Dams, Rivers and Rights

An Action Guide for Communities Affected by Dams

IRN
International Rivers Network
Linking Human Rights and Environmental Protection

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Difficult Words

Compensation: Money or other things given to replace people's losses.

Decommission: To destroy a dam or stop the use of it. This can involve changing a dam structure, permanently opening its gates or removing a dam.

Displacement: Removal of people from their homes and lands.

Downstream: Area located below or down the river from a dam.

Field surveys: Information gathering by talking to people and looking at things directly.

Mitigation: Measures to reduce the impact of a dam. They can include creating wildlife sanctuaries, releasing water downstream of the dam and providing money and new livelihoods to affected people.

Non-governmental organization (NGO): An organization that is independent from the government.

Non-violent direct action: Peaceful event organized to pressure decision-makers and raise public awareness about a struggle.

Public development bank: An international bank, like the World Bank or the Inter-American Development Bank, that lends money to governments or companies for development. Public development banks are controlled by governments.

Re-operation: Changing dam operation to allow the river to flow more naturally.

Reparations: Money or other things given to replace losses or compensate for damages caused by an existing dam.

Reservoir: A lake that is created when a dam is built.

Resettlement: Moving people into new or existing villages to make way for a dam.

Schistosomiasis: Disease caused by contact with certain types of snails that live in fresh-water canals, rivers or lakes.

Sediment: Sand, dirt and rocks that are carried by a river.

Upstream: Area located above a dam, including the reservoir and areas further up the river.

World Commission on Dams: Independent international commission set up to study the performance of dams, examine alternatives and make recommendations for future dam building. Final report issued in 2000. Information available at www.dams.org.

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Introduction

Around the world, people are rising up against big dams. They are fighting to protect their rivers and their livelihoods from new dams. They are demanding **compensation** for problems caused by old dams. They are proposing better alternatives for energy, water supply and flood management. All of them are fighting for a voice in decisions that affect their lives.

Over the last 20 years, the international movement against dams has grown strong and had many successes. Some dams have been stopped. Better alternatives, such as small dams and water conservation, have been implemented. Communities have received better compensation. Some dams have been taken down.

But new dams continue to threaten communities worldwide.

International Rivers Network created this action guide to empower communities threatened by new dams and to share ideas from the growing international anti-dam movement. International Rivers Network and other **non-governmental organizations (NGOs)** around the world are ready to help you in your struggle. NGOs that may be able to assist you are listed at the end of this guide.

We hope this guide provides information and tools to help you decide how to respond to a proposed dam, how to protect your rights and how to demand a voice in decisions about dams.

- At the beginning of the guide is a list of difficult words and their definitions. These words appear in **bold** in the guide.
- Chapter 1 provides general information on dams, including how they work, who benefits from dams and who pays for them.
- Chapter 2 talks about the impacts of dams on communities and natural resources.
- Chapter 3 describes the international movement of people against destructive dams and its successes.
- Chapter 4 gives ideas for how communities can challenge dams and defend their rights.
- Chapter 5 provides information about better options for meeting people's water, energy and flood management needs.
- At the end of the guide is a list of contacts that may be able to help you.

We wish you success in your struggle against destructive dams. We are one in our struggle for justice and dignity. Water for life, not for death!

International Rivers Network

CHAPTER 1

Basic Information About Dams

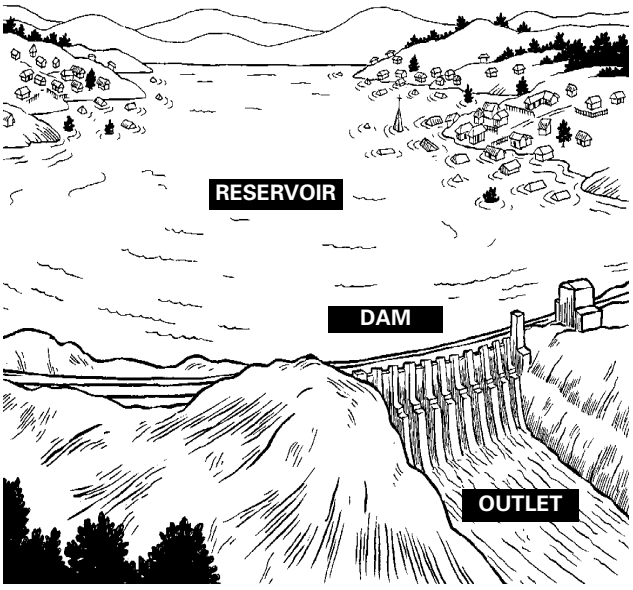
What is a dam?

A dam is a wall built across a river. Dams can be made of earth, rock or concrete. They block river flow, creating artificial lakes called **reservoirs**. Water contained in reservoirs can be used to generate electricity, to provide water for irrigation and drinking, to aid navigation of boats, to control floods, and for recreation. Some dams are built to do more than one of these things.

More than 47,000 large dams (taller than 15 meters) have been built around the world. China, the United States and India have the most large dams. The world's biggest dams are over 250 meters tall (or higher than a 60-story building) and several kilometers wide. They cost billions of dollars and take more than 10 years to build.

What do dams do?

- **Water supply** and **irrigation dams** store water in a reservoir. This water is sent to cities or farms using large pipes and canals.
- **Hydropower dams** use water to turn the blades of machines called turbines to generate electricity. Electricity is sent to cities or factories using transmission lines. After passing through the turbines, water is released back into the river below the dam.
- **Flood control dams** store water during heavy rains to reduce flooding **downstream**.
- **Navigation dams** store water and release it when water in the river is low so boats can travel up and down the river year-round. They are typically built with locks, or devices which raise and lower boats so they can travel past the dam.



Dams come in many shapes and sizes but most have these features.

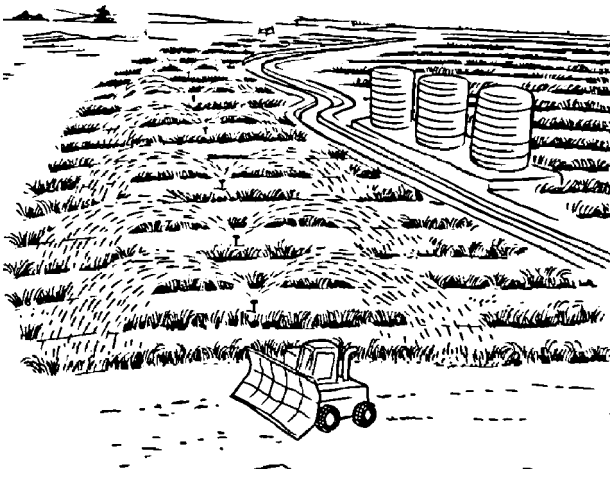
◈ Who benefits? Who loses?

Factories and city residents benefit from power generated or water stored by dams. Large agricultural companies benefit from cheap water for irrigation. Dams often take resources away from rural communities to give these benefits to industries and people living in cities. Sometimes these industries and people are in neighboring countries.

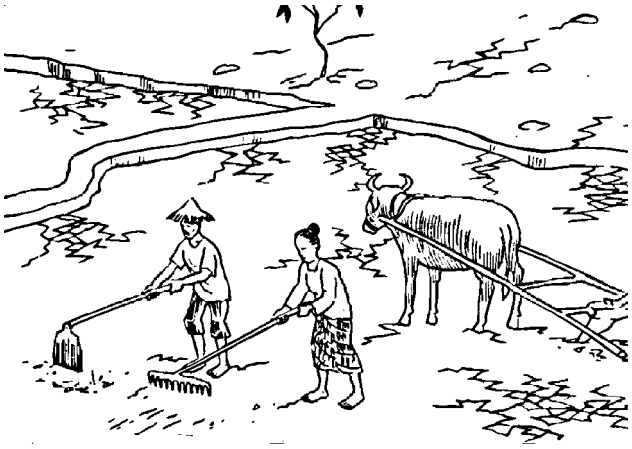
Construction and engineering companies benefit too. They receive millions of dollars for designing and building dams. Governments can benefit from taxes collected during construction or operation of a dam. Because of the large amounts of money spent on dams, corrupt government or company officials sometimes take money for their own benefit.

The ones who have suffered most from large dams are rural farmers and indigenous or tribal peoples. Millions of people have been evicted from their homes to make way for dams and reservoirs. Millions more living downstream have lost resources and their traditional livelihoods.

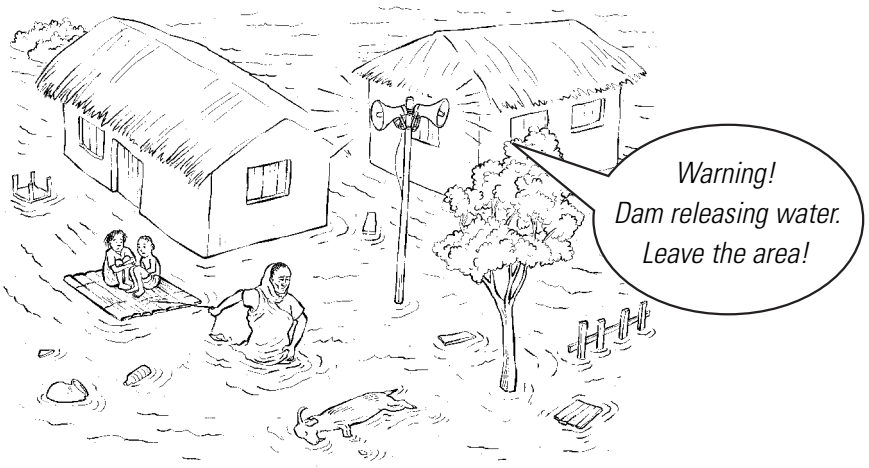
To make matters worse, dam-affected people are rarely included in decisions about whether or not to build a dam. They usually do not know their rights to information and public hearings, to demand new land and livelihoods, and even to oppose dams. They typically do not receive benefits of electricity or water although they may live right next to a dam.



Large-scale farmers receive irrigation water and power from dams.



Dam-affected people often do not receive these benefits and end up with worse land.



Some dams make floods worse instead of better.

◈ How do dams perform?

While dams can provide some benefits, they often do not produce as much power or irrigate as much land as expected. Water supply dams often provide less water than promised. This usually happens because dam builders overestimate how much water is available in the river for use.

Flood control dams can stop small floods, but they can also make damages from large floods worse. People may build more houses and shops downstream from a dam because they feel safe. However, when a large flood occurs and the reservoir cannot hold the floodwater, more people downstream may lose their belongings and even their lives.

Dams do not last forever. They are usually built to operate for a certain number of years. The lifespan of a dam depends on many factors, including how much **sediment** is in the river. Over time, reservoirs fill up with sediment. As the sediment builds up, dams become less effective, until they can no longer operate.

When dams do not perform well, governments and people suffer

The Yacyretá dam was described by former Argentinean president Carlos Menem as a "monument to corruption." The dam's costs have increased from US$2.7 billion to US$11.5 billion, and the project is still unfinished.

The dam, located in Argentina and Paraguay, produces only 60% of the power it is supposed to produce. The group that manages the dam is billions of dollars in debt and cannot pay back loans because the project is unprofitable.

Governments often borrow money to build dams. They expect to earn lots of money. However, if dams do not generate as much power as expected, governments may not have enough money to pay back loans. They may cut spending on education and health care which causes suffering for people too.

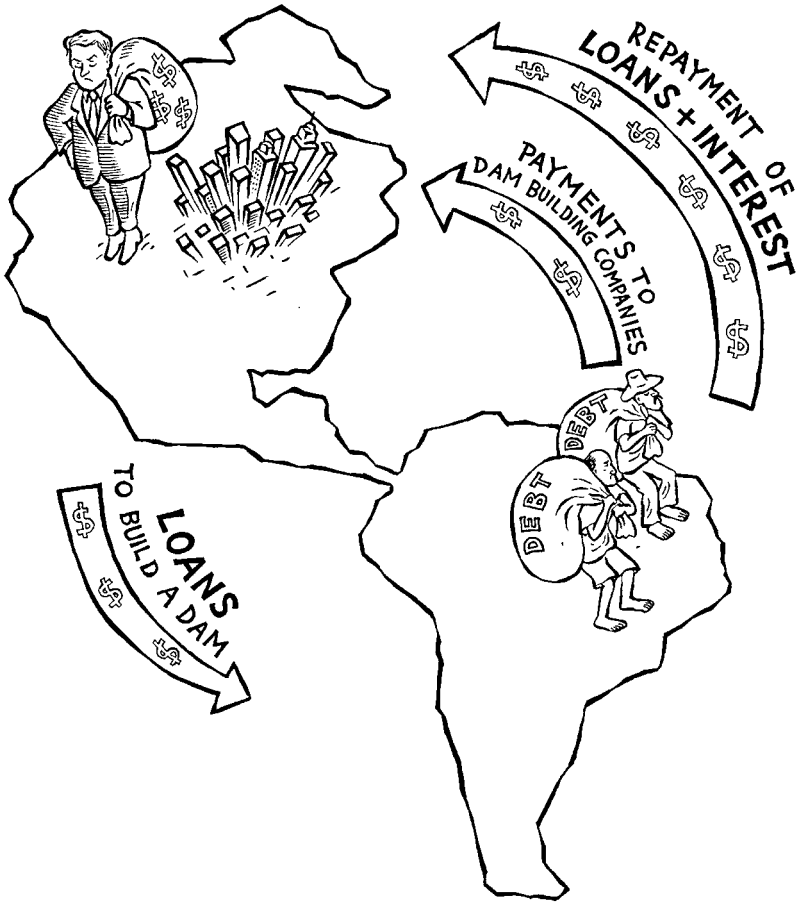
For cash-poor countries, investments in risky dams may increase their debt to institutions like the World Bank. In these cases, dams built to reduce poverty may actually increase it.

◈ Who pays for dams?

About US$40 billion is spent on dams each year. Since dams are so expensive to build, governments usually need to get loans from many funders. The World Bank is one of the most important dam funders. This **public development bank** has spent US$60 billion on 600 dams all over the world. Regional development banks—like the Asian Development Bank, African Development Bank and Inter-American Development Bank—lend money to governments and companies to build dams too.

When public development banks fund part of the dam construction, it makes it easier for the government to get loans from private banks too. Rich countries, like Japan and Germany, also give grants and loans to governments that want to build a dam.

After the dam is built, the government has to pay these loans back. Even if the dam does not make as much money as it was supposed to, the government still has to pay back the debt.



People in rich countries benefit from dam building in two ways. Dam-building companies receive money to build dams, and governments receive interest payments when poor countries pay back loans.

CHAPTER 2

Impacts of Dams

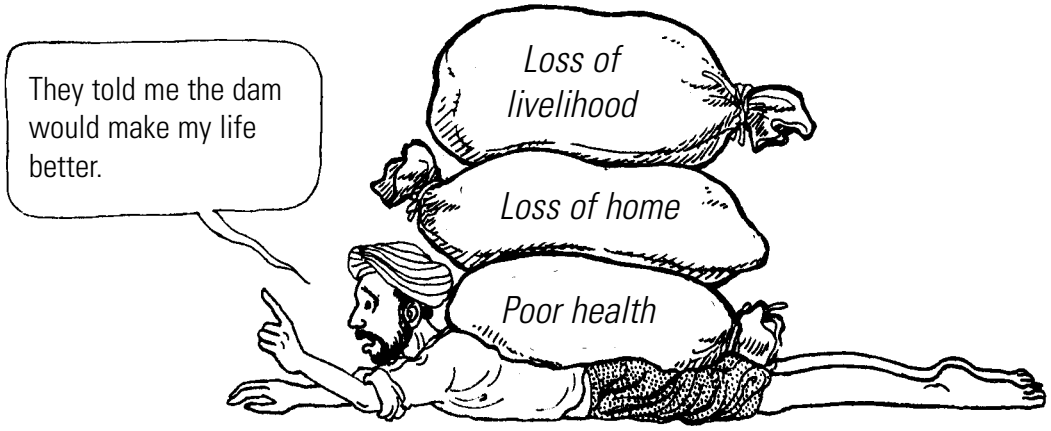
When Malisemelo Didian Tau first heard about plans to build a big water supply dam on her land in Lesotho, Africa, she resisted. But the dam builders convinced her that only a few people would have to move away to make many people's lives better. They promised Malisemelo and her community compensation, water supply, schools and new homes.

But the promises were not kept. Says Malisemelo, "When we do not get enough compensation for our lands, it is the death of our children and the death of coming generations because they will have nothing to help them survive in the future."

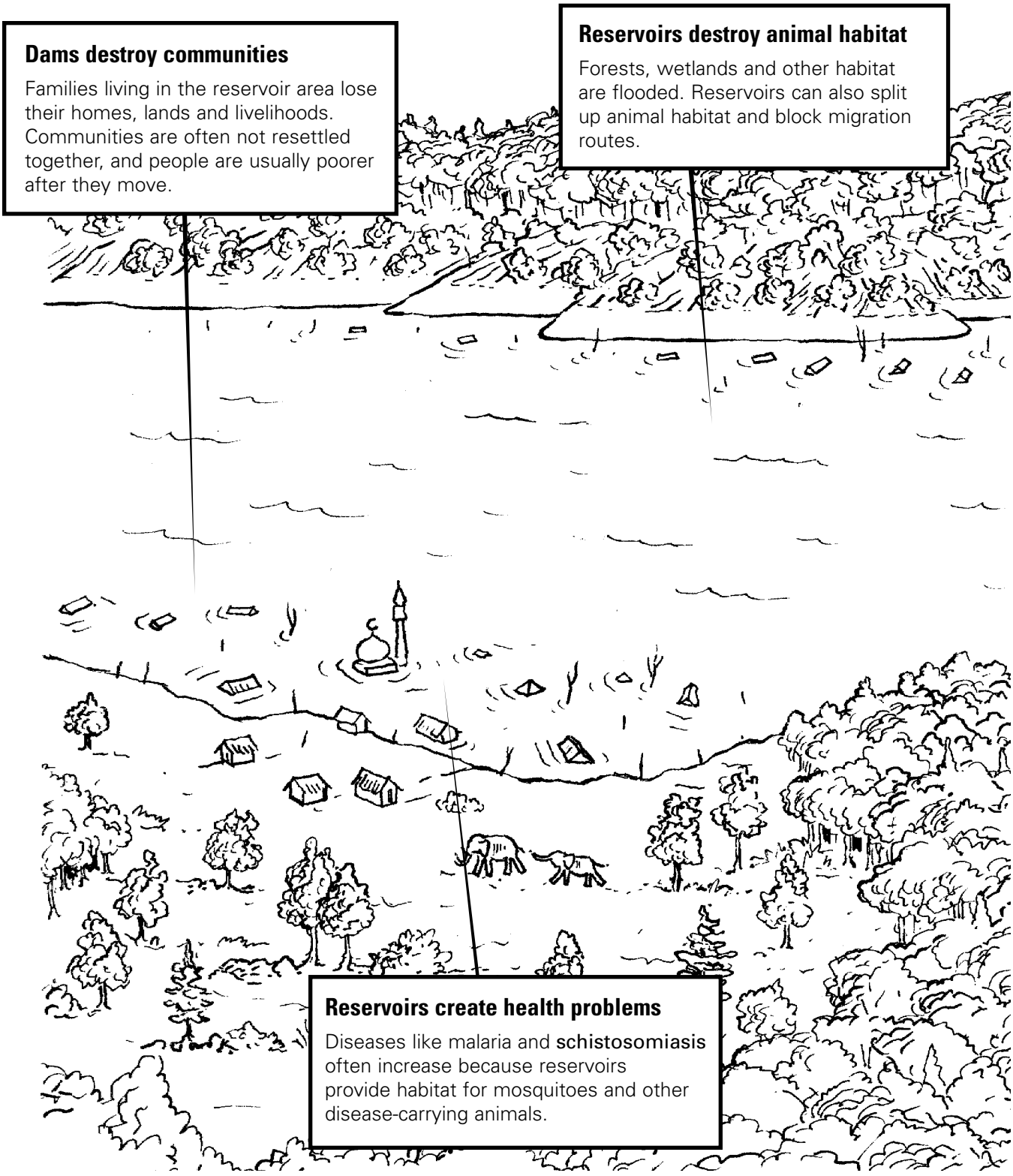
This is not just Malisemelo's story. Between 40 and 80 million people have been forced from their homes and lands to make way for dams. Most of these people are poorer now. Their livelihoods, cultures and communities have been destroyed.

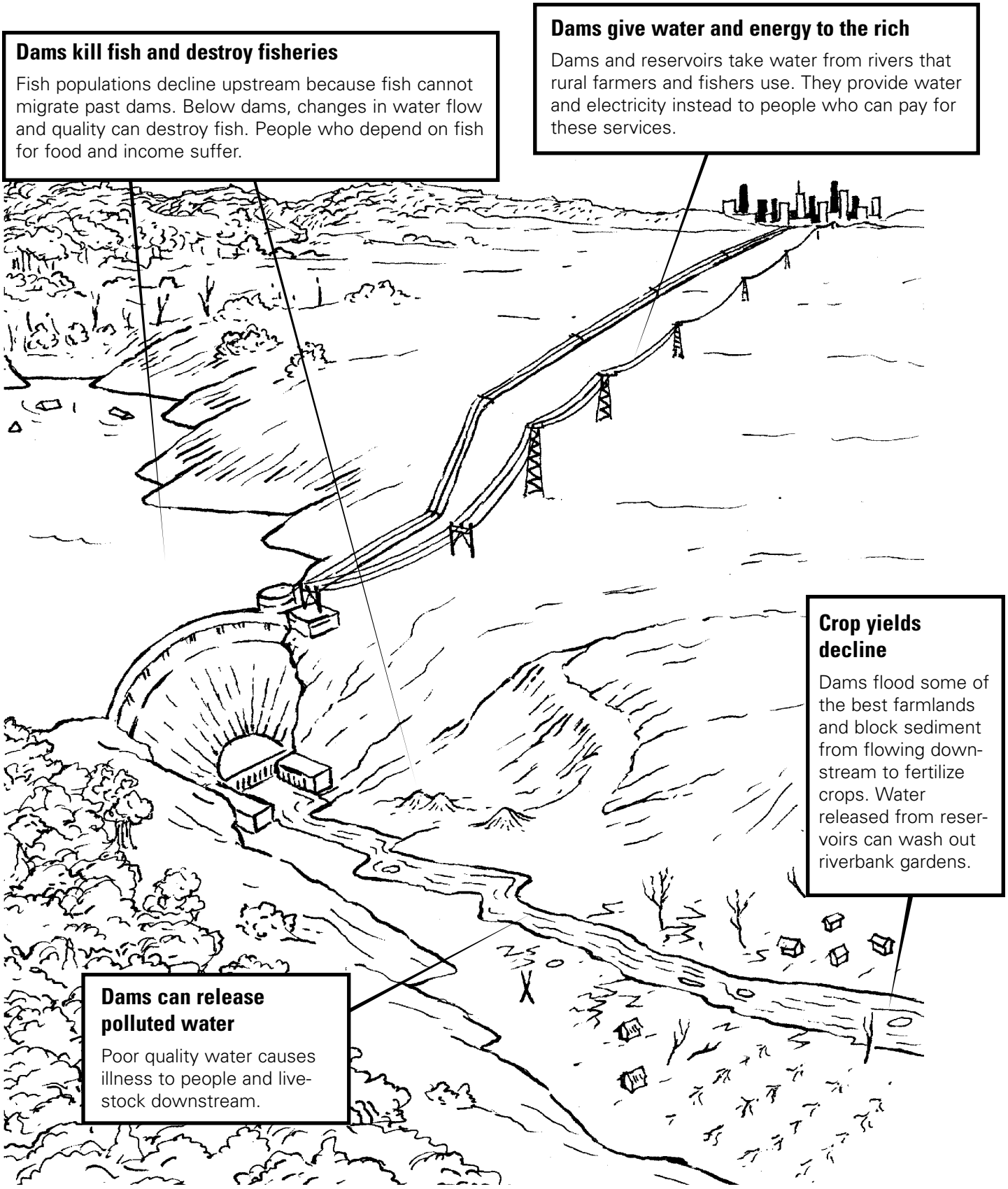
Dams have flooded some of the world's most important animal habitats and fertile farmlands. Rivers have been ruined. Fisheries have been destroyed. Some fish, animal and plant species have disappeared.

This chapter explains the impacts of dams on communities and natural resources. We examine the specific impacts of dams on displaced families and on communities living downstream of the dam. Then, we discuss what communities in Lesotho are doing to defend their lives and livelihoods from big dams.



Dam Impacts


Dams destroy communities
Families living in the reservoir area lose their homes, lands and livelihoods. Communities are often not resettled together, and people are usually poorer after they move.
Reservoirs destroy animal habitat
Forests, wetlands and other habitat are flooded. Reservoirs can also split up animal habitat and block migration routes.
Reservoirs create health problems
Diseases like malaria and schistosomiasis often increase because reservoirs provide habitat for mosquitoes and other disease-carrying animals.


Dams kill fish and destroy fisheries
Fish populations decline upstream because fish cannot migrate past dams. Below dams, changes in water flow and quality can destroy fish. People who depend on fish for food and income suffer.
Dams give water and energy to the rich
Dams and reservoirs take water from rivers that rural farmers and fishers use. They provide water and electricity instead to people who can pay for these services.
Crop yields decline
Dams flood some of the best farmlands and block sediment from flowing downstream to fertilize crops. Water released from reservoirs can wash out riverbank gardens.
Dams can release polluted water
Poor quality water causes illness to people and livestock downstream.

◈ Realities of displacement

Displaced communities suffer

One of the biggest impacts of dams is the forced **displacement** of people from their homes. Reservoirs flood areas where people live, grow crops, fish and raise livestock. Sometimes families have lived on the land for many generations. Despite this, governments and dam builders force people to leave their homes and lands. Entire villages are flooded.

40–80 million people have been displaced by dams worldwide.

Displacement makes most people poorer. They have problems getting enough food to eat and income to support their families. They may no longer be able to survive by farming and fishing. Rural communities may be forced to move to cities or towns where they must adapt to a new way of life. In cities, they can face new problems like crime and drugs.

Displacement destroys communities and cultures. Villages are often divided and separated, so people no longer live close to friends and relatives. Indigenous people and ethnic minorities are often the victims of dam building. Cultural sites and graves of ancestors may be flooded. People may lose connection to their ancestral lands.

Some people displaced by dams have been moved to land that is not fertile or is too steep to farm.

Says an ethnic Nya Heun man forced to move for the Houay Ho Dam in Laos, "Some people thought they would get sick if they moved. They thought it's not our own land. It's like moving to a different country. Our sense of place, our sense of home, was destroyed."

Dam-affected people often suffer emotional and physical problems. Alcoholism, depression, domestic violence, disease and even suicide often increase after they are displaced.

Problems with resettlement

Some people who are displaced by dams are given new houses. This is called **resettlement**. People may be moved into existing villages or into new villages built just for dam-affected people.

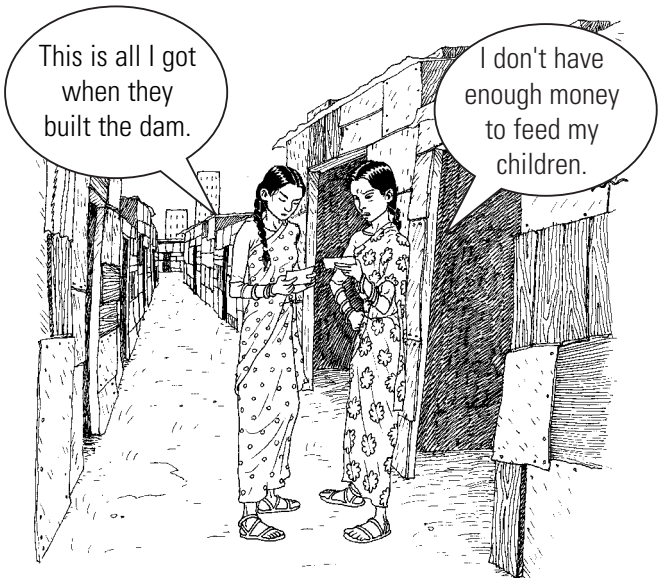
Dam builders often promise that people's lives will be better after resettlement. They promise that people will get jobs and big new houses with electricity and water. However, these promises are usually broken. The houses are often small and poorly made. People cannot afford electricity or water fees. They usually receive less land than they had before. The new land may be more difficult to farm than their old land.

Resettled people are often unable to farm or fish or raise livestock like they used to. Sometimes dam builders encourage them to adopt new livelihoods, like cattle grazing or growing crops to sell at markets. However, this is usually unsuccessful and people may have a harder time making a living than before.

Many do not receive enough compensation

Compensation is money or other things given to replace what people have lost. When people are given cash compensation, it is often not enough money for them to survive. If people are not used to cash, they may not know how to make the money last for a long time.

Many people do not receive compensation. The government may say the people have no right to compensation because they do not legally own the land they live on. The community may share the land or some people may farm land that is owned by other people. Or the government may not think they will be affected by the dam.



Without enough food or money to survive, families often end up living in slums or working as migrant laborers.

"Government officials told us, 'Give up your small home in the interest of the big home [the nation],'" said Zhang Qiu Lau, who was resettled for the Xiaolangdi Dam in China. "They promised to pay 15 cents a square foot for our homes and replace all our farmland. But up to now, I've received nothing, no cash. And our family, which had half an acre of good quality farmland per person, received just half as much of much poorer quality land when we moved to Xiang Yuan."

◈ Millions of people affected downstream

Dams have destroyed the livelihoods of millions of people living downstream of dams. The biggest impacts are on fishing and farming.

Fish catch downstream dropped by 60 percent after Brazil's Tucurui Dam was built. Fewer people fish today.

Fisheries destroyed

Dams destroy fisheries by changing water flow and blocking fish from reaching breeding grounds and habitat **upstream** of the dam. Fish populations usually decline. Some species disappear. As a result, people may lose an important source of protein and income. Their traditional way of life may also be destroyed.

Crops decline

People can suffer damages to their crops. Changes in water flow can erode riverbanks downstream of dams. Sometimes people's riverside gardens, land and crops are washed away into the river.

Rivers carry important nutrients and sediment that fertilize fields after floods. Dams stop these nutrients and sediment from traveling downstream. Without these nutrients, crop yields may decline. People may have to buy chemical fertilizers. If this is too costly, people may have to stop farming.

Lack of clean water

Water can often become dirty or polluted downstream of dams. People and animals may get sick if they drink the water, especially during times of low flow. People may get sores or skin rashes if they bathe in the river. Less water may be available for irrigating crops.

After the Yali Falls Dam was built, Cambodian villagers got sores and rashes if they bathed in the Se San River.

Sudden releases cause damage

Dam operators sometimes decide to suddenly release water from reservoirs. Water levels can increase rapidly. People using the river may not get any warnings. Their boats and fishing equipment may be swept away by the rising waters. In some cases, people may drown.

Communities fight against poverty in Lesotho

Before the Katse dam was built in Lesotho, local communities could grow crops all year round. They grew pumpkins, peas, beans, potatoes and other vegetables. Their large fields could produce enough food to share with others.

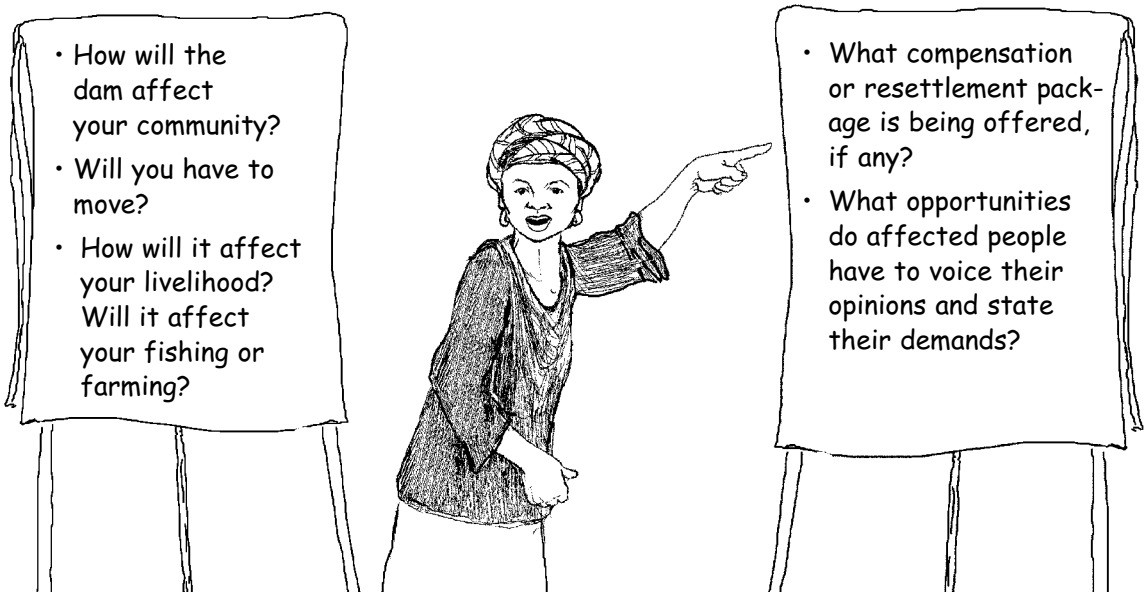
But after they were resettled, communities became poorer. Promises of compensation and new livelihoods were broken. Some people even died.

"Life here on the resettlement site is difficult. We struggle to get everything, even wild vegetables. At Molikaliko, we had food all year round. Here, we starve all year round," said Nkhono 'Maseipati who was resettled for the Katse Dam.

Communities in Lesotho are still fighting for fair compensation. They have filed complaints with dam builders, publicized their concerns and organized demonstrations. In late 2005, a government official promised to give communities everything they demanded. Will these new promises be kept?

If you hear that a dam may be built in your area, it is important to remember stories like this one. Think about how your life would change if a dam were built nearby. Imagine how it would affect your family, livelihood, culture and community.

Questions for discussion:



The International Movement Against Destructive Dams

Millions of people around the world fight destructive dams. Fishermen in Pakistan, farmers in Thailand and indigenous people in Guatemala fight dams. University professors in Japan and human rights NGOs in Uganda also fight dams. They fight to protect people's livelihoods and natural resources. And they fight for people's rights to take part in decisions that affect their lives.

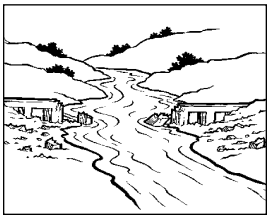
These efforts are more effective when people work together in regional and international alliances. Today, there are networks of dam fighters in Latin America, East and Southeast Asia, South Asia, Europe and Africa (see *Regional Contacts* section for more information). These networks include dam-affected people, people's movements, NGOs, researchers and other groups. People use these networks to share information, organize joint activities and work together to stop dams and defend people's basic human rights.

Dam fighters have organized two international meetings to share experiences and develop strategies to fight destructive dams. In 1997, participants from 20 countries met in Brazil. A second meeting took place in 2003 in Thailand with 300 participants from 61 countries. The movement continues to grow and get stronger.

◈ Successes of dam fighters

Fewer dams being built

The international movement has been successful in stopping dams. There are fewer dams being built now than in the past. Because of strong opposition to dams, governments have even cancelled dam projects.



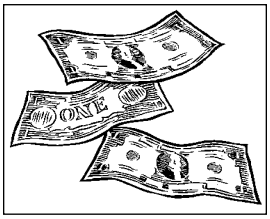
Some dams taken down

Today, in the United States and Europe, dams that were built many years ago are being **decommissioned**, or taken down. The rivers are returning to life. In France, several small dams on the Loire and the Lèguer rivers were decommissioned in recent years. After the dams were destroyed, the rivers returned to life. Salmon and other fish started to swim up and down the river again.

Rights of affected people upheld

Many dam-affected people have successfully fought to protect their rights. Some people have received better compensation. Some have participated in decision-making processes. And some have received irrigation water and electricity.

Because of protests by affected people and their allies, there are now international guidelines to improve dam-building. These guidelines were developed by the **World Commission on Dams** (WCD). The WCD says that no dam should be built without the agreement of the affected people. Dam builders should sign legal contracts with affected people for compensation. If the contracts are broken, affected people should be able to take legal action against dam builders. Many governments have not adopted these guidelines, but dam-affected people are using these guidelines as a tool to fight for their rights.

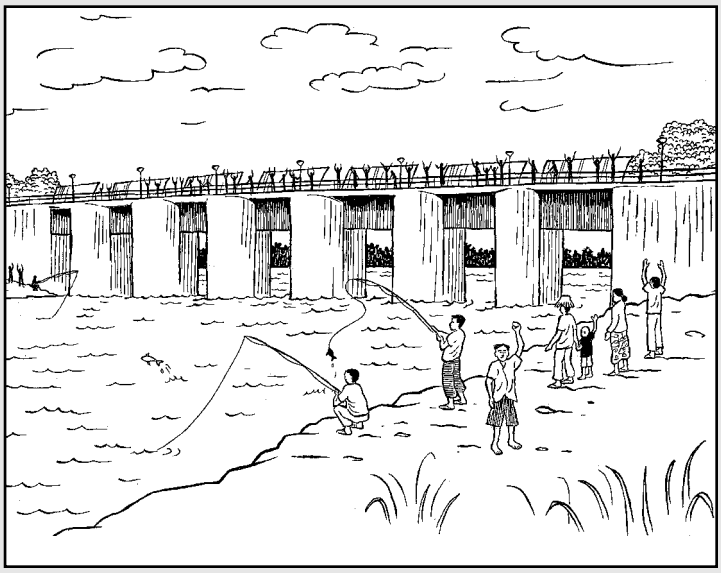


Less money for dams

Dams are very expensive. Governments in Latin America, Africa and Asia have to borrow money from public development banks and private banks to pay for dams. Twenty years ago, these funders gave a lot of money to build dams. Today, because of strong opposition to large dams, they loan less money for these projects. This has made it harder for governments to build dams.

Villagers win victory at Rasi Salai Dam

In 2000, the gates of Thailand's Rasi Salai Dam were permanently opened. This was a big victory for dam-affected people.



The Rasi Salai dam flooded the farmland of more than 15,000 people. It blocked fish migration routes and flooded a swamp forest. It was a disaster for everyone. Affected people decided to fight. They demanded that the gates of the dam be permanently opened to restore the river and people's livelihoods.

They created a protest village in the reservoir area to bring attention to their demands. Some protestors occupied the dam site. They said they would not leave until the dam gates were opened. At one point, the protesters were surrounded by rising water. This lasted several years.

In the end, the villagers won. The Thai government agreed to open the dam gates. Since then, the Mun River has come back to life. People can once again grow crops on the banks of the river and catch fish. They have regained their livelihoods.

Buppa Kongtham, a leader of the Rasi Salai movement, explained why she fought to decommission the dam: "Saving the environment is the only way to help my grandchildren in the long run. That's what I'm doing for them now."

◈ Successes…but dams still threaten communities

These are big successes. But a lot still needs to be done. In many countries around the world, governments are still building destructive dams. Many people still lose their homes and land to dams and reservoirs. Many powerful governments, banks, companies and development banks have big plans to build more dams.

- We need to strengthen resistance against destructive dams.
- We need to work together, support each other and learn from each other to protect the rights of dam-affected people.

When many people fight together against dams, it is harder for governments and companies to build dams and harm communities.

CHAPTER 4

How to Fight Dams

You can do many things to fight dams and to fight for your rights. The first step is to gather information about the dam and what impacts it might have on your community. Next you should figure out what you want and how you can make that happen. Then you take action to achieve your goals. This process is often called a campaign.

It is important to start your campaign as early as possible. Some important actions you can do throughout your campaign include getting and distributing information, organizing with other people in your community and working together with national, regional and international groups.

In some countries, organizing against a dam can be dangerous for community members and their families. Sometimes it is risky to criticize the government or its dam-building plans. It is important to be aware of these risks when you develop your campaign strategy.

This chapter gives you suggestions for how to develop a campaign strategy. It outlines actions you can take throughout the dam-building process. Lastly, it describes the three stages of dam building and identifies important steps you can take at each stage.

March 14 is the International Day of Action Against Dams and for Rivers, Water and Life. Hundreds of groups around the world take action to demonstrate against destructive dams, celebrate victories and educate the public. By organizing activities on March 14, you can increase awareness about your struggle and the international opposition to large dams.

◈ Planning your campaign

1. Collect information

It is important to understand how the dam would impact your community and the river. You can use **field surveys** to gather information from members of your community. NGOs, university researchers and other groups may also be able to help you. Here are some questions to think about:

- What villages and lands will be affected by the dam and reservoir?
- How many people will have to move?
- How many people will lose their fishing areas and farmlands?
- What is the value of the land, crops, houses, and/or fish catch that they will lose?
- What compensation or resettlement is being offered?
- Who is developing the dam? Is it the government, a private company or both?
- Who is paying for the dam?

2. What are your goals?

The next step to organizing your campaign is to figure out your goals and develop a strategy to achieve your goals. Here are some things to think about:

- What are you trying to achieve?
- Do you want to stop the dam?
- Do you want better compensation?
- Do you want to have a say in decisions about the dam that affect your community?

Make sure your goals are shared by members of your community. Your goals can be translated into demands for your campaign. For example: "Stop the Okavango Dam" or "More compensation for Okavango communities!"

3. Who are your allies and who are your opponents?

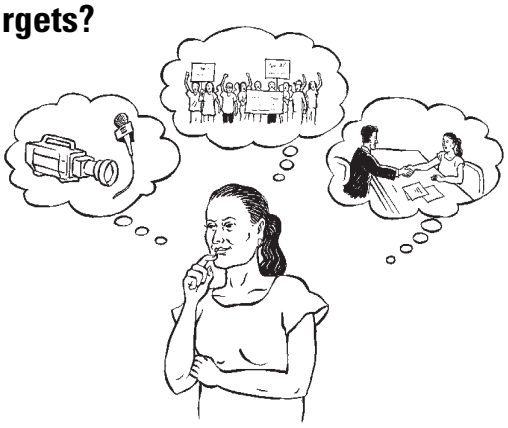
Building alliances is one of the most important parts of a campaign strategy. Think about who can help you in your struggle. Your success depends on how much support you can build within your communities, with the general public and with other groups.

Think about who your opponents are. What are their strengths and weaknesses? What will they do to oppose you? Opponents can include other community members, government officials, dam-building companies and funders.

4. Who are your targets?

Think about who can give you what you want. Who is making decisions about the dam? It may be people in your government. It may be a dam-building company. Or it may be a dam funder, like a development bank. These are your targets. Which of your targets is easiest to influence? If your government is not very open, it might be easier to influence the dam funder or the dam builder.

5. What strategies will change the mind of your targets?



What will convince your targets to change their minds and support your demands? Will protests be effective? Will media reports change their minds? Will action in your Parliament or legislature be effective? Usually a combination of actions is most successful. Make a timeline listing actions. Make sure everyone understands who is responsible for each action. This is your campaign strategy.

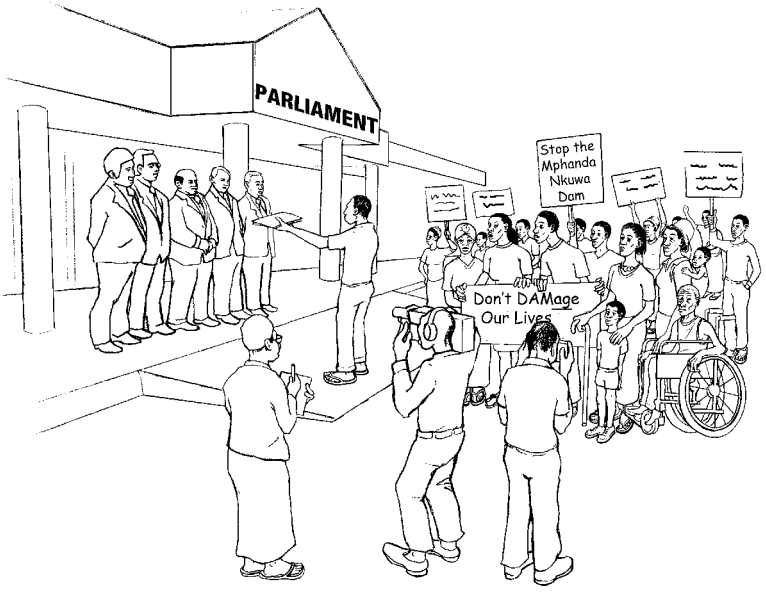
6. What funding do you need for your campaign?

Every campaign needs resources, whether it is help with organizing marches and demonstrations, a computer and access to email, a telephone, or printing of campaign materials. Many groups rely on donations from members of their community. Other sources of funding include foundations, aid agencies and other people in your country. If you need help fundraising, try to contact some bigger NGOs in your country. They may have ideas for raising money.

Discuss your campaign strategy in your community and make sure that everyone understands and agrees with it.

◈ Important strategies to fight dams

Some strategies can be effective at all stages of the dam-building process. Here are some ideas for activities that you can do throughout your campaign.



Organize and mobilize

Organize and mobilize affected people and the general public to support your struggle. Your campaign success depends on uniting many people. Governments and dam builders will often try to create conflict amongst community members. By building the strength and unity of your community early on, it will be harder for dam builders to divide you.

One way to mobilize people is to create your own organization. You can also link up with other organizations to form a network. Find out if there is a national network on dams in your country. Organize meetings to plan your campaign strategy and discuss actions to take. Create alliances with NGOs, academics, researchers, lawyers, and technical experts.

Organize marches, demonstrations, strikes, boycotts and blockades to bring attention to your struggle. These activities are most successful if you target institutions that are making decisions about the dam. Organize public meetings in towns and cities.

Distribute information

Produce leaflets, posters, reports and other materials to raise awareness about the dam and its potential impacts on your community. These materials can be distributed to affected people, the general public, environmental and human rights groups around the country, and government agencies. This is a good way to publicize your demands.

Work with the media

Publicize your message using radio, newspapers and television. This will help put pressure on the government and dam builders to listen to your demands. Call journalists that have written about similar issues in the past and tell them your stories. Organize a press conference. Invite the media to your activities. Keep journalists informed about your struggle. Ask NGOs and other support groups to help you identify different ways of delivering your message.

Lobby your government and funders

Meet with decision-makers to tell them about your concerns. Convince local and national government officials, and members of Parliament or Congress to support your demands. Organize letter-writing campaigns and petitions to target decision-makers in your government and dam funders. If the dam is being funded by a private bank or a public development bank, work with international NGOs to target these funders.

Take legal action

Sometimes legal action can be used to delay or stop dams, or to get better compensation for affected communities. Find a lawyer and find out whether dam builders are breaking any laws. Many big law firms will work for free for a good cause.

Propose alternatives!

Try to get experts to help you propose alternatives to the dam. (See *Chapter 5* for more information.)

Brazilians organize to stop Pilar Dam

In the 1990s, powerful foreign companies wanted to build a dam on the Piranga River in Brazil's Minas Gerais state. The dam would displace 133 farming families and destroy fisheries. Thousands of people downstream would be affected by changing water levels in the river.

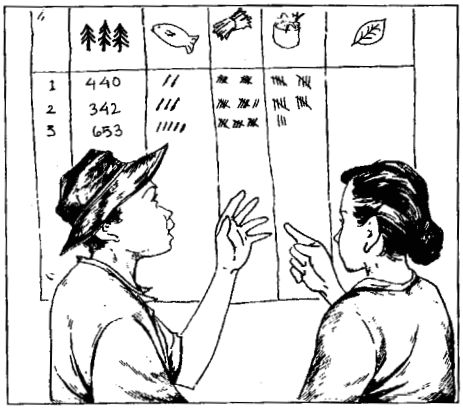
Local residents, an NGO, university researchers and church groups formed an alliance to fight the Pilar Dam. They worked together to find out what impacts the dam would have on their lives. They read the companies' studies and found many problems. They shared this information with government officials who were also worried about dam's environmental impact.

The NGO and researchers explained the environmental studies to the community to prepare them for a public hearing on the dam. They also helped farmers to compare their own views of their land, livelihoods and resources with that presented in official studies.

The community was well organized for the public hearing. Children read poems about the Piranga River and residents held up signs telling the company "*Fora*" ("Get Out"). Community leaders made strong statements expressing their concerns. The pressure from local residents, the criticism of the companies' environmental impact studies, and the concerns of government officials forced the companies to cancel the dam project.

When one of the companies tried to build a new dam in the area several years later, people again said "NO." They occupied the site where the company was taking measurements for the dam. After 43 days, the company technicians left. The community is prepared to resist again if necessary.

Thai villager research



For the past few years, people living along the Salween River on the Thai-Burma border have struggled against their governments' plans to build dams along the river. They decided to conduct research using local knowledge to document how they are using the river.

For 2½ years, Thai Karen ethnic people from 50 villages gathered data on fisheries, traditional fishing gear, herbs, vegetable gardens and natural resources. NGO staff and volunteers helped record data and write the report, but community members were the primary researchers. The villagers identified many fish, herbs and edible plants along the river that they depend on for food. The villagers will use the research to prove how important the river and forest is to their lives.

How to do your own research

Step 1: Organize a meeting with everyone who wants to be part of the research. Invite people from as many affected villages as possible. Talk about all the ways you depend on the river for your livelihoods and decide what you want to research.

Step 2: Divide into teams to conduct the research. The teams should include people who are experts in the area that is being studied. For example, fishers should do the fish research, and vegetable growers should do the riverbank garden research.

Step 3: Decide what method you want to use for your research. Here are some ideas:

Fisheries: Divide the river into zones. Assign a team of fishers to research each zone. After every fish catch, collect a sample of species. Organize a meeting so people can identify each species by its local name. Talk about their habitat, migration patterns, size, weight and spawning patterns. If you have a camera, take a photograph of each species that is caught. Put each photo into a book and write all the information about the fish underneath the photo.

Riverbank Gardens: Divide the river into zones. In each zone, walk along the riverbank and take measurements of each riverbank garden. Write down who owns each garden, what each person grows in the garden, and how they use the vegetables (for example, for eating or selling). If the vegetables are sold at the market, write down how much money they are sold for.

Step 4: Record your findings. Decide how to use them to influence decision-makers.

◈ What you can do at each stage of dam building

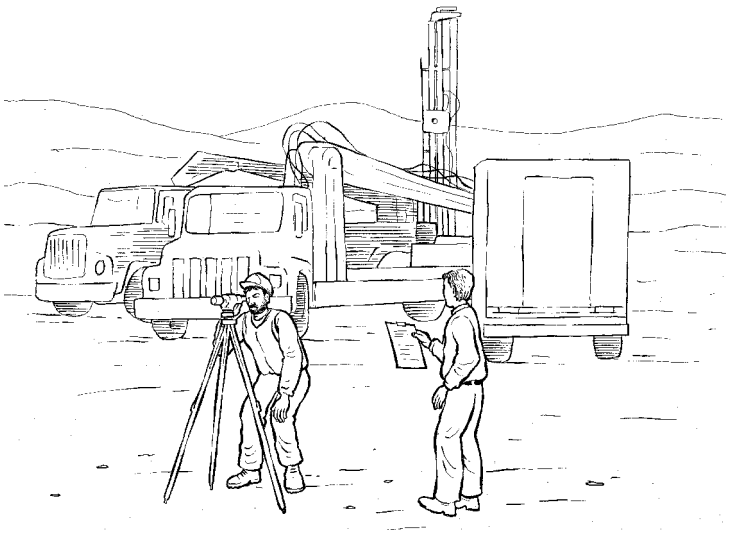
This section describes the three stages of dam building and specific actions you can take at each stage. The three main stages of dam building are pre-construction, construction and operation.

Stage 1: Pre-construction

Duration: 2 to 20 years or longer.

What happens during this stage?

Before a dam is constructed, dam builders develop plans and complete many studies to see whether it is possible to build the dam. They also want to see what the dam's impacts might be. Most of the studies are done by foreign companies.



Surveyors and drilling rigs are often the first signs that a dam is being planned in your area.

1. **Pre-Feasibility Study.** This study makes sure that the dam can be built and operated. It determines whether the site is suitable for a dam, estimates how much power or water can be produced, and estimates the dam's cost.

2. **Feasibility Study and Detailed Design.** This study looks at information necessary to build the dam, such as climate, geology, how much water is in the river, etc. If you see strangers in the area taking measurements and drilling in the ground, then they are probably doing the feasibility study.

3. **Environmental Impact Assessment (EIA).** The EIA is supposed to look at the environmental impacts of the dam. It is also supposed to suggest **mitigation** measures for the environmental problems the dam will cause. EIAs usually say that most impacts can be mitigated and the dam should be built.

4. **Resettlement Plan/Social Development Plan.** This includes plans for resettling people who live in the reservoir area. It also includes plans for compensating other affected people. Affected people living downstream of the dam are often left out of this plan.

Once these studies are done, dam builders meet with governments and banks to try to get funding for the dam's construction.

What can you do at this stage?

This is the best time to influence the dam project. If you think the dam will harm your community, then try to stop the dam. Learn about what rights you have under your local laws. Demand that the government organize public hearings so you can debate who benefits and who loses from the dam. Try to take legal action to stop the dam. Work with experts to develop better alternatives or compensation plans and publicize these.

Even if your campaign to stop a dam is successful, the government may try to build it again later. Building strong alliances is important for your long-term struggle.

Review dam studies

Demand that the studies are released to the public. If you are able to get copies of the studies, find experts to review them and publish their reviews. Many experts will do these reviews for free. Expert reviews can identify problems with the studies and predict what might go wrong if the dam is built.

Do your own studies

Often dams are built without studies that show how people depend on rivers. If the dam is built, people are less likely to receive full compensation because there is no record of what they have lost. It is important to record how your community depends on the river. These field surveys can also highlight the damage the dam might cause. Thai villagers have developed a research method for doing this called "Thai Villager Research". (See box on page 23.)

Target the funders

Find out who is likely to fund the dam. If the funders are from another country, contact NGOs in those countries to ask them to support your campaign. See the list of contacts at the end of this guide.

Demand legal agreements

If you decide to move, make sure that you sign a legal agreement that contains everything promised to you. Make sure you understand the agreement. Do not sign anything that you do not understand. The government and dam builders will often tell you that you will get new houses and better land, but this is rarely true.

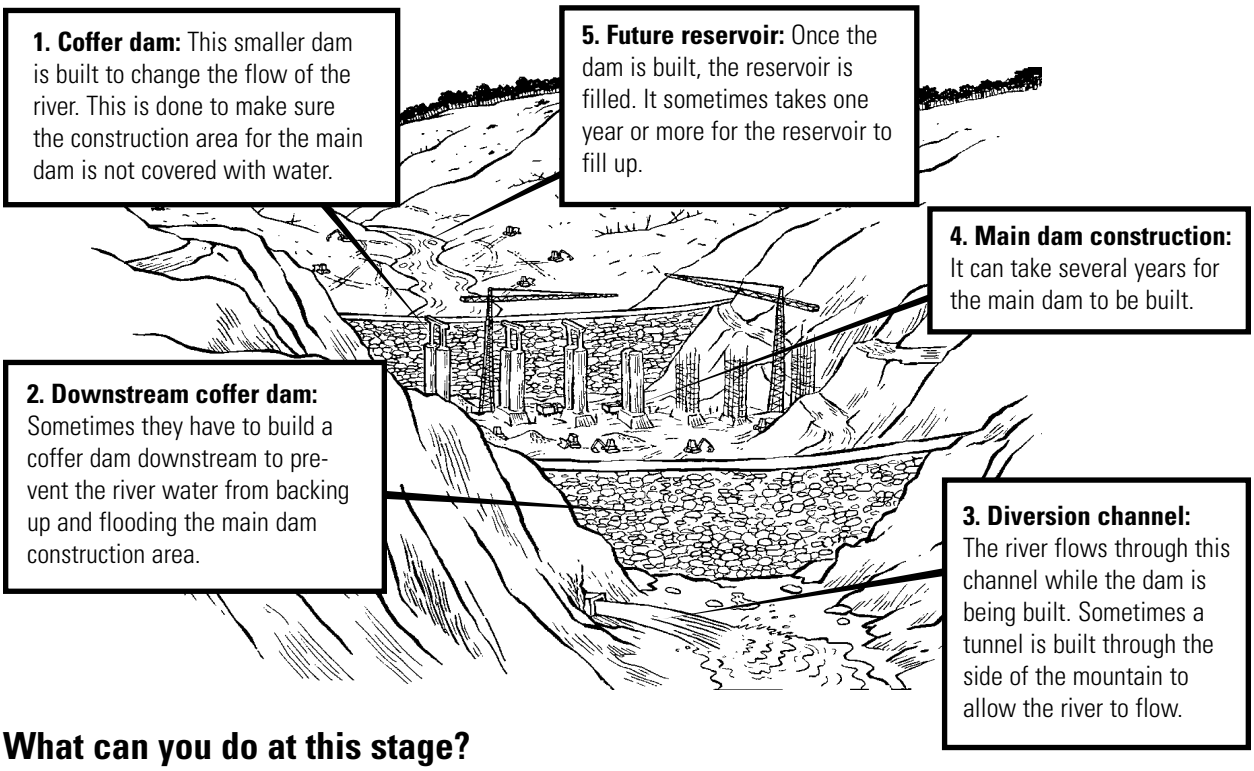
Do not sign anything you do not understand!

Stage 2: Construction

Duration: 5 to 15 years. Construction often takes longer than predicted. Sometimes this is because of technical difficulties, and sometimes it is because of corruption.

What happens during this stage?

The construction process for a dam is usually like this:



What can you do at this stage?

Your campaign can still be successful even if dam construction has already started. You might be able to stop construction, get more compensation, or make the project better. It is important to continue your struggle.

Organize demonstrations

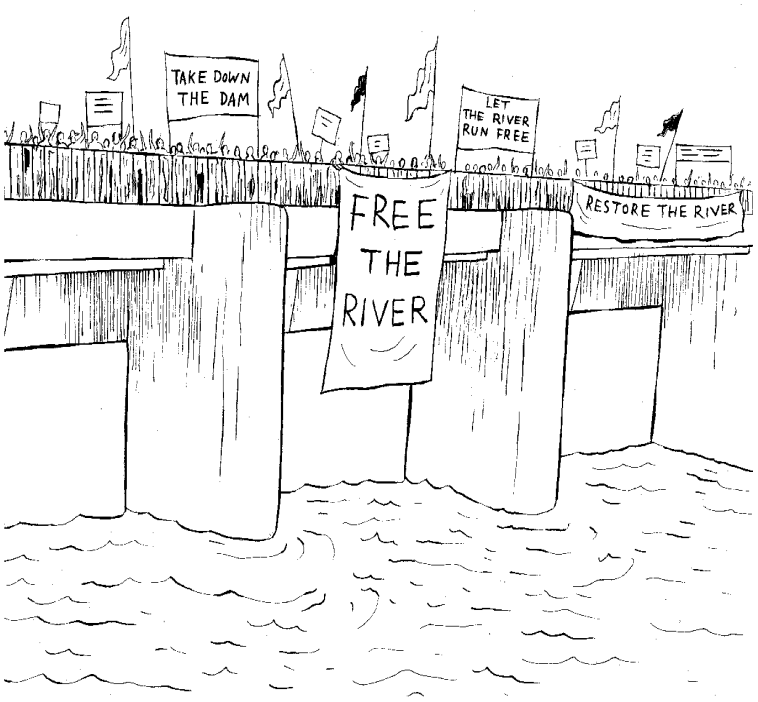
At this stage, some groups try to stop construction from taking place by organizing blockades and other forms of **non-violent direct action**. If you cannot do this, then monitor construction and resettlement. If the dam builder or government does not do what they said they would do, organize protests and other actions to demand that they keep their promises.

Work with international NGOs

If the dam is funded by a public development bank, work with international NGOs to make sure the funder receives information about problems with the dam. Sometimes this funder can put pressure on the dam builders if they are doing construction or resettlement badly. If things are really bad, the funder may stop giving money until things improve.

Stage 3: Operation

Duration: Around 50 years (sometimes more, sometimes less).



What happens during this stage?

After dams are built, they start to age. Some reservoirs quickly fill with sediment. Some dams may become unsafe or even break.

Once a dam has reached the end of its lifespan, it needs to be fixed up or decommissioned. Many groups around the world are demanding that dams be decommissioned because of their impacts on people and rivers.

What can you do at this stage?

Demand reparations

Even if the dam is built, some companies and governments may still have a legal obligation to provide compensation. You should research whether this applies to you.

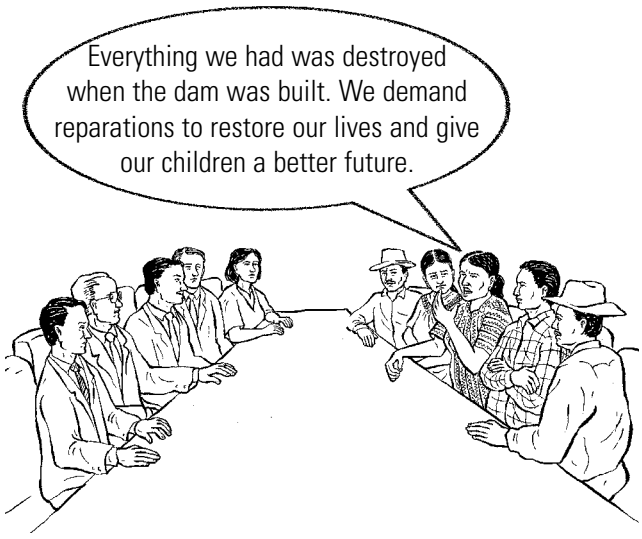
Many people around the world who have been affected by dams are demanding **reparations**, or compensation for past damages. They are demanding that the agencies that built the dam (governments, banks and companies) take responsibility for the impacts of the dam and pay compensation to affected communities. Some have been successful. (See box on next page.)

Demand changes in dam operation

You can also demand changes in dam operation to help the river flow more naturally again. This is called dam **re-operation**. This can involve changing the amount of electricity generated at different times of the day. Or it could mean releasing more water downstream of the dam. Many groups around the world are fighting for dams to be re-operated.

Demanding reparations in Guatemala

While Guatemala was in the middle of a civil war, the government built the Chixoy Dam in Maya Achí territory. The Maya Achí are indigenous peoples. After some people refused to move for the dam, paramilitary forces killed about 400 people in 1982. More than 3,500 people were forced off their lands. Thousands more lost land and their livelihoods.



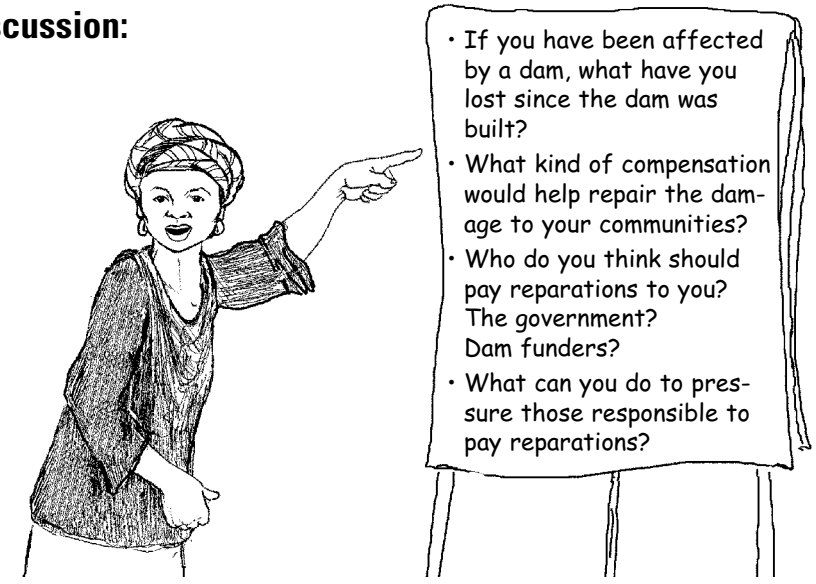
For years, survivors lived in extreme poverty. But they never gave up their call for justice. Affected people are now demanding reparations for their social, physical and economic losses.

The affected communities, together with some NGOs and a researcher, produced a study that documents the dam's impact on the environment, natural resources, poverty and food supply. This study has helped to show what the Maya Achí lost and why they deserve reparations.

In November 2004, the communities organized a big protest at the dam site. After occupying the dam for two days, the government agreed to form a commission to negotiate reparations. The commission held its first meeting in December 2005.

Says Cristóbal Osorio Sánchez, one of the massacre survivors, "Reparations allow us to restore our dignity and respect for our culture and our rights. Reparations mean we will be able to provide for our families and live well again, to develop projects to benefit the community and to increase the capacity of the people. Reparations will help people feel there is a sense of future. To feel good about life."

Questions for discussion:



CHAPTER 5

Alternatives to Large Dams

Better options exist to provide water, power and flood protection to people. These options are often cheaper, faster to build and less harmful for people and the environment than large dams.

Around the world, dam-affected communities and NGOs have gathered information about alternatives to large dams. They have used this information to pressure their governments to support better alternatives. Their efforts have helped stop the construction of destructive and unnecessary dams.

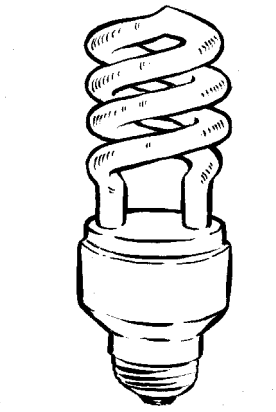
In this chapter, we discuss some alternatives to dams and highlight successful actions communities and NGOs have taken to support better alternatives. We hope this chapter gives you ideas about alternatives you can push for in your campaigns. Because every region has different needs, you will need to figure out the best options for your region.

◈ Alternatives for energy

There are many ways that governments can provide energy to their citizens. These include reducing energy demand, improving existing power plants and transmission lines and building new energy sources.

Reduce demand

Governments can reduce energy demand by encouraging factories, businesses and people living in cities to use energy more efficiently. This costs less and is better for the environment than building new power plants and new dams.

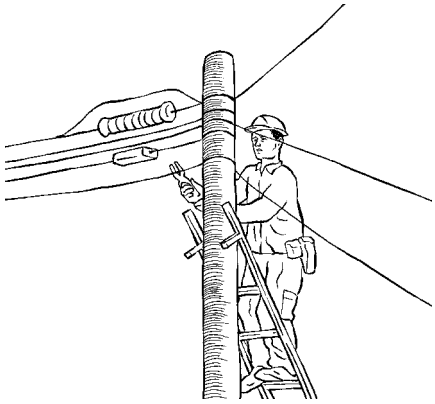


Compact fluorescent light bulbs reduce energy use.

Some tactics for saving energy include helping people to pay for machines and light bulbs that use less electricity. Governments can make companies and citizens that use electricity-hungry machines pay more taxes.

Governments can also encourage people and industries to use electricity during different times of the day. Then fewer power plants and dams need to be built.

Improve existing dams and transmission lines

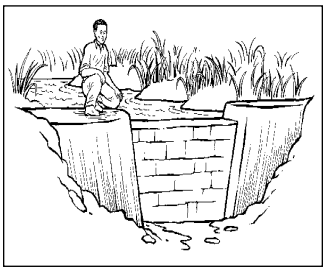


Transmission lines carry energy from power plants to people, cities and factories. In many countries, poor quality transmission lines can waste a lot of power. Energy can often be saved by repairing transmission lines.

Existing dams or power plants can also be improved. By cleaning plants, removing sediment and making other technical improvements, power plants can produce more electricity. These improvements can cost less and take less time to do than building new power plants.

Build better energy sources

Here are some ways to produce energy that are less damaging to the environment and communities than big dams. Many of these options can be used to provide power to big cities and factories, or to rural villages.



Small hydropower

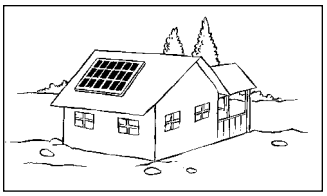
Small hydropower dams are usually only a few meters tall. They can be built of earth, stone or wood. Small dams often do not have reservoirs, so they usually do not displace people. The flow of the river does not change much. Very small micro-hydro projects often do not involve a dam. They divert some water from rivers to generate power.

Small hydropower projects can be set up and managed by local villagers. In China, India and Nepal, thousands of small hydro projects supply power to villages and towns.

Biomass energy

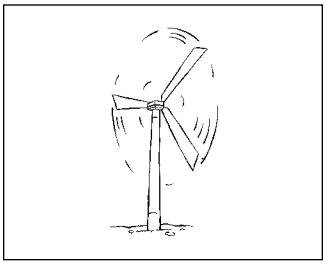
In many countries, biomass is a very common energy resource. Biomass includes all waste material that comes from plants and animals. Animal and agricultural waste is used to operate stoves, to produce gas and to heat buildings.

Biomass can also be used on a large scale. In countries where sugarcane is produced, companies have started to burn the stalks of sugarcane to generate electricity. Rice husks and wood waste can also be used.



Solar power

Solar panels can be put on rooftops to collect the energy of the sun and use it to heat water or produce electricity. Larger panels collect more solar heat and produce more energy.



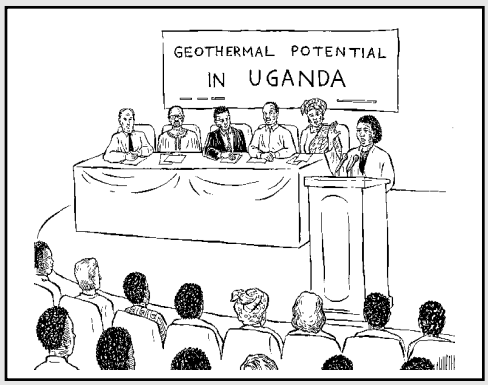
Wind power

Wind power is less harmful to the environment than large dams. In many European countries, such as Germany and Spain, a lot of energy is produced by wind turbines. Countries such as India, China, South Africa and Brazil, are now building many wind turbines to generate clean energy.

Geothermal power

Geothermal power uses heat from inside the earth to produce energy. This heat warms underground reservoirs of water and steam. Wells can be drilled to bring the hot geothermal water to the earth's surface. This liquid can then be used to make electricity at power plants. The Philippines and El Salvador generate about 25 percent of their electricity from geothermal sources.

NGOs identify better alternatives in Uganda



The Ugandan government and the World Bank have long said the Bujagali Dam is needed to meet Uganda's energy needs. But NGOs in Uganda wanted to look for alternatives that would be less environmentally damaging and better for the people. So they started to investigate large-scale alternatives.

In April 2003, the National Association of Professional Environmentalists (NAPE), a Ugandan NGO, organized a major conference on geothermal energy, the alternative considered to hold the best promise for Uganda. Geothermal experts from around the world, government officials, environmental groups and the general public attended the meeting.

After the conference, the Ugandan Ministry of Energy formed a team to study energy alternatives for the country. Thanks to the efforts of NAPE, hydropower is no longer seen as the only energy option for Uganda. Better, cheaper and cleaner options, such as geothermal energy, are now being considered.

◈ Alternatives for water

Rivers and wetlands around the world have been dammed and drained for water supply. But a lot of this water is wasted by inefficient irrigation and water distribution systems that leak. People who live in cities also often waste water. If water were managed better, there would be enough to meet everyone's needs. Below are some ideas that can help.

Reduce demand

Large-scale agriculture uses and wastes a lot of freshwater. Irrigation systems for large farms often put more water on fields than plants need. The extra water destroys the soils. Other types of irrigation systems can be used to save water. Drip irrigation uses water more efficiently because it delivers water directly to the roots of the plants. Drip irrigation saves water and is better for plants and soil.

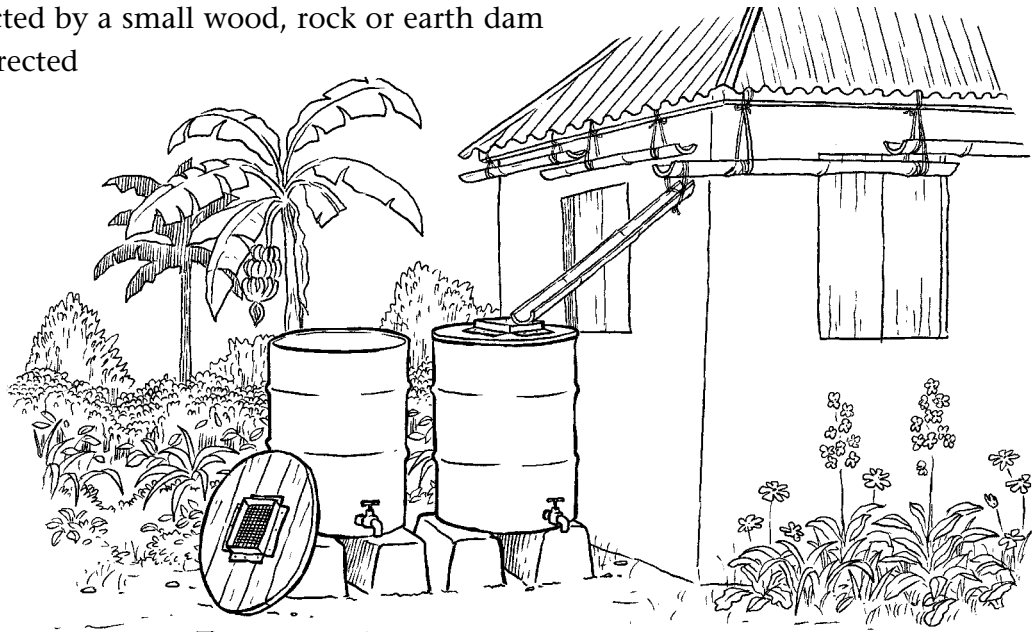
Large-scale farmers and big farming companies sometimes grow crops in dry areas that need a lot of water, such as rice and sugarcane. Water can be saved by encouraging large-scale farmers and companies to grow crops that do not need so much water.

Collect rainwater

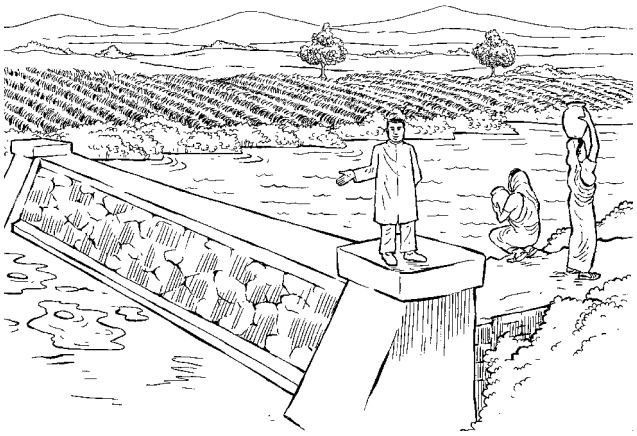
Rainwater harvesting is a cheap and effective way to improve communities' access to water. People can put tanks next to their houses and collect rainwater that falls off their rooftops. Large earth jars can also be used to collect rainwater for household use.

For farming, people often build small dams and embankments to collect rainwater as it runs down hills. Water soaks into the ground. Wells can be built to access the water. Another method is to build small dams and canals on rivers.

Water is collected by a small wood, rock or earth dam and is then directed onto fields.



Harvesting rain, changing lives



In 1986, the Alwar district in Rajasthan, India, was like a desert. People did not have enough water for their homes and fields. At that time, the group Tarun Bharat Sangh (TBS) was formed to increase the water available for people and agriculture. The founders of TBS remembered that people in Rajasthan used to collect rainwater. When TBS started their work, the structures for collecting rainwater had been forgotten and nobody used them any longer.

TBS remembered the forgotten wisdom of rainwater harvesting and rebuilt the small earth dams that their ancestors had built across rivers to capture and conserve rainwater. In Rajasthan, there are now more than 10,000 small dams and earth embankments that collect water for more than 1,000 villages. Thanks to the small dams and embankments, the groundwater level in the area is higher now and rivers that used to be dry carry water year-round. This has transformed the lives of around 700,000 people who have better access to water for household use, livestock and crops.

"Generations before us never had the good fortune we have," says Lachmabai, an elderly woman from Mandalwas village in Rajasthan. "Because of the water we are happy, our cattle are happy, and the wildlife is happy. Our crop yields have gone up, our forest is green, we have firewood, fodder for our cattle, and we have water in our wells."

Questions for discussion:

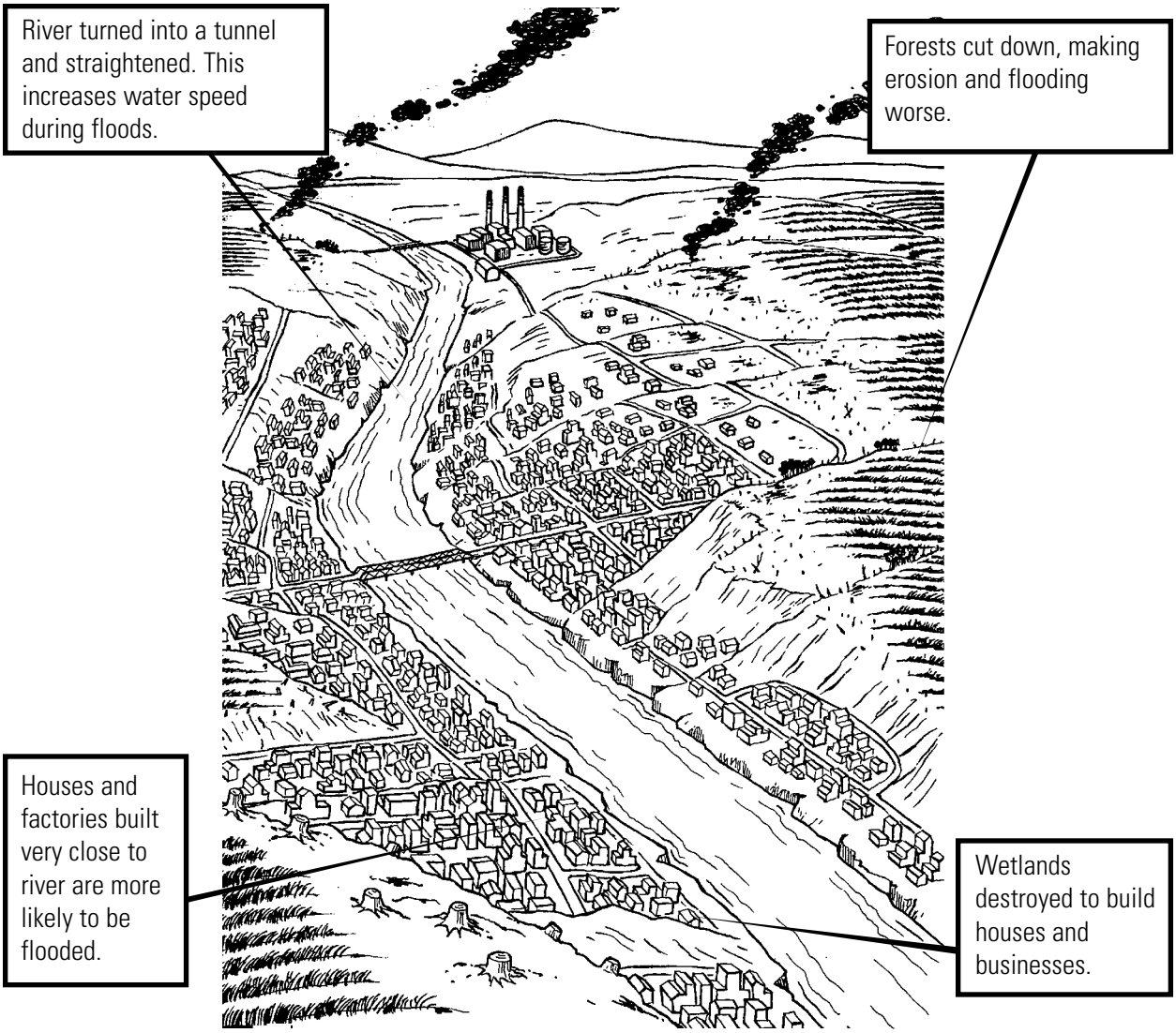
- How does this story relate to your community?
- Are there traditional systems of rainwater collection in your area?
- Would a revival of those systems increase your access to water?
- If you were able to get large numbers of people to supply their own water, would this help you stop a dam project?

◈ Alternatives for flood management

Large dams are sometimes built to control floods. However, when there is a really big flood large dams can make flooding damages worse. There are many ways to reduce floods and make them less destructive. This includes protecting **watersheds** and creating flood warning systems.

Protect and restore watersheds

One of the best ways to reduce damage from floods is to protect and restore watershed areas. Healthy wetlands, floodplains and forests prevent flooding by holding water. They are like a sponge. Trees slow the speed of floodwaters and distribute water more slowly over the floodplain. Wetlands soak up water during storms and whenever water levels are high. When water levels are low, wetlands slowly release water.

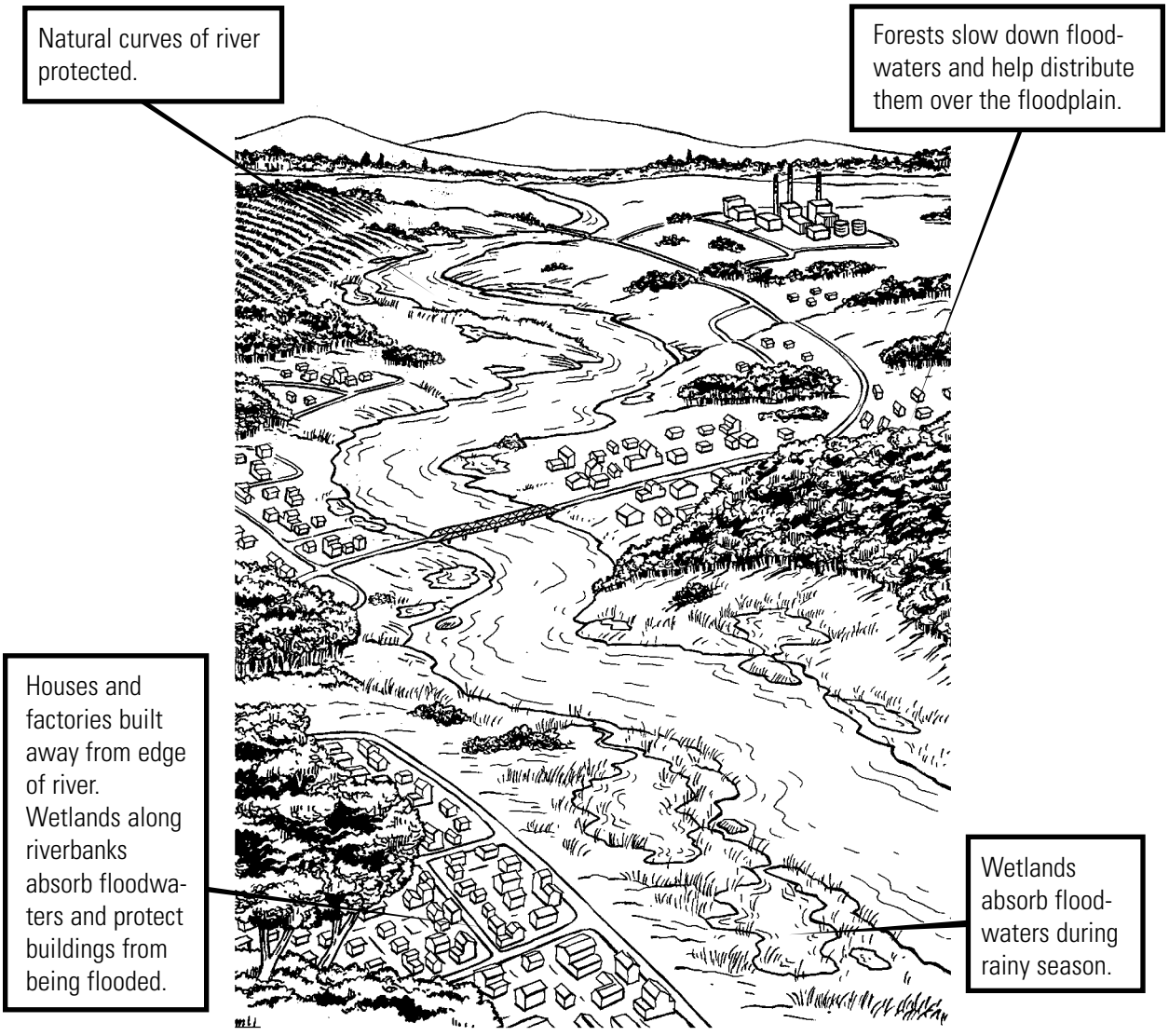


Bad Watershed Management

Today, many wetlands, floodplains and forests have been destroyed for the construction of roads, houses and industries. This has increased flooding damages. For better flood control, these natural resources must be protected. If they have been destroyed, they should be restored.

Create flood warning systems

Governments can invest in flood warning systems so people know in advance when a flood is coming. This can save lives and reduce flood damages. Early warning systems tell people living along the river when flooding is about to occur. This could involve having loudspeakers in towns and having emergency plans for what to do if a flood occurs. Other systems allow people to keep track of how much water is in the river. When the water levels rise above a certain level, people know that flooding is likely.



Good Watershed Management

Conclusion

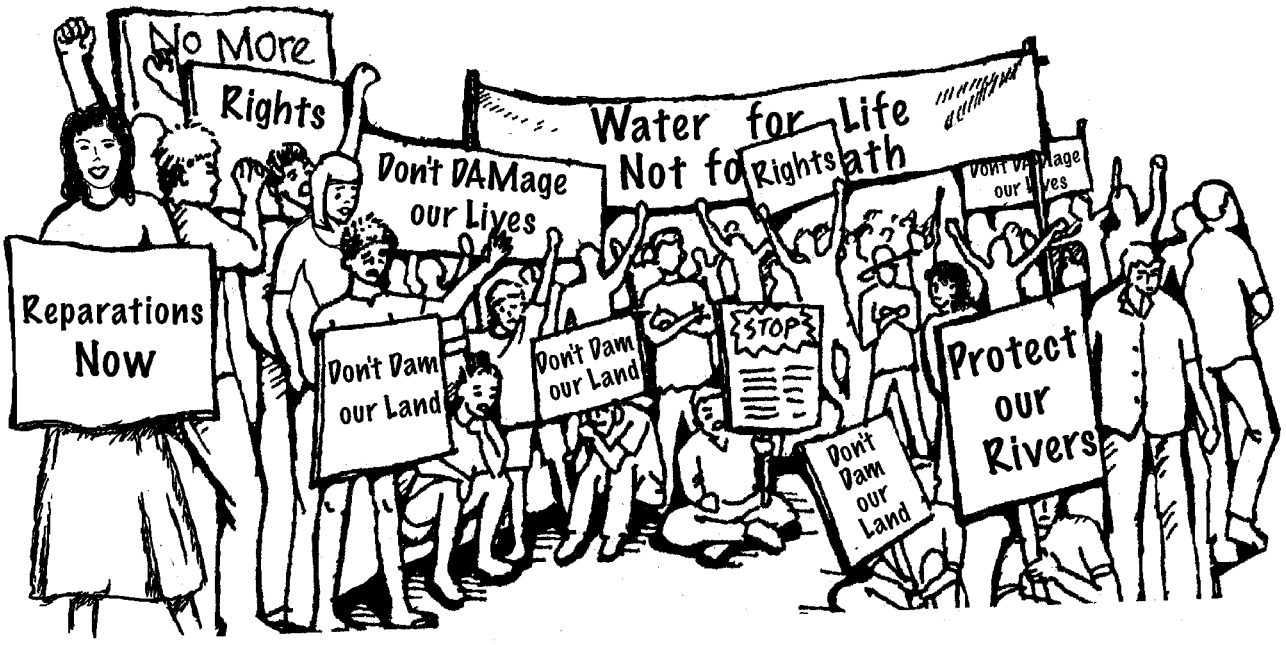
We hope this action guide gives you tools and information to help you in your struggle against destructive dams. We hope the successes of other communities inspire you as you defend your rights and your livelihood. You are not alone in your struggle.

As dam-affected people and NGOs said in 1997:

> "We are strong, diverse and united and our cause is just. We have stopped destructive dams and have forced dam builders to respect our rights. We have stopped dams in the past, and we will stop more in the future."
>
> —*Declaration from the "First International Meeting of People Affected by Dams" in Curitiba, Brazil on March 14, 1997.*

These words have proven true. Together, we can stop destructive dams and defend people's rights. Together, we can meet people's energy and water needs without hurting communities and the environment.

Together, we can build a better future.



Regional Contacts

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Email: info@irn.org
Web: www.irn.org
Provides support to local communities and NGOs who are fighting destructive dams.

Africa

African Rivers Network
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National Association of Professional Environmentalists (NAPE), Uganda
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Phone: + 256 77 492362
Email: nape@nape.or.ug
Web: www.nape.or.ug
Network of communities and NGOs advocating for sustainable use of African water resources.

Mr. Hope Ogbeide
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SWAPHEP works to increase local peoples' access to clean water and to promote the sustainable management of freshwater resources in Nigeria.

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Web: www.emg.org.za
Provides support to organizations and communities working to stop dams and protect rivers in Africa.

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Email: info@rivernet.org
Web: www.ern.org
Network of European groups, organizations and people working to protect Europe's rivers.

Latin America

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Brazil's national movement of dam-affected people.

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Phone: +91 11 2748 4654
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Web: www.sandrp.in
Shares information on dam-building in India and provides contacts for dam-fighters in India.

Mr. Gopal Siwakoti 'Chintan'
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Email: gopalchintan@gmail.com
Web: www.wafed-nepal.org
National network of water and energy project-affected people and local concerned groups in Nepal. Also helps coordinate South Asian network of groups working on dam and river issues.

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Web: www.sungi.org
Helps communities defend their rights and get benefits from development projects in Pakistan.

East and Southeast Asia

Rivers Watch East and Southeast Asia
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Network of NGOs and dam-affected people in East and Southeast Asia working to stop destructive river development projects.

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Web: www.searin.org
Supports rights of local communities to their resources and opposes threats to rivers and ecosystems in mainland Southeast Asia.

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Monitors the policies and projects of the Japan Bank for International Cooperation (JBIC).

International Rivers Network

Linking Human Rights and Environmental Protection