can be caused by many things. In order for communities to solve water pollution problems in their settlements, we need to find what is causing these problems. The causes of these problems may be social (people's behaviour), or physical (things we can see), or institutional (what the local authority is doing). Most pollution is caused by all three of these problems together. And most pollution problems are best solved when the community and the local authority agree exactly what the causes are.

## Physical problems

These are the things we can normally see, such as when there are no bins or toilets, or when they don't work properly, or when the facilities used to take waste away from our communities are broken. These facilities could be stormwater drains, sewerage pipes, or rubbish collection trucks. Physical problems are often linked to social and institutional problems, for example when the local authority can't repair trucks or when the waste services are vandalised by some people or animals.



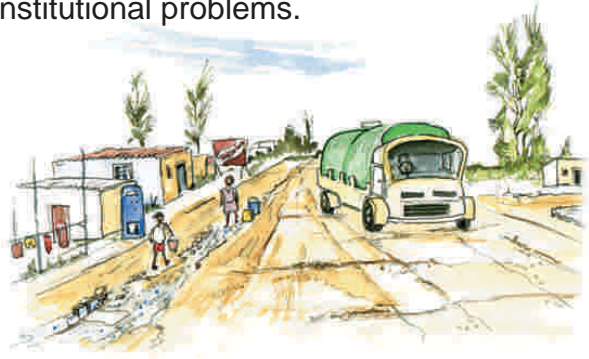
### Box 1. What is water pollution from settlements?

Water pollution happens when the waste we produce as part of our everyday life gets into water. This can make the water

- less suitable for the purposes we usually use it for
- harmful or potentially harmful to our welfare, health or safety
- harmful or potentially harmful to the animal and plant life that depends on it

## Institutional problems

These are the problems caused by the local authority. Local authorities are responsible for providing communities with water and sanitation services. But often they are not able to give us services, or to maintain them properly. So if the local authority hasn't got enough money to take rubbish away as often as it should, or to give us enough black plastic bags to put our rubbish in, or when it hasn't got staff who can put in services, or if it doesn't know what services we need, there are institutional problems.



## Social problems

Social problems are the ones we get because of our behaviour. Water and toilet facilities may be misused because of lack of awareness and education. Many people don't know that misusing facilities can cause health problems, and affect our long-term survival, and others believe it's the government's job to keep our surroundings clean. Unemployment and poverty can mean protecting our water resources is less important for us than day-to-day survival.



# TYPES OF POLLUTION

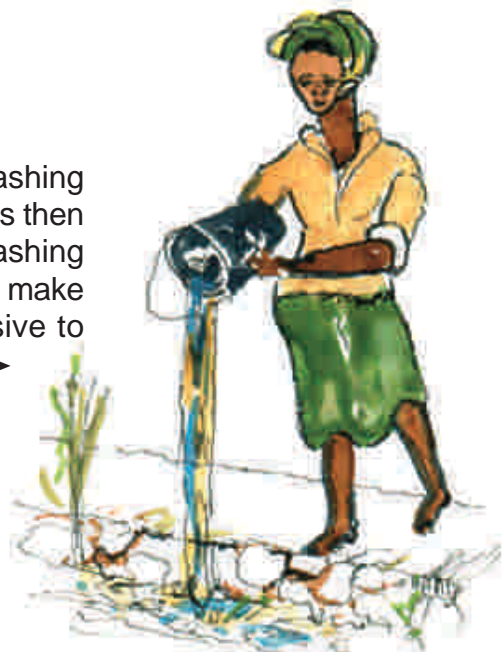
There are four types of waste in settlements - solid waste, sullage or dirty washing water, stormwater and sewage waste. Any of these can cause water pollution, but when they are combined (as it often happens in settlements) they are a much greater risk to water sources and to communities' health and well-being.

**Solid waste:** This is waste such as litter and old food dropped in the streets, or household rubbish which is thrown into the street or river. Solid waste attracts flies which bring disease, but also clogs up rivers so they can't clean themselves.



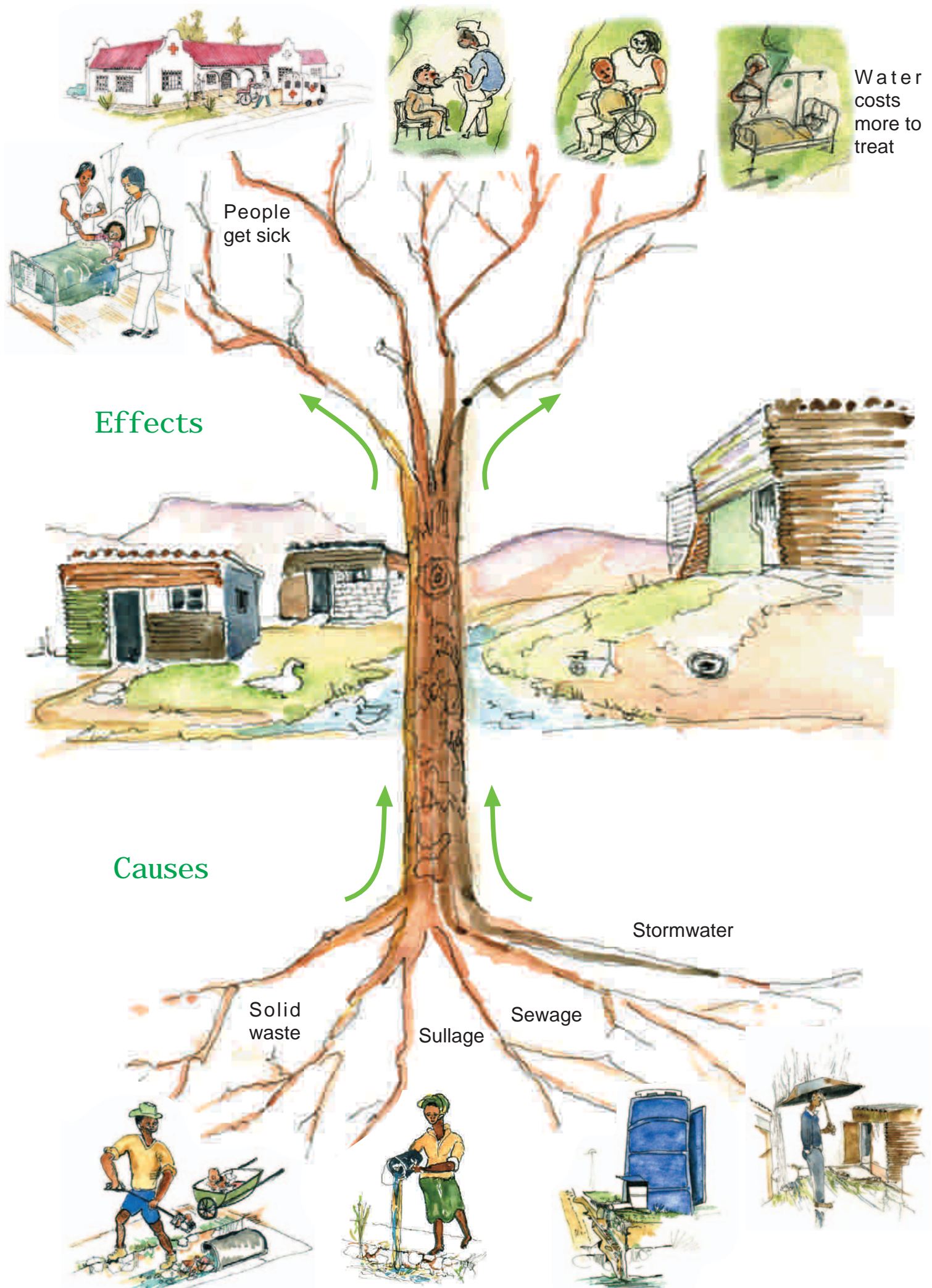
**Sewage waste:** This comes from leaking toilets or pit latrines, broken or blocked sewerage pipes. This also has bacteria that can make us sick, and may have chemicals which make it costly to treat water.

**Sullage or grey water:** This comes from dirty washing water that is thrown away in the river or street, and is then washed into nearby streams when it rains. Dirty washing water contains bacteria, or small organisms that can make us sick, and chemicals that make it more expensive to clean the water for drinking.



**Stormwater:** Storm water is rainwater that washes soil, litter and other waste material into the river and streams. We see this problem often in rural areas where shallow pit latrines overflow during heavy rains.

Tiny living creatures, such as germs in sewage, and chemicals in washing water, may be found in any of these types of pollution. Although we can't see these things, they can make humans and animals very sick, poison vegetables we grow and even the soil we grow them in.



A PROBLEM TREE

# SOLVING THE POLLUTION PROBLEM

To solve the pollution problem we must look around our settlement for the causes, and ask WHY? For example, if black plastic bags are not being taken away, ask 'Why is the local authority not collecting our waste?' If pit latrines are leaking, ask 'Why are these things not being fixed?' If people are throwing dirty washing water in the river, ask 'Why are they behaving like this?'

Often we will need to ask WHY? many times to track down the problem. For example, if the children are suffering from diarrhoea, we ask WHY? Because the water is polluted, but WHY? Because sewerage is getting into it, but WHY? Because the toilets are blocked, but WHY? Because people are throwing rubbish into them.

In this way we can begin to find the causes of the pollution problem and then we can begin to solve it.

This is something we can do as individuals but also together - and problems affecting all the community are best solved together. Here

is an exercise, called a **Problem Tree**, that can be done by groups of people to help identify and solve water pollution problems. The Problem Tree shows us what the problems are, how they can be linked to each other, and helps us decide how to deal with them.

In this exercise the leaves of the Problem Tree shows the effects we have when our water is polluted. Through the trunk of the Problem Tree we can see the different kinds of pollution flowing up to the leaves. This is the pollution caused in our settlements by solid waste, sullage, sewage and stormwater. Underground we can see all the things causing pollution.

Look at the poster that comes with this book. Can you tell which causes are social, which are physical and which are institutional? Can you tell which ones are interlinked? What ideas have you got for dealing with the problems?

To stop the problems we see in the leaves, we must solve the problems at the roots.



# AN EXAMPLE OF SOLVING A PROBLEM

One of Mrs Thoko Molefe's children nearly died when she was only two years old. All the children in that settlement liked to play in the water near the washing area. But they were always getting sick with stomach problems and diarrhoea.



When her child fell sick Mrs Molefe asked the doctor at the clinic WHY? The doctor told her that polluted water was the problem, and she must keep her children away from the dirty washing water.

So she tried to keep the children away from the dirty water, but she wasn't always able to. Then another child almost died as well, and the doctor said it was the same reason.

Mrs Molefe realised the answer to the problem was to stop putting dirty water in the street, not to stop the children playing in the water. To do this, she must ask WHY are people putting dirty water in the street? When she looked she could see there was no where to put the water.



She discussed this with her neighbours and they decided they would tell the local authority about this problem, so they could provide places to put the dirty water, everyone agreed that in future they would be very careful to use these places.



Mrs Molefe's five children are growing up strong and healthy now, and she is so happy she found the cause of the problem and by asking WHY? Was able to solve it.

This problem was caused by one of the four types of waste that bring pollution problems – sullage - but if any of the other types of waste - solid, sewage or stormwater - were getting into the river, that could also have made the children sick.



# FINDING THE SOLUTIONS

You may think: "I am only one person, what can I do?" But all progress starts with one person (like Mrs Molefe) who has decided something must be done.

Here are some things we can do:

- Discuss with our neighbours the problems pollution is causing and how we can find the causes.
- Talk to DWAF and the local authority about what they can do to help.
- Be pollution aware ourselves, and set an example for others. We should take care with where we throw away solid waste, making sure it is put into black plastic bags, and throw dirty washing water onto lawns or gardens (but not onto vegetable gardens which would get polluted), or into proper disposal areas. We should talk to neighbours when we have problems about where to dispose of waste, to see what ideas others have.
- Try to get to the root of the pollution problems, by asking the question 'Why?' every time we see rubbish lying around, leaking taps, broken pipes and so on.
- Look carefully at our settlement, and think what changes (and some may be simple ones) would help to address pollution. Sometimes great changes have been made because one person has seen things in a different way to others. Everyone's ideas are valuable.
- Ask the DWAF regional office with the local authority to help identify low-cost options for addressing these problems.
- Think what is needed to work best with officials from DWAF and the local authority, and ask for it.
- Pay what we can afford for services. But demand that they are well maintained in exchange for payment.
- Remember that dealing with waste costs money, that could be used for other things like building houses.



# WHO BENEFITS FROM STOPPING POLLUTION

Everyone benefits from stopping pollution in settlements before it gets to the water source. What we have to remember always is that we all live down stream.

## How communities benefit

The most important benefit is improved health, especially of children and the elderly. We are more secure where we live when we know that we have long-term use of clean water.

## How local authorities benefit

A pollution aware community helps its local authority by telling it what its needs are, and informing it when there are problems. In this way money isn't wasted. And the local authority also benefits when less pollution is getting into the water, because they spend less cleaning it up. The money

can be used to improve services to the community

## How DWAF benefits

DWAF is tasked with protecting the nation's water resources, so the more we can deal with the problem in our communities, the easier it is for DWAF to make sure there is some water for everyone, forever. The Department of Health will also benefit, because as less people get sick from polluted water, there will be more money to improve health services to us all.



# CONCLUSION

Many people think the government, and not them, is responsible for dealing with water pollution. However, our country's population is growing quickly, and local government funding is very limited and has to cover a wide range of services. As a result, local authorities are struggling to deliver services efficiently to all who need them. It is critical that users pay for these services so that they can be maintained and improved.

We need to choose services which have low costs but which still protect the environment. Also, if we are not spending money cleaning up waste, we can spend that money on other things, like better housing.

Local authorities need to understand each settlement's unique needs, such as how many plastic bags to supply and how often rubbish should be removed.

## Working together for cleaner and healthier settlements

Only by working together, by talking to each other, can we create solutions that will work in practice and for the long term, and which will make a clear improvement in our living environment. Getting the support of both the local authority and national government, (DWAF), in our efforts to keep our settlements clean, is the best way to make a real difference.

If we do not work together, water pollution will become steadily worse, and greater numbers of people will suffer. South Africa's population is growing every day, and the need to provide services for all these people is already too great for government to handle alone.

DWAF needs input and help from everyone if our future is to be one of constant growth and development and if our people are to be healthy. It is easy to take water for granted, but ours is a country with relatively little water, and what there is must be protected.

We now know that there are four types of pollution. We can identify the actual causes of each type by asking - Why? Why? Why? We can help stop pollution by solving the problem.

Because water is so basic to our needs, we tend to have our settlements close to water sources. This means that our river isn't just ours - we are sharing that water with everyone who lives downstream of us. If we pollute our water, we are polluting water for others also, just as we are affected by pollution which happens upstream of us.

**For the sake of everyone's future, and the health of our communities and our environment, South Africa's water must be protected.**

