Sound Management of Waste and Chemicals in PALESTINE

This public awareness brochure is produced by the Environmental Quality Authority of Palestine in collaboration with Zoi Environment Network under the UNEP Special Programme project. It is based on the latest official information with consideration of special circumstances of Palestine.

Disclaimer
The views expressed do not necessarily represent the decision or the stated policy of the UN Environment Programme and its Special Programme, nor does citing of trade names or commercial processes constitute endorsement.

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Draft for review and comments

سلطة جودة البيئة

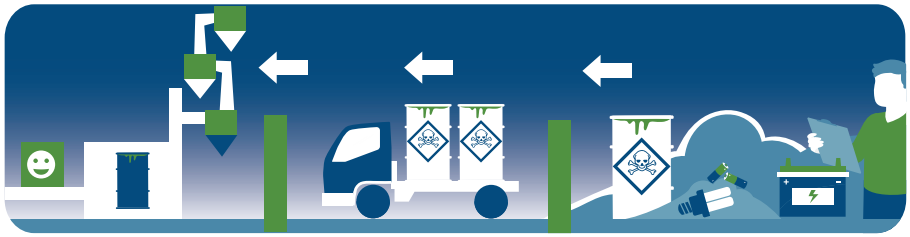
zoi environment network

UN environment programme

CHEMICALS AND WASTE MANAGEMENT PROGRAMME

International Conventions on Waste and Chemicals

Hazardous Waste



Treatment and disposal

Transboundary movements

Hazardous waste inventory

Basel Convention

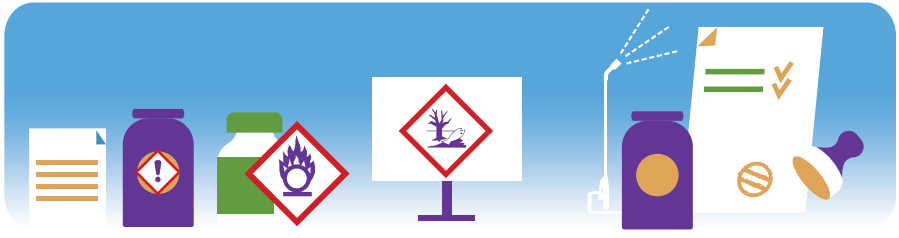
on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

basel.int

Palestine joined in 2015

In addition to its main objective of controlling the movement of hazardous wastes between countries, the Basel Convention aims to minimise the generation of hazardous wastes, to treat and dispose of wastes in an environmentally sound manner, and to improve reporting and public access to information and awareness on hazardous wastes. 191 countries are Parties to the Convention.

Hazardous Chemicals and Pesticides in International Trade



Labelling and safety data sheet

Reporting and information sharing

Prior informed consent (PIC)

Rotterdam Convention

on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade

pic.int

Palestine joined in 2017

The Rotterdam Convention promotes cooperation among Parties in the international trade of certain hazardous industrial chemicals and pesticides to protect human health and the environment from harm by facilitating the exchange of information, promoting safety data sheets and labelling.

Persistent Organic Pollutants

Safe management of POPs stockpiles and waste

Restrict, prohibit or eliminate POPs

Persistent organic pollutants (POPs) inventory

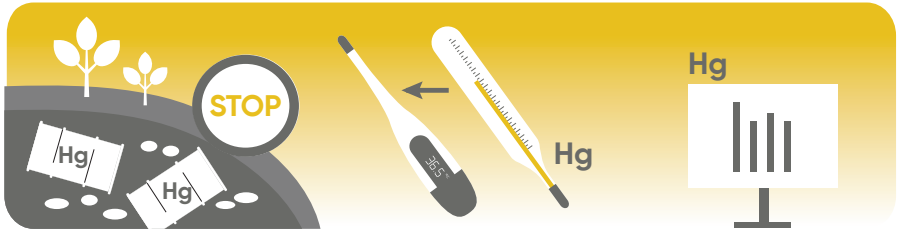
Stockholm Convention
on Persistent Organic Pollutants

pops.int
Palestine joined in 2017

The Stockholm Convention lists chemicals substances — persistent organic pollutants — that remain intact in the environment for long time, accumulate in the living organisms including humans, and are toxic to both humans and wildlife. The Convention requires Parties to take steps to regulate, reduce, safely dispose of or eliminate these chemicals, report on pollution and develop action plans.

The Minamata Convention aim to reduce health and environmental impacts from mercury pollution by minimizing and eliminating the production, use and release of mercury, control mercury air emissions from power plants, waste incineration, cement production, take measures to reduce mercury use in certain products such as batteries, lights, cosmetics, and dental amalgam.

Mercury



Safe management of mercury waste, control of releases

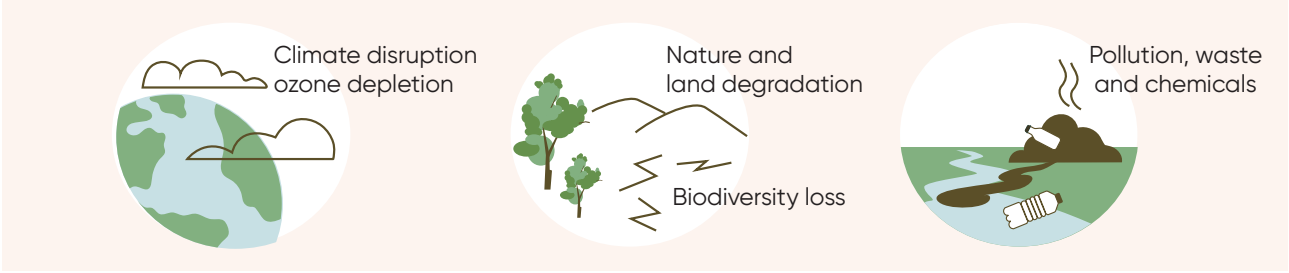
Phase-out or phase-down of mercury use

Mercury assessments and action plans

Minamata Convention
on Mercury

mercuryconvention.org
Palestine joined in 2019

Triple planetery crisis



According to the United Nations, the Earth today is facing a triple planetary crisis: climate disruption; loss of nature and biodiversity; and pollution and waste. This triple crisis threatens the well-being and survival of millions of people around the world, including the people of Palestine.

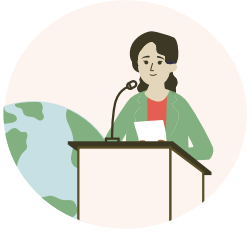
Palestine is highly vulnerable to climate change at the same time being one of the lowest emitters. Palestine's nature and territory remains fragmented and is often overexploited. Household and hazardous waste is not sorted and continues to accumulate in dumps and landfills.

Palestine has already taken steps to address the global and national challenges of the triple crisis. Palestine's climate report and nationally determined contribution summarise the national situation and aspirations. Careful attention to wildlife and ecosystems offers hope for conservation for future generations. Recycling initiatives, including for hazardous medical waste, modernisation of the national waste management system and the expansion of wastewater treatment are helping to improve environmental quality and reduce pollution.

The Environmental Quality Authority of Palestine is a key player in the state's climate, biodiversity and pollution prevention efforts. But many other agencies and ministries also play a role. Inter-agency cooperation and public involvement in the environmentally sound management of waste and chemicals is essential for success.

Environment Quality Authority (EQA) engagement in waste and chemicals

Public awareness, education and advocacy on waste, chemicals and environmental issues



Representation of Palestine in the multilateral environmental agreements, focal point to the BRS and Minamata Conventions

Hazardous waste and chemicals policy, regulations and compliance

Inter-agency cooperation and involvement on waste and chemicals

Central Bureau of Statistics

Data and statistics on economy, population and the environment

Ministry of National Economy

Planning, economic activity regulations and licensing

Ministry of Local Government

Municipal waste management and inventory

Ministry of Health

Regulations on health protection health surveys

Ministry of Agriculture

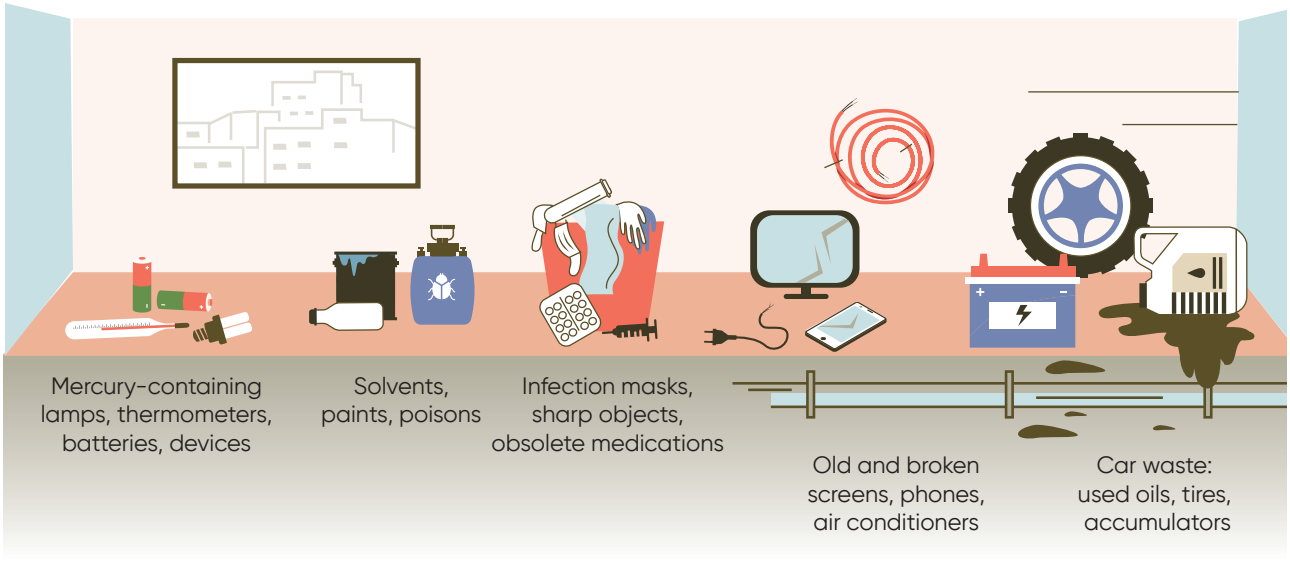
Regulations on agricultural chemicals and safety

Ministry of Interior: Civil Defence and Customs Police

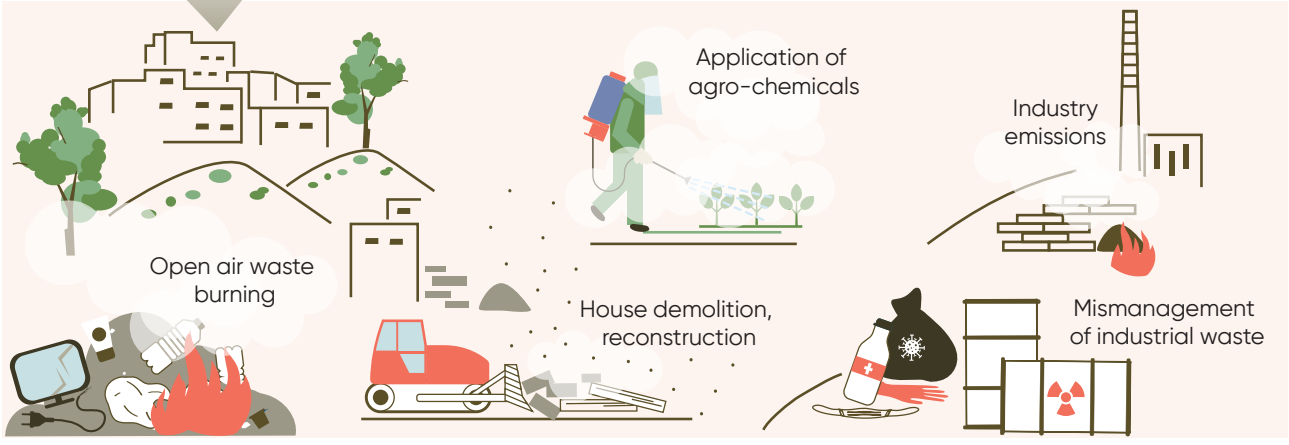
Inspecting shipments of hazardous waste and chemicals, emergency preparedness and response

Sources of and exposure to hazardous waste and chemicals

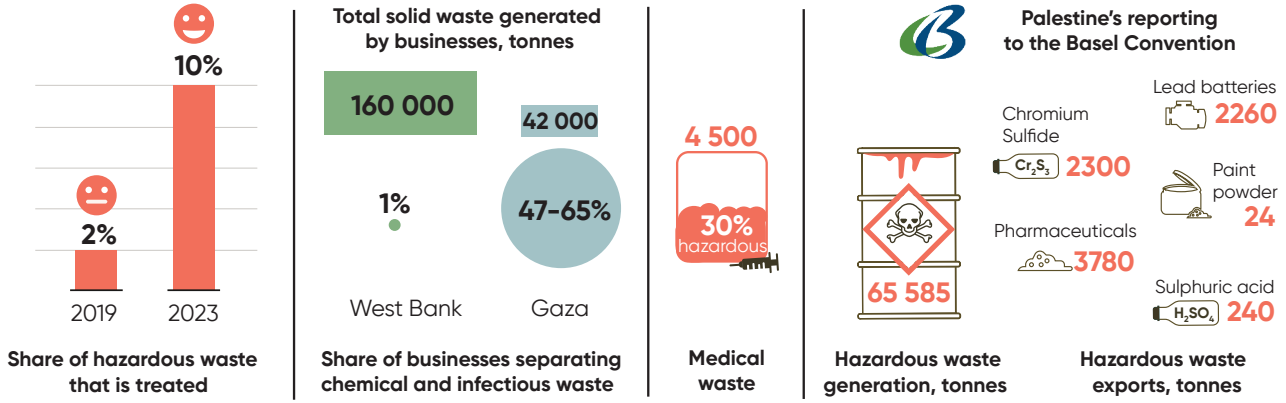
In-house and indoor



Outdoor and professional activities



Hazardous waste facts for Palestine

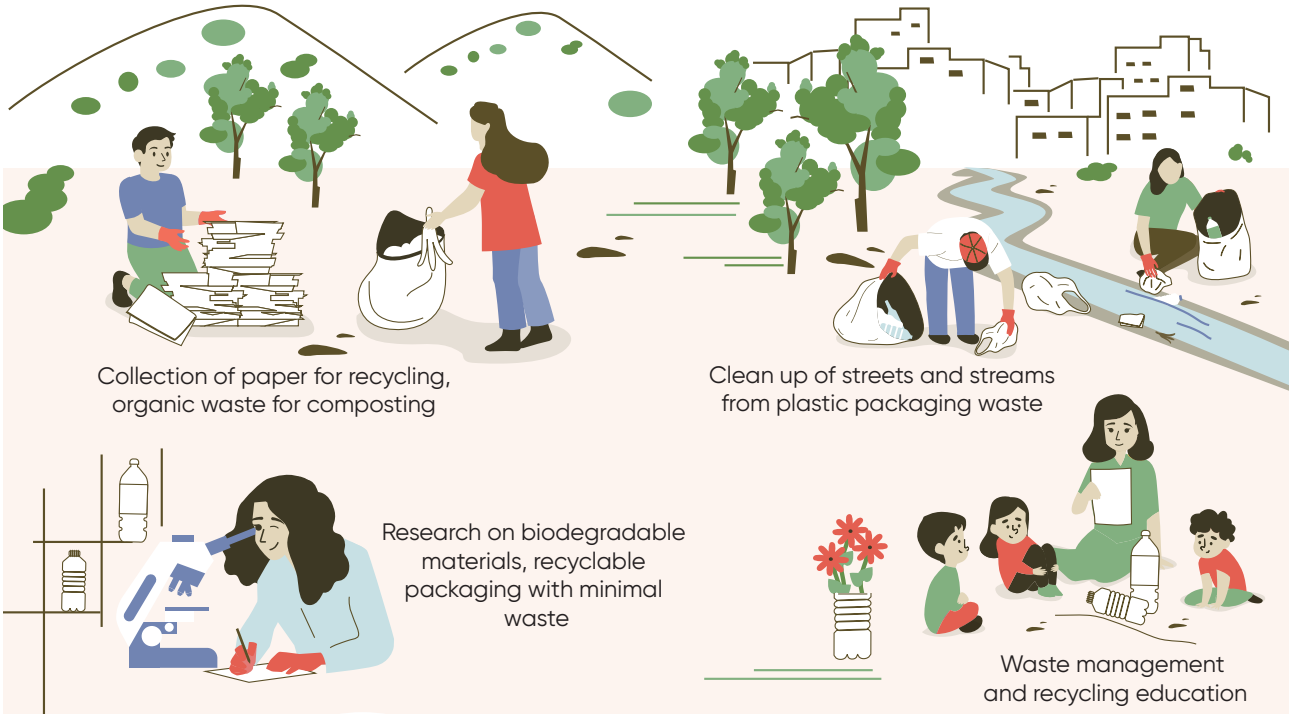


Information based on national statistics and Palestine reporting to the Basel Convention, 2021-2023

Often invisible or neglected, there are actually many sources of hazardous waste and chemicals both indoor — inside households, hospitals or car repair shops, and outside — small and medium enterprises, agricultural applications of chemicals and construction-industrial uses and wastes. Illustrations of this brochure highlight some of the common and known sources. The official data as recently reported by Palestine to the Basel Convention indicates over 65 000 tonnes of hazardous waste per year, but this number can fluctuate greatly from year to year.

Statistical data shows good progress — increase from 2% to 10% in hazardous waste treatment in 4 years. The marked progress is observed in Gaza, where about half of business entities separate their chemical and infectious waste. It is estimated that from the average total of 4500 tonnes of Palestine's medical waste, about 1/3 can be considered hazardous and require special treatment, including incineration.

Youth and women engagement



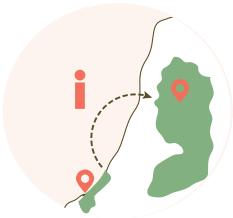
Women in Palestine play a central role in waste and chemicals research, surveys, inspections, public activism and education. The population of Palestine is growing rapidly and is very young and dynamic. Young people can contribute to the sound management of waste and chemicals by organising clean-up campaigns and ecology days, by creatively reusing waste in schools and at home, and by participating in recycling campaigns.

If families, schools, colleges and universities practice and promote waste separation and contribute to recycling, Palestine's environment would be much cleaner and greener. Reducing the use and consumption of plastic packaging, composting of food waste and rational consumption of food have great benefits for the environment.

Attention to potentially hazardous waste in car workshops and small businesses, and timely and proper handling of used chemical spills and leaks, can help prevent local contamination, reduce clean-up costs and avoid fines. Consuming local produce grown in an environmentally friendly way, with little or no pesticides and fertilisers, also contributes to better health and the environment.

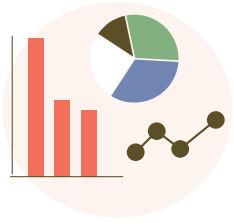
Palestine's special circumstances, constraints and ways forward

Limited access to the international sources of funding for hazardous waste and chemicals inventory and solutions



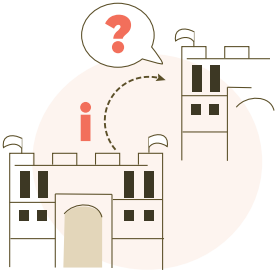
Country's fragmentation into two parts with different governance nuances

Israel controls Palestine's borders and permissions for export and installations



Lack of statistics and information on hazardous waste and chemicals

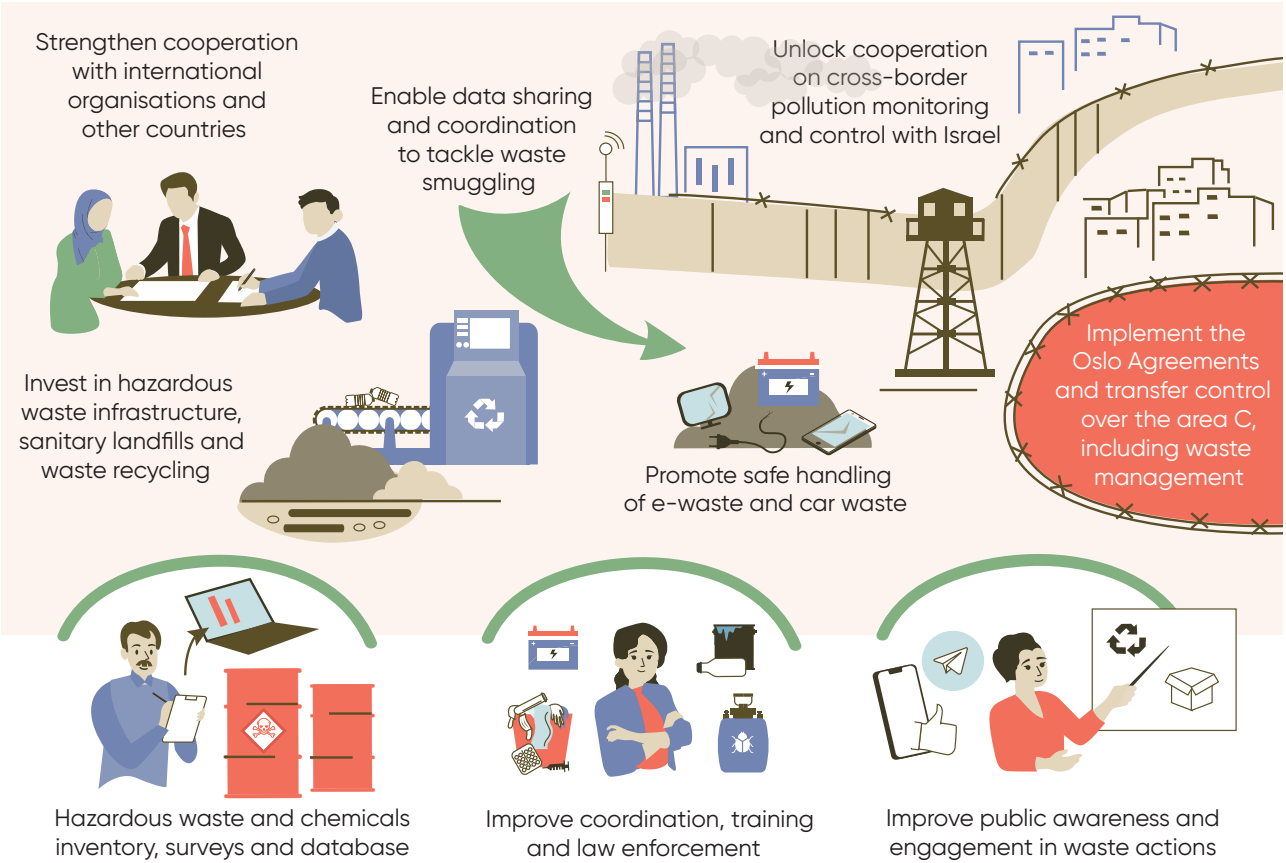
Limited capacity of staff and weak legislation enforcement



Limited inter-institutional coordination and data exchange

Palestine's special circumstances, which have a direct impact on its ability to manage waste and chemicals, include border control and the occupation of part of its territory by Israel. This creates difficulties in the control of imports and exports, technology transfer, and the siting and construction of hazardous waste storage and treatment facilities. Settlements contribute to emissions and waste in the Palestinian territories, while clandestine transfers of electronic and car waste for recycling in Palestine add to the burden of pollution control and waste mismanagement.

Other constraints include limited and irregular institutional cooperation on waste and chemicals, lack of up-to-date and comprehensive statistical information on waste generation, collection, recycling and landfilling. Palestine faces restrictions or delays in accessing waste and chemicals-related funding mechanisms established by the Conventions, including the Global Environment Facility (GEF).

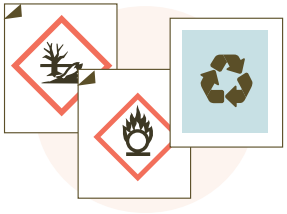


Staff shortages and limited training of environmental inspectors in the detection and investigation of hazardous waste and chemicals further constrain enforcement. Public awareness about risks, sources of and exposure to hazardous waste and chemicals, especially POPs and mercury, is also limited.

To overcome some of these constraints, it is essential to work continuously to improve inter-agency coordination and public awareness, expand data collection and exchange, conduct hazardous waste and pollution mapping and inventories, and develop local and national clean-up action plans.

Basic solutions to pollution, hazardous waste and chemicals

UNEP Special Programme project supporting Palestine



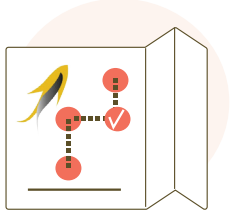
Public awareness materials and information on waste and chemicals

Training and capacity building

Inter-institutional collaboration

Improving reporting within the country and for the BRS conventions

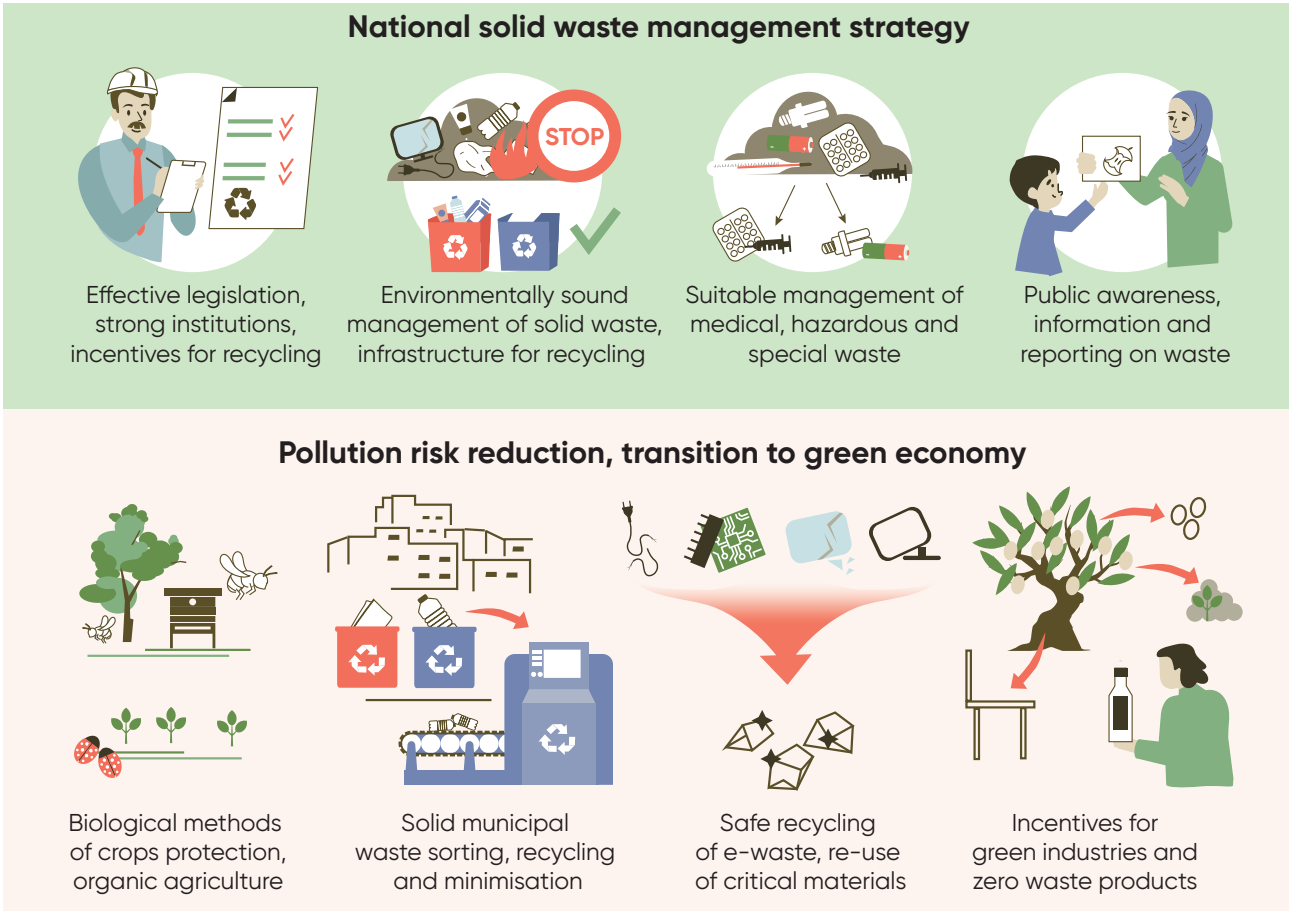
International cooperation and experience exchange



Initial steps on mercury under the Minamata Convention

Palestine is an active party to all four conventions on hazardous waste and chemicals, but its own resources and accessibility to international funding and expertise are limited. The UNEP Special Programme is helping to bridge this gap by assisting Palestine in taking the basic steps towards environmentally sound management of waste and chemicals. The UNEP-EQA project is working to develop and deliver training materials and sessions, produce public awareness materials, review gaps in legislation, data and institutional frameworks, and provide recommendations.

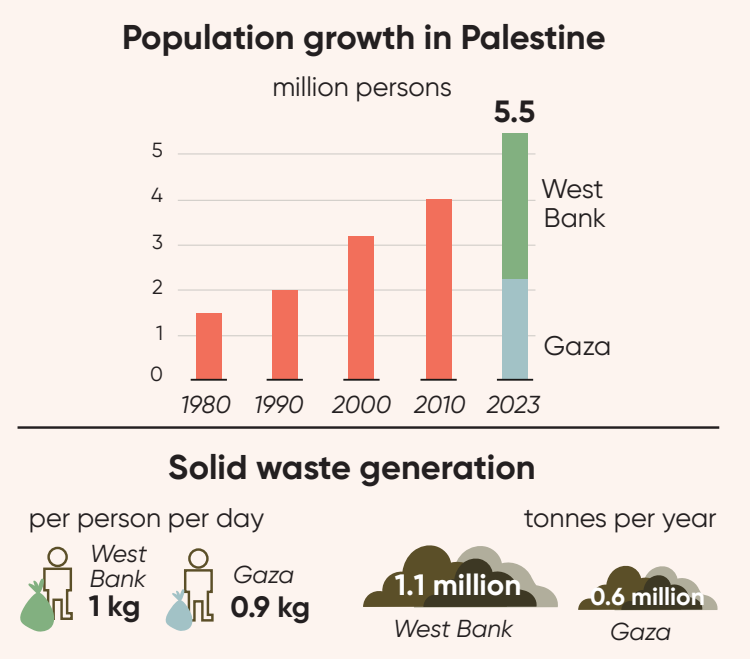
The inter-agency meetings facilitated by the project are always rich in discussion and help to improve coordination, exchange knowledge, and clarify institutional mandates. The project is supporting Palestine's initial steps towards the Minamata Convention on Mercury, in the hope that more technical and substantive support can be provided through the Specific Programme, the GEF and though targeted governmental efforts.

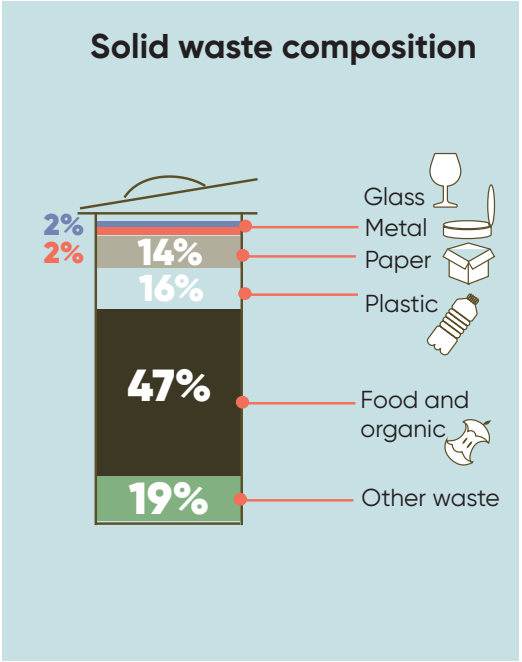


National Solid Waste Management Strategy and targeted waste management improvement projects supported by international donors have helped Palestine to improve landfills, waste transfer stations, waste awareness and reporting. The treatment of hazardous waste from hospitals is now much better than 5–10 years ago.

Further efforts on waste separation and recycling are essential for the transition to a greener economy and for reducing pollution and waste. The expansion of biological and organic methods in agriculture can help reduce the use of pesticides, while the recovery of critical materials from waste can contribute to new industries and jobs, in addition to saving resources. Incentives for green industries and zero waste businesses can help make Palestine greener and a better place to live.

Selected numbers and interesting facts on waste





The population of Palestine has more than doubled in the past 30 years, and continues to grow generating more waste. Currently 1.7 million tonnes of solid municipal waste is going to landfills. The waste generation rate in the West Bank (1kg per day per person) is slightly higher than in Gaza, where greater density and poverty of population in combination of the limited area available for landfilling contributes to smaller waste generation and greater re-use and recycling.

About half of all municipal waste is made of food leftovers. Fractions of plastic and paper waste make 16% and 14% accordingly. A lot more waste could be recycled if separate waste collection is widely practiced and recycling capacities and incentives are operational. Most settlements are served by waste collection services (95%), but only 1–3% of waste is being recycling. National waste strategy aims at 30% recycling. Most of the waste is transferred to the landfills, some of them receive 1000 tonnes of waste per day.

Where does the solid waste end up?

3500 five years ago
Waste generated **4650 tonnes/day**

E-waste coming from Israel
200 tonnes/day

- **10%** *Refrigerators*
- **50%** *Car motors*
- **2.5%** *TVs*
- **10%** *Cables*
- **2.5%** *Cell Phones*
- **25%** *Air conditioners*

Waste from Israeli settlements

Percentage of households covered by solid waste collection services

Goal 100%

95%

Goal 20%

Residential waste collection

Waste transfer

Goal 100%

90%

Landfills

Random dumps, waste burning

0%

Household waste separation

1-3%

Compost

Goal 30%

Recycling sector involves 240 SMEs employing 3500 persons

Recycling and reuse

Undocumented waste processing

Future waste flows: towards circular economy

Smaller methane emissions

Recycling

Landfill

Compost

Waste prevention

Separation

Current waste flows: waste dumping and burning

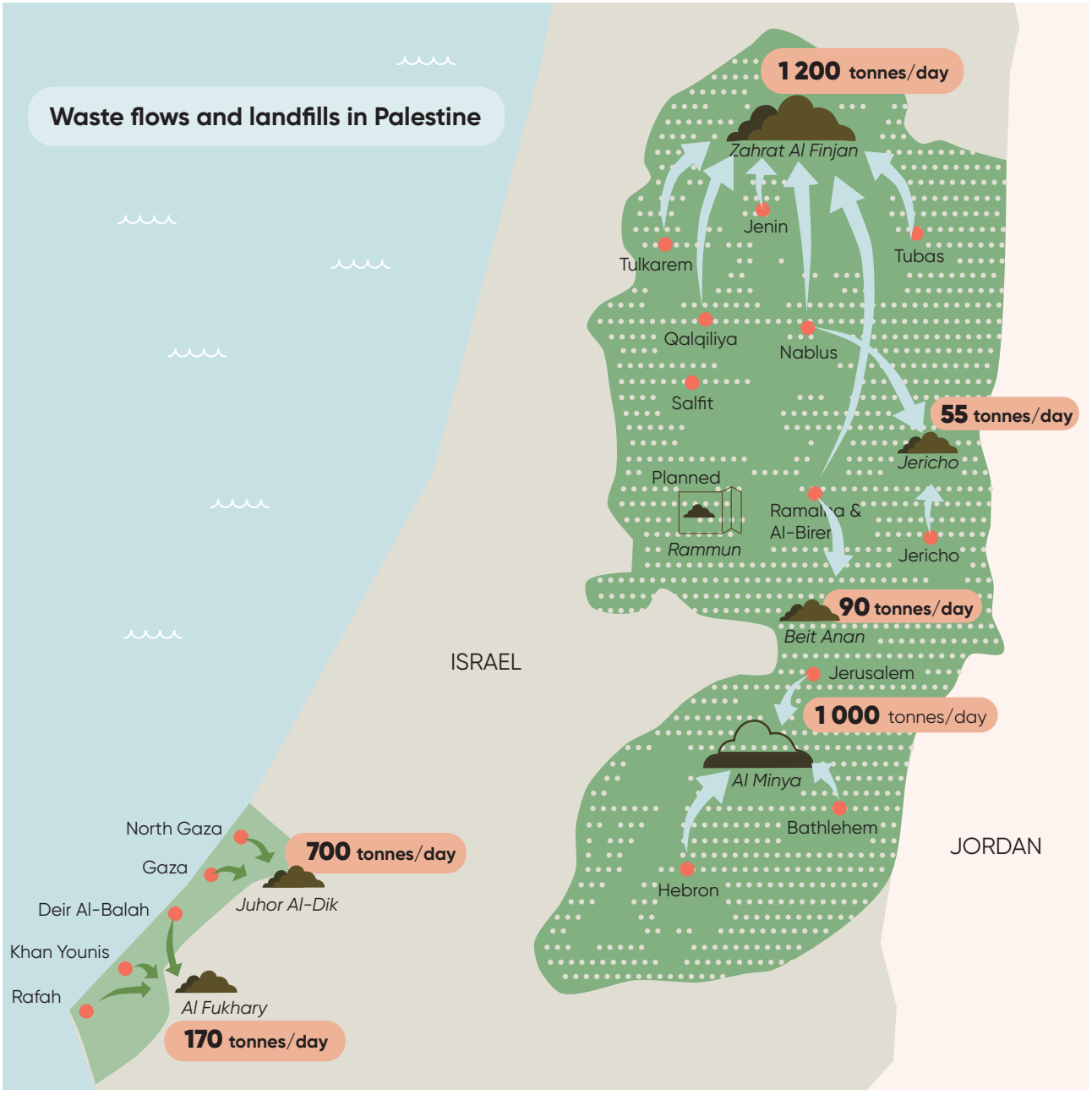
Large methane emissions

Recycling

Landfill

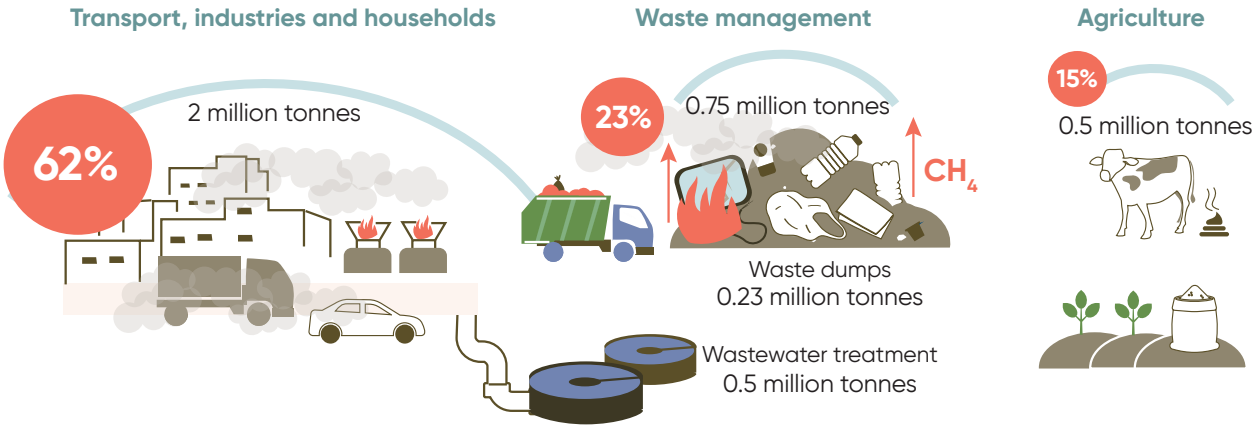
Compost

Open burning


Waste flows and landfills in Palestine
1 200 tonnes/day
Zahrat Al Finjan
Jenin
Tulkarem
Tubas
Qalqiliya
Nablus
Salfit
55 tonnes/day
Jericho
Planned
Rammun
Ramallah &
Al-Bireh
Jericho
90 tonnes/day
Beit Anan
ISRAEL
Jerusalem
1 000 tonnes/day
Al Minya
Bathlehem
JORDAN
Hebron
North Gaza
Gaza
700 tonnes/day
Juhor Al-Dik
Deir Al-Balah
Khan Younis
Rafah
Al Fukhary
170 tonnes/day

Links between waste and climate change

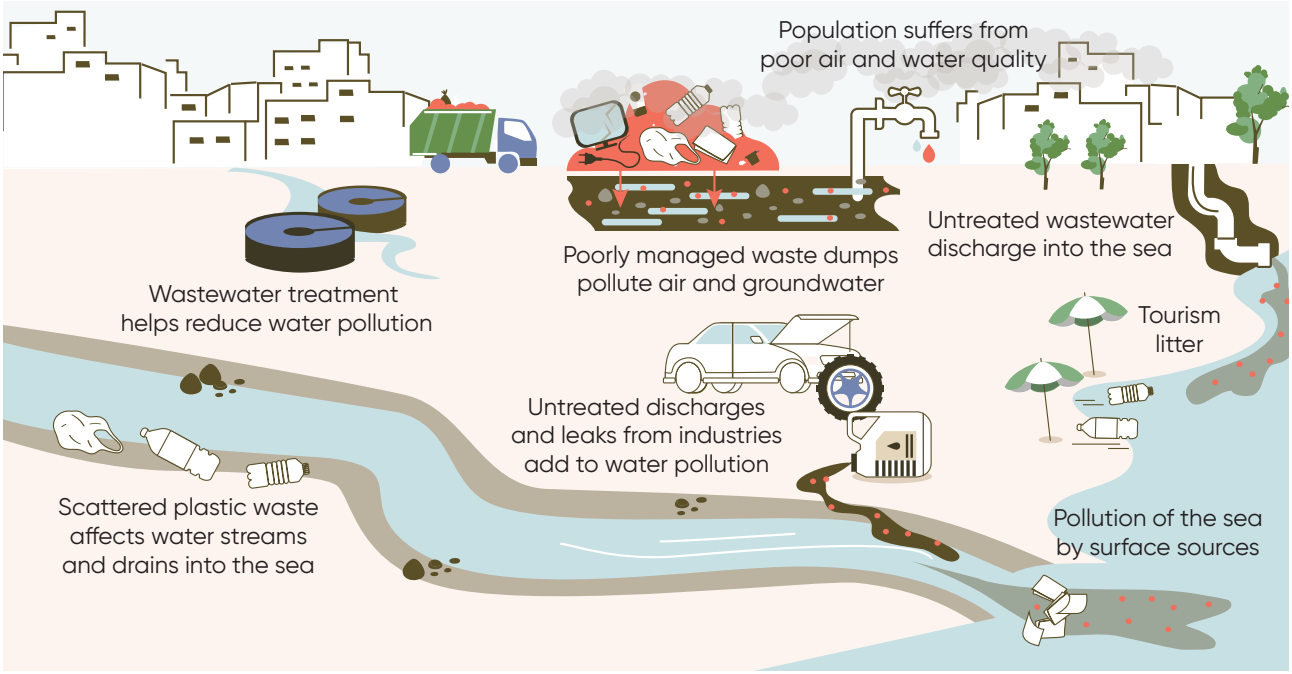
Sources of greenhouse gas emissions in Palestine



The link between waste management and climate change may not seem obvious, but in Palestine it is significant. Wastewater treatment and disposal of waste in landfills cause methane emissions, while waste open burning results in carbon dioxide emissions. All waste sources in Palestine together account for 23% of all domestic greenhouse gas emissions.

Rapid population growth is increasing the amount of waste and associated emissions, but there are several ways to decouple population growth from emissions. Reducing food waste and increasing composting results in less organic matter going to landfill and less methane generation. Landfill methane capture and biogas production from agricultural and other organic waste can provide additional energy for local communities and reduce methane emissions. Finally, increased recycling helps to reduce the production and use of primary materials, as well as energy use and emissions.

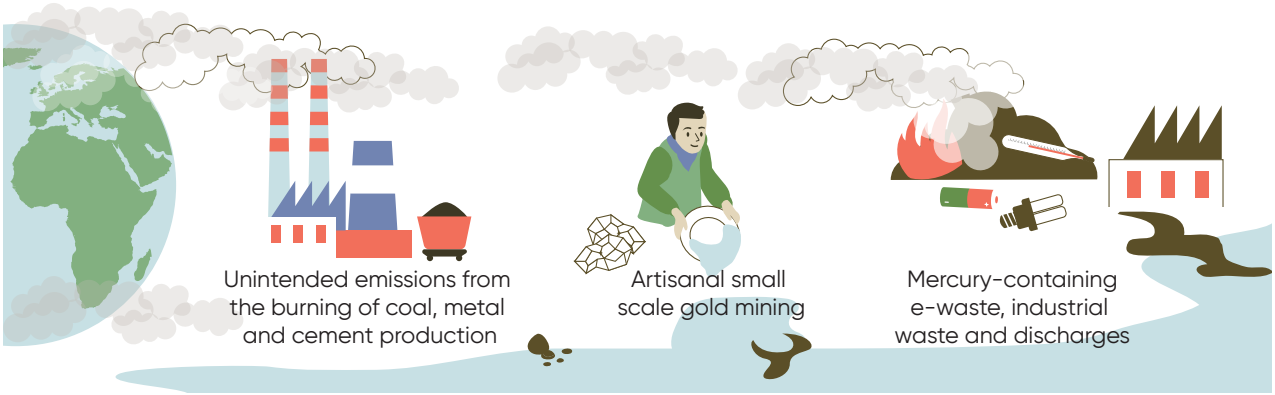
Links between waste and water pollution problems



Water quality can be affected by a number of waste-related pollution sources. Plastic packaging and bottles from land and coastal areas can be washed into rivers, lakes and the sea and harm aquatic life, while microplastics can harm human health too. Used oil leaks from car repair shops and untreated urban runoff can introduce many pollutants into waterways. Outdated and unmanaged waste dumps can leach toxic substances into groundwater and affect water supply systems.

Finally, untreated wastewater can cause health problems and damage water ecosystems. Regular waste clean-up campaigns, environmentally sound waste management, comprehensive wastewater treatment systems and sanitary landfills help to reduce or minimise the impact of waste on water.

Important sources of mercury emissions and releases



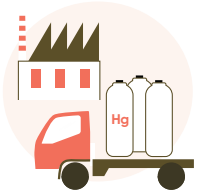
As an element, mercury will always be present in our plant and in our environment. However, it is a pollutant of concern and countries — the Parties to the Minamata Convention — have set the goal of reducing and, where possible, eliminating man-made emissions and releases of mercury.

Mercury is still used by thousands of artisanal small-scale gold miners around the world. As a result, mercury enters water ecosystems and the atmosphere, threatening the environment and the health of workers. Mercury is also released into the air by coal-fired power plants, cement and other industries. These two sources account for more than half of man-made mercury emissions worldwide, but are likely to be insignificant or non-occurring in Palestine.

Mismanagement of waste containing mercury in devices such as lamps, thermometers or batteries, as well as dental amalgam waste, leads to mercury contamination. This source is likely to be present in Palestine.

As a Party to the Minamata Convention, Palestine is taking the first steps to understand the shape and size of the mercury problem in the country. Despite limited access to international funding and limited technical capacity to sample and monitor mercury pollution, it is important to review regulations and train staff to identify and reduce mercury pollution, inform the population about the health risks associated with mercury, and take measures to reduce exposure to mercury in e-waste recycling shops and medical and solid municipal waste collection and treatment.

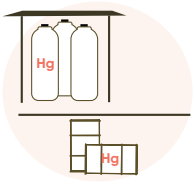
Selected provisions of the Mercury Convention most relevant to Palestine



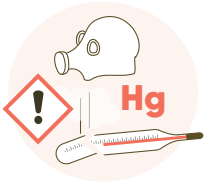
Mercury supply sources and trade

Mercury-added products

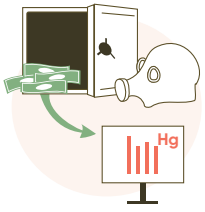
Emissions and releases



Interim storage of mercury and waste



Contaminated sites and health aspects



Financial resources

Capacity building, technical assistance

Initial assessment, implementation plan

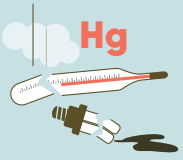
Public information and awareness

Information exchange and reporting

Potential mercury sources and issues in Palestine

Mercury in sludge

Mercury use in dental amalgam



Localised contamination

Mercury-containing waste burning and emissions

Global and regional atmospheric transfer and deposition

Sources of information

Palestine report to the Basel Convention (2021, submitted in 2022):
https://ers.basel.int/ERS-Extended/FeedbackServer/fsadmin.aspx?fscontrol=respondentReport&surveyid=83&voterid=56149&readonly=1&nomenu=1

Palestine report to the Stockholm Convention (submitted in 2022):
https://ers.pops.int/ERS-Extended/FeedbackServer/fsadmin.aspx?fscontrol=respondentReport&surveyid=81&voterid=51397&readonly=1&nomenu=1

Atlas of Sustainable Development 2020, State of Palestine:
https://palestine.un.org/en/150000-atlas-sustainable-development-2020

Palestine Initial National Communication on Climate Change to the UNFCCC (2016):
https://unfccc.int/sites/default/files/resource/Initial%20National%20Communication%20Report_%20State%20of%20Palestine.pdf

National Strategy for Solid Waste Management in Palestine 2019–2022

Solid Waste Management in the occupied Palestinian Territory (2019):
https://www.cesvi.eu/wp-content/uploads/2019/12/SWM-in-Palestine-report-Thoni-and-Matar-2019_compressed-1.pdf

Palestinian Central Bureau of Statistics, Waste theme page on the World Environment Day 2023 “Beat Plastic Pollution”:
https://www.pcbs.gov.ps/post.aspx?lang=en&ItemID=4522

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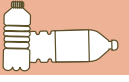

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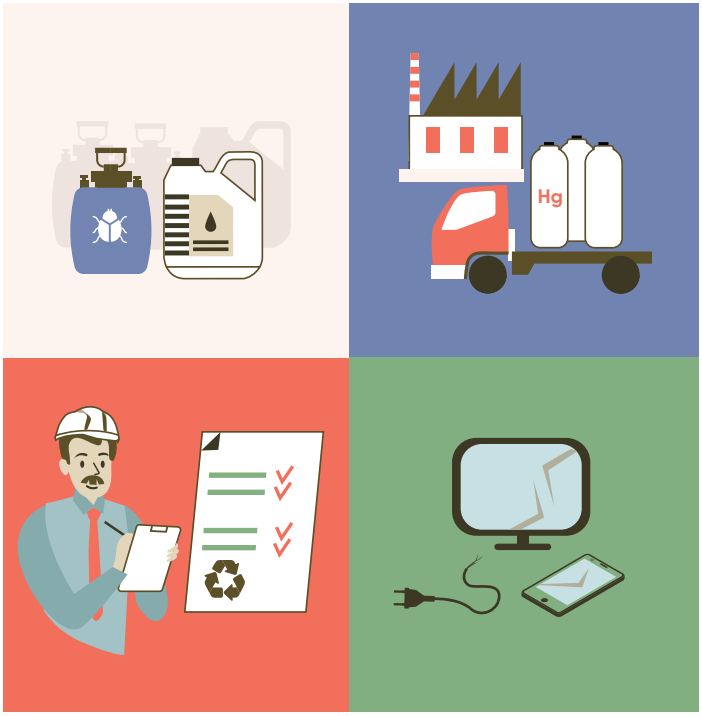
3 SEPARATE FOOD WASTE AND DONATE IT TO FARMERS

1 WASTE AND CHEMICALS MANAGEMENT

START



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