PROGRESS REPORT
SLOVENIA

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

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Introduction

Consumption of materials around the world has been increasing very rapidly, which jeopardizes the achievement of the 12th goal of sustainable development. Current material needs lead to overexploitation of resources.

One of the world’s biggest challenges is to link environmental sustainability to economic growth and prosperity by disconnecting the environment from economic growth and doing more with less. In order to promote sustainable consumption and production patterns and to move towards a greener and more socially inclusive world economy, resource separation and impact separation are needed.

In order to achieve sustainable development, we urgently need to reduce our ecological footprint by changing the way we produce and consume goods and resources.

Ensuring sustainable consumption and production practices necessarily means respecting the planet’s biophysical boundaries and lowering current global consumption levels to match the biophysical capacity to produce ecosystem services and benefits.

The world’s population will continue to grow, the middle class is expected to reach 5 billion by 2030, and many developing countries will be looking for a path to greater prosperity. This means enormous pressure on our environment and on resources that we will find increasingly difficult to obtain.

Consumption and production around the world are the driving forces of the global economy, but they still rely on using the natural environment and resources in a way that continues to have devastating effects on the planet.

Economic and social progress over the last century has been accompanied by environmental degradation, which threatens the very systems on which our future development depends — in fact, our survival.
10 richest countries in the world consume 10 times more resources than the poorest countries and more than double the world average, which shows a lot of inequality in the distribution of raw materials to support the (current) lifestyle in these countries. At the same time, this means that low-income countries will need large quantities of raw materials per capita to achieve sustainable development goals. The introduction of a different approach to production and consumption is therefore essential if we are to ensure a decent future for future generations. The answer to this challenge can be found in the transition to a circular economy, which with a more thoughtful way of production and consumption, according to some estimates, can contribute as much as 45% to achieving climate goals.

Some facts and figures:

- Each year, about one-third of all food produced – equivalent to 1.3 billion tonnes worth about $3 trillion – ends up rotting in the trash cans of consumers and retailers or spoils due to poor transportation and harvesting practices.

- If people around the world switched to energy-efficient light bulbs, the world would save $120 billion a year.

- If the world's population reaches 9.6 billion by 2050, almost three planets will be needed to provide the natural resources needed to maintain the current way of life.

Sustainable consumption and production mean more and better with less. It is also about separating economic growth from environmental degradation, increasing resource efficiency and promoting a sustainable way of life.

Sustainable consumption and production can also make a significant contribution to poverty reduction and the transition to a low-carbon and green economy.

More and more multinationals and larger companies are interested in the transition to sustainable use of resources and production, but this practice must be extended to smaller companies to a greater extent.
What is responsible consumption and production?

Goal 12 calls for a comprehensive set of actions from businesses, policy-makers, researchers and consumers to adapt to sustainable practices. It envisions sustainable production and consumption based on advanced technological capacity, resource efficiency and reduced global waste.

Consumption and production patterns have wide environmental impacts. Sustainable production and consumption patterns use resources efficiently, respect resource constraints and reduce pressures on natural capital in order to increase overall wellbeing, keep the environment clean and healthy, and safeguard the needs of future generations. The rise in living standards and the quality of life in Europe since the end of World War II has been made possible through increases in income, production and consumption, which so far have gone hand in hand with more resource extraction and growing pressures on natural capital (air, water, land and biodiversity) and climate. Since we live on a planet with finite and interconnected resources, the rate at which these are used has relevant implications for today’s prosperity and lasting effects on future generations. It is thus important for the EU to decouple economic growth and improvement of living standards from resource use and the eventual negative environmental impacts. This involves increasing the circularity of materials in the economy, thereby reducing both the need for resource extraction and the amount of waste ending up in landfills or incineration. It also means safe management of chemicals and shifting from carbon-intensive energy carriers towards sustainably produced renewable energy sources. Such an approach would not only reduce environmental pressures, but also provide major economic benefits.
Responsible consumption and production in Slovenia

Monitoring SDG 12 in Slovenia focuses on developments in the areas of decoupling environmental impacts from economic growth, energy consumption, and waste generation and management. Slovenia made significant progress in virtually all three areas of consumption and production. However, progress in reducing energy consumption has slowed down over the past few years.

Decoupling environmental impacts from economic growth: Increases in economic activity have long been associated with growing resource and energy consumption. To allow for a continued improvement of the living standard and quality of life without sacrificing the natural resource base they depend on, Slovenia has been striving to become a resource-efficient, green, and competitive low-carbon economy. Focus has therefore shifted to improving the efficiency of resource and energy use by restructuring economies towards producing more from the same resource and energy input. This is of particular relevance in view of a growing population and rising per-capita wealth, which may result in greater overall resource consumption, despite an increase in resource efficiency. Such decoupling of economic growth from the consumption of natural resources should also go along with minimising harmful impacts on human health and the environment. The EU’s progress in this area is monitored by four indicators. Two of them look at the ratio of resource use (materials and energy) to GDP, while the other two look at the harmful environmental impacts of consumption of toxic chemicals and emissions related to transport. Overall, these indicators show some progress over the past few years: the EU’s resource and energy productivity has risen, while consumption of hazardous chemicals has decreased and CO2 emissions from new cars have remained stable.

"Average CO2 emissions per kilometre in new cars in 2018 amounted to 119.6 g CO2, which is 0.6 g CO2 more than in 2017."

Slovenia’s progress of achieving SDG 2030 targets, 2017 (Source: OECD)
Circular economy

The Sustainable Development Goal 12 promotes circular economy, social innovation, new concepts of green mobility and economic sharing, all of which will contribute to changing consumption and production patterns, tackling high youth unemployment and high carbon footprint, and issues arising from the aging and rapid growth of population.

In parallel, the idea of the circular economy as an alternative economic framework has become increasingly important over the last few years, and is also proving to be an "approach to achieving local, national and global sustainability". This growing interest is reflected in a number of actors, including governments, cities and, last but not least, large multinational companies, which are actively exploring ways to transition to circular economy practices.

One of the reasons for the transition to a circular economy, which is a fundamental component of the green economy, is the recognition that the companies of the new model are more sustainable in production green growth and a low-carbon economy, and resource efficiency. Such a transition represents new challenges and opportunities for the transformation of the economy and the creation of new and sustainable competitive advantages for both Slovenia and the European area.

In the EU’s multiannual financial framework for the period 2020–2027, maintaining the environment and sustainable use of resources will be environmental challenges that will be crucial for maintaining the prosperity and quality of life in the region.

The aim of the circular economy is to preserve the value of products, raw materials and natural resources and to reduce waste generation. The circular economy is also a great opportunity for a more sustainable, competitive and positive economy. The transition to a circular economy would accelerate the recycling of products and raw materials, reduce the amount of waste generated and, above all, reduce the need to exploit new, primary raw materials. Sounds nice, but are we really going in that direction?
In a circular economy, unlike a linear economy, where production and consumption run on the same track, raw materials, products and waste are constantly returned to the process. Raw materials, products or waste are recycled, returned to production, reused, repaired or exchanged between users. This method of management reduces the amount of waste generated and the utilization of primary raw materials. In fact, only those products that can no longer be used are discarded, and only the minimal possible amount of new primary raw materials that is necessary to maintain the production is used.
Monitoring progress towards the circular economy

To monitor and measure progress towards the circular economy and to assess the adequacy of the measures taken, the European Commission established a framework for measuring this progress earlier this year on the basis of the Circular Economy Action Plan. The established framework provides quick and easy access to relevant, internationally comparable data for the general public, business and politics. The framework consists of a set of key indicators covering the main elements of the circular economy, grouped into four content areas: production and consumption, waste management, secondary raw materials, and competitiveness and innovation.

The first set of production and consumption indicators refers to the reduction of waste quantities and the consequent increase in the self-sufficiency for selected raw materials in production.

The second set, which includes waste management, tracks the share of waste that is recycled and thus actually returned to production, while creating a new value.

The third set of indicators deals with the return of materials and products back to production, as secondary raw materials or recycled materials can replace the need for new raw materials and consequently reduce depletion and increase the security of future supply of primary raw materials.

The fourth set of indicators shows the extent to which the circular economy contributes to job creation, the development of innovative technologies for the production of recyclable materials and the promotion of innovative industrial processes.

“In 2018, an inhabitant of Slovenia threw away 68 kg of food on average, or 4 kg more than in 2017.”
What do the data for Slovenia show?

The data show that the Slovenian economy is moving in the right direction, in the direction of a sustainably oriented circular economy. A positive trend can be seen in waste management as well as in the exploitation of secondary raw materials and competitiveness and the introduction of innovations. The only problem remains the generation of waste in production and at final consumers (in households and the service sector).

The quantities of generated municipal waste, which in Slovenia are still just below the EU-28 average, have been increasing year by year and are thus very quickly approaching the European average. From 2010 to 2016, the amount of municipal waste generated per capita increased by almost 13%. The negative trend of increasing quantities is also seen in the generation of food waste. These quantities have also been increasing and have increased by 17% in the last three years for which data are available. The generation of municipal waste and food waste can be influenced by every individual through proper management and lifestyle changes. People should be properly informed and awareness raised that reducing the amount of municipal and food waste generated contributes to the conservation of primary resources, as well as to the reduction of energy and water consumption and to cutting the cost of production.

When analysing data on non-mineral waste, the picture changes considerably and trends turn in a positive direction. In this case, the generation of this waste, shown on GDP (gross domestic product), is reduced, which means that less other waste is actually produced per unit of GDP.

One of the central pillars of the circular economy is the return of materials and waste back to production and the prevention of their disposal and incineration. This increases the value of materials while reducing losses. Slovenia and the Slovenian economy have recently been investing a lot of effort in waste recycling and reuse processes. This is also reflected in the share of recycled waste, which has been mostly increasing. The share of recycled municipal waste thus increased from 22.4% in 2010 to 57.7% in 2016, while the rate of packaging waste recycling increased by 6 percentage points and in 2015 amounted to 67%. The rate of recycling of electrical and electronic waste increased by 25 percentage points, the rate of recycling of bio-waste by 58 percentage points and the rate of recycling of construction waste from 94% to 97%. The problem is currently only seen in plastic packaging, where the rate of recycling has been falling, and dropped from 67.3% in 2010 to 63.4% in 2015, but, despite the decline, remains well above the EU-28 average. The overall rate of packaging recycling is expected to be 65% by 2025 and 70% by 2030, which Slovenia has already achieved with 67% in 2015.
According to the latest data, Slovenia is above the EU-28 average in the recycling rate of all types of waste, except for the recycling of bio-waste.

Positive trends are also observed in the use of secondary raw materials, where the share of raw materials and waste returned to production reduces the utilization of primary raw materials in the total consumption of resources. The higher this share, the more secondary raw materials replace the primary raw materials. The share of materials or raw materials circulating within the production industry in Slovenia has been growing and increased from 5.9% in 2010 to 8.4% in 2014. Despite the increase, this share is still below the EU-28 average. Trade in recyclable raw materials has also been increasing, both between Slovenia and the countries of the European Union, as well as between Slovenia and other countries.

Four priority areas for Slovenia

The circular economy also contributes to the creation of new jobs and the development of innovative technologies for the production of recyclable materials, and encourages innovative industrial processes. According to data from the competitiveness and innovation category, Slovenia is above the European average. The number of persons in paid employment in activities closely related to the circular economy rose from 1.88% in 2010 to 2.18% in 2015. The value added at factor cost has also increased. It amounted to 1.23% of GDP in 2010 and 1.3% of GDP in 2015. In 2013, for which the data are last available, Slovenia also had 2 patents registered relating to recycled/secondary raw materials.
Trend and interpretation of Slovenia’s progress on the path to a circular economy and comparison with the EU-28. Sources: SURS and Eurostat

<table>
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<tr>
<th>Indicator</th>
<th>EU-28</th>
<th>SI</th>
<th>SI last available data</th>
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<td>Lot 1: Production and consumption</td>
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<td>Waste food</td>
<td>149</td>
<td>64</td>
<td>75 (2016)</td>
<td>growing</td>
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<td>Lot 2: Waste management</td>
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<td>Lot 3: Secondary raw materials</td>
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<tr>
<td>Imports of recyclable raw materials from non-EU countries (tonnes)</td>
<td>5,484.505</td>
<td>171.634</td>
<td>112.730 (2016)</td>
<td>falling</td>
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<td>Exports of recyclable raw materials to non-EU countries (tonnes)</td>
<td>34,801.638</td>
<td>113.039</td>
<td>175.585 (2016)</td>
<td>growing</td>
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<tr>
<td>Imports of recyclable raw materials from EU countries (tonnes)</td>
<td>NA</td>
<td>779.816</td>
<td>911.102 (2016)</td>
<td>growing</td>
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<td>Exports of recyclable raw materials to EU countries (tonnes)</td>
<td>NA</td>
<td>495.580</td>
<td>580.151 (2016)</td>
<td>growing</td>
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<td>Lot 4: Competitiveness and innovation</td>
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<td>Number of employees (% of all employees)</td>
<td>1,71 (2014)</td>
<td>1,88 (2010)</td>
<td>2,18 (2015)</td>
<td>growing</td>
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<tr>
<td>Value added at factor cost (% of GDP)</td>
<td>1,00 (2014)</td>
<td>1,23 (2010)</td>
<td>1,30 (2015)</td>
<td>growing</td>
</tr>
<tr>
<td>Number of patents relating to recycled / secondary raw materials</td>
<td>363,78 (2013)</td>
<td>1,00 (2009)</td>
<td>2,00 (2013)</td>
<td>growing</td>
</tr>
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One third of electricity from renewable energy sources

Renewable energy sources are important for a sustainable and secure energy supply, for reducing greenhouse gas emissions and for developing the economy. The most important renewable energy source in Slovenia is wood, whose share among renewable sources in energy supply in 2018 was 48%.

The share of energy from renewable sources in the total energy supply in Slovenia – this includes all the energy needed in the country, both for the production of electricity and heat and for use by final consumers (i.e. households, industry, services) – amounted to 17% in 2018.

Among renewable energy sources in the energy supply in Slovenia in 2018, wood and other solid biomass accounted for the largest share, 48%. This was followed by hydropower with 36%. The shares of other renewable energy sources were lower, but the use of energy from these sources has been mostly increasing.

In 2018, around 5,100 GWh of electricity was produced from renewable energy sources, which was a third of all electricity produced in that year. Most of this energy is produced in hydropower plants; in 2018, this share stood at 95%. The amount of electricity produced in a given year from renewable sources highly depends on the hydrological conditions in that year.
Green Growth

In 2018, green growth (stimulating economic growth while ensuring the preservation of natural resources) compared to the previous year is reflected in the following indicators:

- energy productivity increased by 5%,
- emission productivity increased by almost 4%,
- water productivity increased by more than 3%,
- the amount of available freshwater resources per capita increased by almost 13%,
- timber stock increased by 1%,
- the share of separately collected municipal waste increased by 0.8 percentage points,
- the share of organic and conversion farms increased by 0.4 percentage points,
- the national budget for research and development in energy and the environment increased by 0.2 percentage points each.

In 2018, the following indicators did not show progress towards green growth:

- material productivity decreased by more than 10%,
- the utilization of domestic resources per capita increased by almost 8%, and
- the share of environmental taxes in relation to all taxes and social contributions decreased by almost 0.6 percentage points.

"Greenhouse gas emissions in Slovenia decreased by 14.5% in the 1986–2017 period."

Waste

Situation in the field of waste in Slovenia

Just like all over the world, the amount of waste has been growing in Slovenia. On average, we generate slightly more than 8 million tonnes of waste per year in Slovenia, of which more than a million tonnes are municipal waste, which amounts to 495 kilograms per capita. Among municipal waste, there are 6,700 tonnes of hazardous municipal waste, but we have been managing to reduce this amount.

Most municipal waste has ended up in landfills in the past. With the change in legislation, policy instruments and the establishment of municipal waste management centres, we reversed the trend, as the share of separately collected waste and the recycling rate began to increase. With an extremely high rate of recycling of 59% for municipal waste, Slovenia ranks among the top in Europe.

Efficient use of natural resources through the concept of circular economy

Promoting sustainable management of natural resources and their efficient use, in particular by supporting the transition to the so-called circular economy is crucial in waste management. Both waste prevention and preparation for re-use and recycling enable the production of products from already used sources, which significantly reduces the need for natural resources. As a result, energy consumption and additional environmental impacts are also reduced to a certain extent. The transition to a circular resource management strategy requires comprehensive changes that include the entire product life cycle, including its design and material selection, not just the post-end phase.

When a substance or an item becomes waste, it is subject to waste legislation. In Slovenia, we follow the basic European guidelines in this area, the common goal of which is to prevent the generation of waste or to reduce the amount of existing waste. In the generation and management of waste, the waste hierarchy is considered as a priority: waste prevention, preparation for re-use, recycling, other recovery operations (e.g. energy recovery) and disposal. In order to efficiently and easily carry out all these processes, it is necessary to properly separate waste at the place of its generation. In addition to the environmental aspect, the economic viability of the processes is also taken into account in waste management.
The cost of polluting the environment is borne by the polluter

The oldest environmental principle of payment for pollution stipulates that the polluter covers all costs of prescribed measures to prevent and reduce pollution and risks to the environment, of environmental use and of elimination of the consequences of environmental pollution, including the cost of preventive and remedial measures in case of environmental damage.

For the purposes of waste prevention, including the re-use of products and the preparation for re-use, recycling and other methods of recovery of waste generated after the use of certain products, extended liability may be prescribed for the manufacturer of such products. This sets out its obligations throughout the life cycle of the product, with users being best acquainted with those after the end of the product’s use. Waste management under the extended responsibility of the producer is currently enforced for the following mass streams of waste: packaging, electrical and electronic equipment, portable batteries and accumulators, grave candles, plant protection products containing hazardous substances and medicines, and used tires and vehicles.

Slovenia is achieving good results in the field of waste separation, but lags behind in reuse. The main reasons for this are the lack of systemic solutions that would encourage and facilitate the possibilities and ways of re-use, and the mentality of people who support re-use on a principled level, but do not implement it in practice.

Slovenians have a relatively high standard of living and that is also why the consumer mentality has developed at this stage, and we would rather go to the store for new goods than to repair or reuse old ones. Of course, this can be changed in several ways. Both through systemic measures and by raising the awareness of individuals that even small changes in living habits can make a positive contribution to their family budget as well as the environment.

By reusing products, we prevent the generation of waste and thus reduce its quantity and its impact on the environment. Reuse is not a one-time act, but an attitude towards things and a life philosophy that you can pursue on a daily basis.
58.9% of municipal waste recycled
Need to develop a new circular economy action plan

The transition is an opportunity to expand sustainable and job-intensive economic activity. There is significant potential in global markets for low-emission technologies, sustainable products and services. Likewise, the circular economy offers great potential for new activities and jobs. However, the transformation is taking place at a too slow pace with progress neither widespread nor uniform. The European Green Deal supports and accelerates the EU’s industry transition to a sustainable model of inclusive growth.

Slovenia must leverage the potential of the digital transformation, which is a key enabler for reaching the SDG objectives.

**Together with the industrial strategy, a new circular economy action plan will help modernise economy and draw benefit from the opportunities of the circular economy domestically and globally.**

A key aim of the new policy framework must be to stimulate the development of lead markets for climate neutral and circular products, in Slovenia and beyond.

The circular economy action plan needs to include a ‘sustainable products’ policy to support the circular design of all products based on a common methodology and principles. It needs to prioritise reducing and reusing materials before recycling them. That could foster new business models and set minimum requirements to prevent environmentally harmful products from being placed on the market.

We need to extend and strengthen producer responsibility. Circular economy action plan needs to guide the transition of all sectors. We need to develop requirements to ensure that all packaging in the market is reusable or recyclable.

**Need to make new social trend of living**

In addition to the production system, the question of consumer habits is also important, where the trend in Slovenia is not favourable, as, for example, electricity consumption in households and the share of households equipped with goods that need electricity for their operation has been growing. A larger number of such devices not only nullifies the benefits that can be brought about by improving the energy efficiency of some devices, but also contributes to the increase in the amount of waste.

**An action plan to promote sustainable household consumption in Slovenia needs to be adopted.**
Leave no one behind

The basis for achieving sustainable development goals is multi-sectoral cooperation with diverse stakeholders, as this is the only way to fully implement individual sustainable development goals, which also takes into account the principle that no one should be left behind.

In the future, Slovenia must strive for further active integration of various relevant stakeholders. Thus, policy-makers must work firmly and side by side with all stakeholders and, above all, with representatives of civil society. Indeed, a website on the Agenda for Sustainable Development until 2030 in Slovenia has been created and regularly updated, which offers all interested parties an insight into the situation in the field and the value of individual indicators. However, we recommend that consultative bodies should be set up where the interests of civil society are better represented and where measures are adopted through a structured dialogue. According to the interests of civil society, the government and the competent authorities should develop policies and measures that adhere to the principle of “leaving no one behind”.

Conclusion

Most indicators show that the Slovenian economy is moving in the right direction, in the direction of a circular economy. Some effort will still be needed to encourage and take measures to reduce waste or to accelerate the reuse of waste and its return to production processes. It will also be necessary to increase investments in companies engaged in the recycling or reuse of materials and to increase investments in the preparation and use of materials that can be recycled.

Circular forms of production are often financially unattractive, as they can make the production process much more expensive. Therefore, we need to encourage and support scientific research institutions in research that will develop production processes that will also be financially viable.

It will also be necessary to invest in research and development in the fields of materials recycling, the use of waste, secondary raw materials, and reducing the use of primary raw materials, and in this way look for new opportunities and solutions. There is still a lot of space and room for improvement.
Sources:

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https://slovenia2030.si/drugo-porocanje-slovenije-v-teku/

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EU trend of SDG 12 on responsible consumption and production.

The 2030 Agenda and the SDG aim to eradicate poverty and prevent harmful climate change and injustice by 2030. It calls on all countries, both developed and developing, and all the people of the world to take action towards sustainable development goals which mean a better future for billions of people and the whole planet.

The world is on a great test. Especially after the experience of the pandemic, it became clear to us that everything we have is not eternal.

Ecosystems and their services are key to the survival, health and quality of life of present and future generations. Natural resources are the foundation of economic development, offer opportunities for new investment and employment, and for improving the living standards and quality of life.

Sustainable protection of natural resources and planning of their use are necessary for the long-term preservation of the quantitative and qualitative state of our natural resources, which are one of the key pillars for ensuring a healthy living space, food production and economic activities with high added value and quality of jobs.

Within civil society organizations, we need to create appropriate trends that will change consumer habits and direct them to products and services that pursue sustainable and reusable resources.