Aesthetics and Ecology in Technological Education

2021-1-IE02-KA220-HED-000031130

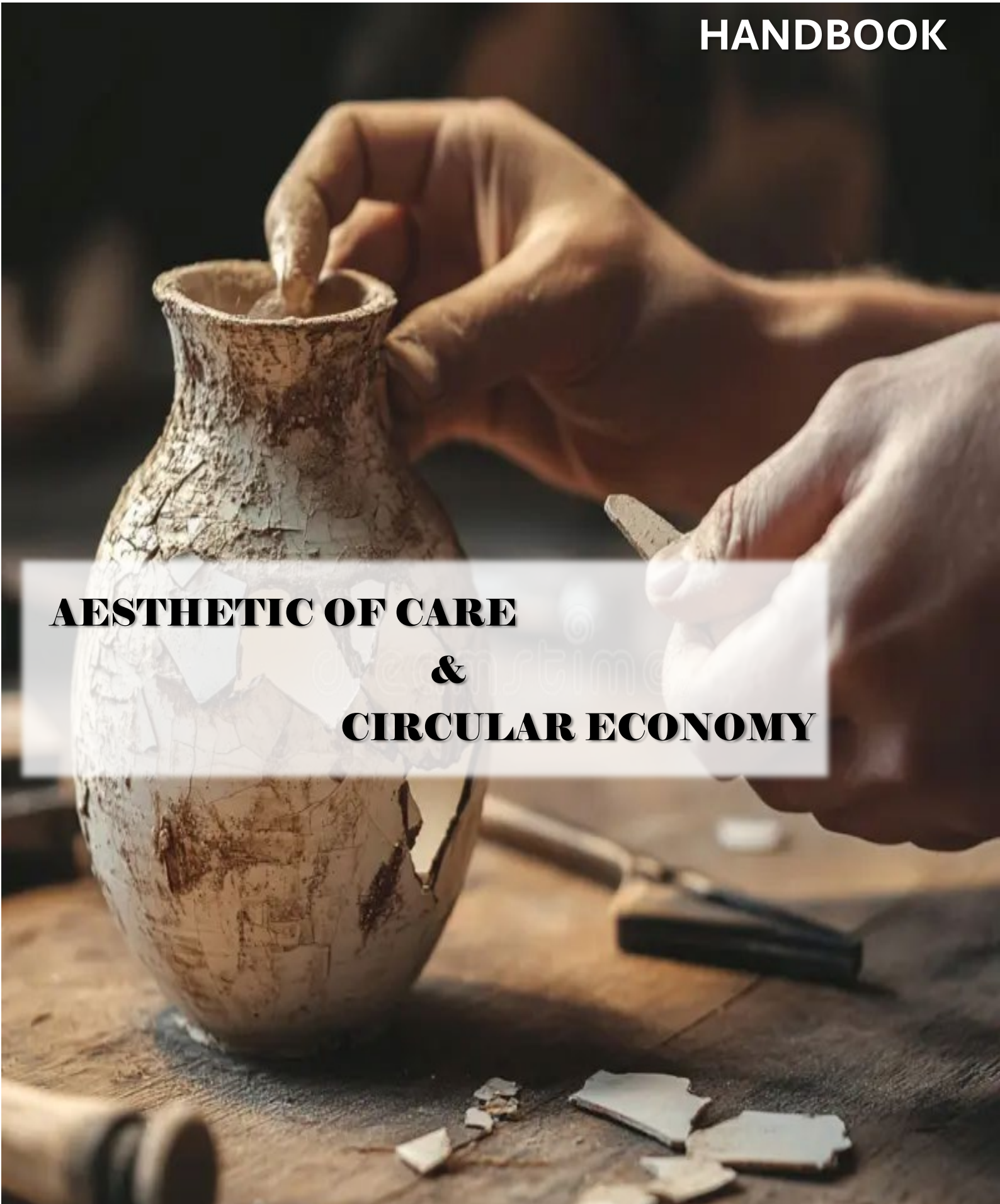

Table of Contents

Table of Figures

INTRODUCTION

In the 21st century, it is crucial to use new, transdisciplinary approaches in education that link technological development to solving climate and social problems. Technology affects various aspects of human life, from consumer electronics to facial recognition or autonomous vehicles, so linking technical innovations to aesthetic and ethical concepts is essential. An aesthetics of care links specific ways of caring: for each other, for human societies, and for the environment to the way we design, build, interact, use, or aestheticize technology. The study of aesthetics and ethics in technical disciplines is a necessary condition for building skills and competencies in students that will help redefine sustainable technological development so that future engineers have competencies they can use to create technologies that address societal and environmental problems.

Addressing the environmental and social problems of our daily lives requires the creation of a radically new, transdisciplinary approach to the teaching of engineering. The aim of the project ***Aesthetics and Ecology in Technological Education*** **(**AesThiCo**)** is to develop such an interdisciplinary framework and toolkit for educators to use in different pedagogical settings.

In this Handbook, we have tried to provide the core concept of the Aesthetics of Care and how it relates to the Circular Economy, Corporate Social Responsibility, and the 17 UN Sustainable Development Goals. In support of their theoretical coherence, we have shown various examples of the successful use of the principles of the Aesthetics of Care in everyday life.

The handbook can be used as a teaching tool among engineering students to introduce them to the "Aesthetics of Care" and its actual application in the creation of applications, inventions, designs, and products.

Aesthetic of Care

Aesthetic of Care, as defined by the Aesthico project group, is constructed as a process that aims at encouraging ethically responsible action. According to this definition, “Aesthetics of Care with Ecology in Technological Education is a process. Its aim is ethically responsible action. The process is informed/activated by sensory experience, and shaped by knowledges and aesthetic consciousness. This entails a caring for ourselves, others and the planet.”(reference)

This definition is based on main aspects such as sensory experience and is shaped by knowledge and aesthetic awareness. That could integrate ecological values into areas that are often dominated by technical aspects. This approach's main focus is made for reconsidering teaching methods, with an emphasis on the integration of aesthetics and ecological awareness into technological processes, the aim of this text is to structure the concept of AoC into different points which includes a study of care, aesthetic and ecology.

We would start with the term ‘care’, we could open a window of critical reflection, and its meaning could vary in different contexts. The term ‘care’ could raise important questions about the way in which it is understood and applied in the context of the Aesthetics of Care. Can we create a true sense of care that initiates creativity and ecological responsibility without falling into the trap of general limitations?

On the other hand, aesthetics are often associated with beauty and appreciation of the senses, aesthetics also include deeper aspects of the way we perceive, think, and act. In what way could we ensure that aesthetical aspects in technology education go beyond just looking rationally and encouraging a deeper connection with the environment? This question invites us to rethink how we can combine aesthetics with practices that are both ethical and environmentally responsible.

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Understanding the Term "Care"

The term "care" can cover a range of points from the practical to the conceptual, and mainly influences the way we interact with and observe(take care) the world around us. Prof. Breitsameter's analysis of the term reveals its broad and somewhat ambiguous nature, particularly in the term's translation and application across different languages and contexts. In English, 'care' might connote attention, worry, guardianship, safe-keeping, medical care, fostering, and caution. These terms are illustrating the way versatile the term 'care' can be. In a wider sense, caring would include both practical and mindful roles. This implies activities that conceive communities and the environment, through the practice of caring in the use of technologies and design.

The dimension of care is closely associated with roles that cover the range of attention, worry, guardianship, safe-keeping, medical care, fostering and caution. Here care is manifested as a real and essential function that supports the ongoing stability and wellbeing of its subjects. The term can also be perceived through a more abstract dimension which involves attention, awareness, conceiving, maintaining and repairing. This draws attention to being aware of the needs of the environment. This aspect of caring is closely related to concepts of mindfulness, which focus on attentive and thoughtful interaction with the environment and the people in it.

It is highlighted by Professor Breitsameter, that any proper understanding of the aspect of care in discussions of aesthetics needs to move beyond the mere functionalities of care to appreciation and valuing perspective. Care may develop some degree of authoritarian characteristics, which is likely to lead toward paternalism, especially with regard to aesthetics. These relations about care do suggest that there is more to care than to just seek for ways of addressing existing problems but rather connect with that which is important in a much deeper sense. The richness of the linguistic concept allows engaging it in several aspects of Aesthetics of Care (AoC). However, care has a requirement of being framed forth such that its more restrictive, controlling, and narrowed connotation is not captured. This is important since an overly conception of 'care' which is too authoritarian or paternalistic may also go against the very foundations of creativity, openness that the AoC seeks to promote.

In the AoC framework, this would mean that care is conceptualized as a way of guiding attention and perception toward phenomena for supporting the growth and integration into their environment. Care therefore sets conditions both aesthetically and ecologically, which ensure that care is a major element that is part of the aesthetic experience. The outcome of this approach is to provide an environment in which aesthetic and ecological values will be combined in reinforcing the overall impact of technological efforts.

Understanding the Term "Aesthetic"

The term 'aesthetic' can be looked at in three main directions. First, there is the understanding of the term 'aesthetic' in a traditional way as beauty and sensory experience. The importance is based on the appreciation of visual, auditory, and tactile experiences. Aesthetics here should relate to creating and experiencing the beauty of art, nature, and designed environments. But there could also be an understanding of aesthetics in that aesthetics reflect care regarding sensory qualities and the theory of the senses. That may consider the perception and its process in specifying individuals to engage with the world through their senses. This aspect is relevant with the interpretation and significance of sensory elements, which is giving a way to a more reflective approach toward the aesthetic experience.

Third is the aspect that highlights the ways in which aesthetic experiences can drive action and creativity. It suggests that the qualities of the environment can trigger creativity in response and action. Thus, aesthetics is not only about passive appreciation, but also about active engagement engagement, where qualities of a so-called object are perceived to influence how we act, create and perceive.

Putting all three dimensions together, we could say that ‘Aesthetic of care’ goes beyond the narrow definition of aesthetics as the appreciation of beauty toward a concept that covers the sensory, reflective, and creative aspects of human experience conveyed by an ethical practice of care.

One of the major aims of AoC is building aesthetic competencies in education, especially in fields like technology and engineering. The abilities mentioned are needed to bring about a world that focuses on ecological values and sustainability. To do this, for sure, the aesthetic dimensions of ecology need to be elaborated rather than taking ecology only as an ethical framework.

Aesthetic of care in technological Education

We have to keep in mind that integrating ‘aesthetics of care' into technology would always need reflection, re-evaluation, and adjustment with the evolution of the world and, importantly, with the evolution of our understanding of the term 'care' itself. The making of aesthetic knowledge here can never be achieved through cognitive understanding only, but it does require experiences of an environment through different approaches. In deeper engagement with aesthetics, technological education allows not only to create technologies and systems that are functional and responsive, but to be conceived of the ‘care’. This approach now represents a link between aesthetics and technology and positions the ‘aesthetics of care’ as a crucial intersection which enables engineers and technology specialists, through this direction, to contribute toward a sustainable future by blending aesthetic and ecological thinking.

By integrating this framework, the engagement with the aesthetic dimensions of ecology also allows students to develop technologies and systems that not only function but are sensitive to aesthetic and ecological concerns as well. It will not suffice that technology will be functional or even pleasing to the eye; it needs to be designed having not only a deep consideration of the well-being of ourselves, others, and the planet. But it should require that ‘care’ includes actively participating and being engaged in both the creation and reception of technology. However, it is important to understand that to the extent that ‘care’ is understood in moral terms, its broader relevance as a general relational structure risks being overlooked. Without a precise idea of what an 'aesthetics of care' means, there is a risk that this concept may be seen to obscure values in art and design. It is therefore important to maintain a clear meaning of care in support of aesthetic experience, and not to dilute it, so that it fits into the meaningful framework of both technological and artistic development.

We can discuss here that the aim of 'aesthetics of care' is something that brings a relational approach into technological education. This will encourage students to seek beyond the common focus on simple functionality or visual appeal and to advocate for a deeper integration of ‘care’ in design and using technology. The approach presented here counters the traditional division between the aesthetic and the technical or functional by cultivating a culture in which people are perceived, reflected upon, understood, and actively involved. It proposes instead that ‘aesthetics of care’ will be essential in order to construct technologies that are not only sustainable but also ecologically and ethically aware.

Conclusion

- Care is a term that has a different background from a practical to a conceptual level, and informs a great deal of our being-in-the-world.
- Aesthetics of care would have to extend the meaning of care beyond its moral meaning to a more general relational structure. If a global view of the concept of care is not extracted, then the concept of care in art, design and technology becomes weak and disconnected from the aesthetic experience itself.
- The term "aesthetic" can be usefully approached from three dimensions: that of beauty and sensory pleasure, perception orientation, and action orientation.
- The dimensions take together the conception of aesthetics beyond an appreciation of beauty. In The Aesthetics of Care, these dimensions are integral to forging an approach in which ethical practice is integrated with sensory and reflective engagement.

Erasmus+

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UNATED NATIONS SUSTAINABLE DEVELOPMENT GOALS AND CIRCULAR ECONOMY

In 2015, the United Nations adopted a Sustainable Development Agenda, titled "Transforming our world: the 2030 Agenda for Sustainable Development". The program consists of five parts and it lists and formulates 17 Sustainable Development Goals (SDGs) (fig.1), as each of them has targets, total of which is 169, all of them monitored through 232 indicators. The Agenda aims to promote socially, economically, and environmentally sustainable development globally by 2030 as to them are added issues, banded with environmental protection, maintaining sustainable economic development and consumption, the establishment and functioning of democratic institutions, elements in the preserving of human rights, gender equality and others. The goals are evaluated annually (SDG Progress reports) and there is a larger report called the Global Sustainable Development Report (GSDR) produced every 4 years (GSDR).

The document was approved by all 193 Member States in the UN.

Figure 1. The 17 UN Sustainable Development Goals

GOAL 1: End poverty in all its forms everywhere

SDG 1 aims to end poverty in all its forms everywhere. Its objectives include ensuring that the entire population and especially the poorest and most vulnerable have equal rights to economic resources, access to basic services, property and land control, natural resources and new technologies.

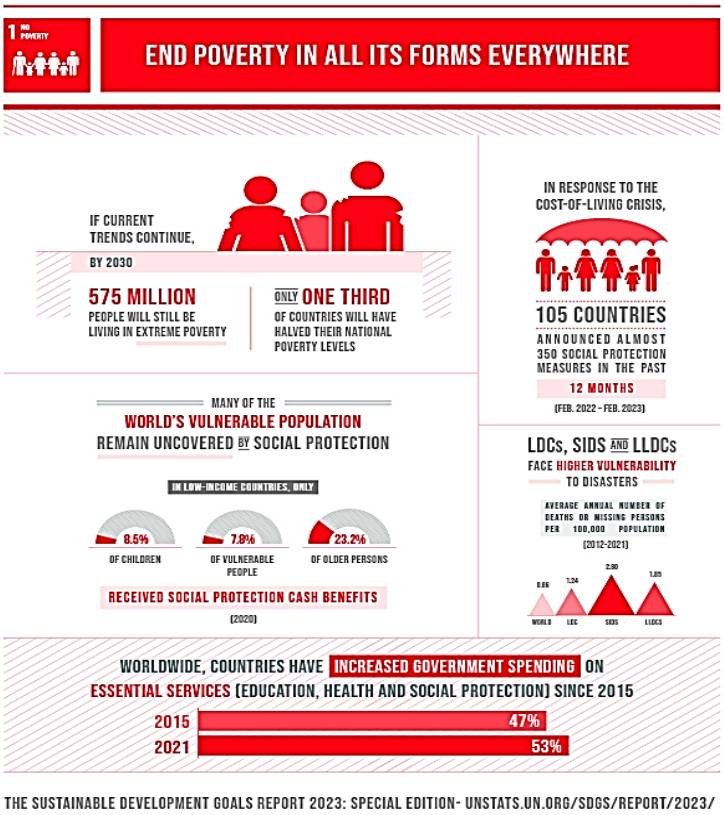


Figure 2. SDG 1 infographic

There are currently over 700 million people or 10 % of the world's population living in extreme poverty (i.e. on less than US$1.90 per day), which means they barely have enough to cover their most basic day-to-day needs. In recent years, 165 million people have fallen into poverty due to rising inflation resulting from

the COVID-19 pandemic, with 75 million falling into extreme poverty. This is the first time poverty has increased in the last 3 decades.

In Europe, there is also the energy crisis of 2022 due to the war in Ukraine and the corresponding increase in gas prices.

To make matters worse, extreme poverty is a gender issue: for every 100 men aged 25 to 34 who live in extreme poverty worldwide, there are 122 women within that age group in the same situation. Furthermore, there are two regions housing the greatest number of people who live below the poverty threshold: Southern Asia and Sub-Saharan Africa. (https://www.iberdrola.com/sustainability/committed-sustainable-development-goals/sdg-1-no-poverty)

There is also a staggering difference in the coverage provided in terms of financial and social assistance for vulnerable segments of the population from one region to another. Around 61 % of these segments (children, adults at working age and senior citizens not covered by contribution plans) receive financial support in Europe and North America. By contrast, monetary aid is only offered to 4 % in Central and Southern Asia.By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day.

Targets of Goal 1:

- By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
- Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable
- By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
- By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
- Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions;
- Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions;

GOAL 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 2 is about creating a world free of hunger by 2030.The global issue of hunger and food insecurity has shown an alarming increase since 2015, a trend exacerbated by a combination of factors including the pandemic, conflict, climate change, and deepening inequalities.

Figure 3. SDG 1 infographic

By 2022, approximately 735 million people – or 9.2% of the world's population – found themselves in a state of chronic hunger. In addition, an estimated 2.4 billion people faced moderate to severe food insecurity in 2022.

2 billion people in the world do not have regular access to safe, nutritious and sufficient food. In 2022, 148 million children had stunted growth and 45 million children under the age of 5 were affected by wasting.

Extreme hunger and malnutrition remains a barrier to sustainable development and creates a trap from which people cannot easily escape. Hunger and malnutrition mean less productive individuals, who are more prone to disease and thus often unable to earn more and improve their livelihoods.

Targets of Goal 2:

- By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
- Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

- Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

GOAL 3: Ensure healthy lives and promote well-being for all at all ages

SDG 3 aspires to ensure health and well-being for all, including a bold commitment to end the epidemics of AIDS, tuberculosis, malaria and other communicable diseases by 2030. It also aims to achieve universal health coverage, and provide access to safe and effective medicines and vaccines for all.

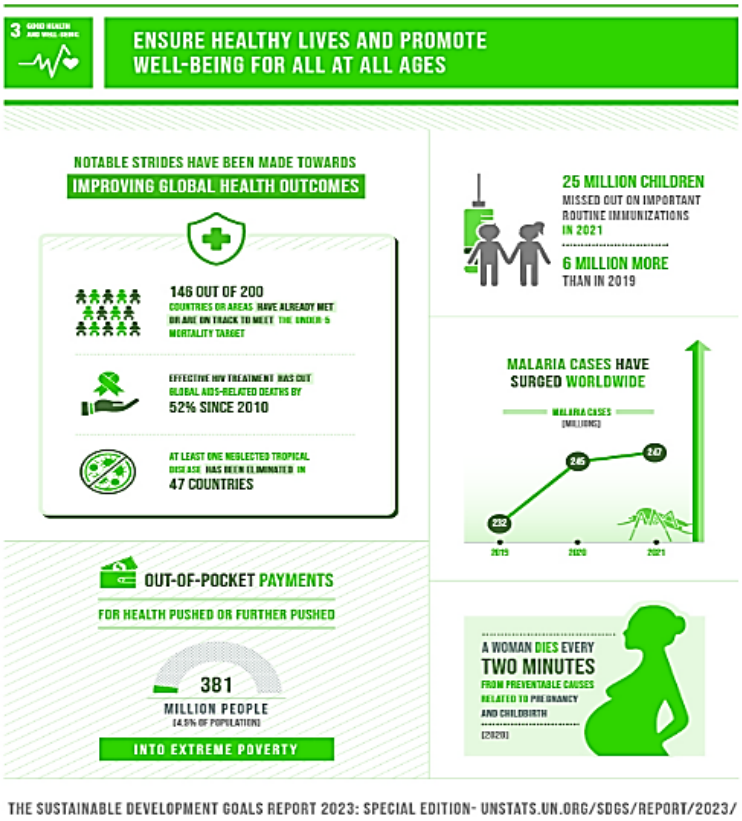


Figure 4. SDG 3 infographic

https://sdgs.un.org/goals/goal3

Targets:

- By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
- By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol
- By 2020, halve the number of global deaths and injuries from road traffic accidents
- By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes
- Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all
- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate
- Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all
- Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

GOAL 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 4 aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. This goal supports the reduction of disparities and inequities in education, both in terms of access and quality.

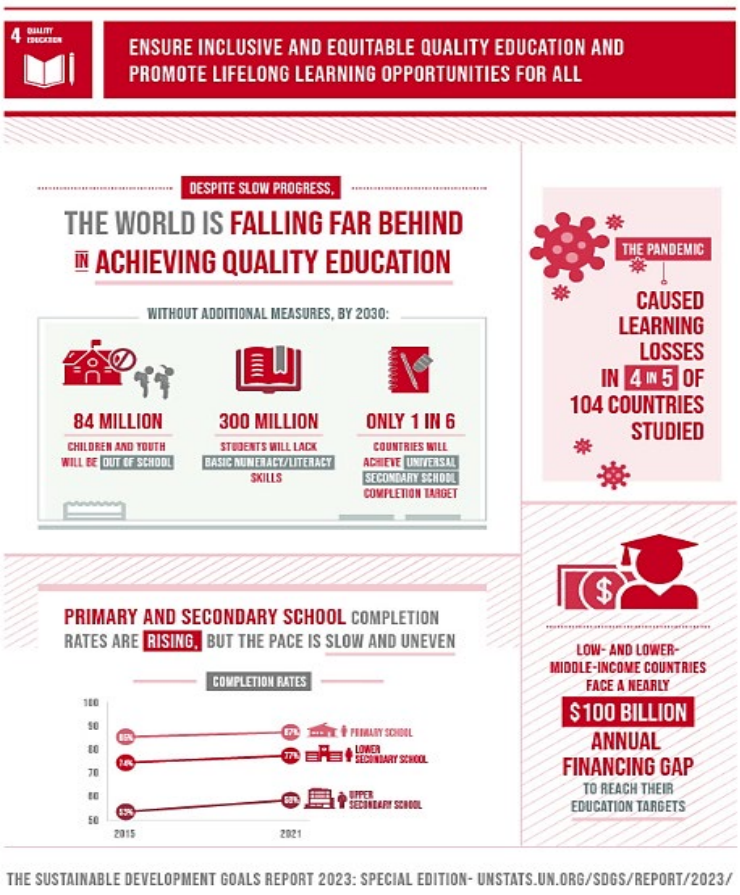


Figure 5. SDG 4 infographic

Targets:

- By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes
- By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
- By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
- By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
- Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
- By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries
- By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

GOAL 5: Achieve gender equality and empower all women and girls

Goal 5: Achieve gender equality and empower all women and girls. Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. There has been progress over the last decades, but the world is not on track to achieve gender equality by 2030**.**

Figure 6. SDG 5 infographic

Targets:

- End all forms of discrimination against all women and girls everywhere
- Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
- Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
- Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
- Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
- Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women
- Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all

GOAL 6: Ensure availability and sustainable management of water and sanitation for all

Goal 6: Ensure access to water and sanitation for all. Access to safe water, sanitation and hygiene is the most basic human need for health and well-being. Billions of people will lack access to these basic services in 2030 unless progress quadruples.

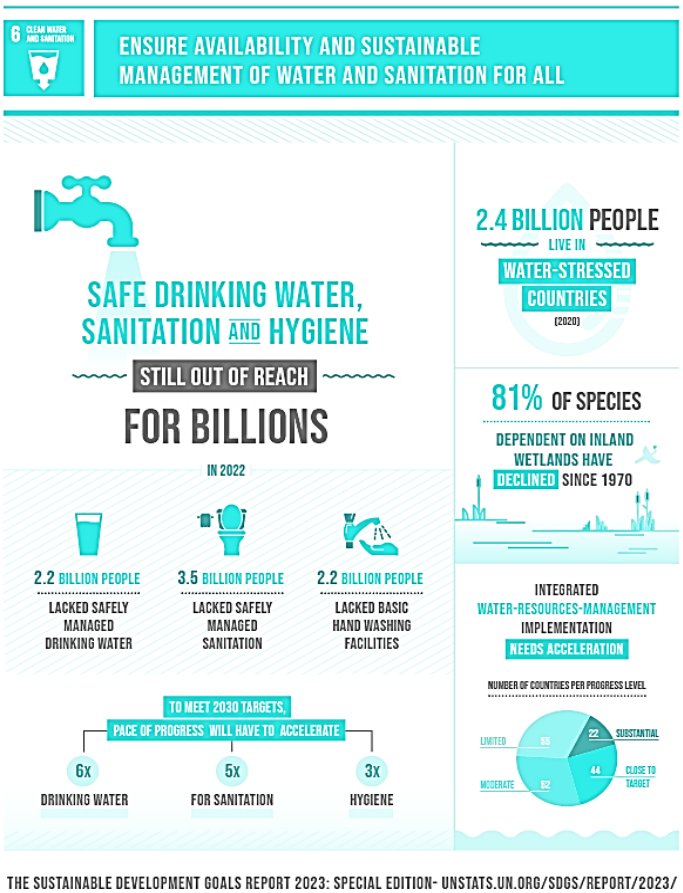


Figure 7. SDG 6 infographic

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 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
- By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
- By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- Support and strengthen the participation of local communities in improving water and sanitation management

GOAL 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Sustainable Development Goal 7 calls for “affordable, reliable, sustainable and modern energy for all” by 2030. It's three core targets are the foundation for our work: Ensure universal access to affordable, reliable and modern energy services.

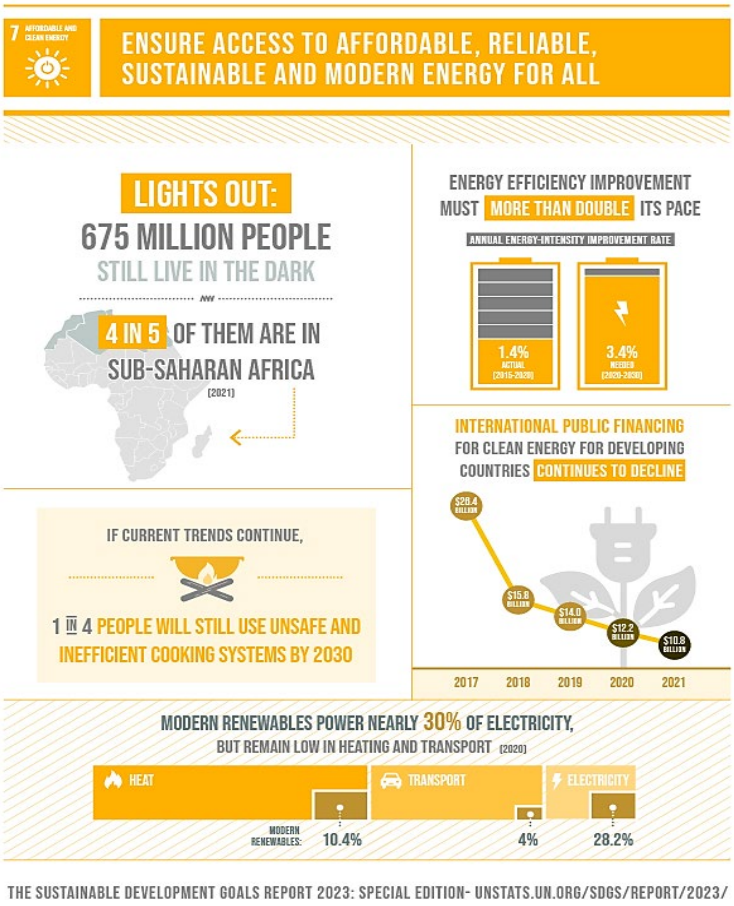
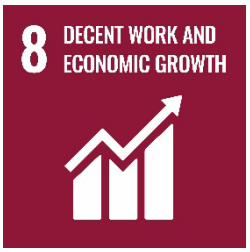


Figure 8. SDG 7 infographic

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
- By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support



GOAL 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SDG 8 recognizes the importance of sustained economic growth and high levels of economic productivity for the creation of well-paid quality jobs and calls for opportunities for full employment and decent work for all.

Figure 9. SDG 8 infographic

Targets:

- Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
- Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
- Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
- Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead
- By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
- By 2020, substantially reduce the proportion of youth not in employment, education or training
- Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
- Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment
- By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
- Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all
- Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries
- By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization

GOAL 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 9 aims to build resilient infrastructure, promote sustainable industrialization and foster innovation.

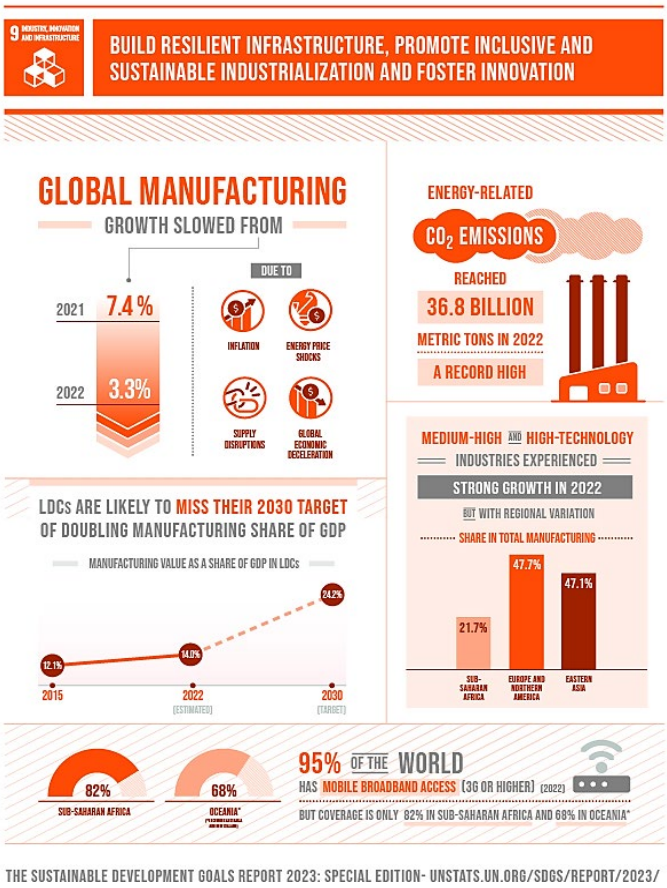


Figure 10. SDG 9 infographic

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2021-1-IE02-KA220-HED-000031130

Targets:

- Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
- Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
- Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
- By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
- Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
- Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
- Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
- Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

GOAL 10: Reduce inequality within and among countries

Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate ones.

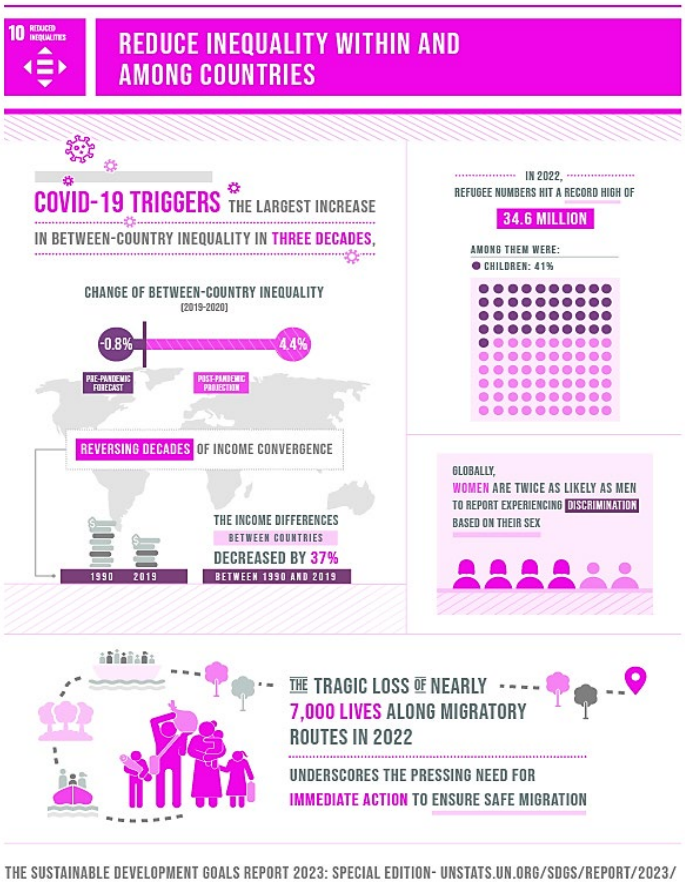

Figure 11. SDG 10 infographic

Targets:

- By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average
- By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status
- Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard
- Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality
- Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations
- Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions
- Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies
- Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements
- Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes
- By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent

GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 11 is about making cities and human settlements inclusive, safe, resilient and sustainable. Cities represent the future of global living. The world's population reached 8 billion on 2022 over half living in urban areas.

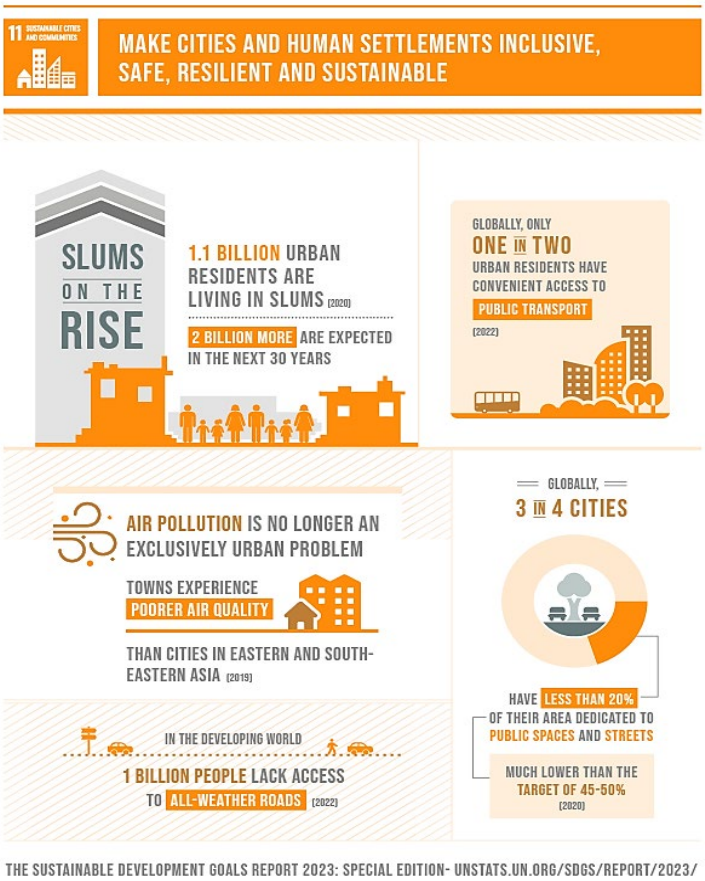

Figure 12. SDG 11 infographic

Targets:

- By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums

- By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
- By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- Strengthen efforts to protect and safeguard the world's cultural and natural heritage
- By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
- By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
- By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels
- Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

GOAL 12: Ensure sustainable consumption and production patterns

Goal 12 is about ensuring sustainable consumption and production patterns, which is key to sustain the livelihoods of current and future generations. Our planet is running out of resources, but populations are continuing to grow.

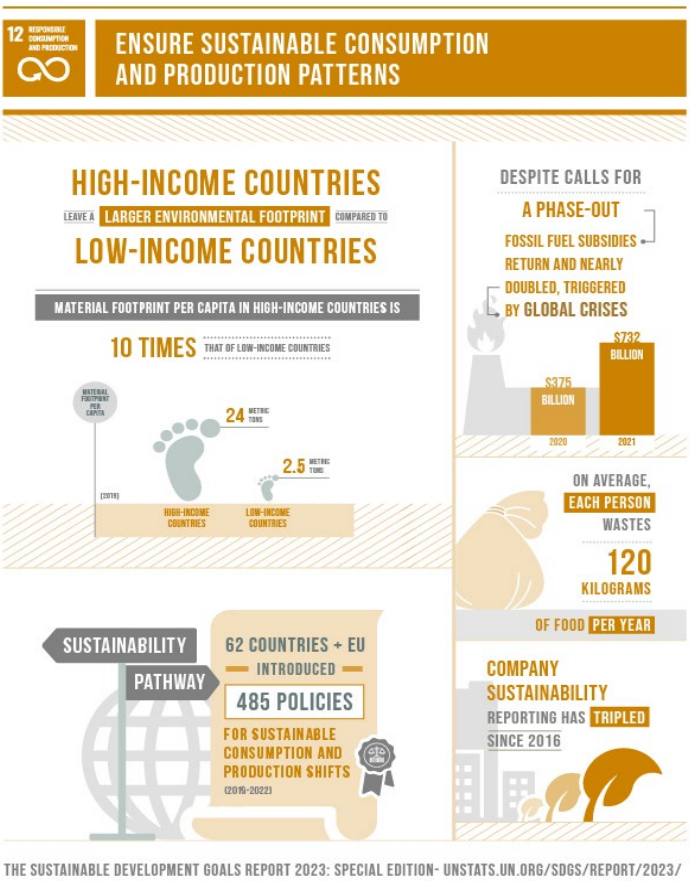

Figure 13. SDG 12 infographic

Aesthetics and Ecology in Technological Education

2021-1-IE02-KA220-HED-000031130

Targets:

- Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
- By 2030, achieve the sustainable management and efficient use of natural resources
- By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
- By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
- Promote public procurement practices that are sustainable, in accordance with national policies and priorities
- By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
- Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products
- Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

GOAL 13: Take urgent action to combat climate change and its impacts

Sustainable Development Goal 13 is to limit and adapt to climate change. The official mission statement of this goal is to "Take urgent action to combat climate change and its impacts".

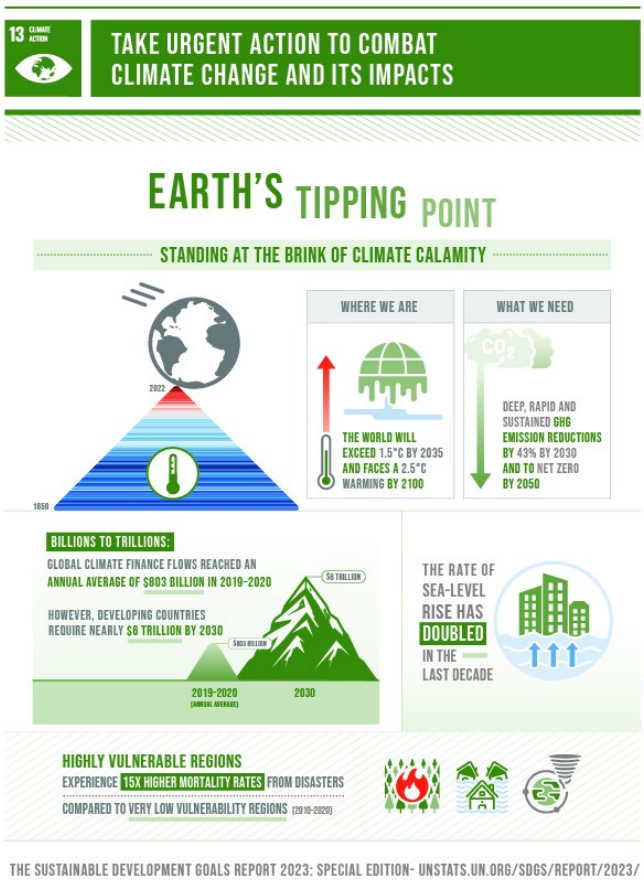

Figure 14. SDG 13 infographic

Targets:

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

- Integrate climate change measures into national policies, strategies and planning
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
- Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
- Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

GOAL 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 14 is about conserving and sustainably using the oceans, seas and marine resources**.**

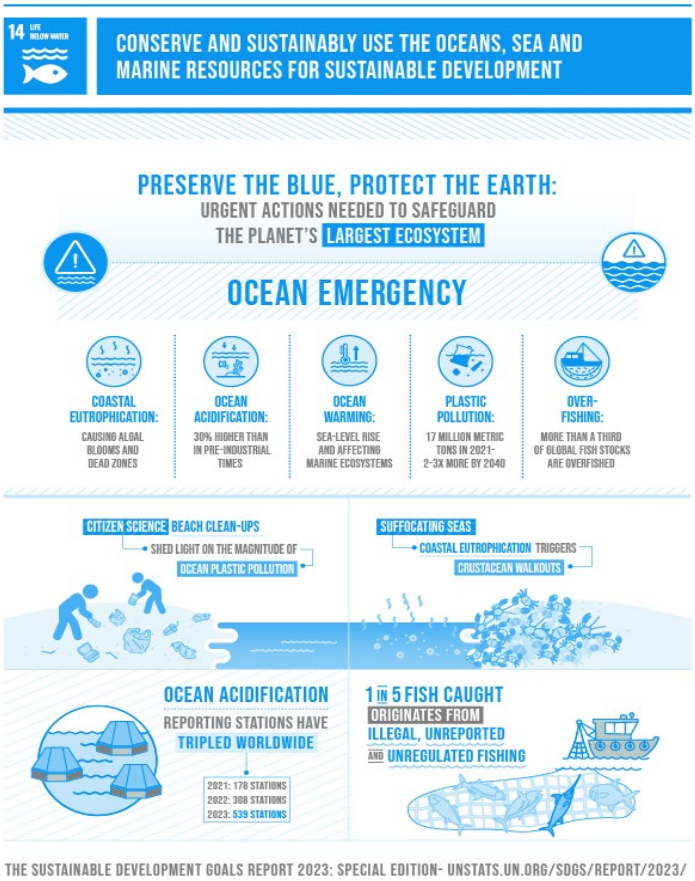

Figure 15. SDG 14 infographic

Targets:

- By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

- By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
- Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
- By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
- By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
- By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation3
- By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
- Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries
- Provide access for small-scale artisanal fishers to marine resources and markets
- Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”

GOAL 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

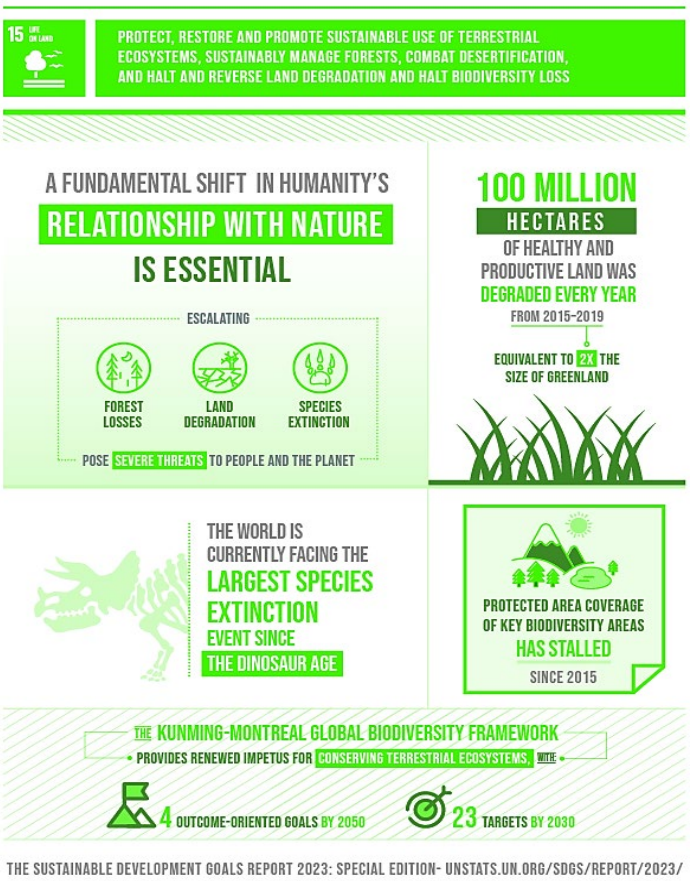

Figure 16. SDG 15 infographic

Targets:

- By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

- By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally
- By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
- By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development
- Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species
- Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed
- Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products
- By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
- By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
- Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems
- Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation
- Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

GOAL 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

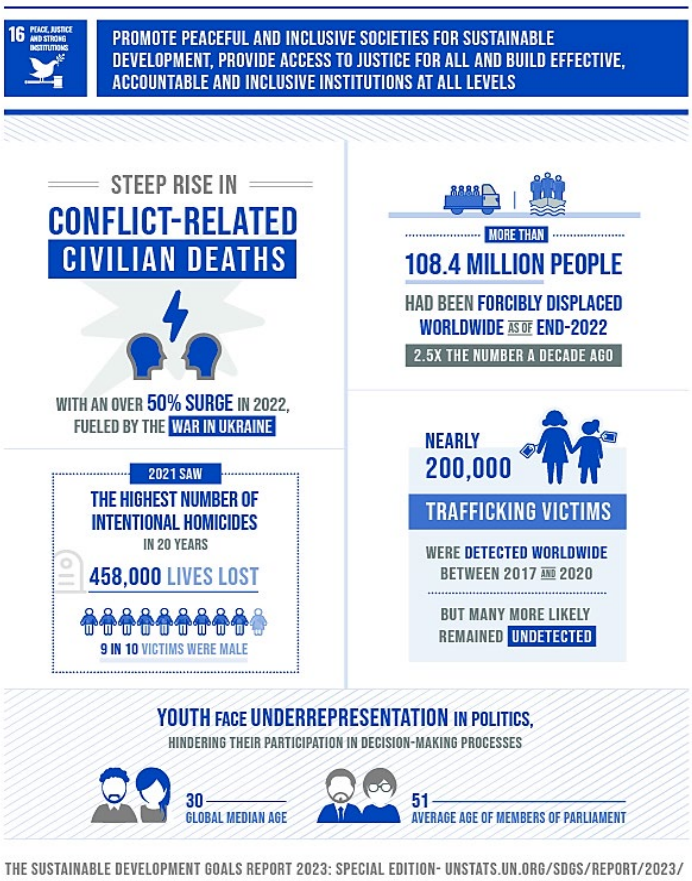

Figure 17. SDG 16 infographic

Targets:

- Significantly reduce all forms of violence and related death rates everywhere
- End abuse, exploitation, trafficking and all forms of violence against and torture of children

- Promote the rule of law at the national and international levels and ensure equal access to justice for all
- By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime
- Substantially reduce corruption and bribery in all their forms
- Develop effective, accountable and transparent institutions at all levels
- Ensure responsive, inclusive, participatory and representative decision-making at all levels
- Broaden and strengthen the participation of developing countries in the institutions of global governance
- By 2030, provide legal identity for all, including birth registration
- Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements
- Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime
- Promote and enforce non-discriminatory laws and policies for sustainable development

GOAL 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

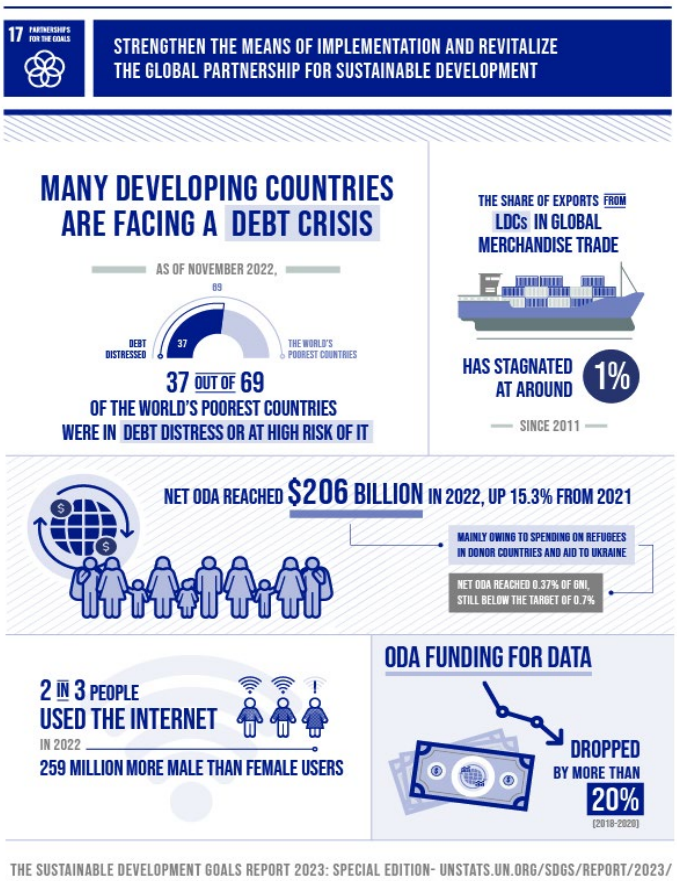

Figure 18. SDG 17 infographic

Targets:

- Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection
- Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the

target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries

- Mobilize additional financial resources for developing countries from multiple sources
- Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress
- Adopt and implement investment promotion regimes for least developed countries
- Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge-sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism
- Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed
- Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology
- Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation
- Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda
- Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020
- Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access
- Enhance global macroeconomic stability, including through policy coordination and policy coherence

- Enhance policy coherence for sustainable development
- Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development
- Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships
- By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts
- By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

Aesthetics and Ecology in Technological Education

2021-1-IE02-KA220-HED-000031130

SUSTAINABLE DEVELOPMENT GOALS AND CIRCULAR ECONOMY

Circular Economy

The definition of Circular Economy used by the European Parliament as a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible, suits best the ideas of Aesthetic of Care. The Aesthetic of Care is understanding as an "educational process. Its aim is ethically responsible action. It is informed/activated by sensory experience and knowledge(s) in a relational world. It entails caring for ourselves, others, and the planet (by attending to sustainable forms of creative practice and attitudes of caring).

Circular Economy extends, the **life cycle of products.**
In practice, it implies **reducing waste** to a minimum. When a product reaches the end of its life, its materials are kept within the economy wherever possible. These can be productively used again and again, thereby **creating further value.**

Circular Economy is an opposite model of the traditional, *linear* economic model, which is based on a take-make-consume-throw away pattern. This model relies on large quantities of cheap, easily accessible materials and energy.

Under the "waste hierarchy" theory, the circular economy improves the resource efficiency and economic efficiency in the whole system by promoting the 3R strategies (reduce, reuse, recycle). To realize the 3R, technological innovations, social transitions, and business model are adopted to improve the resources/energy utilization efficiency, mitigating the lifecycle emission, creating more benefits, and enhancing the resources/energy security. (Liang Dong1,2 & Zhaowen Liu3 & Yuli Bian; 2021)

The European Union focuses its initiatives to ensure the change of linear economy to circular economy model of consumption and production behaviour.

Aesthetics and Ecology in Technological Education

2021-1-IE02-KA220-HED-000031130

In March 2020, the European Commission presented the circular economy action plan, which aims to promote more sustainable product design, reduce waste and empower consumers, for example by creating a right to repair). There is a focus on resource intensive sectors, such as electronics and ICT, plastics, textiles and construction.

In February 2021, the Parliament adopted a resolution on the new circular economy action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050, including tighter recycling rules and binding targets for materials use and consumption by 2030.

In March 2022, the Commission released the first package of measures to speed up the transition towards a circular economy, as part of the circular economy action plan. The proposals include boosting sustainable products, empowering consumers for the green transition, reviewing construction product regulation, and creating a strategy on sustainable textiles.

The new Action Plan is key to reach sustainable development. The EU's transition to a circular economy will reduce pressure on natural resources and will create sustainable growth and jobs. It is also a prerequisite to achieve the EU's 2050 climate neutrality target and to halt biodiversity loss.

The new action plan announces initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented, and the resources used are kept in the EU economy for as long as possible.

Measures that will be introduced under the new action plan aim to:

- make sustainable products the norm in the EU
- empower consumers and public buyers
- focus on the sectors that use most resources and where the potential for circularity is high such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients
- ensure less waste
- make circularity work for people, regions and cities
- lead global efforts on circular economy

Empower consumers. Consumers will have access to reliable information on issues such as the reparability and durability of products to help them make environmentally sustainable choices. Consumers will benefit from a true ‘Right to Repair'.

Focus on the sectors that use the most resources and where the potential for circularity is high. The Commission will launch concrete actions on:

- electronics and ICT – a ‘Circular Electronics Initiative' to have longer product lifetimes, and improve the collection and treatment of waste
- batteries and vehicles – new regulatory framework for batteries for enhancing the sustainability and boosting the circular potential of batteries
- packaging – new mandatory requirements on what is allowed on the EU market, including the reduction of (over)packaging
- plastics – new mandatory requirements for recycled content and special attention on microplastics as well as biobased and biodegradable plastics
- textiles – a new EU Strategy for Textiles to strengthen competitiveness and innovation in the sector and boost the EU market for textile reuse
- construction and buildings – a comprehensive Strategy for a Sustainably Built Environment promoting circularity principles for buildings
- food – new legislative initiative on reuse to substitute single-use packaging, tableware and cutlery by reusable products in food services

Ensure less waste. The focus will be on avoiding waste altogether and transforming it into high-quality secondary resources that benefit from a well-functioning market for secondary raw materials. The Commission will explore setting an EU-wide, harmonised model for the separate collection of waste and labelling.The Action Plan also puts forward a series of actions to minimise EU exports of waste and tackle illegal shipments.

Connection between Circular Economy and UN Sustainable Development Goals

The connection between SDG goals and Circular Economy (CE) practices demonstrates that CE practices can directly contribute to the achievement of many SDG goals. SDGs 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 8 (Decent Work and Economic Growth), 12 (Responsible Consumption and Production), and 15 (Life on Land) have the strongest ties to CE practices (Schroeder, 2018).

Circular economy uses renewable resources and renewable energy could have significant environmental benefits in the whole life cycle of products. By adopting this strategy, it will strongly contribute to environmental goals in SDGs (goals 6, 7, 12, 13, 14, 15), but moderate contributions to social aspects.

The idea of Reuse in a circular economy benefits not only environmental goals in SDGs, but also helps to generate a new market for waste collection, recycling, and remanufacturing, hence contributing to economic and social goals as well. Positive contribution is identified to goals 1, 11, 12, and 17 in social and economic dimensions.

A key aspect of the Circular economy is education. Education could promote pro-environmental behaviours that are fundamental to achieving the SDGs, and by combining technologies innovation, design for the future, and knowledge creation will lay the foundation for social transition (related to goals: 4,5,9. 10, 11, 12, 16, 17).

Some work has already been done on the relationship between the Circular Economy and the Sustainable Development Goals. Figure 19 illustrates the work done by Patrick Schroeder, Kartika Anggraeni and Use Weber, who have done one of the most comprehensive results on such relationships (Schroeder, 2018).

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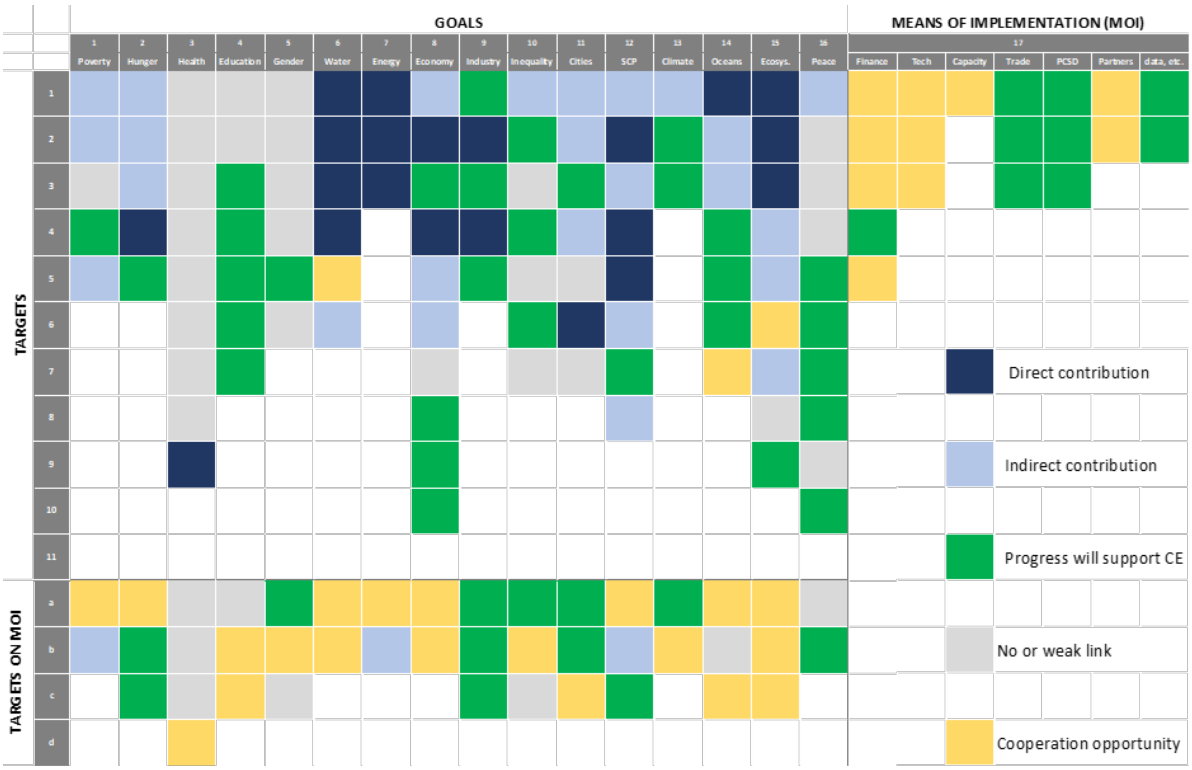

Figure 19. Circular Economy practices for the SDGs (Schroeder, 2018)

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Aesthetics and Ecology in Technological Education

2021-1-IE02-KA220-HED-000031130

SOCIAL CORPORATE RESPONSIBILITY AND SUSTANAIBILITY: AN OPPORTUNITY TO IMPROVE COMPETITIVENESS

Introduction

Corporate Social Responsibility (CSR) can explain the competitive advantages. The variables of CSR in its two business and environmental aspects include principles of good governance. In this way, in addition to carrying out "good practices" in their management processes, they could be considered socially responsible agents with their environment and committed to the society they serve. The main objectives of the chapter are:

- Define the concept of Corporate Social Responsibility (CSR).
- Understanding the dimensions of CSR
- Identifying the evolution of CSR
- Studying the impact of sustainability for economic development in the 21st century
- Understanding what we mean by responsible management
- To understand the implementation of CSR in the company.
- Outlining objectives, principles, applications and benefits of CSR
- Incorporate a research proposal

1. Concept of corporate social responsibility (CSR)

Responsibility as an ethical value makes it possible to align the conduct of a human being to level both the value of success and commitment. Sagot, J. (2008) in his opinion column states that: "the notion of responsibility is part of ethical values. This means that it is one of the elements that make an effective model of coexistence possible. Irresponsibility, in any of its manifestations, is essentially unethical". And this author goes on to state: "when we speak of responsibility, we allude to something that is assumed (...). Assuming responsibility means taking ownership of it. To be able to answer for what has been entrusted to us". Responsibility as a company value, according to the Business Association for Development (2006) "is the

permanent commitment of companies to increase their competitiveness while actively contributing to the sustainable development of society (...), through concrete and measurable actions to solve the country's priority problems". The same association further elaborates on the concept of Corporate Social Responsibility (hereinafter CSR) and defines it as "a business management model that incorporates the economic, social and environmental dimension in the strategic planning of its operations, considering the impact and expectations of its publics of interest or stakeholders, under the premise of obtaining greater profitability and long-term sustainability". The Asociacion Empresarial para el Desarrollo (AED) together with the Instituto Centro Americano de Administración de Empresas (INCAE), have developed a CSR model for the Costa Rican business sector, which establishes eight categories on which the company should focus comprehensively to achieve socially responsible conduct.

The Colombian Centre for Corporate Responsibility defines CSR as "the capacity of a company or entity to respond to the effects and implications of its actions on the different groups with which it relates (...). In this way, companies are socially responsible when their activities are oriented towards satisfying the needs and expectations of their members, society and those who benefit from their commercial activity, as well as the care and preservation of the environment". This capacity, conceived as the ability for good business management action, must cross different contexts where companies interact, as this center makes clear: 1) Regulatory, which refers to the set of laws and general rules that the different state bodies dictate to regulate the functioning of companies, markets and competition. 2) Operational, which refers to the factors that allow companies to produce goods and provide services in accordance with their corporate objectives. 3) Economic, which refers to the resources related to value creation and profitability, capital and investments, costs, prices, tariffs and market practices. 4) Social, which refers to the aspects that link the organization’s work with the social context in which it operates, to enable it to contribute to the quality of life and well-being of society. 5) Environmental, which refers to aspects for the identification of environmental impact, environmental protection and sustainable development. In general, concludes this clarification center, "the concept of CSR corresponds to an integral vision of society and development that understands that economic growth and productivity are associated with improvements in the quality of life of the people and the validity of democratic political institutions that guarantee the freedoms and rights of the people. It also assumes that the general aim of the economy is to provide well-being for society and that these social demands are insufficiently expressed in legal norms, which would imply a deeper and more demanding commitment of economic actors with the rest of society". In Spain, the Ministry of Labor produces the Spanish Corporate Social Responsibility Yearbook, which provides an overview of the commitment made by companies, where specific CSR reports are published, following international standards. In short, companies' CSR behaviors are considered strategies that position them in competitive markets and lead them to good economic results, in sync with the demands of their stakeholders.

Another interesting proposition about integration with strategy suggests that if ethical and social responsibility principles are embedded in knowledge management processes, they can make the knowledge management system a more useful tool, uncovering and exploiting new

opportunities if a socially responsible and ethical approach is applied, requiring management awareness and awareness of the potential benefits involved (Guadamillas and Donate, 2008). Companies that behave in a socially responsible manner need strategic management and "good practices" that consider the economic, social and environmental dimensions of their actions. Bueno (2004) indicates that a so-called "strategic-social" business model should be achieved, based on the following aspects: 1) the creation of value for the shareholder, the rest of the stakeholders and the social agents; 2) the creation of social capital based on responsibility, commitment and solidarity with all the agents related to it; 3) the incorporation of a governance model with relational or implicit contracts and, based on trust, loyalty and ethics; 4) the vision and mission of the company based on its culture, its values and corporate reputation; and, 5) the social commitment to carry out good corporate governance. Therefore, ethics, transparency and the consideration of organizations as "strategic-social" entities are considered aspects of good corporate governance practices and the highest level of commitment that a growing agribusiness committed to responsibility could assume would be to adopt on the part of the administrators, The highest level of commitment that a growing agribusiness committed to good corporate governance could assume would be to adopt an affirmative stance in the greatest number of measures for good corporate governance, providing all information systems with the three dimensions of Social Responsibility (Rubio, 2005): 1) the formalization of CSR policies and management systems, 2) information transparency and homogeneity, and 3) external control of the actions of the companies; In this way, corporate policies are developed that are capable of meeting all the information demands of the company's groups of influence, and understanding CSR as a philosophy and an apex of the company's cultural values. Finally, continuing along these lines, corporate responsibility, "sustainable development" and "social capital" help to consider CSR as "a strategy that establishes objectives and behaviors in organizations, which, without renouncing the essential aim of obtaining maximum profit, is capable of framing all other business commitments and generates added values in terms of the environment, social, safety, human capital, guarantees for customers - in terms of social capital, and, in short, improving strategies for responding to society".

2. Dimensions of social responsibility

Corporate social responsibility is defined as "the voluntary integration by enterprises of social and environmental concerns into their business operations and their relations with their stakeholders" (European Commission, 2002). This definition reflects the modern vision of social responsibility (Cabrera Déniz and Santana, 2005), but in order to explore this theory in greater depth, it is necessary to identify other fundamental elements related to the social environment that are applicable to public administration organizations, such as: (1) social, because as an organization it integrates a social system or collective of individuals; (2) corporation, because it can be a public interest entity, commonly associated with a social project; (3) organization, because it is formed by a stable set of people, institutionalized and properly structured; (4) society, because it is a group of people, with the aim of fulfilling, through mutual cooperation, all or some of the objectives; (5) environment, because they carry out their activity in a natural physical environment; and (6) stakeholders, in this case Spanish society and that of the surrounding countries. Rivero (2003) stresses that they are made up of groups of people or individuals, affected in one way or another by the existence or action of organizations, and with some legitimate interest in them. CSR and sustainability coincide in three dimensions: economic development, environmental protection and social cohesion (Jenkins and Yakovleva, 2006). The concept of commitment is a fundamental factor in cooperation agreements and implies the existence of a willing obligation. In the case of CSR, this term is called social, due to the fact that organizations interact in society, and hence the consideration of a determining factor of CSR, called social commitment.

2.1. The organizational and economic dimension of CSR

If the main function of a company is to create value and thus generate profits for its owners and shareholders (Nieto and Fernández, 2004), the use of corporate social responsibility practices means quality in management and that its policies contribute to the good reputation and prestige of the firm (De Quevedo et al... 2005). Other examples the increase of employee motivation, commitment to work, a teamwork style, and the creation of a culture capable of bringing about organizational change to satisfy customers Maignan and Ferrell (2003) describe the firm as "an open and flexible system made up of diverse and active agents in a network of relationships with various other agents". Furthermore, it implies the existence of a set of values to develop cooperative arrangements in line with the strategy that motivates the organization to act in any field (Larrinaga, 2003; Peligros and Bilbao, 2005). Heugens et al. (2004) analyzed in their empirical study of the food sector, social responsibility from the point of view of reputation and capabilities in collaborative relationships between markets in European countries, incorporating dialogue, communication and coordination of activities to solve cooperation problems as significant variables. Doh (2005) studied theoretically, knowledge-based technology outsourcing activities and the benefits of cooperative relationships, as well

as the implications for CSR strategy and country development. On the other hand, Peligros and Bilbao (2005), investigated production outsourcing in the Spanish automotive industry, using "Lean Manufacturing" organizational technology, concluding that it increases the manufacturer-supplier relationship, reduces the number of suppliers, and finally increases the social responsibility of the participants in the relationship. The concept of commitment is a fundamental factor in business-to-business cooperation agreements and implies the existence of an obligation entered voluntarily, without any kind of imperative. In the case of CSR, this term is called social, because organizations interact in society, both from the point of view of their own elementary composition (sum of social individuals) and from the point of view of being an integral member of a social system (corporate citizen). This establishes the necessary relationship between business activities and social values; and compliance with the first determining factor of CSR, which is social commitment. Finally, a well-developed corporate responsibility policy is an "invisible asset" that creates value when it is integrated into the operating systems of an organization from a socio-economic point of view, incorporating suppliers in the transformation process, which leads to an improvement in efficiency in order to meet customer suggestions and demands, providing rational support for the implementation of socially responsible strategies and systems of knowledge management, information and control.

In this sense, reputation is a socially constructed asset, and these CSR policies provide reputation and legitimize reputation the organization’s activities and society's expectations. De Quevedo et al. (2005) understand it as the perception that an entity's actions are desirable and appropriate within a socially constructed system of norms, values, beliefs and definitions, in short, a CSR culture.

2.2. Environmental dimension of corporate responsibility

The environmental strategy reflects the degree of integration of environmental aspects into the strategic planning process of SEEs, due to the increasing impact of business activity on the natural environment and the growing environmental awareness. The development of new products, the location of new production plants, investments in R&D, the development of new technologies, changes in product design and production processes are examples of strategic business growth that are influenced by environmental aspects. Burguillo and García (2005) distinguish at least two areas of economic analysis: 1) environmental and natural resource economics, and 2) ecological economics. In any case, these actions are characterized by the fact that knowledge in environmental management is one of the main strategic resources of SEEs (Fraj and Martínez, 2005; Claver et al., 2005).

3. Evolution of corporate social responsibility

Its beginnings date back to the 1920s with the concept of Corporate Philanthropy, although some authors, among them Cerna (2008) indicates that since 1889 Andrew Carnegie in his work "The gospel of wealth" referred to the concept: "wealthy individuals and their companies must assume responsibility for managing wealth for the good of society as a whole by assisting and guiding disadvantaged or less fortunate individuals". And even Roca (2010) traces its first references to the concept back to 1776 in the work of Adam Smith (one of the greatest exponents of classical economics), in his work "The Wealth of Nations" where he raises the importance of ethical aspects, trust and the existence of marked differences in the distribution of wealth, which are basic aspects of the concept that is handled today. Subsequently, in the 1920s, a period when labour conflicts increased and companies saw the need to improve their "reputation", philanthropic actions were carried out within the framework of charity and charitable activities. In the 1930s and 1940s, the debate on the company-society relationship was strengthened and the ILO (1944) achieved the Declaration of Philadelphia, an opportunity in which the obligations of the company to the economy and the improvement of the conditions of the private sector workforce were established. Its principles were based on: a) labour is not a commodity; b) freedom of expression and association are essential; c) poverty anywhere is a danger to prosperity everywhere; d) the war against want must be waged with unrelenting vigour. But it was in the 1950s that H.R. Bowen (Roca, 2010) published his book "Social Responsibilities of the Businessman", in which he explains the importance of incorporating social values into the management of business. As a conclusion to the debate, the concept and definition of the relationship between business and society originated in that decade. The aspects involved in this relationship are a) the company's function is not exclusively economic; b) as an organisation, the company must pay attention to specific groups, prioritising the internal environment; and c) the company can collaborate with the solution of certain social problems. In the 1960s, CSR represents the social power of the company, reinforced by social conflicts and tensions, which were more marked at the end of the 1960s. In the 1970s, two trends coexisted, the first postulated by Milton Friedman and T. Leavitt, who stated that the role of the company was strictly economic and that it owed its role to its shareholders. The second corresponds to CSR with the characteristics. Since the 1980s, there has been an "evolution" in the definition of CSR, as well as an awareness of its importance for companies and states. Peter Druker (1986) stresses the importance of incorporating CSR into company management and emphasizes that the company's most important assets are: social capital, human capital and corporate reputation. Archie B. Carroll (1991) proposes a systematization of CSR, and using the figure of a pyramid, indicates that the base corresponds to the economic responsibilities of the company, and the following are legal, ethical and voluntary, the latter being at the apex of the pyramid. In the mid-1990s, Edward Freeman defined and identified stakeholders more precisely, defining them as "any person who affects or is affected by the operation of the company, and later, after the events of ENRON (2000), he stated that "the stakeholder is anyone to whom the company has a moral obligation". The 1990s and early 2000s are characterized by the emergence of a series of global, regional and national initiatives, which in one way or another and under different names, promote CSR; among them is

Corporate Social Responsibility Europe (1995), which is the union of 48 European companies; the Word Business Council on Sustainable Development (1997), made up of 160 international companies from more than 30 countries; the Global Compact (1999), promoted by the UN; the Organisation for Economic Co-operation and Development (2000), made up of 35 governments; the Green Paper (2001) proposed by the European Union. Roca concludes that "at the beginning of the present decade there have been some important contributions to highlight, among them C.K. Prahalad and S.L. Hart incorporated into the debate the idea of "inclusive capitalism" as a mechanism for reducing poverty by working at the base of the population pyramid. On the other hand, M. Porter and M.R. Kramer, reinforcing what was proposed earlier by P. Draker, established a link between competitive advantage and CSR, establishing social impact as a substantive part of business management. CSR is a business philosophy that is trying to consolidate itself; however, despite the different contributions that are being made worldwide, a great effort is required by the business system and its institutions to incorporate it into management, according to the very particular characteristics and needs of the environment. This work is fundamental for CSR to make sense and take on real life and not just appearances.

4. Sustainability for economic development in the 21st century

In the 1970s, the term sustainable development, which we associate with sustainability, became widespread in the report of the World Commission on Environment and Development, "Our Common Future", the Brundtland Report (1987), which defines it as "development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". If the word development represents the idea of process, which is semantically visible by its meanings in English (development), in French (development) or in Portuguese among other languages, sustainable development, in coherence with this perspective, can be explained under the approach of how the strategy of sustainability unfolds in experimental dialogue.

Sustainability and sustainable development as a vital business issue, focusing on the analysis of how the effects of regulatory policies could be mitigated, customer awareness and how they could influence companies to change their strategy on environmental performance (Li, Bhutto, Waris and Hu, 2023). On the other hand, sustainability governance refers to changes in the role of government and an increasing role of non-governmental actors with the aim of realizing the collective goals of public and private actors (Rivera and Gutierrez, 2019). In this sense, sustainability studies can be seen as a bridge to business survival (Gharib et al., 2022; Zeng, Zhong and Naz, 2023).

A company that seeks sustainable development and/or long-term sustainability must have the capacity to ensure its continuity, positioning and contribute to the progress of the present and future generation through its actions (Cárdenas et al., 2019). In terms of the variables most

closely related to sustainable development, according to Saz and Carús (2008), there are three: (1) ecological sustainability, which refers to the conservation of those elements necessary for long-term survival (species, populations and ecosystems), as well as their characteristics; (2) economic sustainability, understood as the need to rationally manage resources, including natural resources; and (3) social sustainability, conceived as the distribution of costs and benefits to avoid imbalances between the current resident population and the future population.

The "development" perspective adds practices that play a very particular role in the formation of sustainable social capital, as each actor in society has the right to expect that his or her generosity for the community will lead to benefits in return, which reinforces the collaborative and cooperative behaviors synonymous with the formation of social capital. Moreover, development as a process of structural change and learning (acquisition and creation of knowledge and skills, values, attitudes and relationships in the productive process, consumption patterns, way of life, etc.) should be seen as a capital that both builds strategic capabilities (Kliksberg and Tomassini, 2000). Given the role of the development perspective in the set of sustainability measures and actions, we will now situate the conceptual framework which this research project will address.

5. Responsible management (GR)

Aguinis (2011) defines Corporate Social Responsibility (hereinafter CSR) as the strategy that leads the "organizational actions and policies adapted to the context in which they are carried out to take into account the expectations of stakeholders and the triple bottom line of economic, social and environmental performance" (Aguinis, 2011. p. 855). It includes in its definition actions, but also strategies (policies), the need to adapt to the context of business action, stakeholder expectations and the triple bottom line of business performance: economic, social and environmental. CSR manifests itself as a way of guiding business management, being an instrument or decision-making model to achieve responsible management (RM) available to companies that incorporate the correspondence between the organization and stakeholders, maintaining a common interest for mutual benefit. In this line of action, there are several approaches to consider responsible management (RM): A) Through the voluntary commitment of organizations; b) With an eye on its actions towards its stakeholders, Under an economic, social and environmental approach, C) Of these three particularities, concern for both external and internal agents is the point considered most relevant in the actions of organizations to generate positive social impacts through responsible management. Furthermore, according to Bueno (2006), there is a new company model called "Strategic-Social Company", in which the creation of social capital through responsible management and solidarity with all the agents related to it coexists (Bueno, 2004, p. 66). From there we can achieve socially responsible behavior towards employees, shareholders, management in the production process, customers, suppliers, competitors and the community.

Any of the actions carried out by organizations when producing or generating services end up creating alterations in the ecosystem, which we can define as the environmental impact of their externalities. This impact does not understand types of organizations, as it is applicable to any type of company, whether there is a great impact on the environment or not, because in the end, every organization generates some environmental impact to a greater or lesser extent. In order to reduce or minimize environmental problems, there are different guidelines for action: (1) evaluation of the environmental repercussions and risks that the company may generate; (2) control and monitoring of the factors that have an impact on the environment and the effects they cause; and, (3) implementing corrective measures, carrying out research, further training of personnel, etc.

Therefore, CSR actions associated with sustainable development are considered a strategy that promotes prosperity under the three dimensions, economic, social and environmental (Devenin and Bianchi, 2018); it encourages companies to efficiently manage their social and environmental obligations in a responsible manner (Bice et al., 2017), justifying the need to implement strategic management systems, which allow to evaluate processes, improve transparency and governance in the company and implement administrative systems to improve competitiveness (Jones et al., 2019). Furthermore, the importance of CSR lies in its relationship with other factors, such as innovation, since, for many companies, a joint management of innovation and CSR could bring several advantages to the company in terms of sustainability.

The scope of CSR includes attention to issues such as creating mutually advantageous partnerships with communities to reduce economic losses, improving relations with suppliers and marketing intermediaries, conducting honest advertising, promoting the involvement of local people in decision-making, providing new jobs, examining investor relations and investment policies, complying with government regulations, recognizing corruption, providing equal opportunities, implementing fair pricing policies, reducing waste, and increasing the sustainable management of limited natural resources. Furthermore, CSR measures also constitute a strategic intangible that contributes to improving the competitiveness of technology-based firms or rely on key technologies (Bernal-Conesa et al., 2017).

6. Implementing corporate social responsibility

The growing interest in CSR has given rise to a prolific dialogue between different sectors of civil society, NGOs, governments, academia, business and labor, mainly around what it means in practice for a company to be socially responsible, giving rise to a wide variety of guidelines, codes of conduct, indicators, and planning processes. There are, however, four basic elements that any company should consider in its efforts to achieve social responsibility: This is the fundamental input for the development of CSR. The company recognizes that its operations generate effects on people and the environment, and identify the people or organizations impacted. The understanding and proper management of these impacts requires consultation with these stakeholders, as corporate responsibility cannot be defined solely based on what the company considers to be good for society. It is essential that stakeholders be allowed to have a say in how the company should act. The opinion of these stakeholders is an important input for decision-making at different levels of the company, from the definition of its principles and values to the identification of indicators to assess the level of employee satisfaction.

7. Principles of corporate social responsibility

Among the most important principles of Corporate Social Responsibility are the following (Briones, 2010): Transparency: This consists of the disclosure of information, decisions and intentions in clear and accessible terms for all publics related to the company. Establishment of public commitments: In this regard, the company must publicly assume its commitments, whether they are related to its internal public, or to the future, to the maintenance of natural resources, to the promotion of diversity. Interaction with institutions representing various interests: This is generated through the creation of areas of contact and dialogue with specialist organizations, ensuring that they collaborate with the company in the treatment and resolution of its dilemmas. Capacity to attract and retain talent: This is defined as the investment of efforts aimed at establishing the company as an alternative that responds to the interests of citizens, particularly in their professional aspirations. High degree of motivation and adherence of employees: In this sense, the aim is to involve all internal employees and suppliers in the company's CSR management, demonstrating coherence in the subscription and fulfilment of its commitments. Ability to deal with conflict situations: This characteristic is acquired by demonstrating a willingness to investigate and dialogue, developing processes that prevent risk situations, deepening contact with networks of organizations and opinion formers and reflecting transparency in these actions and relationships. Establishment of short- and long-term goals: Effectively incorporates the different aspects of social responsibility in the management of the company, with all the characteristics of other performance indicators. Commitment of the company's management: Reliability is strengthened by clearly verifying the strategic understanding of the company's management with regard to social responsibility issues. In general, the company has one or more people permanently dedicated to deepening social responsibility issues. Although the list is longer, the points mentioned above are present

in all companies that are incorporating CSR in their management. These characteristics may be clear and well defined, or there may be evidence that the company is interested in developing them.

8. Benefits of corporate social responsibility

Considering that approximately half of the world's 500 largest economies are multinational companies, without a single homeland, which are usually accountable only to themselves, citizens increasingly must rely on the values and internal policies of these companies about social responsibility issues. The key challenge, particularly for companies in developing and transition countries, is to change the survival mentality and culture that emphasizes short-term profits at the expense of moral and social values. Providing products and services ethically and responsibly requires a different mindset; a mindset that emphasizes doing things because they are right and not just because they maximize shareholder value. With respect to the environment, not all managers understand the importance of good environmental performance, not only because of the risks that can arise from irresponsible behavior, but because of the real economic benefits that can be gained. Environmental risk, analogous to the risk of loss of image and reputation, is asymmetric in terms of the perception of the various stakeholders. For example, environmental risk can affect companies in the market through loss of customers, lawsuits that damage the company's image, or on their future economic and financial performance through new regulations that have an impact on their operating costs. Well-known brands and large companies are prime targets for litigation for social responsibility misconduct and the consequences can be enormous in terms of loss of market share or decrease in market capitalization. A 1997 study by Business & Society found that social irresponsibility can result in a negative effect on company profitability, especially when it is front-page material in newspapers and the media in general. c. Enhancing reputation and brands the business environment is increasingly sensitive to the social, ethical and environmental performance of firms, due to globalization, the communication revolution, the knowledge-based economy, and the mobility of customers and suppliers. Brand and customer loyalty are becoming more critical, and globalized economies put additional pressure on the process of selecting strategic partners and participants in global sourcing and distribution channels. A global survey conducted by the World Bank Institute in 2003 found that 52% of consumers surveyed gave companies a reward or punishment, either by buying or not buying their products, based on their perceived social and environmental performance. Under these conditions, reputation becomes central to the entire business and becomes an important competitive asset whether expressed in international brand equity or local shop reputation. A good reputation among stakeholders can be more valuable than the brand itself, because it is often more difficult and time intensive to build a good reputation than to develop a particular brand. The United Kingdom's Corporate Governance Guidelines, Turnbull report, advises companies to treat reputation in the same way as other assets. Using the CSR framework when developing corporate strategy can result in high efficiency in operations, for example, improved efficiency

in the use of energy and natural resources, reduction of waste, reduction of gas emissions, or production of recyclable materials for sale. Business operations also benefit from improved human resources; offering work/life programs to employees that result in reduced absenteeism and increased employee retention often saves companies money through increased productivity and through reduced hiring and training costs. e. Improved financial performance Businesses and companies can benefit from improved financial performance. Improved financial performance Companies and the investment communities have long debated whether there is a positive correlation between socially responsible companies and improved financial performance. While it is not possible to give a final answer to this dilemma, several surveys and academic studies have proven that the relationship is positive or at least not negative. In this regard, there are financial performance indices for a set of companies that maintain socially and environmentally responsible behavior. These indices show a superior financial performance of these companies compared to those that do not take CSR aspects into account. The compatibility between engaging in social and environmentally responsible business conduct and achieving above-average financial performance has awakened senior executives to the imperative and growing need to incorporate CSR as part of the overall strategy of the companies they manage. f. Increases sales and customer loyalty Several surveys and studies have concluded that there is a growing market for the products and services of socially responsible companies. While businesses must first satisfy traditional customer criteria - price, quality, appearance, taste, availability, safety and convenience - studies also show a growing desire by consumers to buy based on other values and criteria, such as non-use of child labor, environmental protection and community outreach, among others. Consumers aware of the importance of CSR prefer to be loyal customers of companies with a good reputation and some form of certification. The attitude of rewarding socially responsible companies through the purchase of their products and services and punishing those that are not by not purchasing them is undoubtedly a growing force in the markets. g. It allows the attraction and retention of quality employees. The progressive mobility in the labor market has made the attraction and retention of human resources a key variable for business success. On this issue, companies with high CSR standards have demonstrated a greater ability to attract and retain talent. The conditions offered by employers in the areas of occupational health and safety, professional development, participative management, remuneration and benefits and organizational learning, among other aspects, constitute elements that characterize the profile of companies, and which are evaluated by potential employees before deciding whether to join a given organization. h. Open two-way communication with stakeholders not only enhances the company's reputation, but also opens new business opportunities. Cooperation with key stakeholders and acceptance of the concept of performance evaluation in economic, social and environmental dimensions provides opportunities for innovation and creativity and contributes to the introduction and development of new products, processes and technologies. Including aspects such as social and ecological costs within the overall strategy of companies strongly stimulates creative thinking. When competitors adopt less costly but not socially responsible solutions, they assume, in one way or another, the higher cost of such a decision in the long run. Companies must take advantage of the new challenge, exploiting innovation as well as seeking new alternatives and solutions.

Creativity is one of the vital ingredients for building sustainable competitive advantages. Moreover, the experience gained by overcoming CSR challenges also provides opportunities for companies by giving them the knowledge and expertise to face new challenges. i. It allows them to attract and retain investors and partners. ii. It allows attracting and retaining quality investors and business partners. The demand for investment capital is growing and companies certainly prefer to obtain it at the lowest possible cost. Investors are usually prepared to pay more for companies with the best business practices. At the same time, investors require new conditions to minimize risks, such as good corporate governance, transparency and business ethics, as well as social responsibility policies and practices. Many countries have been able to attract foreign investment by offering cheap labor. However, there are cases where these cost savings have been achieved by hiring child labor or employees who lack basic health and safety conditions. These cost savings therefore become a high risk that affects the future sustainability of the business. Several multinational companies have started to support their business partners and suppliers adopting CSR practices, thus reducing the risk of damage to their image by being linked to suppliers that pollute the environment, that employ children, or that do not recognize the legal benefits of their employees. j. Many governments provide financial or tax incentives for socially responsible initiatives, such as the development of new technologies and innovations that are environmentally friendly or have an impact on the social development of the country, among others. Companies that demonstrate that they are engaged in practices that meet and go beyond regulatory compliance are being less subject to scrutiny by government and public entities, which not only gives them greater credibility and trust with their stakeholders, but also saves them time and effort by improving relations with local governments. Aligning with CSR issues provides the opportunity to strengthen the relationship with government and political leaders, contributing to the development of public policies or the improvement of existing ones. It also provides suggestions for improving the efficiency of public institutions linked to the company's activities, as well as contributing to the solution of social problems by participating in projects with the government in the areas of education, infrastructure, security, housing and others.

9. Research proposal

One of the objectives of this project is to carry out a diagnosis of sustainability measures, indicating the main strengths and weaknesses that should be emphasized. We understand that sustainability, properly understood from the establishment of CSR measures, the incorporation of modernization of a productive nature where the circular economy and other organizational measures, based on policies where research and development is a fact and can be felt in new product or service innovations; has led to a change in the business culture that was previously hierarchical or bureaucratic, towards another culture called entrepreneurial or market culture where there is greater decision-making capacity of the directors and/or managers who operate to face different types of adversities. In this sense, we consider that sustainability has facilitated the recruitment of more direct employment and a different profile of people, increasingly more educated, more technological, more likely to use social e-networks, younger or with great experience in the sector where they have traditionally been operating, and with more leadership in a company that provides opportunities for their good work or the application of good practices.

Another of the objectives to be studied from the diagnosis is to find out about the changes in business models following the adoption of measures of a sustainable and responsible nature. Today we talk about technological companies, networked business models, companies committed to their environment, where regardless of the situation they face, the first concern should be their concern for the people they depend on (employees, customers, suppliers), care for the environment or surroundings where they operate (the planet), and finally the valuation of the company's profit and loss account to guarantee its survival. From my point of view, these changes can be seen in the fact that there is more automation, technification, integration of industrial processes, the start of R&D activities; open innovation, co-innovation and social innovation are understood; furthermore, resilience or adaptation is understood, and companies are designing strategies to enter international markets and increase their presence in large industrial groups with a notorious presence abroad or with an international character.

On the other hand, the company is subjected to constant work demands and damage to health or health-related problems resulting from health crises, which leads it to modify its work structures to better adapt to teleworking environments and online operations. New information systems for advanced business management are being incorporated, with trained personnel (decision systems, simulators, etc.), new risk management assessments, knowledge of the different financing channels (micro-credits, grants, subsidies for modernization, micro-financing, crowdfunding projects, etc.), and above all more strategic planning based on the establishment of cooperation agreements and alliances to achieve sustainability. In short, the research proposal shows those strategic capabilities most representative of companies that, with responsible management, could achieve improvements in different areas, which we have classified as Blue Entrepreneurship environments, as well as others in Social Entrepreneurship and CSR.

AESTHETICS OF CARE IN PRACTISE

Aesthetics of care can take a variety of forms and scales. Participatory actions such as co-design, participatory art, and participatory planning are often related to social justice (L. de Kock et al., 2023). Initiatives around the world show practices where caring for ourselves, others, and the planet overlap, thus allowing the educational process to cover various aspects of the aesthetics of care. For example, in Riga, there are various groups, initiatives and events, that promote education in aesthetics of care by using several circular economy principles, and at the same time being connected to SDGs. For instance, the Zero Waste Brothers is an organisation focused on the reuse of old materials and furniture, giving a new life to wooden pallets, wooden doors or window frames, fences, textiles, etc. in this way reducing waste. On a larger scale, there are organisations aiming for urban regeneration and adaptation of unused buildings and sites, to host new functions and thus continue the life of the building.

A combination of these principles: community engagement and co-design, reuse of old materials and regeneration of the territory, giving a new place for neighbours to meet, communicate and spend their free time, formed a basis for the initiative that took place in Imanta neighbourhood in Riga in August 2019. The event called “Imantas svētki” took place in two locations: a public park and a territory next to the Anniņmuiža (the building hosts an NGO).

Engagement of the local community in the process of regeneration of the area included: participatory art while painting the façade, creation of benches and flower beds by reusing old wooden pallets and other wooden materials, planting the flower beds, as well as other activities. The event aimed at the engagement of various stakeholders and user groups, promoting the participation of families with small children, dog owners, seniors, and people living in social housing next to the territory.

Figure 20. Creation of a new flower bed and participatory art on the building facade (photo: A.Korolova).

In recent years, "senior playgrounds" have become increasingly popular. (Solberg, Paul & Kvamme, Nils & Raastad, Truls & Ommundsen, Yngvar & Tomten, Sissel & Halvari, Hallgeir & Loland, Nina & Hallén, Jostein. (2011). Effects of different types of exercise on muscle mass, strength, function and well-being in elderly. European Journal of Sport Science - EUR J SPORT SCI. 13. 1-14. 10.1080/17461391.2011.617391.). These outdoor facilities are designed and constructed specifically to meet the needs of elderly people. They aim to promote physical exercise among this age group through easy and convenient design (fig. ..)Senior playgrounds attempt to address two main issues. The first is to improve the health of elderly people through physical activity, and the second is to enhance their emotional well-being by facilitating social interactions.

Figure 21. Examples of senior playgrounds. (Solberg, Paul & Kvamme, Nils & Raastad, Truls & Ommundsen, Yngvar & Tomten, Sissel & Halvari, Hallgeir & Loland, Nina & Hallén, Jostein. (2011). Effects of different types of exercise on muscle mass, strength, function and well-being in elderly. European Journal of Sport Science - EUR J SPORT SCI. 13. 1-14. 10.1080/17461391.2011.617391.)

The fashion industry is one of the sectors with the most negative impact on the environment, so any initiative aimed at reusing and repurposing clothes that are no longer used has a positive impact on people and the environment. The initiative “Together in class” (Bulgaria)" links the reuse of clothes with charity and the promotion of education. Other good practices are related to remaking old clothes. Breathing new life into old clothes and unwanted materials is one of the basic principles of the Circular Economy and consumer behaviour. Involving children and young people in organizing fashion shows with clothes made from old clothes is a positive step. In this way, the principles of personal responsibility and sustainability are promoted.

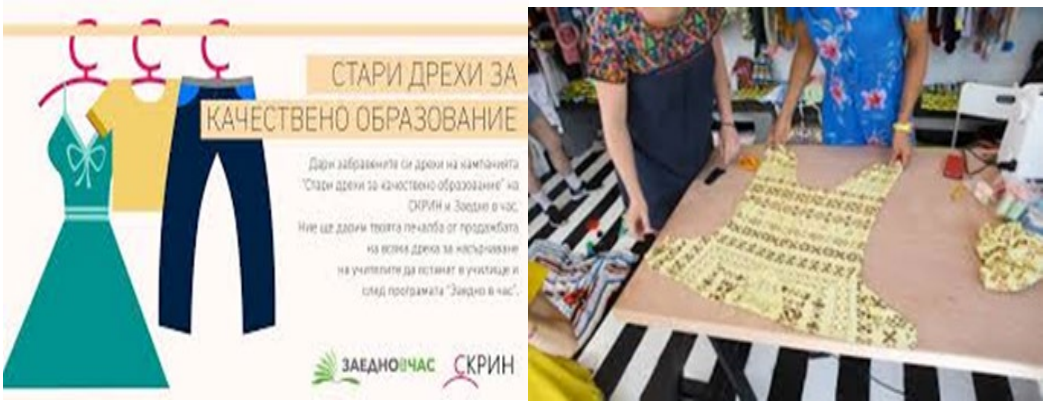

Figure 22. Together in class initiative

CIRCÚBICA, S.COOP is a Spanish company dedicated to working in the educational field using recycled materials and surplus production. Promote circular economy initiatives related to a portfolio of business services using entrepreneurial practices immersed in culture, art, sustainability, and circularity. It is a firm that seeks waste from other companies in a state of waste or surplus production, to use them again taking advantage of their potential with the transformation of industrial waste to serve in turn as innovative pedagogical tools. Among the things it does: inclusive and environmentally friendly education, incorporating unstructured and recycled materials in its classrooms, sourced from local businesses, Sustainability, education, care for the elderly and disabled in a single space for the enjoyment and benefit of the whole community.

Figure 23. Examples of CIRCÚBICA's products

Some examples of designs and construction elements: Play installation for the shopping centre using metal structures that were going to be discarded to build immersive tunnels, as well as cardboard and furniture to build meeting areas; and, recreation of aesthetically friendly spaces with reusable and recycled materials from natural resources from the Region of Murcia. The

projects in which he has recently collaborated: CIRCOTRONIC, a project promoted by the University of Kosice in Slovakia, CARISMED with CEEIM Murcia, on friendly and sustainable spaces, and Science and Water Museum of the City of Murcia (Spain). Circubica has awards for entrepreneurship, sustainability, education and circular economy.

Figure 24. Examples of designs and construction elements in the region of Murcia

Building elements integrated in a nature conservation environment should be useful as resources with environmental and circular valorisation. For example, access to beaches is of great difficulty. This image of the stairs for access to Falesia Beach is an example of a construction or access with a high tourist influx in the Algarve in Portugal. A new specimen of seahorse captures our attention every time we walk along the Paseo Colón, in Santiago de la Ribera (Spain). The seahorse, together with "La Dorada", have been the fish that identify the coastline of the Mar Menor in the Region of Murcia in Spain, their uniqueness and beauty today as sculptures contribute to improving the tourist image of this Spanish region so devastated in recent years. However, these works have their origin in the Ecopark of the municipality of San Javier, where they were created with circular processes by the municipal official Mr. Teodoro Martínez Gismero, becoming today a point of visual tourist interest, the identifying resources of this coastline and serving as a cultural value to show to the citizens.

Figure 25. Examples from Algarve and Santiago de la Ribera

This seahorse was made entirely from recycled materials that citizens deposited in the Ecoparque, from table and chair scraps to any other material that could be used in its construction. The different pieces were fastened together with steel from the waste that was taken to the recycling centre. For the last two years, in addition to the artistic value that our eyes have the fortune to contemplate in this privileged environment, such as the Mar Menor, the Caballito de Teo is a clear example of a circular economy. This approach gives a new life to products, promoting reduction, reuse, renovation and repair, allowing the imagination to fly to create an aesthetic, ecological and unique design. Next to this seahorse, on the same promenade, is "La Dorada", which was created a year earlier with materials from the ecopark by the same official. These examples are visited by thousands of people every year and are an obligatory stop for many tourists who take the opportunity to have their photographs taken with them. We hope that this initiative does not stop here, as the new waste that enters the ecopark will surely form part of future projects at Aesthetics of Care.

AESTHETICS OF CARE & ARCHITECTURE

As the field of architecture evolves, there has been a significant shift towards prioritizing the aesthetics of care. This goes beyond traditional concerns of function and design, extending to the emotional and psychological well-being of those who inhabit and use these spaces. The aesthetics of care in architecture are focused on creating environments that prioritize human experience, promoting comfort, support, and emotional connections. At its core, this design philosophy recognizes the profound impact that built environments have on individuals' well-being, addressing the physical, emotional, and social aspects of our experiences within constructed spaces. A key element of this approach is creating spaces that foster social interaction and community engagement.

In contemporary architectural design, the aesthetics of care represent a paradigm shift that place human well-being at the forefront of the creative process. It acknowledges that the spaces we inhabit have a profound impact on our lives, influencing not only our physical comfort but also our emotional and social experiences. As architects explore new dimensions in design, the aesthetics of care stand as a testament to the transformative power of architecture in shaping communities that thrive on connection, support, and a shared sense of care.

Figure 26. THE AMSTERDAM ORPHANAGE, Architect: Van Eyck, Location: Amsterdam, The Netherlands Year: 1960-1991 (remodeled), Credits: archeyes.com © Philip Szymanski

The Amsterdam Orphanage was designed by Van Eyck to offer a cozy and inviting environment that feels more like a home than an institution. The focus was on nurturing the children's emotional and physical well-being through a well-designed space that encourages exploration and social interaction.

Figure 27. ISRAELS PLADS SQUARE, Architects: Cobe + Sweco Architects, Location: Copenhagen, Denmark, Completion Year: 2014, Credits: archdaily.com, Rasmus Hjortshøj – COAST

The Israels Plads Square in Copenhagen transformed a former lifeless car park into a new plaza elevated above the street level with the car park moved underground. By taking into account the community's needs, the design functions as a large urban playground people use to congregate, relax, and participate in various activities.

Figure 28. COPENHILL ENERGY PLANT AND URBAN RECREATION CENTER, Architecture: BIG, Location: Copenhagen, Denmark, Completion Year: 2019, Credits: archdaily.com, © Laurian Ghinitoiu

CopenHill is a waste-to-energy power plant that features a ski slope on its roof. This project not only generates energy from waste but also creates recreational and green space for the community, contributing to both energy production and public well-being. It is a great example of how infrastructure projects can go beyond traditional functions, incorporating sustainable and recreational elements to enhance the urban experience.

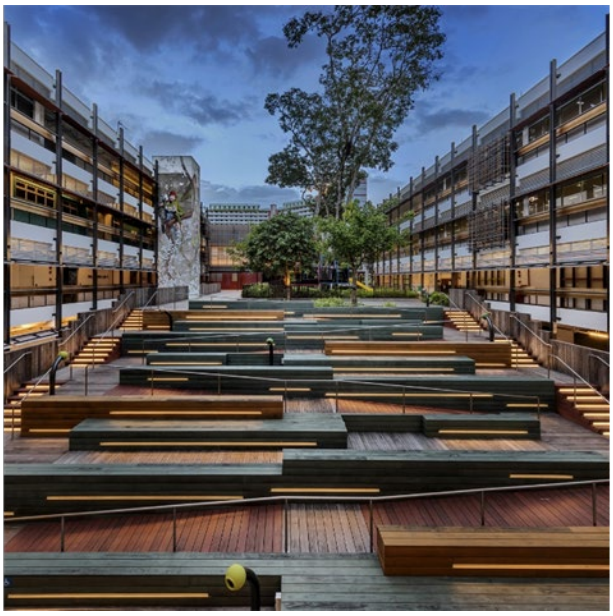

Figure 29. ENABLING VILLAGE, Architects: WOHA, Location: Singapore, Completion Year: 2016, Credits: archdaily.com, © Edward Hendricks

A project that has tried to address this is the Enabling Village in Singapore. Designed by WOHA, the community space offers retail, recreational and training services for differently abled individuals. All public spaces and restrooms in the building are wheelchair accessible and include induction loops that can transmit audio to people using hearing aids and provide braille maps for visually impaired people. The project includes a center for innovators to gather and test ideas for assistive technology.

Figure 30. MUSHOLM EXTENSION, Architects: AART Architects, Location: Korsør, Denmark, Completion Year: 2015, Credits: archdaily.com, © Jens Markus Lindhe

The Musholm Extension, designed by AART Architects goes beyond physical accessibility, embodying a comprehensive approach to inclusivity. One notable feature is the incorporation of adaptive sports and recreational facilities, allowing individuals with various abilities to participate in activities together.

Figure 31. FRIENDSHIP PARK, Architects: Marcelo Roux + Gastón Cuña, Location: Montevideo, Uruguay, Completion Year: 2015, Credits: archdaily.com, Marcelo Roux

Another example is the Friendship Park in Montevideo, Uruguay. It is made in a way that children of all ages can enjoy the space regardless of their physical or cognitive abilities. Apart from the easily accessible spatial arrangement, the materials used help provide tactile and aromatic cues to the users.

Therapeutic environments

Therapeutic architecture is a specialized discipline within the Built Environment that places individuals' well-being at its core, leveraging empirical evidence to guide design decisions. This approach is particularly significant for people facing health challenges, as it prioritizes spaces that are not only functional but also deeply supportive of physical and mental recovery. Therapeutic architecture seeks to incorporate spatial features that positively engage human physiology and psychology, creating an environment that fosters healing, comfort, and peace.

Figure 32. MAGGIE'S LEEDS CENTRE, Architects: Heatherwick Studio, Location: Leeds, United Kingdom, Completion Year: 2020, Credits: archdaily.com

Maggie's Centers are the legacy of Margaret Keswick Jencks, a terminally ill woman who had the notion that cancer treatment environments and their results could be drastically improved through good design. Her vision was realized and continues to be realized today by numerous architects, including Frank Gehry, Zaha Hadid, and Snøhetta. The one in Leeds is the charity's 26th project and one of its most welcoming.

Figure 33. CARPE DIEM DEMENTIA VILLAGE, Architects: Nordic Office of Architecture, Location: Dønski, Norway, Completion Year: 2020, Credits: archdaily.com, © Hufton+Crow

Carpe Diem Dementia Village is an innovative and groundbreaking approach to dementia care, characterized by its unique architectural design and philosophy centered around providing a supportive and engaging environment for individuals living with dementia. Designed to resemble a small-scale village it incorporates residential-style houses, communal spaces, and outdoor areas that promotes autonomy and independence, reducing the institutional feel often associated with traditional care facilities.

Figure 34. URBAN HOSPICE, Architects: NORD Architects, Location: Frederiksberg, Copenhagen, Denmark, Completion Year: 2016, Credits: archdaily.com, © Adam Mørk

The Urban Hospice in Copenhagen creates a positive and relaxed atmosphere for patients, relatives, and staff. The design prioritizes a protecting atmosphere, breaking the traditional patient corridor into smaller units and incorporating a curved common area around a private courtyard. This warm, tactile, and co-created space embodies a unique journey for a dignified end-of-life experience.

Community and social interaction

Denise Scott Brown famously remarked, “Architecture can’t force people to connect; it can only plan the crossing points, remove barriers, and make the meeting places useful and attractive.” Her insight captures the heart of compassionate architecture—a design approach that prioritizes the creation of spaces fostering social interaction and community engagement. Architecture rooted in this ethos aims to shape environments that encourage people from diverse backgrounds to gather, connect, and share experiences, thereby cultivating a sense of belonging and enhancing social well-being.

Figure 35. COMMUNITY CENTRE HERSTERDLUND Architects: Dorte Mandrup, Location: Albertslund, Denmark, Completion Year: 2009 Credits: archdaily.com, © Adam Mørk

Community Centre Herstedlund, designed by Dorte Mandrup, is a dynamic hub that accommodates diverse activities for all ages and interests, encouraging a mix of uses. The design features outdoor connections, skate ramps, performance spaces, and a roof terrace. The building serves as a user-driven cultural space, available for various events and activities at all hours.

Figure 36. PUNGGOL NEIGHBOURHOOD AND POLYCLINIC, Architects: Serie Architects + Multiply Architects, Location: Singapore, Completion Year: 2018, Credits: archdaily.com, © Hufton + Crow

Terraces, designed by Serie Architects in collaboration with Multiply Architects, is a pioneering community center and polyclinic in Singapore. It features lush garden terraces that slope toward the waterway, fostering urban farming, communal activities, playgrounds, and an amphitheater. Overlooking these gardens are spaces for dining, education, and healthcare. A sheltered plaza by the waterways serves as the vibrant heart of the community, hosting various activities.

Figure 37. THE HIVE LEARNING HUB, Architects: Heatherwick Studio, Location: Singapore, Completion Year: 2015, Credits: archdaily.com, © Hufton + Crow

The Learning Hub at Nanyang Technological University, designed by Heatherwick Studio is a groundbreaking educational landmark in Singapore. Departing from traditional structures, it features twelve towers housing tutorial rooms around a central atrium that encourages interaction and collaborative learning. This innovative space redefines the role of educational buildings in the digital age, emphasizing collaborative and technology-rich learning environments for students and professors alike.

Cultural sensitivity

Cultural sensitivity in architecture is a crucial approach that goes beyond mere aesthetics to deeply acknowledge and respect the diverse identities, values, and traditions of the communities it serves. This design philosophy emphasizes the importance of creating spaces that are inclusive, responsive, and reflective of cultural richness, allowing architecture to become a vessel for expressing and preserving local heritage and shared identity.

Figure 38. LYCEE SCHORGE SECONDARY SCHOOL, Architects: Kéré Architecture, Location: Burkina Faso, Completion Year: 2016, Credits: archdaily.com, © Iwan Baan

Situated in Burkina Faso, the Lycée Schorge Secondary School by Kéré Architecture sets a new standard for educational excellence. The design features locally-sourced stone for walls, providing thermal mass for temperature control. Wind-catching towers and overhanging roofs enhance natural ventilation. The radial layout creates an autonomous 'village' with a central courtyard for gatherings.

Figure 39. ISLAMIC RELIGIOUS AND CULTURAL CENTER IN LJUBLJANA, Architects: Bevk Perović Arhitekti, Location: Ljubljana, Slovenia, Completion Year: 2020, Credits: archdaily.com, © David Schreyer

The Islamic Religious and Cultural Centre in Ljubljana transforms an abandoned area near the city center into a multifunctional complex. Including a religious school, cultural spaces, apartments, and Slovenia's first mosque, the design echoes historical precedents like Sarajevo mosques. The autonomous buildings surround a central square with the mosque as the focal point.

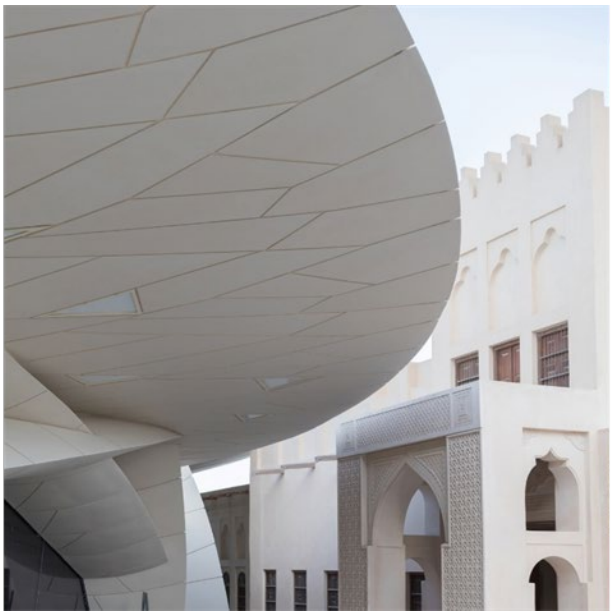

Figure 40. THE NATIONAL MUSEUM OF QATAR, Architects: Ateliers Jean Nouvel, Location: Qatar, Completion Year: 2019, Credits: archdaily.com

The design of the National Museum of Qatar draws inspiration from the desert rose, a mineral formation found in Gulf region deserts. Composed of interlocking disks, both exterior and interior reflect this desert-rose theme. The museum successfully merges architectural aesthetics with cultural and environmental context showcasing Qatar's history. The landscaped park interprets Qatari landscapes, narrating the country's story through local flora.

Towards environments

Care for the environment is a central aspect of the "aesthetics of care" in architecture, a philosophy that goes beyond appearance to prioritize ecological responsibility and harmony with nature. This approach emphasizes not only minimizing the environmental impact of a building but also actively contributing to the restoration and improvement of its surrounding ecosystem. Architects and designers who embrace this philosophy recognize that buildings are integral parts of larger ecological systems and aim to design in ways that respect and enhance these natural surroundings.

Figure 41. THE EDGE, Architects: PLP Architecture, Location: Amsterdam, the Netherlands, Completion Year: 2015, Credits: archdaily.com, © Ronald Tilleman

The Edge, a pioneering office building in Amsterdam, is recognized as the world's most sustainable office building. While sustainability as a purely technological narrative has been exhausted by its overuse, The Edge creates a radically new working environment which is enabled by sustainable technologies.

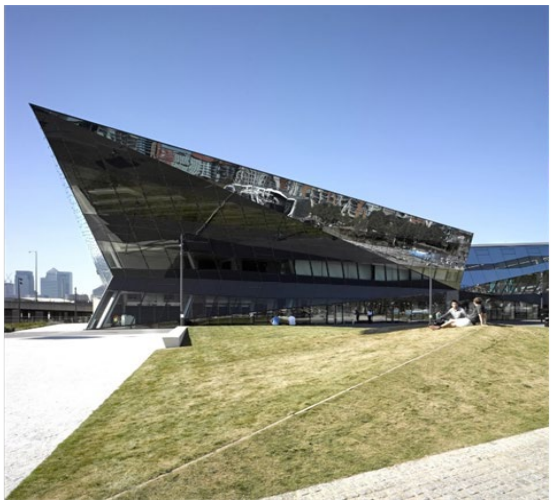

Figure 42. THE CRYSTAL, Wilkinson Eyre Architects, London, United Kingdom, 2023, Credits: archdaily.com, Courtesy of Wilkinson Eyre Architects

The Crystal, designed by Wilkinson Eyre Architects, stands as an emblem of regenerative sustainability in London. With an innovative envelope design, the Crystal optimizes natural light, uses highly insulated glass, and operates as an all-electric, net-zero carbon emissions structure, embodying the future of sustainable architecture.

Figure 43. ONE CENTRAL PARK, Ateliers Jean Nouvel, Sydney, Australia, 2014, Credits: archdaily.com, © Murray Fredericks

One Central Park by Jean Nouvel showcases a regenerative approach, transforming urban spaces into sustainable, vibrant ecosystems. The towers feature a canopy with Australian flora forming a vibrant facade. The adjacent public park offers a serene space for relaxation and various activities. A cantilever with motorized mirrors directing sunlight onto the gardens.

Flexibility and adaptability

Spaces designed with the aesthetics of care prioritize flexibility and adaptability, creating environments that can evolve alongside changing needs while remaining safe and functional for users. Adaptability in architecture refers to a building's capacity to undergo meaningful changes throughout its lifetime, responding to shifting human needs, environmental conditions, and technological advancements. This approach encourages a dynamic reimagining of spatial arrangements and structural configurations, allowing spaces to serve multiple purposes and cater to diverse user requirements over time.

Figure 44. MEDIA-TIC, Architects: Enric Ruiz Geli, Location: Barcelona, Spain, Completion Year: 2009, Credits: archdaily.com, © Stijn Bollaert

The MediaTIC is an adaptive building that harmonizes Barcelona's industrial history with its technological future. Serving as a European hub for information and communication technologies, this digital-era warehouse features a flexible and responsive design. The metallic

structure, featuring rigid braced frames, offers versatile interior spaces that can be easily adapted to accommodate various functions and activities.

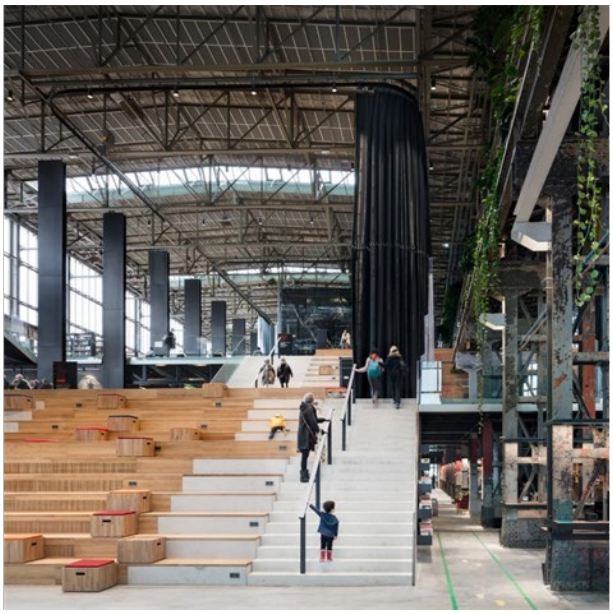

Figure 45. LocHal LIBRARY, CIVIC architects + Braaksma & Roos architectenbureau + Inside Outside + Mecanoo, Location: Tilburg, The Netherlands, Renovation Year: 2019, Credits: archdaily.com, © Iwan Baan

The LocHal Library stands as an exemplary model of how adaptive reuse, collaborative design, and a focus on community engagement can transform an industrial structure into a vibrant and contemporary cultural center. The interior of the LocHal is designed to be flexible and adaptable. Movable furniture, partition walls, and open spaces allow the library to cater to different needs and events, providing a dynamic environment that can evolve over time.

ELEMENTAL addressed the challenge of settling families within a limited site and budget. The solutions involved a two-story building with ground and top floors, allowing for expansions. The approach allows further improvements and extensions to the property by the owners.

Figure 46 SOCIAL HOUSING, ELEMENTAL, Iquique, Chile, 2003-2010, Credits: archdaily.com, © Ramiro Ramirez

Adaptive reuse

In architecture, adaptive reuse, also known as building reuse, involves repurposing an existing structure to serve a new function, such as transforming an old church into a restaurant, a former train station into an office space, or a historic windmill into a home. Adaptive reuse architecture provides an innovative way to extend the lifespan of buildings, giving them renewed purpose and meaning. This approach is often applied to historic or culturally significant structures, allowing communities to preserve their heritage while meeting contemporary needs. By converting these buildings into functional spaces like low-income housing, student residences, community centers, or multi-purpose creative hubs, adaptive reuse contributes to sustainable urban development.

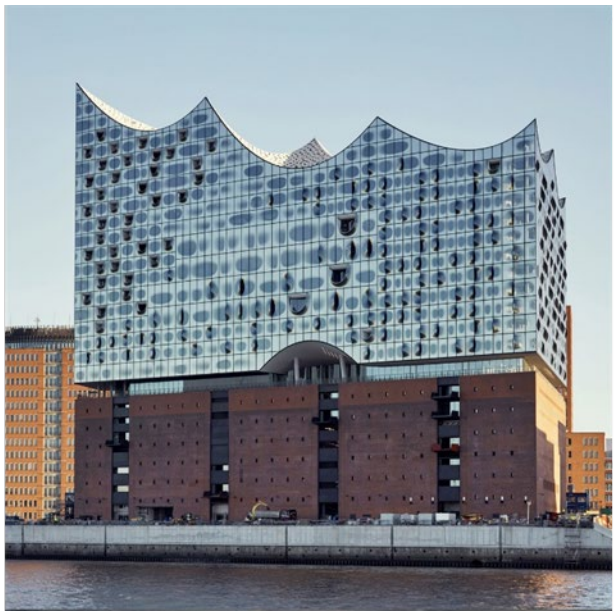

Figure 47. ELBPHILARMONIE HAMBURG, Herzog & de Meuron, Hamburg, Germany, Renovation Year: 2016, Credits: archdaily.com, © Iwan Baan

The Elbphilharmonie in Hamburg, designed by Herzog & de Meuron, transforms the Kaispeicher into a vibrant center for social, cultural, and daily life. Combining a philharmonic hall, a chamber music hall, restaurants, bars, a panorama terrace, apartments, a hotel, and parking facilities, the building serves as a dynamic mix of urban uses. The archaic Kaispeicher, a warehouse from 1963, provides a robust foundation and contrasts with the new glass building, creating an iridescent crystal visible from afar.

Figure 48. BOEKHANDEL SELEXYZ DOMINICANEN, Architects: Merkx + Girod, Location: Maastricht, The Netherlands, Renovation Year: 2006, Credits: dezeen.com

Boekhandel Selexyz Dominicanen, located in Maastricht, is a stunning bookstore situated in a former Dominican church. The interiors feature bookshelves and reading areas cleverly integrated within the church's architectural elements, such as the nave and choir. The high ceilings, arches, and stained glass windows create a unique and contemplative atmosphere, providing an inspiring setting for book lovers.

Battersea Power Station, originally designed by Sir Giles Gilbert Scott, has undergone extensive restoration and adaptive reuse transforming it into a vibrant retail destination with galleries, restaurants, shops, and event spaces. The Battersea Power Station project aims to maintain the site's scale and visual drama while offering a mix of uses for the public.

Figure 49. BATTERSEA POWER STATION, Architects: WilkinsonEyre, Location: London, United Kingdom, Renovation Year: 2022, Credits: archdaily.com, © Peter Landers

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Policy framework for biobased, biodegradable and compostable plastics

Useful links:

https://sdgs.un.org/goals/goal
https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits