
Mountain of electronic waste :Where do our old cell phones and laptops end up?



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Who am I?

Name : Salina Maharjan

I come from: Nepal

Place of Birth : Lalitpur, Nepal

In Germany : since January 2022

Field of Study: Informatik (2. Semester)

University: Goethe University Frankfurt



Sustainable Development Goals (SDGs)



The 2030 Agenda with its 17 Sustainable Development Goals.

SDG 12: Responsible consumption and Production

- Sustainable and efficient use of natural resources
- Prevention or recycling of waste and safe disposal of hazardous wastes
- Reduced food waste
- Cooperation between companies, consumers and authorities for sustainable consumption and production
- Environmentally friendly handling of chemicals

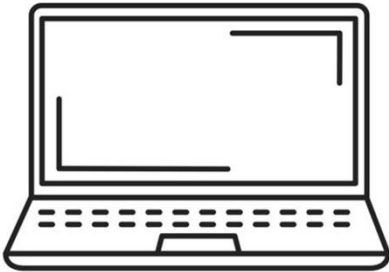


A few questions....



How many electronic devices do you own?

Adobe Stock | #476949292



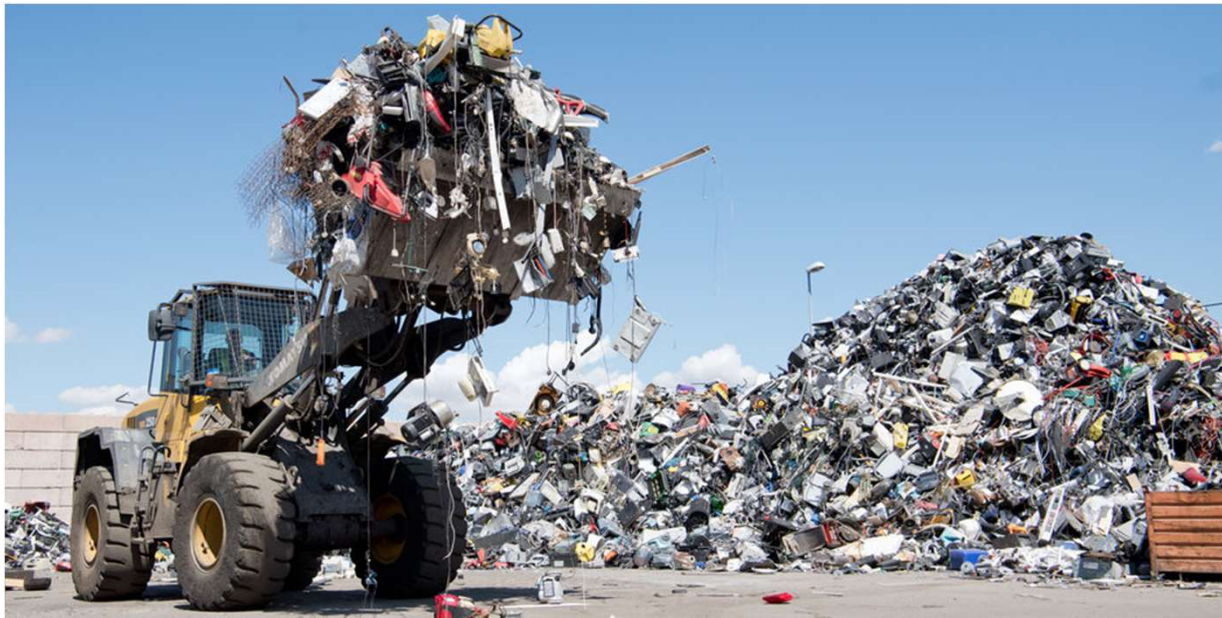
Did you have other cell phones before your current one?



If so, what did you do with the previous cell phone?



Where do our old cell phones and laptops end up?



- 85% of our E-Waste are sent to landfills and incinerators are mostly burned
-

Folie 10

- 1 40 million tons of electronic waste generated every year, worldwide (800 laptops every second.)
An average cellphone user replaces their unit once every 18 months.
E-waste comprises 70% of our overall toxic waste.
Only 12.5% of E-Waste is recycled.
ref: <https://www.theworldcounts.com/stories/electronic-waste-facts>
Salina Maharjan; 19.10.2023

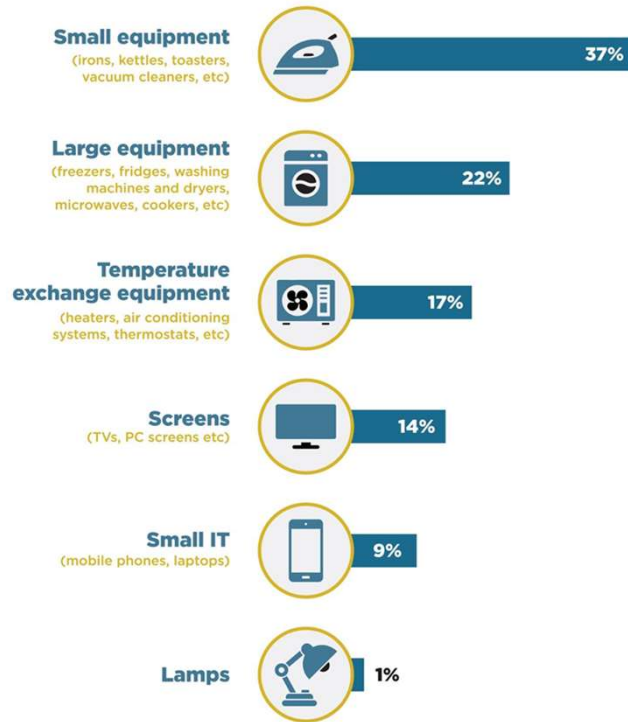
E-Wastes, what are they actually?

- any electrical or electronic equipment that has been discarded
- includes working and broken items that are thrown in the garbage
- particularly dangerous due to toxic chemicals that naturally leach from the metals inside when buried



The Composition of Electronic Waste

Average Yearly Global E-Waste Generation is
50 Millions Tons

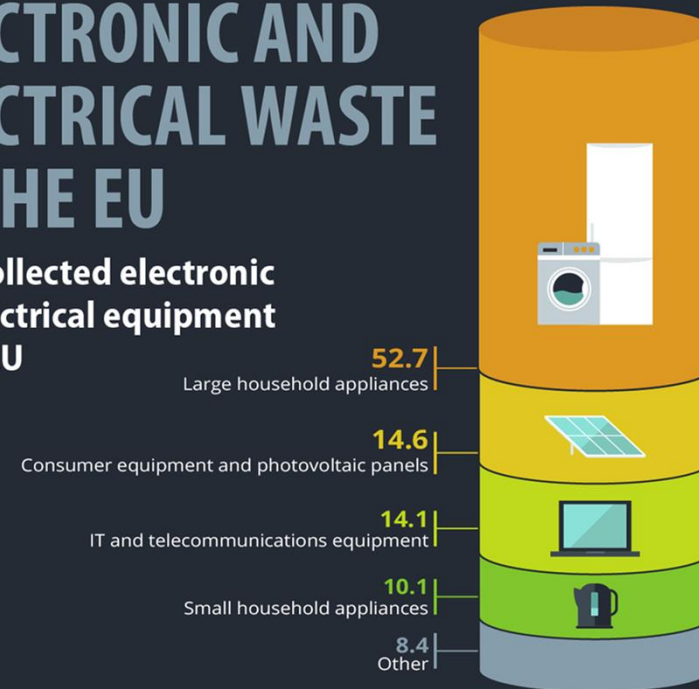


TRASHCANS UNLIMITED
THE BEST TRASH CANS AT THE BEST PRICES

ELECTRONIC AND ELECTRICAL WASTE IN THE EU

Total collected electronic and electrical equipment in the EU

(%)



Source: Eurostat (2020)


europarl.eu

Folie 12

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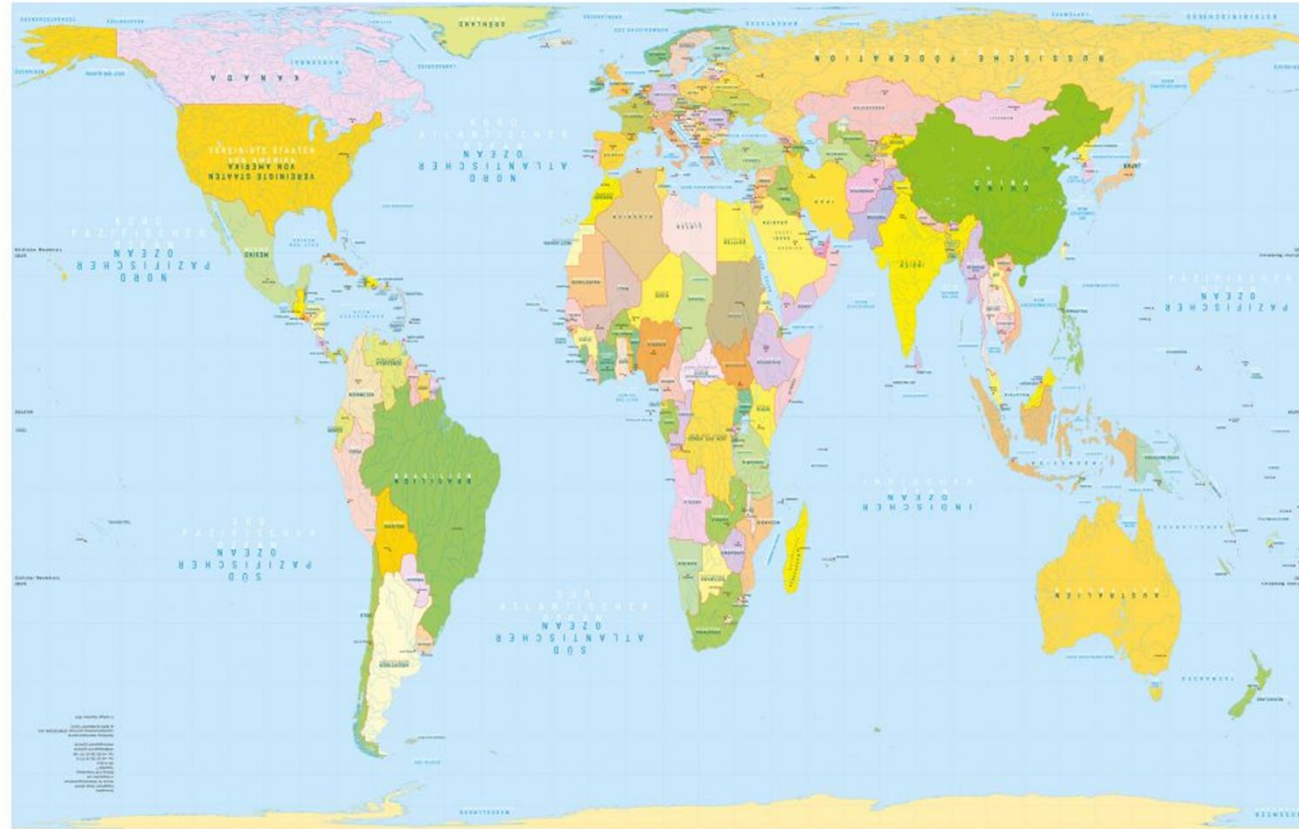
50 million tons of e-wastes produced every year

9% of 50million tons = 4,5million tons

1 ton = 1 cubic meter

Salina Maharjan; 19.10.2023

Worldmap



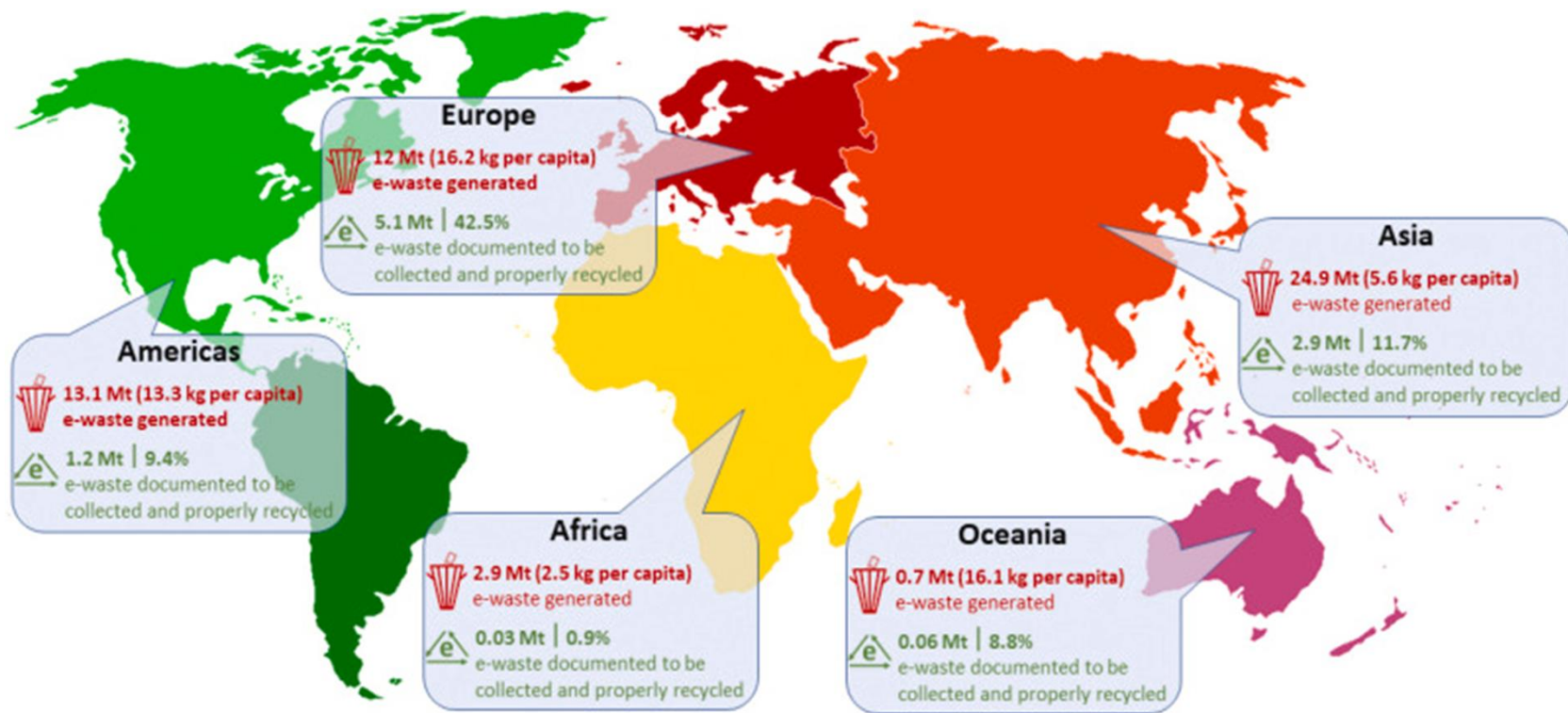
Worldmap

5 continent model

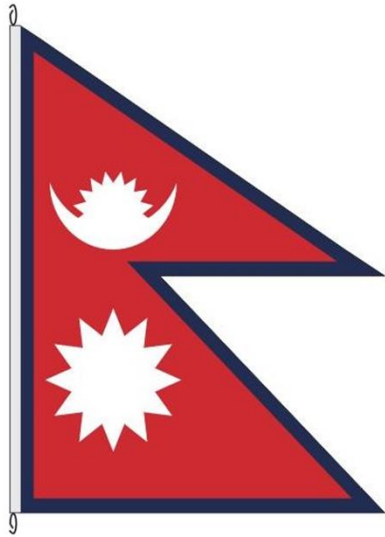
-Where is the most electronic wastes generated?

-Where is it the most recycled?





Nepal



Flag of Nepal

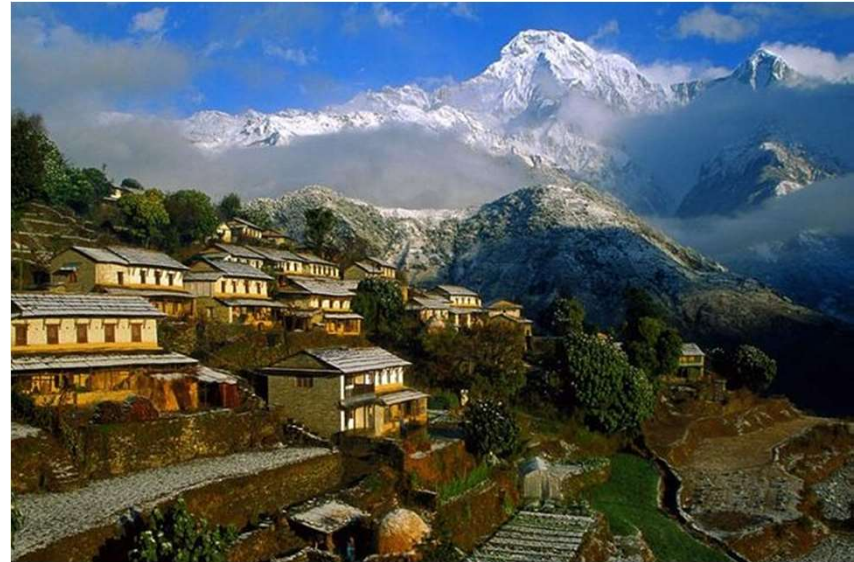


Mt. Everest





Capital city: Kathmandu



Landscape : Mountains, Hills and Terai



142 ethnic groups and 123 languages



Newari Culture



Newari Cuisine



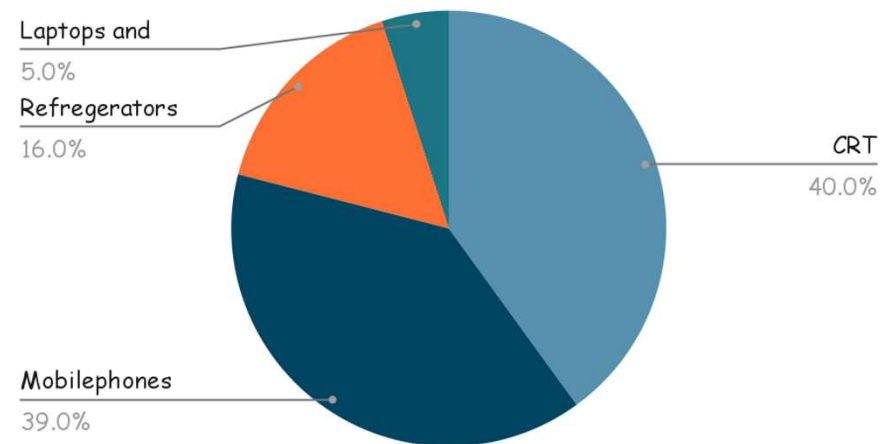
Situation in Nepal

3 -**28,000 tonnes of electronic waste** consisting of unusable phones, computers and TV sets in 2019, according to [Global E-waste Monitor 2020](#).

-**0.9 kg of e-waste** for every man, woman and child in Nepal

-**imported 5.75 million smartphones** in the fiscal year 2022

E-wastes in Nepal

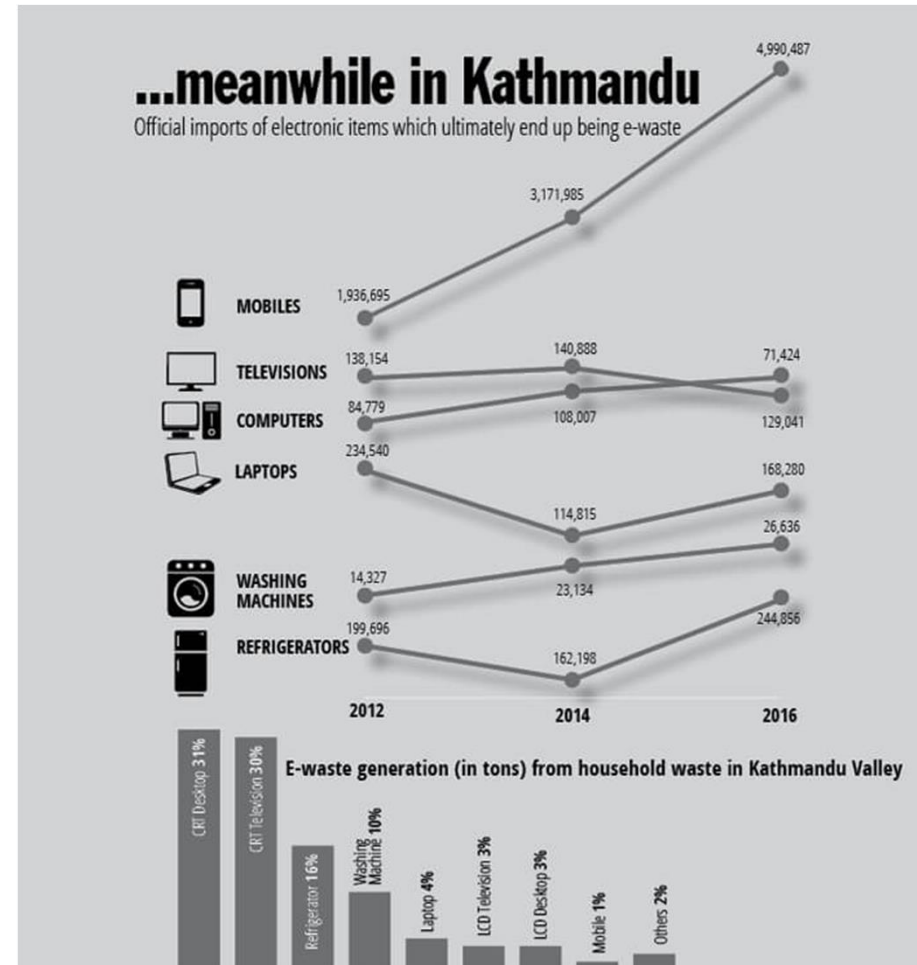


<https://kathmandupost.com/money/2023/06/20/nepal-behind-in-managing-hazardous-electronic-waste>

Salina Maharjan; 19.10.2023

Situation in Nepal

- 4 - Lack of legislation for addressing e-waste-related problems
- Lack of adequate technology to manage e-wastes
- Illegal channeling of E-wastes to India
- Unsafe handling of electronic devices



Folie 21

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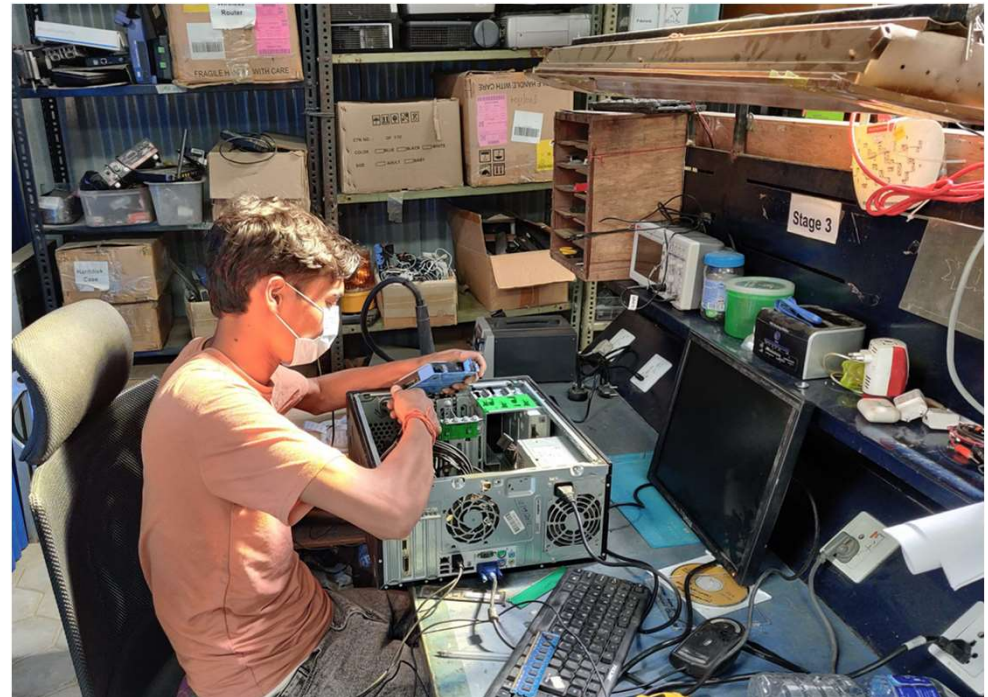
On average, Nepalis change their mobile phones every 15 months. More than 6 million phones are imported every year

Salina Maharjan; 20.10.2023

Solutions?

- Basel Convention
- Doko Recyclers
- train the school students and teach them to do some minimal electrical tweaks
- Upcycling

<https://dokorecyclers.com/>





PLEDGE TO SEGREGATE

Doko Recyclers provides hassle-free home pick-up service

Call us at 9802044421.

doko
RECYCLERS

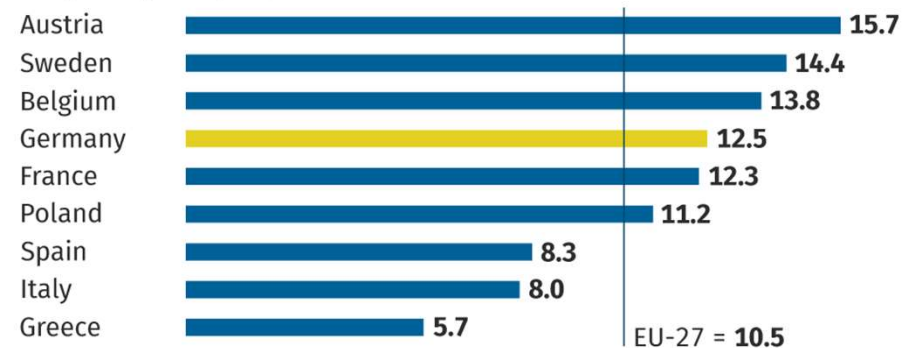
WE RECYCLE!
WE ARE HERE TO PICK UP YOUR RECYCABLES

Situation in Germany

- the amount of e-waste per capita amounted to approximately **12.5 kilograms**.
- **1.04 million tons** of electrical and electronic waste
- Fast 1,5 Kilogramm davon werden illegal exportiert und landen zumeist auf Elektroschrotthalden in Afrika, Indien und China

Electrical and electrical waste 2020

kilograms per capita, selected EU countries



Source: Eurostat

© Statistisches Bundesamt (Destatis), 2023

EUROPE
IN FIGURES

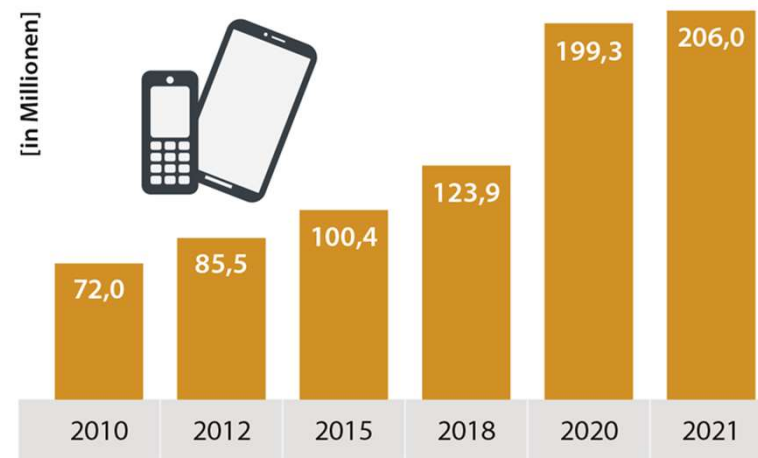


<https://www.zdf.de/dokumentation/terra-x/wo-landet-der-elektroschrott-creative-commons-clip-100.html#:~:text=Rund%2020%20Kilogramm%20Elektroschrott%20produziert,in%20Afrika%2C%20Indien%20u%20nd%20China>



► Alte Schätzchen

Mehr Smartphones und Tablets als Einwohner: In deutschen Schubladen lagern 206 Millionen ungenutzte Altgeräte.⁶



⁶ Bitkom-Befragung (hochgerechnet aus 1000 Befragten ab 16 J. in Deutschland)

■ Supermarkets in Germany must take old electrical goods (as of July 2022)

Known and Suspected Routes of e-waste Dumping



There is currently no system for tracking legal or illegal (under international law) shipments of electronic waste, and therefore, there is no quantitative data on volumes or even all of the true destinations. Some electronic waste is shipped as "working equipment" only to end-up as waste upon arrival. This map indicates information collected through investigations by organizations such as the Basel Action Network, Silicon Valley Toxics Coalition, Toxics Link India, SCOPE (in Pakistan), Greenpeace and others.



Mobile phones and Laptops as E-wastes

- 300 million computers and 1 billion cellphones go into production annually.
- Expected growth rate :8% per year.
- The raw materials needed to produce a smartphone, including gold, cobalt, lithium, and other heavy metals(62 different types), require energy-intensive mining their extraction often causes significant environmental pollution



Why E-Waste is a Growing Problem

We Generate A LOT of E-Waste

53.6 million metric tons of E-Waste was produced in 2019

Our E-Waste is Expected to Grow with Our Technology Use

E-Waste Contains Chemicals That Harm People & the Environment



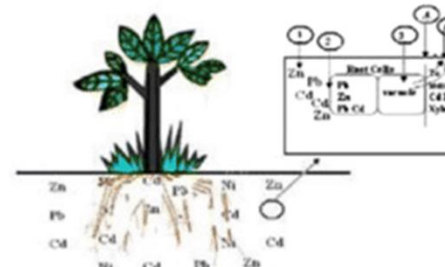
Some predict that E-Waste will grow up to 74.7 million metric tonnes by 2030. That's roughly a 50% increase from 2019!

Adversity caused by incineration landfill disposal



Waste, Air and Soil Pollution by E-waste

Heavy metal transition from polluted soil, air and water



Leached metal uptake by plant

Direct effect on human

Affecting human health



E-waste disposal

Discarded as waste



Used Electronics

Human health



Dioxins

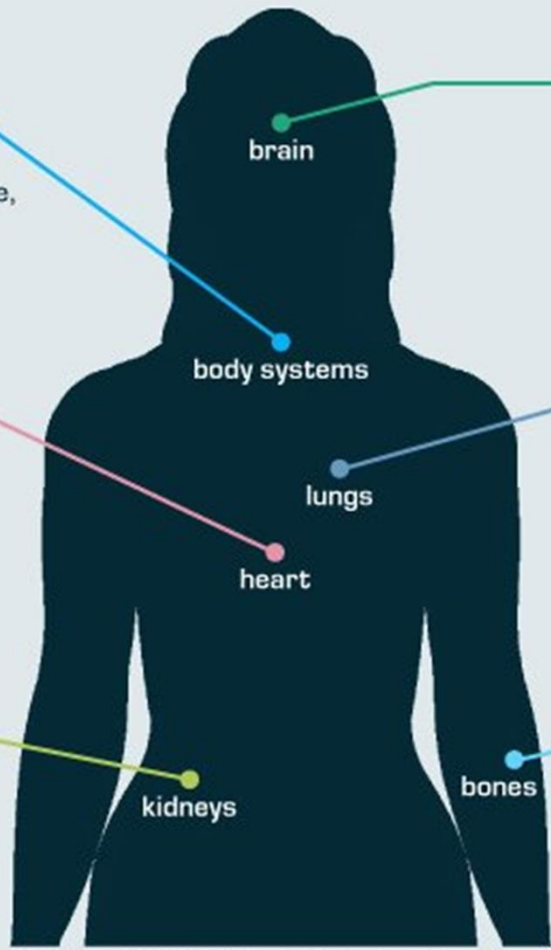
Dioxins damage the immune, nervous, endocrine, and reproductive systems.

As
Arsenic

Arsenic contributes to cancer, diabetes, and cardiovascular disease.

Hg
Mercury

Mercury poisons the eyes, skin, lungs, kidneys, and nervous, digestive, and immune systems.



Pb
Lead

Lead causes cognitive and verbal impairment, especially in children.

Cu
Copper

Copper negatively affects the lungs and kidneys.

Cd
Cadmium

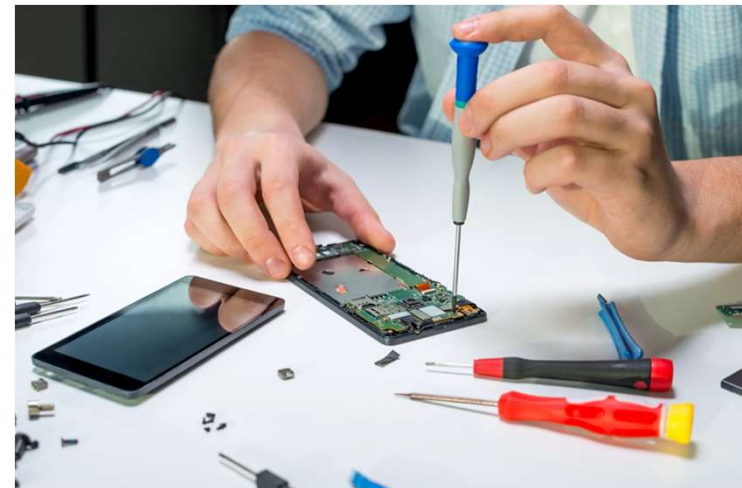
Cadmium weakens the bones by interfering with the body's ability to metabolize calcium.

COMPONENTS IN ELECTRONICS CONTAIN MANY HARMFUL SUBSTANCES.

Have you heard about Refurbished goods ?

An item that has been inspected and repaired

Refurbished: A product restored to like-new condition



Solutions????



Lets work in Groups

1. What role can we play in reducing E-wastes?
 2. Can the old electronics be reused? Why / Why not? If it can be reused how?
 3. Can the old electronics be recycled? And How can we as Students and normal citizens contribute to it?
-

**WE CANNOT CHANGE WHAT WE
ARE NOT AWARE OF,
AND ONCE WE ARE AWARE , WE
CANNOT HELP BUT CHANGE.
-Sheryl Sandberg**

**Thank you for your
Attention!**

