



**SPREP**  
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## FACTSHEET

# Managing Disaster Waste: A Guide for Communities

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Natural disasters, such as tropical cyclones, hurricanes and floods, can generate large quantities of waste, including building debris, fallen trees, and hazardous waste.

Disaster waste is a threat to community health, safety, and the environment. However, it is often managed in an ad hoc manner and can be a major obstacle to the much needed emergency relief operations and cause delay to humanitarian efforts by blocking access to affected communities.

This community factsheet is a basic guide for the safe handling and management of waste generated from natural disasters.



# What is Disaster Waste?

All waste generated following a natural disaster such as tropical cyclones. These may include:

- **Household waste** - general household trash and personal belongings scattered during a disaster.
- **Construction debris** - building materials (which may include asbestos-containing materials), drywall, timber, roofing iron, furniture, mattresses, plumbing.
- **Organic debris** - trees, branches, shrubs, logs, and leaves.
- **Hazardous waste** - oil, pesticides, paints, cleaning agents.
- **Electronic waste** - computers, televisions, printers, stereos, DVD players, telephones, refrigerators, freezers, washing machine, stoves, water heaters, air conditioners.
- **Recyclable waste** - aluminium cans, tin cans, plastic bottles and roofing iron.

## What does the Management of Disaster Debris involve?

Effective management of debris following a disaster can be difficult but is necessary.

Activities a community may undertake includes:

- estimating the amount of debris;
- assessing debris management options;
- separating debris into different material and waste streams;
- identifying debris management sites and facilities and their available capacities;
- collecting and moving debris;
- removing debris from rivers, drinking wells and sensitive habitats;
- identifying hazardous waste, for proper management;
- packaging and labeling debris for transport; and transporting debris to management sites and facilities.

All this can take a long time. But the faster the above and related tasks can be effectively done, the faster the community can return to normal operation.

Moreover, the longer it takes to remove debris, the higher the risks of personal injury and health risks to the community and the environment.



Building debris when not removed can cause personal injury especially for children. Presence of asbestos in building rubble places community at health risk.



Hazardous waste such as oil and chemical can contaminate the environment and local food source.

## Why is it Important to Remove Disaster Waste?



Healthcare waste from healthcare facilities could poses serious risks to communities, including further spread of disease and infections.



Rubbish piles can breed rodents, contaminate food sources and cause vector borne disease.





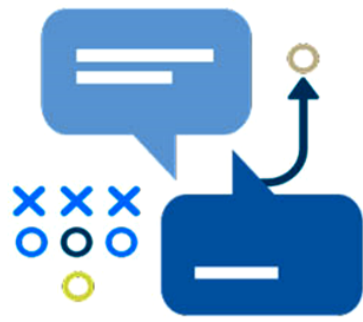
# SAFETY FIRST

## Before Collecting & Sorting Disaster Waste



### Gear check

Equip workers with safety equipment, which may include hard hats, safety vests, safety glasses, heavy work gloves and steel-toed safety boots.



### Talk it out

Hold a pre-plan meeting to clearly communicate safety strategy to everyone involved



### Promote good hygiene

Encourage workers to wash hands and face before eating and at the end of shift due to potential exposure to toxic chemicals and human or animal waste

# During Waste Collection & Sorting

1. Avoid overfilling of garbage bags – always fill ½ of the bag and ensure the bag does not get too heavy (no more than 10kg per bag).
2. Minimise turning from side to side when lifting wastes.
3. Always hold the bag at the top.
4. Do not hold bag close to your body. Hold bags at arm's length.
5. Ask for assistance from the supervisors when you come across hazardous waste.
6. Bulky waste such as corrugated iron and metals are to be handled by 2 people.
7. When handling sharp or heavy objects, use heavy duty gloves and not disposable gloves – talk to designated supervisors for this.
8. Never lift heavy bags on your own during loading of waste – ask for help.
9. Take regular breaks and stay hydrated.

Debris from collapsed buildings can obstruct relief operations, pollute groundwater, and threaten community members and relief workers with hidden dangers and further collapse. Proper clearing is essential for the short and long term success of recovery efforts.

**DO**

Store useful materials for rebuilding or recovery efforts, such as wood planks, bricks, cement blocks and containers and look for recycling opportunities in local areas.

**DON'T**

Avoid burning waste openly. If burning is necessary, locate a properly operated incinerator.

**DO**

Consult local government and environmental authorities. Use existing waste handling facilities in the area before you set up a storage site.

**DON'T**

Never deposit wastes near a watercourse, in a flooded area or close to an environmentally sensitive area such as a forest or beach.

**DO**

Protect yourself. Enter damaged buildings cautiously and only if necessary. Wear boots, gloves, dust masks, overalls and helmets, if available. Wash and if possible disinfect your hands regularly.

**DO**

If you suspect waste to be dangerous, warn other workers and notify authorities. When possible, fence off the area or secure the waste in clearly labelled containers.

**DON'T**

Don't store wastes near or upwind of human habitation, to avoid flies, rats, and bad smells. Don't leave wastes near hillsides where rainwater drainage can flood homes and camps.

**DO**

Estimate the amount of waste expected, the space required for its disposal, and the types of waste to be dealt with. Instruct workers in the safe handling of hazardous materials such as chemicals, healthcare wastes and biological materials.

**DO**

**DON'T**

Don't mix wastes from hospitals and clinics with other wastes. Store them in sealed, labelled containers.

**DO**

Remember the five stages of debris removal:

- ✓ Recover the living
- ✓ Recover the dead
- ✓ Recover valuables
- ✓ Clear for access
- ✓ Clear for reconstruction and recycling

**DO**

Separate wastes according to their reusability – bricks, concrete, timber, metal, solid containers, etc.

**DO**

Setup temporary waste disposal sites which can be easily accessed by large collection trucks

If you are unsure of what to do, especially with safely collecting and sorting wastes that could be dangerous to you, or not knowing if it can be recycled, ask the Department of Environmental Protection and Conservation (DEPC) for guidance and assistance.



# Environmental & Health Impacts of Disaster Waste on Communities

The effect of disaster waste on the Environment and our Health when not managed effectively:



Bad smell from rubbish piles over a long period of time



Waste burnt produces chemical that pollutes the atmosphere and releases chemicals that harm the human health.



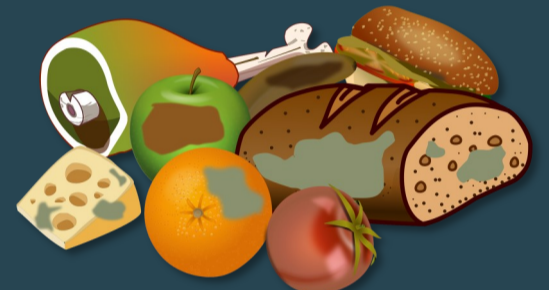
Increase of waste in our surroundings. Piles of waste on the roads when not quickly removed can delay emergency lifesaving operations



Pollution of the environment from oil and chemicals. Swimming in or eating food sourced from these polluted waters can also impact human health



Hazardous wastes such as e-waste has potential to contaminate the local environment. Metal and sharp objects can cause injuries to people especially children when not identified and managed quickly

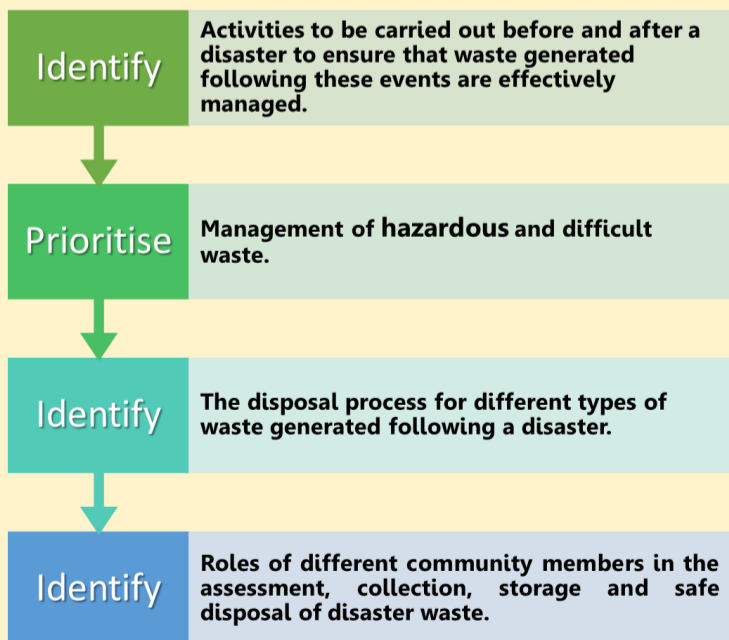


Contamination of food sources. Contaminated food when not removed may be consumed and affect community health. Carcasses if not identified and managed earlier can potentially result in vector borne disease

## Disaster Waste Management Plan

Outlines appropriate pre-disaster preparedness activities and timely post-disaster activities after a disaster strikes.

The Plan will:



### Benefits of Having a Community Disaster Waste Plan

- Increase the capacity of a community vulnerable to hazards to adapt by resisting or changing in order to reach and maintain an acceptable level of functionality and structure.
- Disaster can cause disruption to community systems and having a plan minimise the impact of that disruption.

### Actions that you can do to prepare before a natural disaster strikes

- Avoid "difficult to handle" wastes like plastic bottles from entering the community. When out shopping for your family try and avoid these items as much as possible.
- Ensure that all daily wastes are placed in a dumpsite that is safe and far from the community. This will prevent rubbish being discharged into rivers and ocean during a cyclone.
- Form local groups made up of community members and assign tasks under each Disaster Waste management cycle.
- Trim tree branches and make sure the cuttings are secure so they wont get blown around or washed away to be an issue elsewhere.
- Ensure that any remaining chemicals or hazardous materials are stored in a safe place.
- Tie down houses to ensure that corrugated roofing iron are not blown off and secure any items around your houses that can be easily blown off during a disaster.

### After a disaster passes, communities should:

- Assess the damage on the ground.
- Assess the type of waste and estimate volume of Disaster Waste generated.
- Determine what can be reused in the community.
- Creation of compost piles for all organic wastes and moving organic waste to the designated composting sites.
- Chop up all tree branches that can be used for firewood etc.
- Safe collection of different types of disaster waste, and sorting them for easier collection.
- Cutting of wood waste.
- Safe temporary storage of bulky and hazardous wastes for removal by government.