PACWASTEPLUS WASTE STREAM ICONS

Waste Stream Icons

Priority waste streams of the PacWastePlus programme include:

- **Hazardous wastes** (*specifically asbestos, E-waste and healthcare waste*)
- **Solid wastes** (*specifically recyclables, organic waste, disaster waste and bulky waste*) and related aspects of
- **Wastewater** *(water impacted by solid waste)*

We have developed for each of the three core waste streams distinct icons associated with its priority areas .

HAZARDOUS WASTES

Simply defined, hazardous waste is waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries and may come in many forms, including liquids, solids gases, and sludges.

Under the Hazardous Wastes stream the PacWastePlus programme deals specifically with **Asbestos**, **E-waste** and **Healthcare waste** only.

ASBESTOS

Asbestos refers to six naturally occurring silicate minerals composing of long and thin fibrous crystals. These crystals contains many microscopic 'fibrils' that can be released into the atmosphere by abrasion and other processes. Inhalation of asbestos fibres can lead to various serious lung conditions, including asbestosis and mesothelioma.
Given its high resistant to heat, Asbestos has been used as a building material for many years. The use of Asbestos as a building material is banned in many countries due to its well-known health hazard.

The *"State of Asbestos in the Pacific"* report highlighted that four of the 13 countries surveyed in the region account for 83% of confirmed non-residential asbestos.

In the Pacific region, the risk of exposure to asbestos is heightened by the incidence of disasters and extreme weather events, which can damage asbestos materials and release airborne fibres. The report also reveals that new building products containing asbestos continue to be imported into the region.

This raises the very real concern that the problem of asbestos in the Pacific is not simply a legacy issue. Even though asbestos has been banned in 56 countries around the world, none of the Pacific island countries have implemented controls to eliminate the import of new asbestos containing materials.

PacWastePlus participating countries may, through developing project concepts, prioritise remedial actions in locations where asbestos poses the greatest risk to human health which could be supported by a nation-wide public awareness campaign on the risks associated with asbestos and steps that can be taken to minimise exposure.

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HEALTHCARE WASTE

Waste generated by health care facilities and includes used needles and syringes, soiled dressings, body parts, diagnostic samples, blood, chemicals, pharmaceuticals, medical devices and radioactive materials. Poor management of health care waste exposes health care workers, waste handlers, patients and local communities to infection, toxic effects and injuries, and risks polluting the environment. It is essential that all medical waste materials are segregated at the point of generation, appropriately treated and disposed of safely.

The volume of healthcare waste tends to increase in the Pacific region as population grows and medical services expand. Healthcare waste is hazardous as it has the potential to be infectious to humans, or cause injury and may contaminate the environment, therefore proper treatment and disposal is important to protect people and our natural surroundings. Protection of Pacific communities from the impact of healthcare wastes means protecting all individuals at risk of exposure to poorly managed healthcare waste. This includes healthcare workers at hospitals and health clinic responsible for the handling, transport and disposal of healthcare waste, and members of the community living near Health care facilities.

Potential exposure to health care waste increases in areas where scavenging at waste disposal sites occur and/or at health facilities where manual sorting of wastes is undertaken. These practices are common in the Pacific. In 2013, a regional healthcare waste baseline survey found that none of the Pacific region's key hospitals and health clinics met all the minimum standards for the proper management of hazardous healthcare waste.

The lack of access to appropriate incineration equipment and training was found to be a major barrier at many of the locations surveyed. The PacWastePlus programme is providing countries with the opportunity for necessary in country interventions.

E-WASTE

The rapid expansion of technology and the consumption driven society contributed to the increase of e-waste volume. Electronic waste or e-waste refers to discarded electrical or electronic devices. Used electronics which are destined for refurbishment, reuse, resale, material recovery, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution. Electronic scrap components, such as CPUs, contain potentially harmful materials such as lead, cadmium, beryllium, or brominated flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developing countries.

The rapidly increasing use of electrical and electronic equipment in the Pacific results in an increase in the volume of waste as it is discarded. Electrical and electronic items contain many recoverable and valuable components such as copper, steel and gold that can be re-used. Most components used in electronic and electrical equipment (including computing equipment) can be eventually reused or recovered and made into new products. Sustainable management of E-waste requires the coordination of E-waste collection points, storage facilities and use of financial models based on 'user-pays' principles. In addition, training E-waste workers in identification of valuable components and dismantling electronic items is also required.

E-waste contains a range of hazardous materials including heavy metals, brominated flame retardants and other toxic substances. If left to accumulate in landfills, E-waste will in time release these toxic substances and contaminate the environment. Currently, there are E-waste stockpiles in several Pacific island countries.

Efforts to effectively manage E-waste are often faced with economical, logistical and technical challenges due to limited access to disposal points, recycling markets and the high costs in transporting E-waste out of the region.

PacWastePlus is working with countries towards provision of equipment and training for commercial operators in dismantling E-waste and establishment of storage facilities, collection points and port upgrades as well as assistance in the removal of E-waste stockpiles in priority countries if necessary with support in developing best practices for reuse, recycling and export of economically recoverable components.

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SOLID WASTE

Many pacific island nations have emerging economies and are consuming a growing amount of disposable goods. These goods often become waste and waste in solid form such as car bodies, plastic bags and packaging are often referred to as Solid Waste. Solid waste in a broader sense is understood as any household, industrial and agricultural materials that have been used and are no longer suitable for their designed purpose. Solid waste management is the discipline associated with control of generation, storage, collection, transport or transfer, processing and disposal of solid waste materials in a way that minimises the negative impact on human health and the natural environment. However, solid waste management practices can differ for residential and industrial producers, for urban and rural areas, and for developed and developing nations but the primary goal of solid waste management is reducing and eliminating adverse impacts of waste materials on human health and the environment to support economic development and superior quality of life.

Under the Solid Waste stream the PacWastePlus programme deals specifically with **Organic waste**, **Disaster waste**, **Bulky waste** and **Recyclables** only.

ORGANIC WASTE

Organic waste is waste that is biodegradable and has the potential to disintegrate. These wastes often includes vegetable and fruit peelings, paper, food waste and human waste. Organic waste is typically a significant proportion of a waste stream, and if managed through landfill creates leachate and harmful greenhouse gases. But when processed appropriately, organic waste can add significant value to soil quality and potentially increase food production, increase soil water retention and helps in elimination of invasive weeds.

Waste generated every day in the Pacific region contains readily biodegradable organic matter such as kitchen waste, garden waste and paper, which on average accounts for about 58% of the waste generated. In some of the larger cities, the amount of organic waste accounts for almost 70% of the total waste generated. Most of this organic waste ends up in dumpsites or in landfills. When organic waste decomposes in landfills (anaerobically) it releases methane gas - one of the potent greenhouse gases contributing to global warming and climate change. As climate change has been recognised by the leaders of all Pacific Island Countries as the greatest risk facing the region, any opportunity to reduce climate impacts is of vital importance to Pacific Island countries. Appropriate collection and processing of organic waste (aerobic processes such as composting) not only reduces greenhouse gas emission, but produces valuable resources suitable for food cultivation and soil water retention, as well as significantly reducing the volume of waste to landfill, thereby increasing landfill life, and reducing the toxicity of landfills.

DISASTER WASTE

The generated waste during a disaster. A Disaster is a sudden devastating event (cyclone, flood, earthquake, tsunami, fire etc) that seriously disrupts the functioning of a community or society and causes human, material, economic or environmental losses that exceed the community's or society's ability to cope using its own resources.

With natural disasters frequency and severity in the Pacific region increasing, the issue of disaster waste has developed a higher profile and greater sense of urgency. Disaster waste is waste produced during and after a disaster. Natural disasters generate a huge volume of intermingled waste types - comprising solid, green and hazardous waste - which often need to be cleared very quickly to allow for relief efforts to be undertaken.

In most cases, Disaster Waste (DW) places more burdens on communities already struggling to cope with catastrophe. During a disaster response, it is difficult to properly manage waste material as priorities are placed more on lifesaving and disaster containment. Disaster Waste has potential to contaminate natural environment and poses a risk on human health. Safe handling, removal and management of Disaster Waste are therefore important issues in disaster response and recovery. PacWastePlus can assist countries in disaster planning and preparation, including determining alternate staging and storage sites for disaster waste, as well as establishing systems to manage the response to natural disasters to enable efficient and effective recovery following events.

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RECYCLABLES

Recyclable wastes refer to waste that can easily be recovered or made into other products and typically includes glass, paper, cardboard, metal, plastic, tyres, textiles, batteries, and electronics. To put it simply recyclables are objects that are able to be processed and used again.

Recycling is a process to convert waste of potentially useful materials into a new product. The consumption behaviour in our society today is largely based on a linear model of "take, make, waste." There is a problem with this system that needs to be first acknowledged and then fixed especially with *natural resources becoming scarcer and more expensive.* Recyclables are often dumped at landfills with the associated cost borne by national governments and local governments. Similarly, incinerators are often considered as a better solution because of their potential to provide energy. However, they are inefficient for a number of reasons ranging from high construction and maintenance cost to potentially impacting on human health. Recycling materials from municipal solid waste saves three to five times more energy than burning them for electricity.

PacWastePlus can provide assistance to adopt the concept of circular economy — a restorative, zero-waste economic model in which resources are used to maximum capacity and natural systems are regenerated. As the world becomes more aware of climate change impacts and scarce resources, the more relevant the concept of circular economy becomes. This is a step toward making a difference by being smart about finite resources by trying to close the loop and keeping the circulation of products and materials going for as long as possible.

BULKY WASTE

Bulky waste (end-of-life vehicles, tyres, white goods, furniture and other large household goods) describes wastes that are too large to be accepted by the regular waste collection service. These includes damaged furniture, abandon vehicles and large appliances.

Depending on the type, bulky wastes has the potential to contaminate soil and the surrounding waterways and posing an indirect threat to health of local communities. Currently, waste collection authorities in the Pacific undertake separate collection for bulky wastes; an exercise that often proves to be too costly while some are disposed in community dump sites.

PacWastePlus has the potential to assist project countries with necessary interventions to ensure safe and financial sustainable management of bulky waste.

WASTEWATER

For the purpose of the PacWastePlus project, Waste water refers to waterways impacted by solid wastes and related aspects such as leachates from landfills or point source pollution from storm water drains.

Pacific Island countries depends largely on the ocean and related water bodies for daily sustenance and economic gain. Improper waste management has greatly impacted water bodies and poses a potential threat to the health of local communities. The PacWastePlus project seeks to assist countries with necessary intervention that protects and monitors the receiving environment potentially impacted by waste facilities/handling.