

ERASMUS+ FIRST MINI-PROJECT

EFFICIENT USAGE OF NATURAL RESOURCES



WHY DO WE NEED AN EFFICIENT USAGE OF NATURAL RESOURCES?

The growth of the economy and the increase of the population in the world (9,000 million inhabitants between now and 2050) mean that the Earth's natural resources are running out at high speed

Our society depends on metals, minerals, fuels, water, wood, fertile soil and clean air. However, we have been depleting these limited resources at a much faster rate than the one that allows their recovery, and if we do not change the way of acting there will be great shortages.



That is why it is necessary to **"use resources efficiently"**, that is, to generate more value by using less materials and consuming in a different way. This will reduce the risk of scarcity, and the environmental impacts will remain within the natural limits of our planet.

So we need some solutions, and that's what we are going to treat here.

In this presentation, we are going to talk about new ways for a more efficient use of natural resources.

First of all, it will be good to look to our actual linear waste economy; then we will talk about energy and water in the world and, finally, a novel initiative aimed at improving our life and that of the planet.

LINEAR WASTE ECONOMY

The current economic model based on the continuous extraction of raw materials to feed the infinite cycle of production, use and waste, generates a very high energy and raw material expenditure, in addition to a large amount of waste.

Each European, according to EU data, consumes 14 tons of raw materials and generates another 5 tons of garbage: an alarming waste in a world of diminishing resources.



SOLUTION: CIRCULAR ECONOMY

- ▶ The concept is based on goods and services that, at the same time, reduces the consumption and waste of raw materials, water and energy.
- ▶ As in nature, the circular economy pursues that the products have an almost eternal life, because when they become waste they can be used again as raw materials.

What is a Circular Economy?

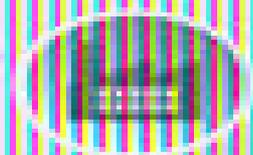
- The value of products, materials and resources is maintained in the economy for as long as possible.
- Waste generation is minimised.







BIOLOGICAL MATERIALS



CONSUME

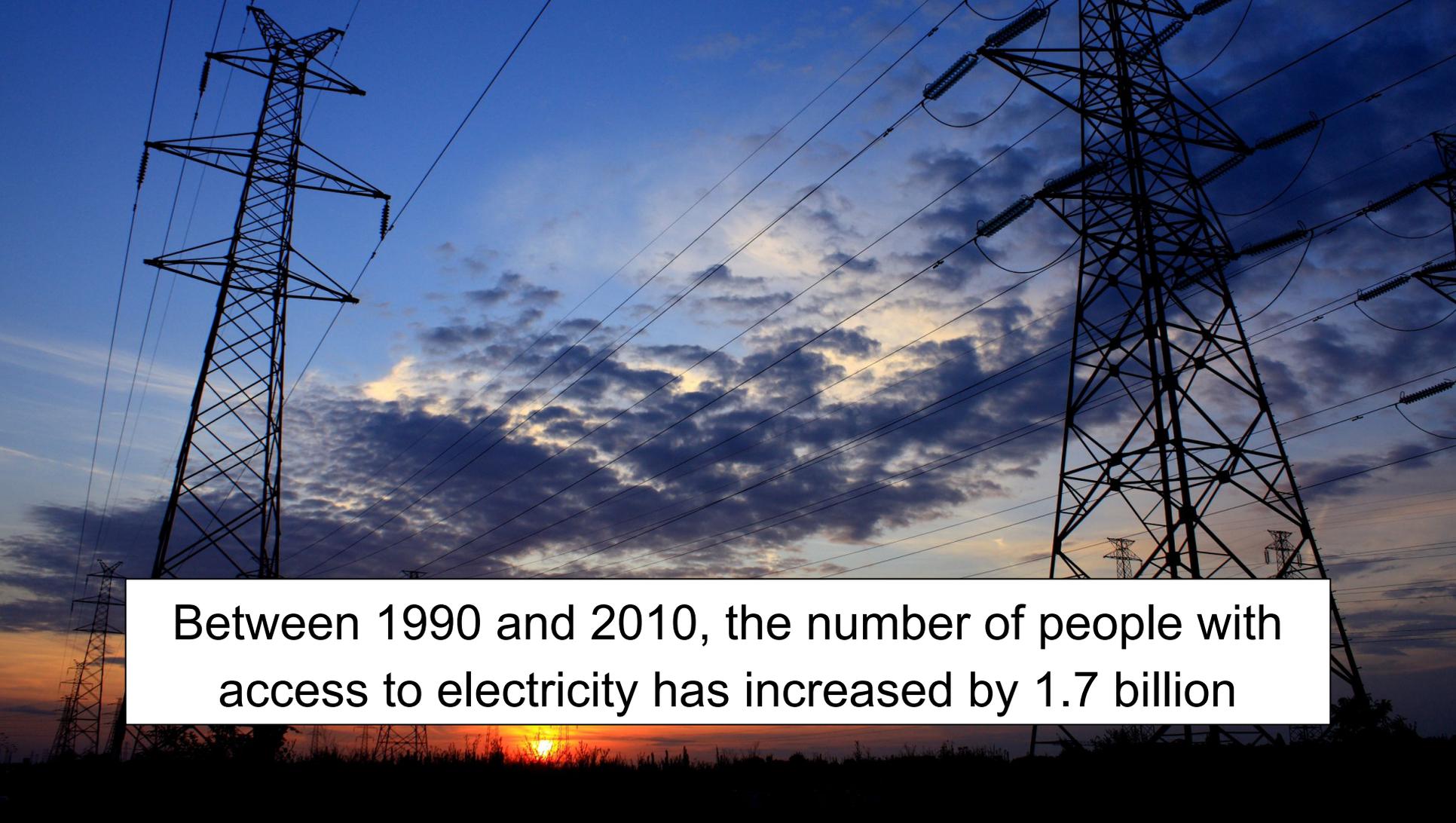


TECHNICAL MATERIALS

ENERGY FROM RENEWABLE SOURCES

Energy



The image shows a landscape at sunset or sunrise. The sky is a mix of deep blue, purple, and orange, with scattered clouds. In the foreground, several high-voltage power lines and their supporting towers are silhouetted against the bright sky. The towers are lattice-structured and have multiple cross-arms. The power lines stretch across the frame from the left to the right. The sun is visible as a bright orange glow on the horizon, partially obscured by the silhouettes of trees and the ground.

Between 1990 and 2010, the number of people with access to electricity has increased by 1.7 billion

ENERGY - KEY FACTS

- One in five people still lacks access to modern electricity
- 3 billion people rely on wood, coal, charcoal or animal waste for cooking and heating
- Energy is the dominant contributor to climate change, accounting for around 60 per cent of total global greenhouse gas emission
- Reducing the carbon intensity of energy is a key objective in long-term climate goals.

The main global initiative on the sustainable use of energy resources is part of the Sustainable Development Goals of the United Nations



1 NO POVERTY



2 NO HUNGER



3 GOOD HEALTH



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 RENEWABLE ENERGY



8 GOOD JOBS AND ECONOMIC GROWTH



9 INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE AND JUSTICE



17 PARTNERSHIPS FOR THE GOALS



THE GLOBAL GOALS
For Sustainable Development

7

**AFFORDABLE AND
CLEAN ENERGY**



7 AFFORDABLE AND
CLEAN ENERGY

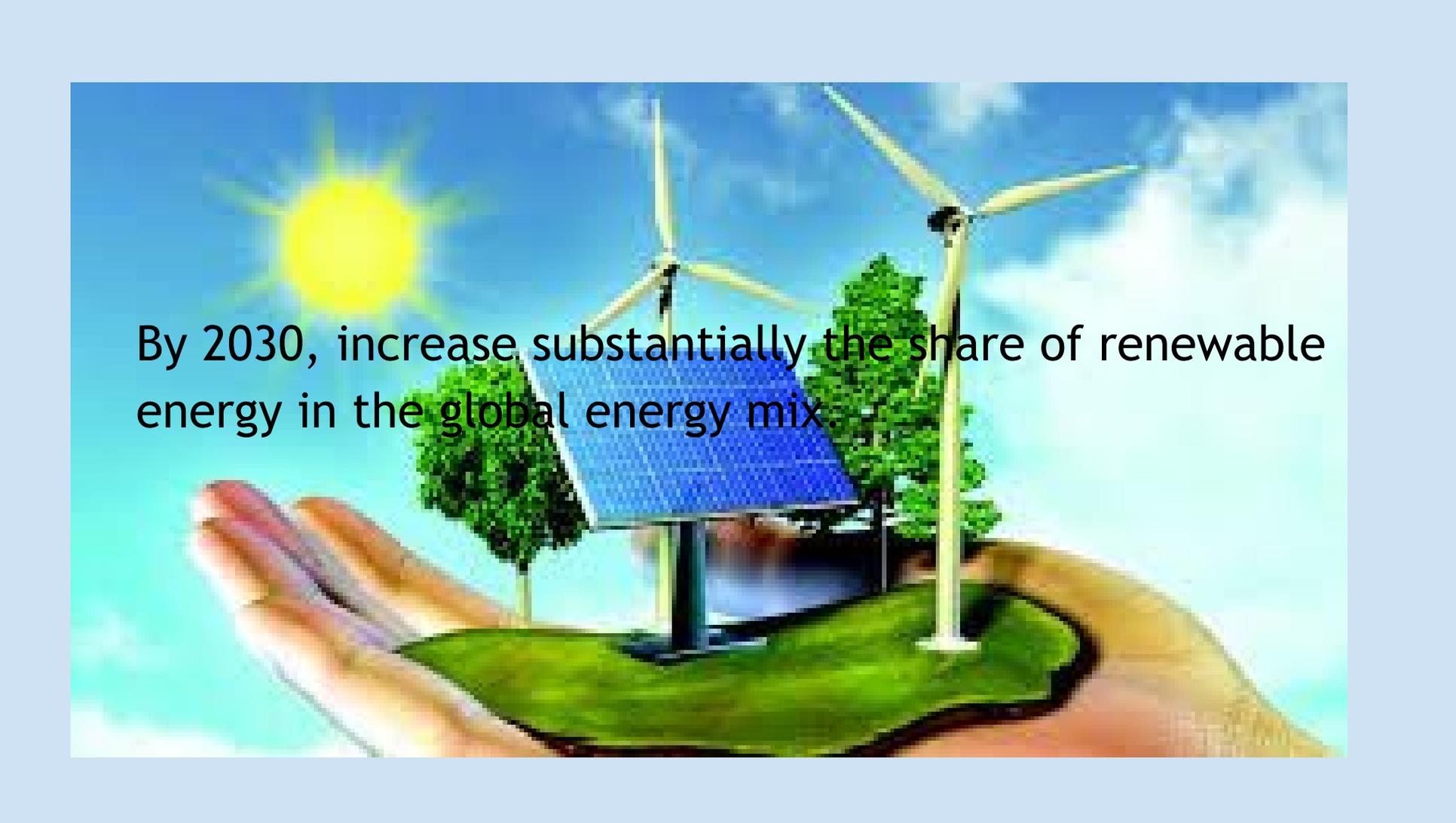


TARGETS:

- By 2030, ensure universal access to affordable, reliable and modern energy services.
- By 2030, increase substantially the share of renewable energy in the global energy mix.
- By 2030, double the global rate of improvement in energy efficiency.
- By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.



Ensuring universal access to affordable electricity by 2030 means investing in clean energy sources such as solar, wind and thermal

A hand is shown holding a small, green, grassy globe. On the globe, there is a blue solar panel, two white wind turbines, and two green trees. The background is a bright blue sky with a large yellow sun and white clouds. The text is overlaid on the scene.

By 2030, increase substantially the share of renewable energy in the global energy mix.

By 2030, double the global rate of improvement in energy efficiency.





No more non-renewable energies should be used because they pollute a lot and have a close limit. Therefore, from our homes we would have to start encouraging the use of new sources of energy, for example by promoting the installation of solar panels in our urbanization.

Have a look at just a few of the many things you can do to make an impact!

- **Save electricity by plugging appliances into a power strip and turning them off completely when not in use, including your computer.**
- **Stop paper bank statements and pay your bills online or via mobile. No paper, no need for forest destruction.**
- **Don't print. See something online you need to remember? Jot it down in a notebook or better yet a digital post-it note and spare the paper.**
- **Turn off the lights. Your TV or computer screen provides a cosy glow, so turn off other lights if you don't need them.**

- Do a bit of online research and buy only from companies that you know have sustainable practices and don't harm the environment.
- Air dry. Let your hair and clothes dry naturally instead of running a machine. If you do wash your clothes, make sure the load is full.
- Take short showers. Bathtubs require gallons more water than a 5-10 minute shower.
- Eat less meat, poultry, and fish. More resources are used to provide meat than plants

A good example:

The ecuadorian archipelago of the Galapagos Islands, has the first ecological airport in the world. It works through solar energy, the reuse of water and the use of wind



WATER RESOURCES



The report “**Water for a sustainable world**” of 2015 states that the planet will face a water deficit of 40% by 2030. That is to say, almost half of the world's population will no have assured access to water.

This problem of colossal dimensions is more a crisis of government than of resource.

There would be water for everyone if the way it is used, managed and shared changed. In addition to waste, overexploitation of aquifers, pollution or drought, exacerbated by climate change, the absence of water management plans in many parts of the world is flagrant.

Today, about 1.2 billion people live in geographic areas where water is scarce.

2.5 billion people do not have access to a good sanitation network.

One billion people go to the air and about 1,800 depend on sources of water contaminated with faecal bacteria.

Each year, water-related diseases and lack of access to drinking water cause about three and a half million deaths.

The penalties for lack of water goes far beyond the scope of our species. It causes a decline in the world's ecosystems, especially in wetlands, and of course in crops, and causes serious damage to biodiversity.

This set of situations triggers famines, wars and uncontrolled migrations.

The main global initiative in defense of water resources is part of the Sustainable Development Goals of the United Nations



6 CLEAN WATER
AND SANITATION



KEY FACTS

- Between 1990 and 2015, the proportion of the global population using an improved drinking water source has increased from 76 per cent to 91 per cent
- But water scarcity affects more than 40 per cent of the global population and is projected to rise. Over 1.7 billion people are currently living in river basins where water use exceeds recharge
- 2.4 billion people lack access to basic sanitation services, such as toilets or latrines
- More than 80 per cent of wastewater resulting from human activities is discharged into rivers or sea without any pollution removal
- Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrhoeal diseases
- Approximately 70 per cent of all water abstracted from rivers, lakes and aquifers is used for irrigation
- Floods and other water-related disasters account for 70 per cent of all deaths related to natural disasters

TARGETS

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
- By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.
- By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

SAVING WATER AT HOME

1° Choose autochthonous plants. When you think about what plants to put in your garden, keep in mind your water needs, since a cactus does not consume the same amount of water as a geranium.

2° Cold water in the fridge. If you always leave a jug of cold water in the fridge, you will not have to wait when you open the tap to come out fresh, saving a significant amount of water.

3° Economizers in the taps. Placing tappers on the faucets helps us save enormously. These economizing devices do not reduce neither the quality nor the comfort of the service.



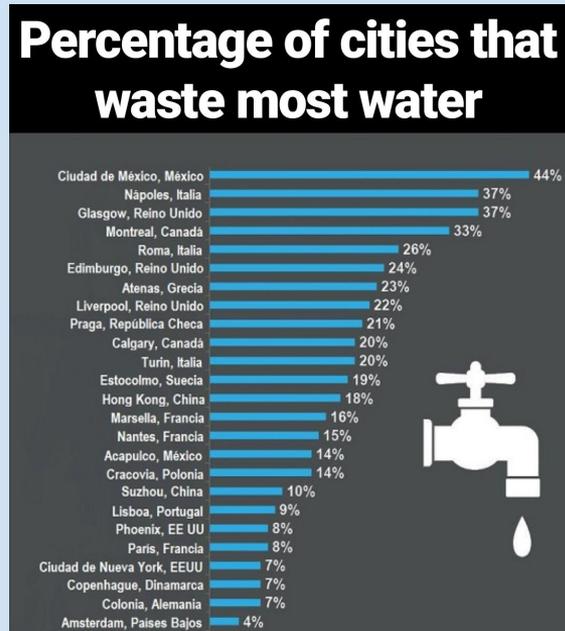
WATER SAVINGS IN THE CITY

1° The main reason why water is wasted in cities is usually poor infrastructure, Europe is an ancient continent, so most of its cities have a water distribution system with more than 70 years.

2° The solution to this problem is the complete modernization of the water distribution system.

3° The use of water is more optimized in those cities where the management is divided among several public and private agents.

4° Continuous check of piping to avoid possible leaks or accidents.

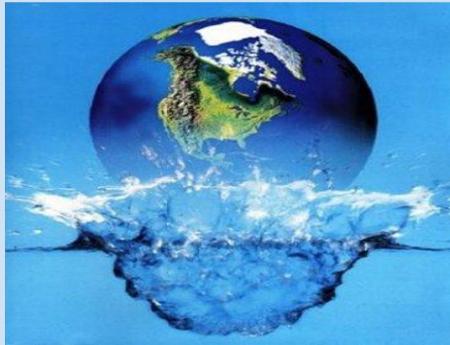


GLOBAL WATER SAVING

1° The countries make treaties with the farmers with the purpose of modifying their agricultural techniques and to spend less water.

2° Use of new technologies to reduce water expenditure, such as LO2X, this technology is used to eliminate harmful compounds from the mud and thus be able to purify or use them to irrigate.

3° Tougher penalties for industries that waste their waste in rivers or lakes, which are harmful to health



THE BATTLE AGAINST THE WASTE

Each year between 7,000 and 10,000 million tons of urban waste are generated worldwide, and some 3,000 million people lack access to controlled waste management facilities.



According to a study published in 2015 by the **United Nations Environment Program (UNEP)** and the **International Association of Solid Waste (ISWA)**, the volume of garbage in the big cities will double in 2030 as a result of the increase in the population. A serious threat, both for the environment and for health, which is fought with force from many parts of the world.

The current societies have a big problem with waste management.

In the first place, we are going to explain what the waste is, then, the problem we have with them and its consequences.

Finally, we propose some measures to fight against this problem.



DEFINITION OF WASTE

- Waste: is an unwanted or undesired material or substance, for example: discarded animal or vegetable matter, an old computer, the bottle of water, an egg shell.
- Also, any matter that is not longer wanted or needed.



The life forms characteristic of our time, give rise to the production and accumulation of garbage. Great amount of products for daily use, reaches our homes, schools or places of work. There is a wide variety of these products among which we can find cans, packaging, wraps, bottles, glassware, among many other things.



THE MAIN PROBLEMS OF WASTE

The production of waste is growing all over the world. The generation of garbage brings the following environmental impacts:

- The consumption of energy and materials used to make packaging and products that we later discard
- Water, air and ground pollution.
- All this has negative effects on human health and the environment



This accumulation of waste is harmful to both health and the ecosystem, so our goal is to ensure it's reduced. We have to clarify that some waste don't have the capacity to be transformed into raw materials. In that case, we can't use them again.



HOW CAN WE SOLVE THE PROBLEM?

These are some of the ways we can reduce waste:

- Insist to the shop assistant to not wrap the objects that you bought, unless it's essential.
- Expired or unused medicine can be given to a pharmacy.
- Familiar size products generate less waste each one.
- When you go shopping don't forget to take your own bag or shopping cart. Reject the bags that can be given to you.



The Zero Waste movement is framed within the concept of Circular Economy and consists of no generate waste.

CAPILANO UNIVERSITY
RESOURCES

Zero Waste Centre

capilano.ca/sustainability



This project try to reuse our waste in a continuous cycle

This movement works so that the business and people work together to solve the problem of garbage





**Bea Johnson's
the leader of
the Zero Waste
movement**

ELEMENTS OF A ZERO WASTE ECONOMY



PRODUCT REDESIGN

All products are reusable, recyclable or compostable and include recycled content; business innovation is supported and encouraged



MANUFACTURING

Conserves natural resources and is safe for people and planet.



TRANSPORT

Transport of products is minimal and energy efficient.



EDUCATION

All people view waste as a valuable resource.



SMART SPENDING

Consumers purchase only necessities and demand recycled, minimally packaged, recoverable products



NEW RULES

Policies such as extended producer responsibility, recycling mandates and incentives support zero waste



RESOURCE RECOVERY

Retailers take back products and all people have access to recycling, reuse and compost facilities.



JOB

Resource recovery and product redesign create jobs.



Zero waste is one of the best options to fight against the climate change

Every day we throw approximately one and a half kilograms of garbage per person. That means we produce around more than half a ton.

Zero waste suggests a kind of simple rules that we can use to let of produce waste.

The spirit guide of zero waste is Bea Johnson. She has been living a life without trash since 2008 and she tell us that we have to follow her slogan, it says: **refuse, reduce, reuse, recycle and rot.**

To join this new ecological trend, just follow some simple steps such as buying vegetables in abundance to store them in glass containers instead of plastic bags or use cloth bags to carry the purchase.

The goal is to make a life without garbage become a reality.