



Circular Economy Lab & Observatory

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SUSTAINABILITY

Importance of redesign of products
and processes for sustainability

Lithuania-6.2



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CIRCULAR ECONOMY

This article will discuss the main aspects of circular economy (also referred to as circularity and CE), explain what it is, and how we can help build this investment in our immediate surroundings and contribute to a better future. CE strives to address global concerns such as climate change, biodiversity loss, waste, and pollution by stressing the design-based application of the model's three guiding principles.

The Save Our Seas 2.0 Act defines a systemsfocused economy as one that includes industrial processes and economic activities that are restorative or regenerative by design, allows resources used in such processes and activities to retain their best value for as long as possible, and strives for waste elimination through the superior design of materials, products, and systems (including business models).

It marks a departure from previous models in which resources are collected, then converted into things, and discarded.

Resources are consumed less often in a circular economy. Materials, commodities, and services are developed to utilize fewer resources, and “waste” is collected and reused to generate new things and materials.

Design has been widely implemented by architect William McDonough, who was introduced as the “father of the circular economy”¹.



Circular economy

The aim of the circular economy is therefore to make the most of the material resources available to us by applying three basic principles: reduce, reuse, and recycle. In this way, the life cycle of products is extended, waste is used, and a more efficient and sustainable production model is established over time. The circular economy gives us the tools to tackle climate change and biodiversity loss together while addressing important social needs.



It gives us the power to grow prosperity, jobs, and resilience while cutting greenhouse gas emissions, waste, and pollution. “If we want a circular economy; a permaculture economy – we need to design decay into products and processes as opposed to disposability.

Manufacturers should design materials and products to biodegrade back into an economic ecosystem programmatically. This will allow for more efficient upcycling and the cultivation of various business opportunities in the process.” — Hendrith Vanlon Smith Jr, CEO of Mayflower-Plymouth ²⁻⁷. The words of this person are dedicated to the younger generation of people who have ideas that would help them come up with alternatives, or be the ones who implement them, and try to do it as ecologically as possible. For this reason, there are now visible projects in the European Union that broaden people’s horizons about the current global situation in the world.

DEFORESTATION

As the world seeks to slow the pace of climate change, preserve wildlife, and support billions of people, trees inevitably hold a major part of the answer.

Yet the mass destruction gains of trees—deforestation—continues, sacrificing the long-term benefits of standing trees for the short-term. About 17 percent of the Amazonian rainforest has been destroyed over the past 50 years.



Deforestation

We need trees for a variety of reasons, not least of which is that they absorb not only the carbon dioxide that we exhale but also the heat-trapping greenhouse gases that human activities emit.⁹

Scientists claim that the contribution of forests to mitigating climate change is multifaceted. During photosynthesis, carbon dioxide (CO₂) in the atmosphere is “tied up” in organic compounds in the tree biomass, and oxygen (O₂) is released back into the atmosphere.



Trees are Earth lungs

Trees maintain the natural balance of oxygen and carbon dioxide in the atmosphere. It is not for nothing that forests are called the lungs of the planet. The annual absorption of carbon dioxide is directly proportional to the increase in wood volume.

At an early age, trees must occupy and utilize the entire growth space, create their own “construction machine” – the root system, the crown, the stem that supports it, and therefore accumulate less carbon dioxide than in a middle-aged tree, when the entire ecosystem and the tree’s “construction machine” are already functioning harmoniously.

Carbon dioxide storage increases as the sapling grows, peaking between 20 and 60 years of age, depending on the tree species. At a later age, trees release more carbon dioxide through the process of respiration than they absorb through photosynthesis.



Forests also perform other important ecosystem functions – they protect the soil from erosion, are part of the water cycle, regulate the local climate, create attractive habitats for other species and protect biodiversity. The world’s massive deforestation is contributing to climate change.

Deforestation significantly reduces the planet’s ability to absorb carbon dioxide from the atmosphere. When land use changes, for example, forestland is used for agriculture, wetlands are drained, and wood is burned or decayed, a lot of carbon dioxide absorbed in the soil also enters the atmosphere.

Every year, 15 percent of the greenhouse gases enter the atmosphere due to deforestation and land use changes and producing more carbon dioxide. To increase the amount of carbon dioxide absorption, it is especially important to preserve and increase the existing forest cover on a global scale.⁸

Most of the fallen trees used as educational tools are textbooks, notepads, notebooks, and other materials made of paper, which are rarely recycled and are usually used only once. Even if the paper is recycled it is not going to be as smooth and solid as it was in the beginning. The disadvantages of paper notebooks.

They are easy to destroy by tearing a page or erasing too much, water damage. People have been making paper in one form or another for at least 2000 years, and the art of paper-making has been through several technological shifts, most notably the switch from cotton and linen fibres as a raw material to wood pulp, a development that took place in the mid-nineteenth century. So now in the twenty-first-century people trying to find some new alternatives and trying other materials instead of wood.

Due to the process and the reason for the destruction of trees, for some time now individuals have set up their own businesses and are selling a wonderful alternative that has emerged recently: paper made from stone, stone notebooks. One company that took an alternative and prepared a product would be “Karts.”



They make notebooks that are made from 100% sustainably recycled stone, and without any bleaches or acids, Karst Stone Paper™ is rebuilt from first principles to be better than wood-pulp paper: more durable, more sustainable, and infinitely smoother to write, scribble, doodle or draw on.



Stone note-books

Karts Company once said: “Our materials are responsibly sourced, employees are treated and paid fairly, and leaders work for a greater cause than a profit margin.

Through our commitment to inspiring people and helping the planet, we take note of what matters most.

Because what matters today is what shapes tomorrow.”³

Another company would be “Parax Stone Paper”, a British manufacturer of paper. The benefits of this paper are like “Karts” companies, but the process takes half as energy- and emissions-intensive as traditional papermaking. The last sample would be a company named “Roca”. At the company founders with employees try to find a way to get stone paper from as few materials as possible.

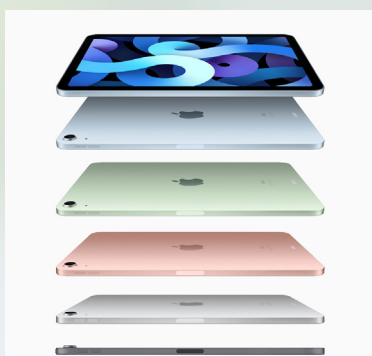


Therefore, they made it made from crushed stone rather than wood pulp. Using stone paper, they are making a huge step toward our planet's protection. It is produced out of calcium carbonate 80% (limestone).

That means it is tree-free, and no water or bleach is used during production. Another alternative to paper notebooks and even textbooks is a digital notebook. A digital notebook is a new and exciting gadget that comes with a display (similar to a writing tablet) but is specifically designed for handwritten notes.

These devices (unlike drawing tablets) make writing and taking notes a joy without having to carry around stuff like a calendar, an agenda, and a separate binder, while a laptop or a Mac with a keyboard is great for study sessions, it is not optimal for planning, designing, or even taking notes due to their sizes.

A digital notepad has an ergonomic design, a long-lasting battery life, and options like cloud services for Evernote and OneNote, which support e-learning on another level. They are great for doodling down thoughts and are perfect for virtual meetings, annotating what you learn, organizing pdfs, creating lists, and more!



While pens, pencils, and quills still work magic on a piece of paper, writing utensils for your bullet journal can be a pain to carry around.

Digital tablets are also produced by one of the largest electronics manufacturers, “Apple” and other companies. Apple has designed its own digital tablet that is not only for studying, but also for anything from organizing your life, professional sketching, coloring, creating graphics, and even relaxing with entertainment.⁵

Notepads that can be used in school instead of notebooks

In conclusion, deforestation makes life harder for all living organisms, not only humans, the only one who has benefited from all this disaster is nature: plants, trees, mushrooms, and other living organisms that do not need oxygen for survival. Everything that we are doing now leads us to death and extinction.



Deforestation equals to less oxygen, less oxygen means fewer lives, fewer lives mean no humans, and no humans mean free Earth. All of a means that we are responsible for other lives not only ours. If we do not stop cutting down trees, it will not be long before there will be nothing left to cut down and life on earth will disappear. On the other hand, Earth would be clean from us, the creatures that are destroying her.

Even now, we can see the consequences due to the unreduced areas of forests being cut down, i.e., endangered species of plants and trees. The organisms that lived on those trees were also extinct because they cannot adapt to such a rapidly changing environment. Sadly, not many people are interested about this problem or think that one person cannot change anything.

Nevertheless, one human sets an example for others. This person is Jimmy Donaldson, also known as “MrBeast”. He creates content for young people on the YouTube platform, and with a large audience, the person uses it to do good things, to expand and educate the younger generation about today’s global issues. J. Donaldson made a video where he planned to plant 20,000,000 trees for every raised \$1.



Guy plants 20 millions trees all over the world

Therefore, he shows that every person can do something, with good cooperative people that are reaching the same goal as he is. The knowledge he spreads is also very important because he not only planted trees but taught the audience that there is a certain place and time for tree planting.

Because not everyone has such knowledge, for example, the president of Turkey, Recep Tayyip Erdoğan, said when he kicked off the project in Ankara. “By planting millions of young trees, the nation is working to foster a new, lush green Turkey,”⁴ then on November 11, 2019, volunteers planted 11 million trees in Turkey as part of a government-backed initiative called Breath for the Future.

They reached the Guinness World Record. But less than three months later, up to 90 percent of the saplings were dead, the Guardian reported. The trees were planted at the wrong time and there was not enough rainfall to support the saplings.⁶



So, Humanity will not be lost as long as there are people who try to save their home, the Earth. All we need in this world now is to be on one side to make the Earth healthy again. Humanity should be the one to make tomorrow a better place.

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GROUP

Judita Davydovaitė, Emilija Nikitina,
Matas Dikšaitis.