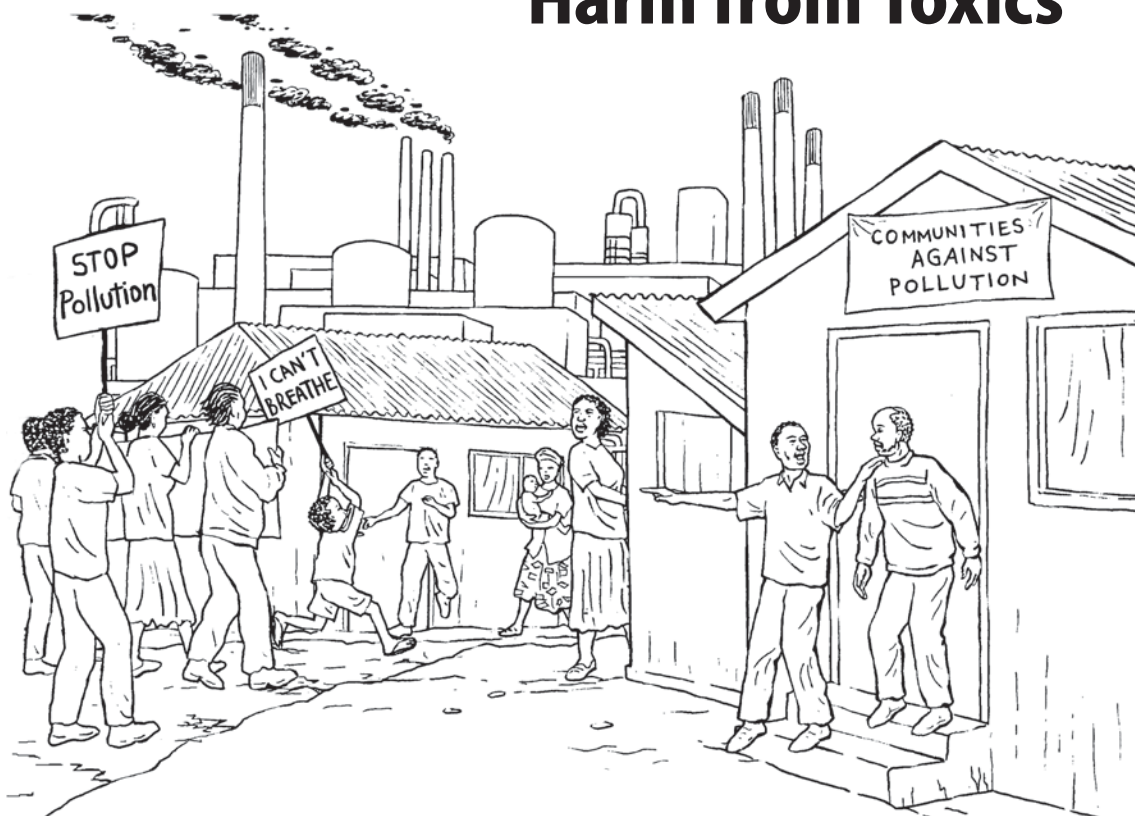


## 20 Preventing and Reducing Harm from Toxics

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# Preventing and Reducing Harm from Toxics



As we learn more about the harmful effects of toxic chemicals on our health and our environment, more and more people are organizing to prevent harm and to find healthier and more sustainable ways of producing things.

Business owners, government leaders, and some scientists try to justify the dangers of toxic pollution by saying that a certain amount of risk is acceptable as the price of development and progress (so we can have electricity, medical care, transportation, computers, and so on). But what they do not tell us is that it is possible to have these benefits in ways that are safer for people and for the environment (see page 458). Rather than accepting unnecessary risks, we can choose to promote safer production of food, manufactured goods, and energy while still preventing toxic pollution as much as possible.

## Avoiding and Controlling Toxics

Preventing exposure to toxic pollution begins with the precautionary principle (see page 32), which is thinking about the harm an action or product might cause before doing it or using it. While we can make personal and community decisions to avoid harm as much as possible, we also need to demand that business owners and our governments put the long-term health of all people, both rich and poor, and the environment before corporate and personal profit.

Many things we do every day affect how much we and others are exposed to toxics. There are some everyday exposures that we cannot control through personal decisions. But there are some exposures we can limit by making choices that help keep ourselves, our families, and our communities safer and healthier. Personal choices will often lead to community action, since we soon see how impossible it is for any one person to control the harm we are facing from toxics by ourselves.

To stop harm caused by toxics, we need to:

**Educate ourselves.** Learn and teach others what is toxic and how toxic substances cause harm. Read this book, talk with people, and learn from organizations providing information about toxics. Schools, health centers, workplaces, community centers, and our homes can all be places to educate the community about toxics and health. (For a community discussion activity on toxics, see page 468.)

**Find sources of toxic exposure** in our homes, water supply, neighborhoods, workplaces, schools, and region. To assess the impacts of toxic pollution on your community, do a trash walk (see page 391), do a health survey (see page 500), or set up a group to monitor pollution (see page 456).

**Avoid whatever toxics you can.** Stay away from known sources of toxics. Reduce use of toxic products by finding safer alternatives for cleaning products (see page 373) and using nontoxic forms of pest control (see pages 296 to 301, and 366). Control toxics by planning a community solid waste program (see page 396), protecting water sources (see page 75), and by working to move toxic businesses or activities away from where food is grown and public areas like parks. Make sure toxic materials are not stored, used, or released in or close to where people live. Work to make sure that especially children, the elderly, the sick, and pregnant or nursing women are not exposed to toxics.

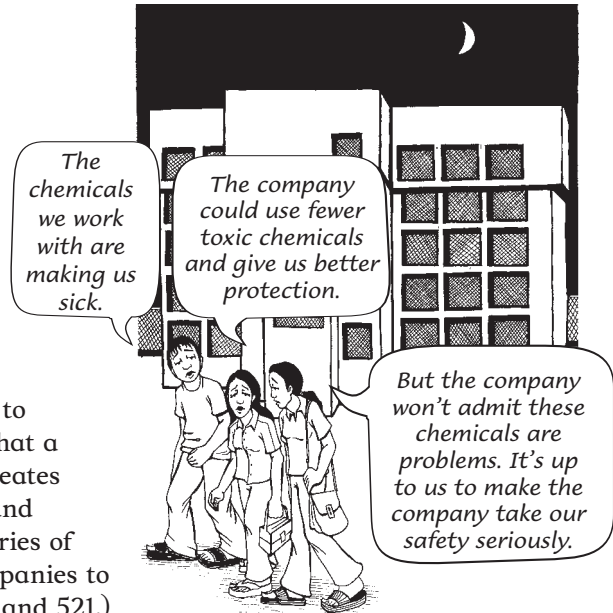


We cannot choose what air we breathe, what water we drink, or what materials our employer makes us work with, and we often cannot know what we are being exposed to in the things we eat or the products we use. For this reason, we need to organize businesses and governments to reduce the use of toxics and the threat of toxic pollution. Many people working together in the shared belief that something is too harmful have the power to make change.

## We can force companies to clean up

The responsibility for toxic pollution lies mostly with polluting industries like power plants, manufacturing, or oil and mineral extraction, while the burden of living with toxic pollution and cleaning it up usually falls on the people who live near the problem.

Some communities have been able to shift the responsibility and show that a particular industry or company creates a problem and should clean it up and commit to safer practices. (For stories of communities that have forced companies to clean up, see pages 344, 465, 483, and 521.)



## Pressure governments for better safety standards

It is government's responsibility to protect people from pollution. But powerful corporations and international financial institutions pressure them to get rid of or ignore regulations about the use of toxics. It takes a lot of community pressure for governments to make and enforce laws that protect people, especially in countries struggling to attract businesses to invest there. But community-based campaigns can force changes in laws (see pages 417, 465, 466, 473 and 480) as well as use existing environmental laws (see Appendix B).

## Press for changes in how products are made

Many industries have developed ways to replace toxic materials and production methods with ones that are more sustainable and less damaging to people's health and the environment. See page 458 for more about clean production methods and ways to influence businesses to adopt them.

## Change consumption patterns

In the end, there is too much consuming by the wealthy. Less consumption and waste, using enough but not too much, is a big part of the solution.

## Hidden Costs and Who Pays Them

Many industries that produce and use toxic materials tell people their materials and products are safe and necessary. But this is not true. Many chemicals and products that people once thought were safe and necessary, such as PVC plastic, leaded gasoline, or pesticides, are now known to cause great harm. And many toxic chemicals have safer alternatives, if industry would only seek them out and use them.

Industrial development has many “hidden costs” in the form of damage to the environment and health problems for people. These hidden costs are usually “paid for” by the people who must live with the harm from toxics, not by the industries that cause this harm. Allowing these costs to be disconnected from the businesses engaged in toxic-spreading activity is one way business protects and increases their profits. These profits are often very large, certainly big enough to support safer practices and protection of people’s health.

The people who suffer the worst effects of industrial pollution are usually the workers in polluting industries. Also affected are those who live nearby and cannot move to less polluted places. Many health problems from toxics cannot be cured (see Chapter 16). So, even when someone can afford costly treatments, and most of us cannot, the harm to our health is often permanent. The real solution is to ban the use of very toxic materials and tightly regulate the use of toxics that are necessary and do not have safer replacements.

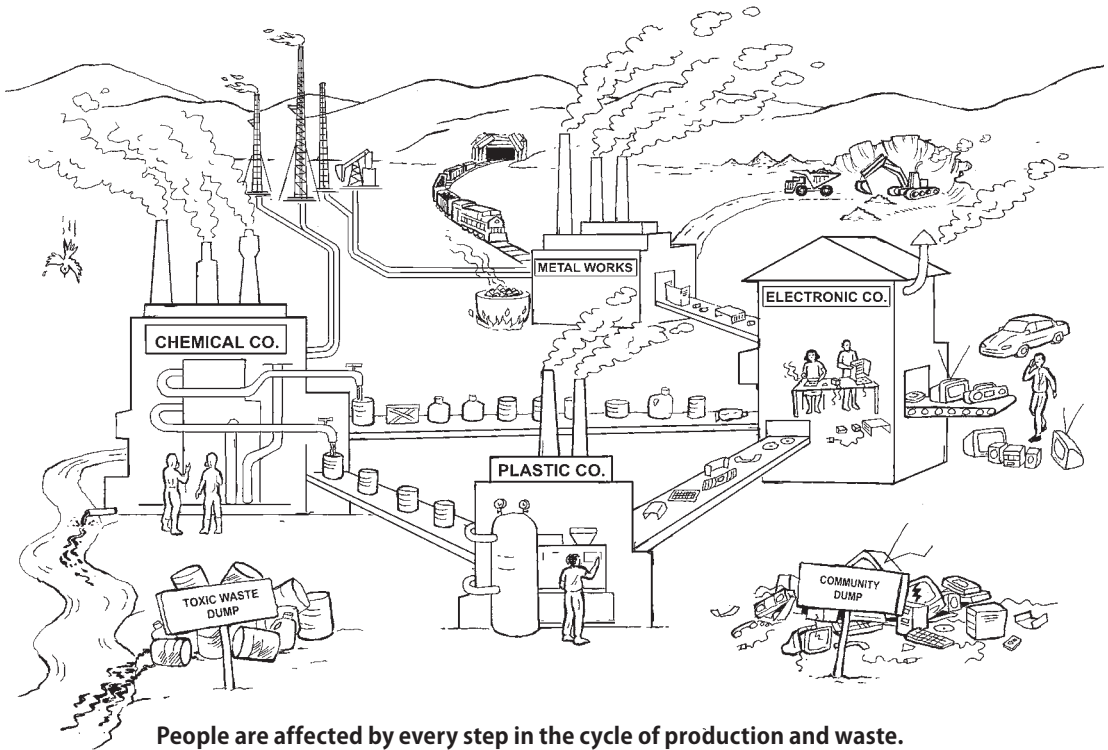


*Industries must pay the cost for safer alternatives and better safeguards for workers, communities, and consumers everywhere.*

## The cycle of production and toxic waste

Even though industries are responsible for making and using toxic chemicals and toxic wastes, each of us, no matter whether we live in a small village or a large city, is affected by the global cycle of production and waste. Whether it is the plastic bags that are used by people worldwide (see page 389), or the many toxic substances and production methods that go into making a single computer, car, or cell phone, we are each connected to a worldwide cycle of toxic production and toxic waste.

## Producing electronics — and toxic waste



People are affected by every step in the cycle of production and waste.  
And at every step, people can work to prevent and reduce harm.

## Some common sources of industrial pollution

**Oil refineries and electric power plants** pollute air, water and soil with toxic chemicals and heavy metals. For more about refineries, see page 513.

**Smelters** release heavy metals like mercury and lead (see pages 338 and 357), and toxins like dioxin (see page 341).

**Factories** of all kinds may cause pollution, but can improve their safety by using clean production methods (see page 458).

**Industrial waste dumps** leak chemicals into soil and groundwater, causing serious problems for many years.

**Incinerators** release toxic chemicals into the air, water and soil (see page 423).

**Small-scale industries** such as tanneries, electroplating, garment, and battery manufacturers can cause pollution and serious health problems for both workers and people nearby (see pages 459 to 464).

**Military bases and war zones** cause devastating pollution, from radiation to dioxin, and leave harmful waste that may last for many generations.

## Air Pollution

Air is polluted when it becomes contaminated with poisonous gases and small dust particles. Most air pollution is caused by burning **fossil fuels** (oil, coal, diesel, gasoline) to run engines, factories, and power plants (see page 526). Wind and rain can carry air pollution far from where the pollution was made. This causes health problems for people everywhere. Air pollution is usually worse in cities, industrial areas, low-lying areas or those circled by mountains, and places where air gets trapped and does not move well.

Air pollution may contain heavy metals such as mercury and lead (see pages 337 to 340, and 368 to 370), POPs (see page 340), and other toxic chemicals such as sulfur dioxide.

If you are doing community air pollution monitoring, it is useful to know which chemicals are in the air. But keep in mind that it is usually more useful to know how to protect yourself and your community from harm from air pollution than it is to know exactly what is in the air.

Air pollution causes serious health problems, including many cancers and respiratory illnesses (see pages 327 to 331). Air pollution causes acid rain that damages forests, water sources, and buildings, as well as our lungs. Also, air pollution is one of the main causes of global warming (see page 33).



## Air pollution monitoring

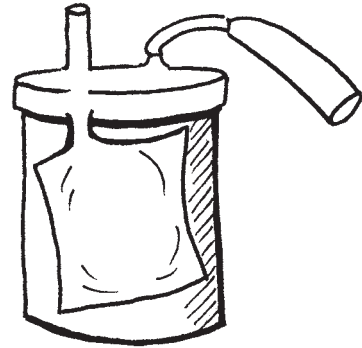
Air pollution monitoring is a method used by a community during a campaign against a polluting business or industry. The monitoring allows many people to participate in the campaign as well as building a base of evidence that can be used to pressure the companies or industries to stop polluting.

Monitoring or checking for air pollution begins with your senses and your common sense. To know what effect air pollution is having in your community, ask people to keep a record of what they smell, see, hear, taste, or feel. The more people that do this, the better chance the community will have to identify and stop the pollution.

### The bucket brigade method

Some communities monitor the air using a simple, low-cost method called the “bucket brigade.”

A 5-gallon plastic bucket with a valve and a special bag are used to take air samples. By opening the valve when there is a toxic release, or any time the air seems especially polluted, a small amount of air is sucked into the bag. The bag is then removed from the bucket and sent to a laboratory to find out what chemicals it contains. (See Resources.)



Having the air sample tested in a laboratory is the most costly part of the bucket brigade. Most countries do not have laboratories that can — or will — test the air sample properly, so it may need to be sent to Europe or the United States. Some communities raise money for a bucket brigade by collecting door-to-door, or by holding dances, parties, or house meetings.

Many communities use the bucket brigade along with other community organizing activities such as interviews and surveys. They also report toxic releases to the media and government, and try to force refineries and other polluting industries to use safer equipment and reduce emissions.



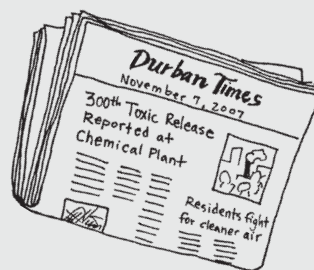
## GroundWork's bucket brigade

Durban, South Africa, is a city surrounded by oil refineries and pipelines, a large chemical storage area, chemical plants, textile and paper factories, and toxic landfills. Every day, people in Durban are exposed to high levels of air pollution, water pollution, and all of the health problems that come with constant exposure to toxic chemicals. Industrial accidents, leaking storage tanks, and broken pipelines are common, causing fires and destruction of nearby wetlands and groundwater resources.

In 1999, a group called GroundWork formed to help people in Durban monitor air pollution. Using the bucket brigade method, the community began testing the air for toxics whenever there was a gas flare, an explosion, or a toxic release. Then they sent the bags full of air pollution to a laboratory in the United States for testing.

The lab tests found high levels of toxics, including sulfur dioxide, nitrogen oxide, and benzene. Test results from air samples collected near a school showed that children were exposed to levels of pollution as high as if they had stood all day, every day, on a busy highway.

The activists showed the test results to the government and the polluting industries, and also announced them on the radio, newspapers, and around the community. The state-run oil company said the tests were not accurate and took their own air samples. But when their samples were tested, they found even higher levels of poisons!



The bucket brigade method helped build a nationwide movement against pollution in South Africa. Under pressure from the growing environmental justice movement, the government passed the Air Quality Act in 2004. The city of Durban also set up its own air monitoring system. Since then, there has been a noticeable decrease in air pollution.

The bucket brigade helped community members feel stronger, braver, and more able to challenge polluting industries. With this increased confidence, they forced the government to listen to them.

There is still a serious pollution problem in South Africa. As chemical plants, refineries, and pipelines get older, the danger of accidents increases. But by combining strong community organization with a tool for collecting samples of toxic pollution, the people of Durban have made themselves safer. And they have shown the rest of their country and the world that people can make industry and government take responsibility for their pollution.

## When there is a toxic release

Chemical plants, oil refineries, and other factories can have accidents that release large amounts of toxic chemicals very suddenly. Refineries also release toxic gases as part of ‘regular maintenance.’ A toxic release may look like a cloud of smoke or a large fire, or it simply may be a sudden strong smell. This can be frightening. It can also be deadly.

In the short term, there are steps people can take during and after every toxic release and chemical spill to reduce harm (see Appendix A). In the long term, it takes community organizing to pressure industries and governments to enforce better safety regulations.

### During a toxic release:

- Depending on the situation and how quickly you can respond, sometimes it is safest to just stay indoors. In other situations, it is safer to leave the area as quickly as possible. Training and a good community emergency plan will help you know when to stay and when to leave.
- Make some kind of record. Mark the time of day the release happened, and how long it lasted. Also note any strange smells, sights, sounds, physical reactions (feelings in your body), and reactions of other people and animals nearby. This information may be useful later for taking community action.
- Take photos and video if it is safe to do so. These can be used later in court or campaigns.

**Making notes directly onto a calendar is a good way to keep a record of toxic releases.**

### After a toxic release:

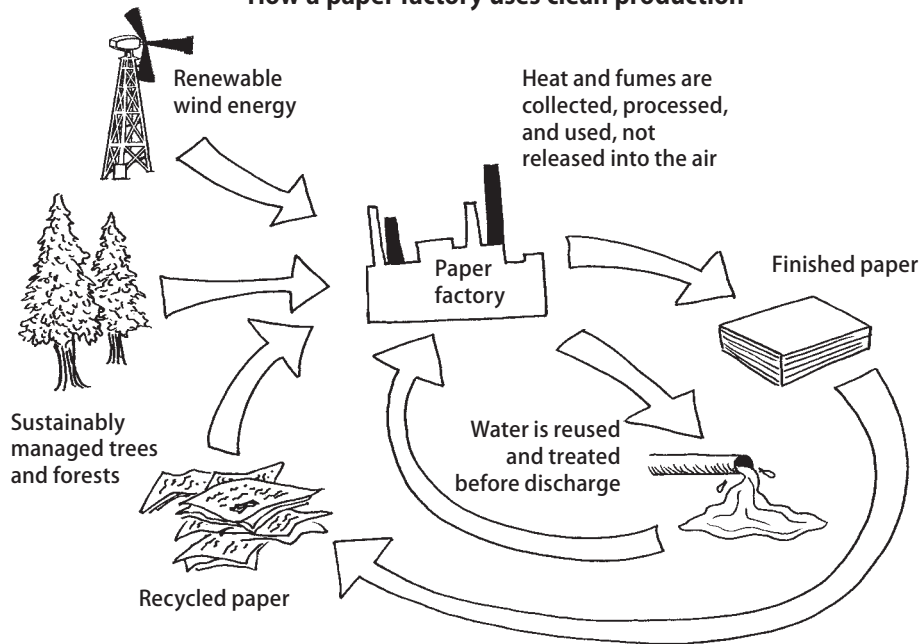
- If people have been exposed to chemicals, help them go to a clinic or hospital right away.
- Contact local government and media to report what happened.
- Call a meeting to let everyone in the community know about what happened, and to organize a response.
- Encourage community members to share their experiences and feelings. This will help people to recover from the event and build solidarity in the community.

TUESDAY	WEDNESDAY	THURSDAY
14	2:25 pm 15 White smoke from factory. Smell of rotten eggs.	16
21	22	23

# Clean Production

Technologies and methods exist to produce and sell products without causing pollution or toxic waste. **Clean production** protects people's health and the health of the environment.

## How a paper factory uses clean production



A paper factory uses trees, water, electricity, and chemicals such as chlorine. A clean production paper factory reduces pollution by using:

- mostly recycled paper, and trees from sustainably managed forests.
- a renewable source of energy (such as solar or wind energy) rather than electricity from fossil fuels such as oil or coal.
- no chlorine or other toxic chemicals.
- as little water as possible. Water is reused several times and then treated to make it safe to put back in the environment.

Most industries can use a clean production process. Heat from factories can be used to generate electricity, and waste products from one process can often be used as materials in another. Clean production can reduce waste to almost nothing. And because clean production reuses materials and energy, it also saves money.

But because companies usually do not pay to clean up or prevent the pollution and harm they cause, they usually must be forced by popular pressure or government regulation to change to clean production methods.

## Promoting cleaner businesses

When business owners and workers understand how chemicals and industrial waste can harm them and everyone in the community, they are often willing to make changes in production materials and methods to reduce harm. Sometimes, however, it is necessary to pressure them in both positive and negative ways to achieve changes that will benefit community health. There are various ways to influence business to choose cleaner production methods.

**Government can:** ban or regulate the use of toxic chemicals and dangerous production processes; refuse to purchase products that are produced in harmful ways; provide funds to businesses to change to cleaner production methods; charge less taxes to businesses that use clean production, and collect more taxes from businesses that use harmful methods.

**People can:** educate themselves, business owners, and workers about the dangers of toxics and the benefits of cleaner production methods; boycott (refuse to buy) products made by a company or sold by a business that is polluting; let others know about nontoxic alternatives that can be substituted for toxic products; use the media to both denounce toxic corporate practices and celebrate the successes of nontoxic, sustainable businesses.



**Workers can:** learn about, follow, and enforce rules about safe handling of toxics, and write protections against toxics for workers and the community into their union contracts.

## Cleaner small businesses

Sometimes, small business owners do not fully understand the harm toxics can cause. When they and their workers use, store, and dispose of toxic chemicals in unsafe ways, they are usually just trying to save money, time, and labor. After all, many businesspeople live in the same communities they are polluting, and are friends and neighbors of the people affected. Or they may know about cleaner production methods but feel they cannot afford the cost of making changes. But over time, the high costs of health care for injured workers and environmental clean-up for damage in the community will often end up costing more time and money, rather than saving it.

When small businesses change to cleaner production practices, they help make the entire community, and their future as a business, more sustainable.

## Dyeing

Many dyes are made with heavy metals and other toxic chemicals. The waste from making dyes is often poured into waterways, filling them with pollutants that are dangerous and difficult to clean up.

### How to reduce pollution

Small businesses in the dye industry can reduce harmful waste by following these guidelines:

- Avoid the most toxic dyes, such as azo dyes, and look for safer alternatives. Azo dyes, known to cause birth defects, are commonly used in printing, textiles, paper manufacturing, pharmaceuticals, and food industries.
- Control the amount of toxics used.
- Reuse byproducts from dyeing as materials to make other products.
- Reuse cleaning water to make the next batch of dye.
- Use high-pressure hoses for cleaning to reduce the amount of wastewater.
- Label and store toxic materials in secure areas away from waterways.

## Tanneries

Leather tanneries use large amounts of water, salts, and toxic chemicals, such as different forms of chromium. At the end of the tanning process, these chemicals are often dumped as waste into rivers and other waterways. As a result, communities around tanneries often have highly contaminated drinking water.

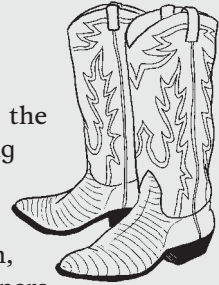
In the short term, these toxics can cause bronchitis, asthma, and other breathing problems. In the long term, repeated exposures can cause birth defects and cancers.

### How to reduce pollution

Some tanneries use nontoxic or less toxic production methods. Traditional methods of tanning use animal parts for safer and cleaner tanning. For tanneries that use chromium, there are ways to recover and recycle chromium so that less is used, and less ends up as waste. This reduces costs as well as toxic pollution. The water used in tanning baths can be recycled, and the wastewater can be treated to make it safer before dumping.

## Cleaner production in tanneries

The city of León, México is famous for its high quality leather shoes. The tanneries in León are small businesses, important to the economic survival of the community. Unfortunately, the tanning operations used to dump chemical waste directly into local waterways, causing serious illness.



Over many years, León passed laws to regulate the pollution, but the tanneries almost never obeyed them. Many tannery owners thought reducing pollution was too costly and would hurt their businesses.

However, when thousands of birds died from pollution in a wetland near León, the local trade organization representing the tanneries began to look for ways to reduce pollution without hurting business. This was when they learned about clean production.

Over the next several years, the trade organization helped the tanneries reduce pollution, and many of the tanneries changed their practices. They did not do this only because they wanted to protect local drinking water or migrating birds. They also did it because they saw that clean production could save them money and produce higher quality leather.

Tanneries in Africa and Asia worked with the United Nations Industrial Development Organization (UNIDO) to find different ways to recover and reuse the chemicals used in tanning. UNIDO's Cleaner Production Project showed that more than half of the pollution from tanneries could be reduced through careful and efficient use of natural resources — using smaller amounts and using them with greater care.

The tanneries of León learned from the UNIDO project and began to practice cleaner production methods. First, they used a new process in which more of the chromium in the tanning bath came in contact with the hide, and less ended up as waste. Next, an enzyme (a natural product that causes chemical changes) replaced the harmful chemicals used to soften hides. Some tanneries that produced lower quality leather began using vegetable tanning rather than chromium tanning, eliminating a very toxic and costly part of the process.

Tanneries that could find no alternative for chromium began reusing it, rather than dumping it after the first use. The same was done with the large amounts of chemical-filled water. Some tanneries built wastewater treatment systems to clean the water and recycle it for reuse, protecting and preserving water resources.

Now the leather workers of León know about clean production. When you ask them why they use these new methods, they may tell you it is to protect local waterways. But they will also tell you they now produce higher quality leather for a lower cost than before.

## A taste of clean production

The beautiful views from the hills of San Francisco, USA, attract tourists from around the world. So does the variety of foods served by its many small restaurants. But with so many restaurants, waste oil from cooking became a problem, clogging sewers and costing the city money. The city requires that all restaurants use a “grease trap” to prevent oil from entering the sewers, but emptying and cleaning grease traps is expensive. Many small businesses owned by recent immigrants cannot afford it.

San Francisco’s Public Utilities Commission, in charge of the city’s sewers, decided that instead of charging large fines to restaurants for not disposing of their oil properly, they would offer a solution. They would collect the waste oil and use it to run city buses!

When the diesel engine was invented, it burned light fuels such as vegetable oil. But because petroleum was cheap and plentiful, and the companies that produced it were powerful, most diesel engines began to use petroleum. Now, with the serious pollution and global warming caused by petroleum, people are returning to vegetable oil as a cleaner and less costly fuel.

Vegetable oil can be used after making a few changes to a diesel engine, or the oil can be turned into “biodiesel,” which can be used with no changes. Burning biodiesel dramatically reduces the air pollution that causes asthma and cancer, and it does not cause global warming. Compared to other fuels, such as natural gas, it is also less expensive.

Making biofuels by recycling waste oil is different than growing a new crop just for fuel. It keeps a waste product out of the sewers and puts it to use.

To make clean production work, the San Francisco Public Utilities Commission hired native speakers of many languages to visit restaurants and collect waste oil. The restaurant owners no longer pay to get rid of their oil, and the city benefits by having fewer clogged sewers and cheaper fuel for its buses.

Now, instead of smelling like traffic, the streets of San Francisco smell like fried food. Which brings more tourists than ever to local restaurants.



# Unsafe Disposal of Toxic Wastes

Companies that do not use clean production methods often produce a lot of toxic wastes. For some industries, like the chemical industry and the mining and oil industries, toxic waste may be their biggest product!

Because toxic wastes can be extremely costly and difficult to dispose of safely, dangerous dumping of wastes is common. And not surprisingly, the dumping usually adds yet another source of illness to the burden of health problems faced by people in poor communities.

More and more businesses are being organized to keep toxic products out of the waste by recycling some or all of their parts. But even environmentally friendly activities such as recycling must be done carefully to prevent toxic materials from harming workers and the environment.

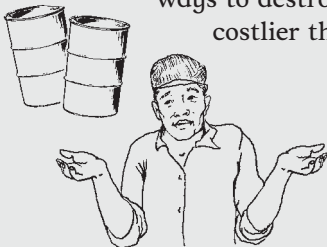
Making sure industries dispose of wastes responsibly is only one part of the solution. To truly end the problem of toxic waste, we must change the way industry works. The only safe way to dispose of toxic waste is to stop creating it in the first place.

## The Africa Stockpiles Programme

Corporations and development agencies have promoted pesticides to farmers for decades as part of a solution to hunger. But many scientists and farmers now recognize that pesticides create more problems than they solve. Who will dispose of these deadly chemicals? How can it be done safely?

In countries across Africa, more than 50,000 tons of unused and unwanted pesticides and other toxic wastes are stored in leaking containers. To clean up these toxics and to prevent the dumping of more poisons, a group of government agencies and international organizations formed the Africa Stockpiles Programme (ASP).

The groups in the ASP have different ideas about how to clean up the waste. Some say the easiest and cheapest way is to burn it. The World Bank and several governments are building incinerators to do this. Other groups in the ASP say burning these wastes would release more poisons into the air and water, and suggest safer disposal methods. As of now, there are no truly safe ways to destroy these chemicals. Developing safer methods will be costlier than burning and will take time.



As the ASP works to solve this problem, toxic wastes blow in the wind and leak into groundwater. These poisons and the sicknesses they cause are part of the deadly legacy of the chemical companies and development agencies that made them and promoted their use.



## Battery recycling

Lead acid batteries from cars are commonly recycled for the metals they contain. In most places, this is not an organized industrial process, but is done in homes and backyards. Battery recycling creates serious lead pollution, damaging health and the environment. Short-term exposure to high levels of lead can cause vomiting, diarrhea, convulsions (seizures, “fits”), coma, or even death (see pages 368 to 370).

In some places, small household batteries are taken apart and the black powder inside is used to make dyes, inks, and cosmetics. This powder is very poisonous and should never be used for these purposes. It is made of cadmium, lead, zinc, mercury, and other toxic heavy metals. If the powder is used, it should be handled with gloves and face masks, and the waste disposed of safely.

### Reducing harm

The best way to reduce exposure to toxins in batteries is for battery producers to collect used batteries and make sure they are recycled under safe conditions. Some countries have laws regulating safe battery recycling.

## Electronics recycling

Producing electronic equipment, such as computers, televisions, cell phones, and radios, requires a large amount of resources. Electronic equipment also contains many toxics such as lead, cadmium, barium, mercury, flame retardants (see page 372), PCBs, and PVC plastic (see page 341).

Electronics often end up in landfills where the toxics they contain leach into groundwater. Or they are taken apart and the materials they contain are recycled, often by hand, using dangerous solvents. This causes serious health problems for the people doing the recycling, and moves the toxic materials into other products that will cause more health problems later.

The safest solution is to require companies that produce electronics to take responsibility for safe recycling and to redesign their products to use less harmful materials and to last longer. And the people who buy and use electronic products can reduce harmful waste by having them fixed when they break rather than throwing them out.



**Wearing masks, gloves, and other protective equipment will help protect people who recycle computer parts.**

## Toxic trade

**Toxic trade** is the export from one country to another of toxic wastes and harmful materials. Because rich countries often try to dump their waste far away, and because governments of poor countries are often powerless to stop them, toxic trade most often means rich countries and rich communities dumping their waste on poorer countries and poorer communities.

Despite international agreements to protect health and the environment, toxic trade is part of global business. Even though they are harmful, products such as tobacco, pesticides, GE foods, asbestos, leaded gas, broken electronics, and others are commonly sent from rich countries to poorer ones.

Some toxic trade is banned by international law (see page 467). But as many health and human rights activists know, laws only protect people when people organize to enforce them.

### Take your toxic waste and go home

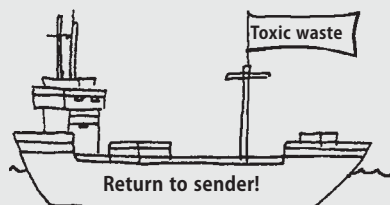
The *Khian Sea* was a ship loaded with 14,000 tons of toxic incinerator ash from the city of Philadelphia in the United States, to be dumped anywhere outside the United States. But wherever it went, people rejected it.

First the ship went to the Bahamas, then the Dominican Republic, but these countries did not accept the waste. It sailed on to Honduras, Bermuda, Guinea-Bissau, and the Netherlands Antilles. But no country wanted the toxic ash.

Desperate to unload, the ship's crew lied about their cargo. Sometimes they said the ash was construction material or roadfill. But environmental activists kept one step ahead of the ship, letting the countries know what was really in the ash. No one would take it until it got to Haiti. There, the US-backed government allowed the ash, now called "fertilizer," into the country. 4000 tons of the ash were dumped onto the beach in the town of Gonaives, Haiti.

Before long, public outcry forced Haitian officials to admit they were not getting fertilizer. They ordered the waste returned to the ship. But the *Khian Sea* had already slipped away in the night.

For 2 years, the *Khian Sea* went from country to country trying to dispose of the remaining 10,000 tons of ash. The crew was even ordered to paint over the ship's name. Still, no country was fooled into taking the toxic cargo. A crew member later testified in court that much of the waste was dumped into the Indian Ocean. In the end, 2000 tons of the ash was put in a landfill back in Philadelphia, thanks to years of effort by activists.

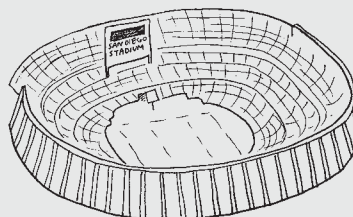


## Urban construction can unearth toxic waste

Unfortunately, ignoring toxic waste doesn't make it go away. When new development projects are begun in cities, usually people are excited about the new markets, housing, recreation, and jobs that will be created. But especially when these projects are built where a factory or military base had been, people must be careful to make sure that the very ground itself has not become a toxic waste dump. And if it has, the toxic wastes must be disposed of safely.

### A home run for health

When the city of San Diego, USA, began to build a new stadium, fans of the San Diego Padres baseball team were excited. The new stadium would be better for watching games, and building it would bring jobs to the community. But an environmental impact assessment (EIA) showed the project would also have bad affects on the environment and people's health.



The proposed site was contaminated with toxic chemicals. The plan called for the toxic soil to be dug up and burned right in the middle of the city. Members of a local group, the Environmental Health Coalition (EHC), knew this would cause serious health problems. So they organized the community to demand an alternative.

EHC and community members asked city officials to reject the plan, but the city denied their request. The community then organized more than 100 residents to protest at the building site. When the local media reported it, the San Diego Padres looked like they did not care about their fans. Soon the owners of the team agreed to find another way to get rid of the toxic soil.

The EHC also showed how the new stadium would cause an increase in traffic, air pollution, and asthma among neighborhood children. After many meetings, the Environmental Health Coalition helped develop new, healthier building plans.

Even when public meetings are scheduled and environmental impact assessments are produced, this does not mean that a project will be free from harm. In the case of the San Diego stadium, the developers wanted to go ahead with the project even though they knew about the harm from burning toxic soil and the problems with the stadium plans. It took an organized and dedicated group to study the reports, attend the meetings, and protest in the streets to get the government to reduce harm.

Many people in San Diego pay attention to every game the Padres play. Now they can support their team and know it has not made them sick.

## International agreements on toxic waste disposal

For years, rich countries of North America and Europe used Africa, Asia, Latin America, and Eastern Europe as toxic dumping grounds without any legal pressure to stop. Finally, community action in the poorer countries, together with pressure from environmentalists around the world, won international agreements outlawing toxic trade.

The first agreement was the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1992). This was won mostly because of the activists who followed the *Khian Sea*, the ship that traveled around the world trying to dump its cargo of toxic ash. Countries that sign the Basel Convention agree to treat, reuse, and dispose of toxic wastes as close as possible to where they are made, rather than shipping them to other countries.

In 2001, 92 nations signed the Stockholm Convention on Persistent Organic Pollutants (POPs, see page 340). It bans production and use of the 12 most harmful POPs (called “the Dirty Dozen”) and makes trading them illegal, unless the use of a certain chemical will prevent more harm than it causes (such as targeted use of DDT to control malaria, see page 150).

A third agreement passed in 2004, the Rotterdam Convention on Prior Informed Consent. This requires a country to notify and get permission from another country when it wants to export harmful chemicals.

When people know about and use these agreements, they can be an important tool to make our world healthier and more just. But there are many ways for countries and corporations to get around the law. For more information on ways to use these and other national and international laws in your struggles for environmental health, see Appendix B.



## Snakes and ladders game

Snakes and ladders is a popular board game used in health education. This version can be played to show the ways that toxics harm us, and how to prevent and reduce harm. You can make your own game board by copying the game board below onto large paper, cardboard, or wood.

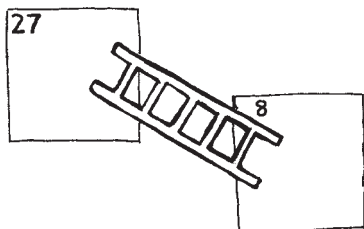
**Materials:** Dice, and seeds, stones, or shells as game markers, and a game board

**Rules:** This game can be played by 2 to 4 people, or by teams. Each player uses one marker (a seed, stone, or shell) to show what place he or she has on the board.

The first player throws the dice and moves his or her marker according to the number shown, beginning from square 1, marked START.

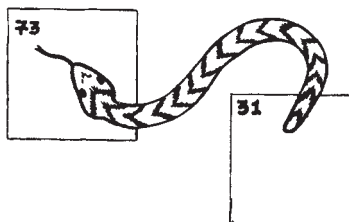
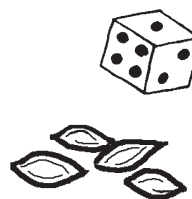
If a player rolls a 6, the player move 6 spaces and then rolls the dice for a second turn. Otherwise, the dice moves to the next player.

If a marker lands on the head of a snake, the player reads the message on the square out loud, then moves the marker to the snake tail, and reads the message on that square. The player's next turn starts from there.



If a marker lands at the bottom of a ladder, the player reads the message on the square out loud, then moves the marker to the top of the ladder, and reads the message on that square. The player's next turn starts from there.

The first player to reach the last square wins. A player must throw the exact number needed to land on the final square.



This game works best when you adapt the messages on the "snake squares" so they refer to health problems and toxics in your community. Also adapt the messages on the "ladders squares" to possible actions to reduce exposure and other solutions relevant to your community.

Encourage the players to discuss the problems (snakes) and solutions (ladders) they land on during the game. When the game is over, ask if there are other problems with toxics that were not mentioned, and what actions people can take to protect their health.

