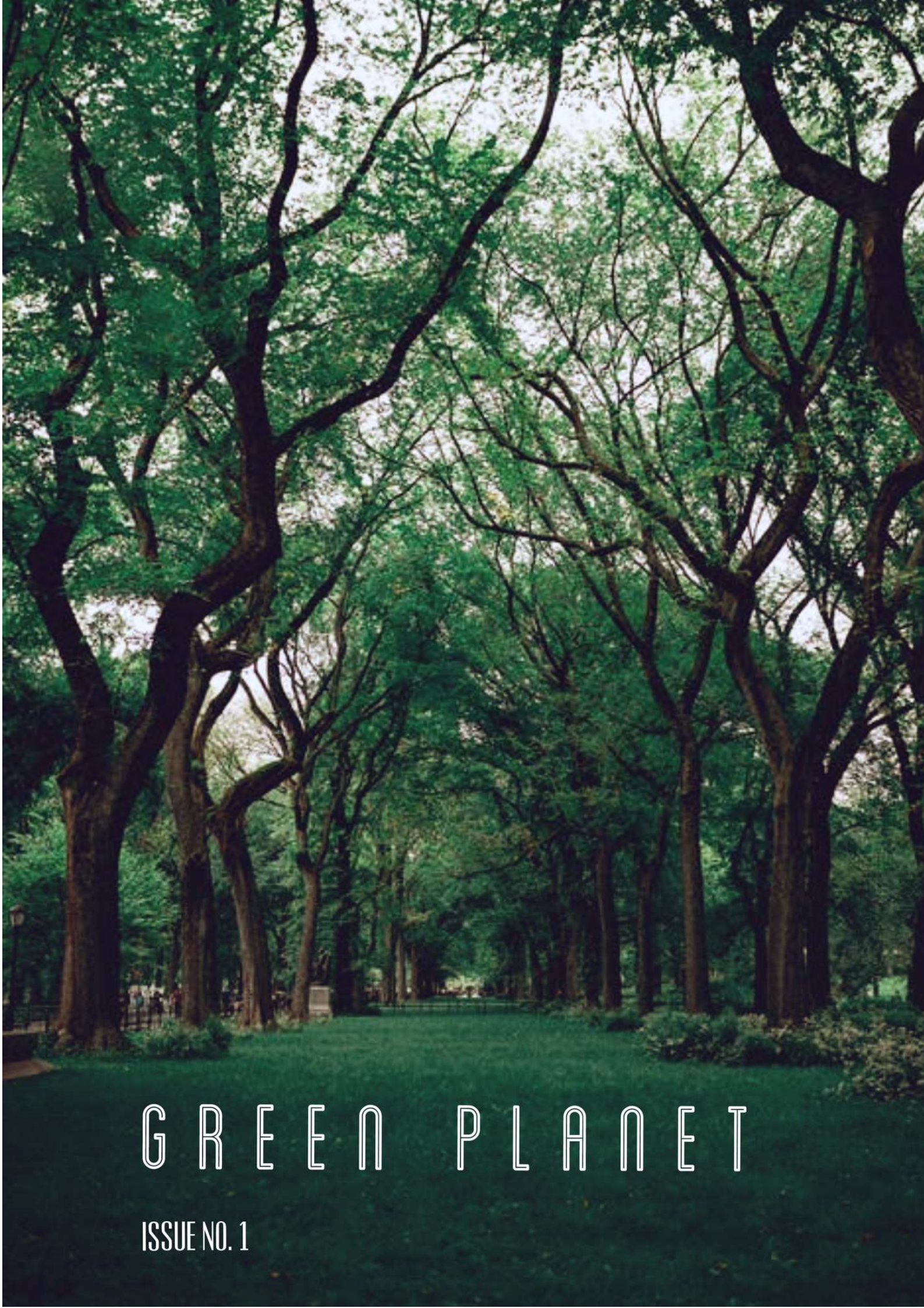


GREEN PLANET

ISSUE NO. 1

Human impact on climate change

Macroclimate

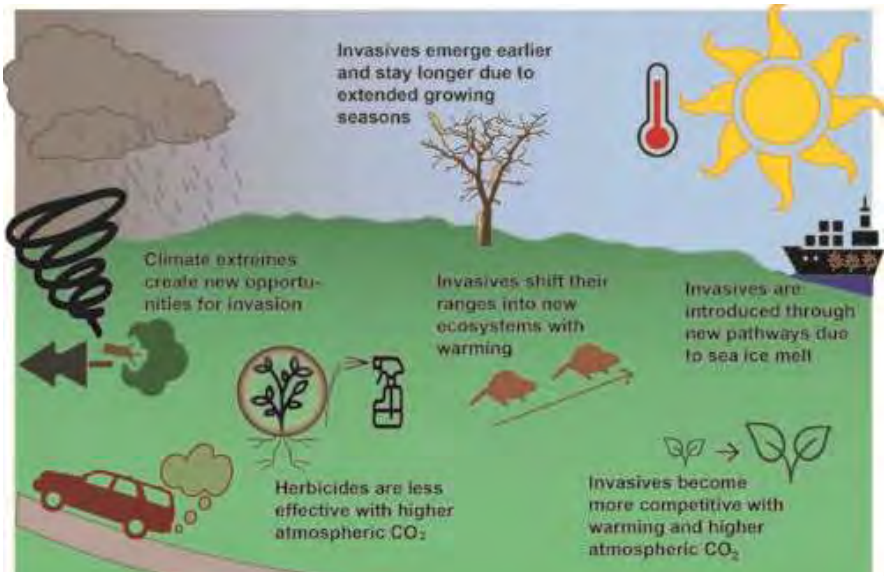
Scientists agree that global warming is caused mainly by human activity. Specifically, the evidence shows that certain heat-trapping gases, such as carbon dioxide, are warming the world—and that we release those gases when we burn fossil fuels like coal, oil, and gas.

Generally speaking, scientists working on climate change compare the climate patterns they observe with patterns developed using sophisticated models of Earth's systems (such as the atmosphere and ocean). By comparing the observed and modeled patterns, scientists can positively identify "human fingerprints" and attribute a proportion of observed warming to human activities.

These fingerprints are found in a diverse range of records from the atmosphere, the ocean, and Earth's surface. They include rising levels of carbon dioxide, unprecedented warming, and a distinct atomic signature left behind in the atmosphere when fossil fuels are burned.

Carbon dioxide (CO_2) is the heat-trapping gas in our atmosphere responsible for most of the warming measured over the past several decades. It's released during cement manufacturing and when coal, gas, and oil are burned—something humans started doing a great deal of during the Industrial Revolution through to today.

In fact, measurements from ancient ice cores show that CO_2 is now at its highest levels in over 800,000 years[1].



IAS and climate change interaction 1
(Bradley et al. 2020)

Microclimate

An alien species is an animal, plant or other organism that is introduced by humans, either intentionally or accidentally, into places outside its natural range. Some alien species – classed as 'invasive' – become established and negatively impact native biodiversity, as well as ecosystem services on which humans depend.

The increase and geographic redistribution of IAS will have diverse societal and environmental impacts. Biological invasions are a major threat to global food security and livelihoods, with developing countries being the most susceptible. These countries, which have high levels of subsistence and smallholder farming, often lack the capacity to prevent and manage biological invasions.

Many IAS have the ability to expand rapidly to higher latitudes and altitudes as the climate warms, out-pacing native species. Alien species that are regularly introduced by humans but have so far failed to establish may succeed in doing so thanks to climate change, creating new sets of invaders.

Some habitats, such as temperate forests and freshwater systems that currently have thermal barriers limiting the establishment of IAS will become more suitable for alien species as the climate changes.

The impacts from invasive alien species (IAS) can be compounded by climate change – the change in the Earth's climate due to rising greenhouse gas emissions[2].

In both cases what is obvious is that either directly, by burning fossil fuels, or indirectly by introducing an invasive alien species, correspondingly in a macroclimate or in a microclimate range we cause rapid climate changes.

We need to realize as humans that we are the center of attention of the whole world. Even if all the species should share the benefits of a healthy environment, we regard that every existing being relies on us. We ignore the laws of nature by standing on the top of the food chain while we are breaking slowly every ring of it. And this is done by depleting the population of a species or by introducing an invasive alien species.

We go on burning fossil fuels no matter if we know that in the long run we cause irreversible global warming. New solutions that will include green energy, bio fuels and electrical energy storage in batteries that will not harm the environment should be introduced to the market. The main purpose is to focus on a lifecycle assessment of one or multiple optimal solutions. That will secure sustainable development, which means that the minimum cost in combination with the most environmentally friendly solutions will be applied. There are many ideas that are being invented but very few of them manage to become true and to be applied. Since the main target is the cost reduction. Hopefully the society will come to a point that will realize that money is not the main issue but what matters is environmental conservation. The quote that must prevail is "We Do Not Inherit the Earth from Our Ancestors; We Borrow It from Our Children" **American Indian proverb.**

Vertical plantations



Since the industrial revolution, which affected various sectors of our everyday life and our practices, it became clear to everyone that there are ways to make our life easier. This totally new environment had a huge impact even on one of human kind's most ancient activities, the farming. The machines helped the land owners reduce their human resources and increase their profit. However our planet's new big deal is environmental situation, overpopulation and lack of land to be farmed. The answer appeared a few years ago and it is called vertical plantations. A simple vertical plantation's construction is now equal to hundreds of hectares of land. The huge waste of water gets reduced by more than 95% and the planted flowers or vegetables are publicly available in every season of the year. So what do you need to create a vertical plantation?

Firsts of all you need a building, a construction. Inside you need to place the farming sections and the supporting machinery. This plantation can be a conventional building or an underground one. The farming techniques can be hydroponics, aeroponics or something else. Why is it better that the conventional farming?

1) It can provide consumers with products in every season of the year.

2) It requires much less water.

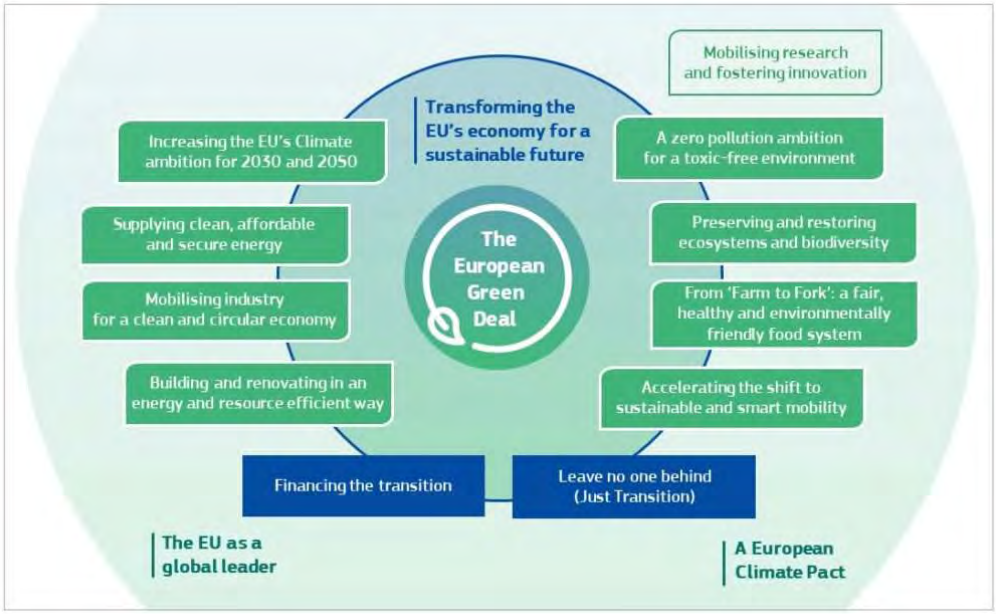
3) The plantation's products can easily reach the highest possible level of quality since the environment is always perfectly controlled. How can this idea affect employability ? The employability is not going to be affected instantly, at least not regarding to numbers. What changes is the specialization of the workers.

EU environmental strategy 2030

More than half of the world's gross domestic product (about €40 trillion) depends on a nature. Restoring nature will be the main element of the EU recovery plan from the coronavirus pandemic, providing immediate business and investment opportunities for restoring the EU economy.

The strategy If 2030 aims to help the EU address issues such as:

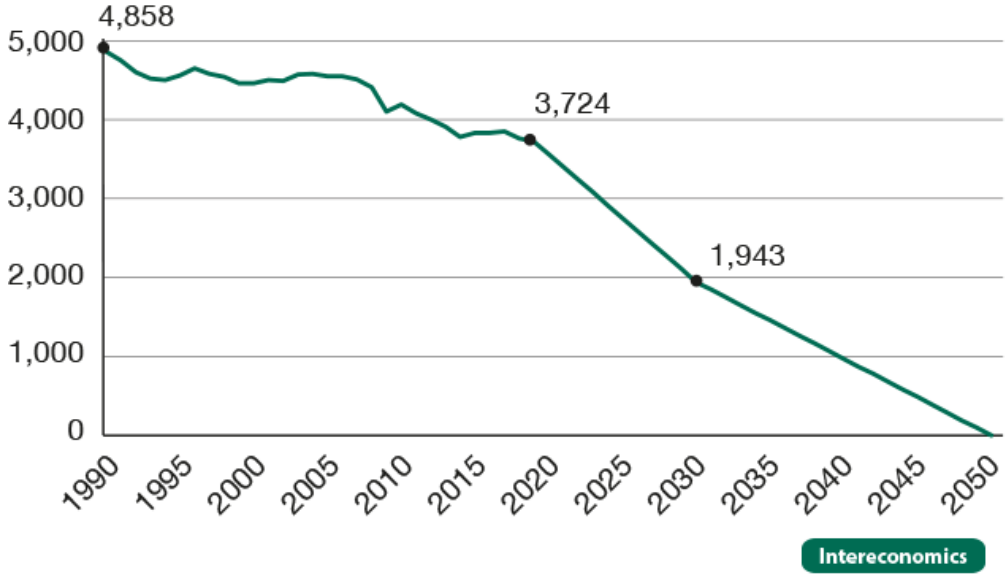
- further steps towards the 2050 target to reduce greenhouse gas emissions by 80-95% compared to 1990 level
- high energy prices and the vulnerability of the EU economy should prices, especially oil and gas, rise in the future
- The EU dependence on energy imports, often from politically unstable regions
- the need to replace and upgrade energy infrastructure and ensure a stable regulatory framework for potential investors
- agreement on reducing greenhouse gas emissions by 2030 purpose.



The policy strategy of 2030 proposes new goals and measures to make the EU economy and energy system more competitive, secure and sustainable. It sets targets for reducing greenhouse gas emissions and increasing the use of energy from renewable sources, and proposes a new management system and performance indicators. In particular, the following actions are proposed:

- a commitment to further reduce greenhouse gas emissions by setting a 2030 target
- to reduce this amount by 40% compared to 1990 level
- the target of increasing the share of energy from renewable sources to at least 27%, leaving Member States free to set national targets
- greater energy efficiency, possibly through an amendment to the Energy Efficiency Directive
- Reform of the EU Emissions Trading Scheme by creating a market stability reserve
- Key indicators: energy prices, diversification of energy sources, interconnections between Member States and technological development to measure progress towards a more competitive, secure and sustainable energy system
- a new reporting management system for Member States based on national plans coordinated and evaluated at EU level.

Climate-neutral EU27 by 2050 via a 60% greenhouse gas emission reduction by 2030



Green jobs

On the one hand, green jobs are an important part of employment growth associated with a more environmentally sustainable economy. On the other hand, they are crucial for to make the transfer technically feasible and economically feasible. No qualified and motivated workers in new sectors of green growth and in key occupations in the investment will not be made throughout the economy and the technology used will not bring the expected benefits for sustainable development.

The European Commission has identified two approaches to defining green jobs, which emerged from the political and research literature: a green industry approach in which working jobs are green according to the nature of the activity "and a transformational approach in which all jobs are more green". The definition of UNEP is in line with the approach of the organic industry and refers to specific activities and sectors that contribute to the improvement of the environment. They define ecological jobs such as work in agriculture, production, research and development, administration and services that make a significant contribution to maintaining or restoring the quality of the environment. Specifically, but not exclusively, this includes jobs that help protect ecosystems and biodiversity, reducing energy, materials and water consumption through high efficiency strategies, decarbonisethe economy and to minimize or completely prevent the creation of all forms waste and pollution.

An important element of this definition of green jobs is that the job is decent work that is productive, providing an adequate income and social protection, safe working conditions, job security, reasonable career prospects, is respect for workers' rights and give workers have a say in decisions that affect their lives. Green jobs are a promise that humanity will be able to respond effectively and fairly to the following two defining challenges of the 21st century. The first is to avert dangerous and potentially unmanageable climate change and the protection of the natural environment that supports life on Earth.

The second challenge is to ensure decent work and thus the prospect of prosperity and dignity for all. Decent work is defined as an opportunity for women and men to get decent and productive work in conditions of freedom, justice, security and human dignity.



Decent work sums up the aspirations of people in working life: opportunity and income, rights, voice and recognition, family stability and personal development, for justice and gender equality. Ultimately, these are different the dimensions of decent work promote peace in communities and society. Decent work is central an element of poverty reduction efforts and a means of achieving a fair, inclusive one and sustainable development. These challenges are closely interlinked and need to be addressed together. Green jobs are crucial to meeting both. To make economic growth and development compatible with climate stabilization and a sustainable environmental footprint, will require a drastic shift to clean development and green low-carbon economies around the world. Green jobs and decent work programs are mutually supportive and include several interdependent elements, such as labor rights, more and better jobs for women and men and social protection measures.

TIPS TO:

RECYCLE, UPCYCLE, REDUCE, REUSE

RECYCLE

Keep plastic bags out of the recycling. Plastic bags are the #1 cause of ruined recyclables. In most cases, if you use plastic bags to bag your recyclables together, all of your recyclables are treated like trash.

Rinse your recyclables - It's okay to leave a little bit of residue on your recyclables, but it is important to rinse as much food residue off as possible. Excess food residue can attract critters and make it more expensive to recycle because of the resources needed to clean recyclables and to remove pests.

UPCYCLE

Be imaginative when you see old pieces. Old ladders make great places to display plants, and old washing machine drums make great outdoor plant pots. Creative ideas can give a new purpose to something that would have otherwise been discarded.

Upholstering - You can easily transform a chair that is no longer to your taste by removing the old fabric cover and re-upholstering it with old curtains and sheets, or alternatively you can buy new fabrics to really make your chair look and feel like brand new. recyclables and to remove pests.

REDUCE

Use a reusable bottle/cup for beverages on-the-go. By taking your own water with you, you'll also reduce your chances of purchasing more expensive beverages.

Buy secondhand items and donate used goods.

Use reusable grocery bags.

REUSE

Try to repair damaged stuff before buying something new.

Reuse glass jars for kitchen storage or preserves and take away containers to store left overs.

Donate your old clothes, books and working electrical equipment to charity so somebody else can reuse them.

Old sheets and towels are great to use as cleaning rags.

Environmental pexeso game



Aids: cut-out squares clean on the one hand and with the concept of ecology or global problems on the other

Objectives of the game: to expand knowledge of ecology and ecological problems, to support logical thinking, to classify knowledge about global problems, to work with terms from the field of ecology, to perceive human impact on the environment, to strengthen knowledge about relationships between organisms and environment

Game preparation:

The leader prepares a memory game with pairs of concepts that are related or directly influenced. The terms are from the field of ecology or global issues.

Auxiliary materials: The leader can use the auxiliary material of the developed pairs of terms.

Rules, game progress:

Participants are divided into pairs. Each pair will receive an ecological memory game. Between the players from the pair, the classic memory game takes place. With the difference that the goal is not to find the same concepts, but concepts that are related (for example, acid rain + sulfur dioxide).

Closing the game:

The winner of the pair is the one who gets more correct pairs.

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