

Module 7

Sustainable Development

Goal No 12

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



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List of abbreviations



MDGs – Millennium Development Goals
SDGs – Sustainable Development Goals

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1.1: Introduction to SDGs

For 15 years, the Millennium Development Goals (MDGs) mandate focused on fighting poverty in its many dimensions (United Nations, 2015) by working on 8 global goals. Following this, in 2015, the United Nations launched the 2030 Agenda for Sustainable Development. This new global action plan seeks to reach sustainability worldwide by the year 2030 by expanding the former 8 MDGs. With a timespan of 15 years, this new Agenda consists of 17 SDGs as shown in Figure 1.

Figure 1 - Sustainable Development Goals



Source: United Nations, Communication Material (n.d.).

The SDGs function as a blueprint for a better and more sustainable future for all (United Nations, 2020) and aim to be achieved by the year 2030. These goals therefore function as a continuation of the MDGs and carry on the work to reach the targets set by global leaders. The pledge of the 2030 Agenda is to leave no one behind, calling for action to end poverty and fight climate change. The SDGs include topics related to social, economic and environmental issues, in addition to highlighting the importance of partnerships for the successful implementation of the 2030 Agenda. The goals are aimed at all people and

countries and should receive the necessary attention and resources to succeed. After five years of SDGs implementation, progress can be seen in some critical areas, while many others demand urgent collective action in order to reach the ambitious targets (United Nations, 2019).

According to the United Nations, SDG12 on Sustainable consumption and production is about “promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic competitiveness and reduce poverty” (UN, 2015). The United Nations defined targets and indicators for SDG12, that establish the actions needed to implement it and deploys a set of metrics which may help to assess the extent to which the foreseen targets are being achieved. Based on the relevance of SDG12, this module describes the many features and fosters a better goal understanding, as part of a global effort to foster sustainable development.

1.2: Defining SDG12

Sustainable Development Goal 12 focuses on “ensuring sustainable consumption and production patterns”, and therefore is aimed at both the consumers as well as the producers of goods. SDG12 consists of 11 global targets, which are accompanied by 13 indicators to monitor the targets’ progress. Like the other SDGs, SDG12 consists of both ‘Outcome’ and ‘Means of Implementation’ targets (Bartram et al., 2018). Target 12.5, for instance, states that by the year 2030, waste reduction should be substantially reduced through prevention, reduction, recycling and reuse. A workable indicator to measure progress in this regard is the national or municipal recycling rate, measured in tons of material recycled per year, if such data is available within a country. Either the year 2014 or 2015 could serve as a baseline to track progress during the implementation of the SDGs in its 15-year period until the year 2030. A detailed table of the targets, indicators and their means of implementation can be found in Annex A.

1.2.1: Significance of SDG12

The focus on sustainable consumption and production patterns concerns a wide range of actions. This is especially true as the consumption of natural resources increases and the seriousness of challenges related to soil, water and air pollution grows globally. The need for

resource efficiency and better consumer awareness are among the priorities for SDG12. As suggested by Chan et al. (2018), SDG12 could be divided into 3 major groups: cross-cutting issues, natural resource management and food waste and loss.

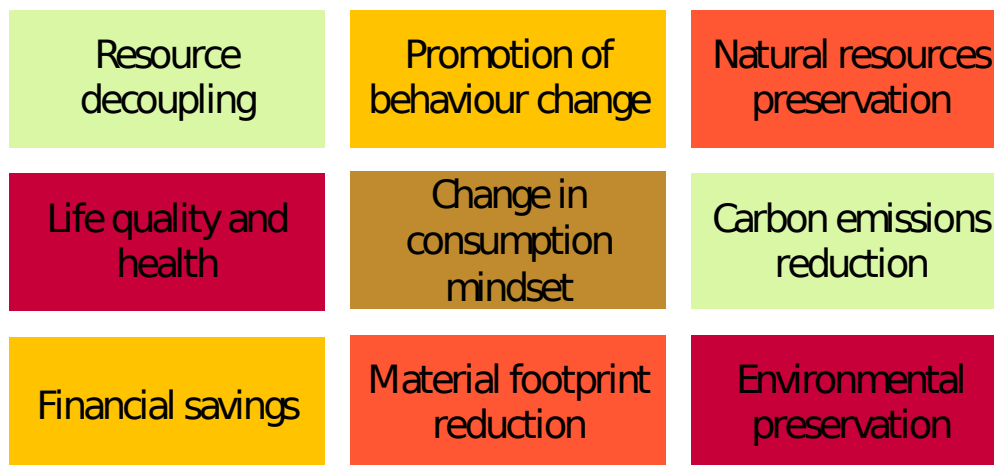
1. The cross-cutting issues include “whole-system perspectives, consumption patterns and consumer behaviour, and how to measure and monitor progress towards sustainable consumption” (Chan et al., 2018, p. 13). For whole-system perspectives, where the supply chain is fully integrated (from production to consumption), sustainability needs to be discussed not solely in academic contexts. Rather, it is paramount to reach and integrate urban planners, business and, in particular, individual consumers. In order for those groups/stakeholders to be able to make informed decisions about their consumption, education is key (Vergragt et al., 2016). Additionally, proper analysis of patterns and behaviours is essential towards an effective application of sustainable consumption and production practices (Dobes, 2016). More sustainable models working towards the circular economy are also connected to this topic, for maximising the use of resources or materials, minimizing waste, emissions and energy, and overcoming technology limitations and lock-ins (Marrucci et al., 2019; Tseng et al., 2018, 2020).
2. The second group concerns natural resource management and encompasses material use and efficiency, the role of consumption, and policy and practical needs. Studies in the European Union point out the need to focus more on the consumption side in terms of Sustainable Consumption and Production policy and the measures taken (Liobikienė & Dagiliūtė, 2016). Given the importance of stakeholders' engagement and the consumer footprint, there is also the need to address consumption-based emissions and their impact and to work on the socioeconomic implications of more efficient economies (Sala & Castellani, 2019; Schröder et al., 2019; Thongplew et al., 2017).
3. Finally, the third group covers food loss, food waste and other issues connected to supply chains. As highlighted by Corrado et al. (2019), approximately one third of the food produced is wasted along the global food chain. This food loss illustrates the environmental burden of a currently inefficient system, while simultaneously demonstrating the huge potential to increase efficiency along the supply chain. An essential part of the initiatives towards responsible production and consumption is to research and apply practices to reduce or prevent food waste (de Moraes et al., 2020) and also to increase agricultural and value-chain productivity while reducing carbon emissions (Galford et al., 2020). Supporting actions towards more efficient

supply chains is among the priorities as well, especially by supporting producers, overcoming inefficient trends, and investing in enhanced scientific and technological capacity (Chan et al., 2018; Luthra et al., 2017; Mangla et al., 2017).

1.2.2: Advantages of SDG12

In view of the varied approaches of responsible production and consumption, the advantages of SDG12 are numerous, as highlighted in Figure 2. Sustainable consumption and production is among the main objectives and foundations needed for sustainable development, ranging from improvements in “the way that products and materials are sourced, manufactured, and marketed and the way that products are purchased, used, and disposed of at the end of their useful lives” (Zu, 2013, p. 2). By investing in more responsible and sustainable production systems, cities, companies and individual consumers can contribute to the decoupling of economic activities from the consumption of resources. This will preserve natural resources, reduce/recycle waste, carbon emissions and pollution, and promote behaviour change in general terms (from buying to disposing).

Figure 2 - Main advantages of SDG12



Source: developed by the authors (2020)

Like a snowball, these advantages have the potential to generate other benefits. From an economic point of view, a reduced consumption of resources and reincorporation of formerly disposed waste into the production system can represent financial savings. Behaviour change can also improve the public image of companies and connect them to the consumer. Given the current population growth and increased urbanization, as well as the demand for resources that are coming with this growth, SDG12 can reduce the material footprint and

contribute to a quality environment, preserving soil, water and air. By working on the decrease of carbon emissions, this goal has also an important role in climate action.

Furthermore, quality of life and health are among the advantages of responsible production and consumption, especially through environmental protections. While changing their behaviour towards the environment and the economy, individual consumers can have more access to information on topics related to sustainability and improve their lifestyles. Since SDG12 targets both consumption as well as responsible production patterns, it will also put pressure on international companies to create better working conditions for employees in low-wage countries.

A final advantage of SDG12 is a change in the consumption mindset. The concept of fair trade entails the need to “change the way trade works through better prices, decent working conditions and a fairer deal for farmers and workers in developing countries” (Fairtrade, a). Another concept linked to a change in the consumption mindset is the sharing economy, where people participate in collaborative consumption (Hamari et al., 2016), either by sharing, renting or borrowing.

1.2.3: Interdependencies of SDG12

According to the United Nations Review of SDG implementation during the High-Level Political Forum in 2018, sustainable consumption and production “is one of the most cost-efficient and effective ways to achieve economic development, reduce impacts on the environment and advance human well-being” (United Nations, 2018, p. 4). The report also highlights that the SDG12 is connected to almost all other goals, and particularly with SDGs 2, 3, 4, 8, 9, 13, 14 and 15.



SDG2 concerns Zero Hunger. The connection with responsible production patterns is given in some targets of this goal which highlights agricultural productivity, secure access to land and productive resources, and the implementation of resilient agricultural practices to increase production as important actions to fight hunger worldwide.

SDG12 has also an important relation with Good Health and Well-Being (**SDG3**) not only for quality of life and better environmental



standards, as mentioned previously, but also for reducing chances of diseases due to air, water and soil pollution and contamination.



Target 12.8 of SDG12 aims to ensure that by the year 2030 “people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.” SDG12 therefore acts as a complement to **SDG4** in promoting Quality Education and ensuring the acquisition of knowledge and skills needed to promote sustainability.

When it comes to Decent Work and Economic Growth (**SDG8**), some targets specifically denote the contribution towards responsible production and consumption: the achievement of higher levels of economic productivity, the promotion of policies to support these productive activities and the improvement of global resource efficiency in consumption and production, while aiming to decouple economic growth from environmental degradation.



SDG9, which focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation, recommends the efficient use of resources and the adoption of clean technologies to reduce carbon emissions.

The same focus is the primary aim of the goal on Climate Action (**SDG13**), which will benefit from actions of responsible consumption and production for reducing carbon emissions and their effects on climate change.



Both **SDG14** and **SDG15** aim to protect and promote the sustainable use of marine and territorial resources, respectively. These objectives combine well with the aims of SDG12. Overfishing and the overall unsustainable use of seas and lakes, for instance, continues to prove be a challenge for



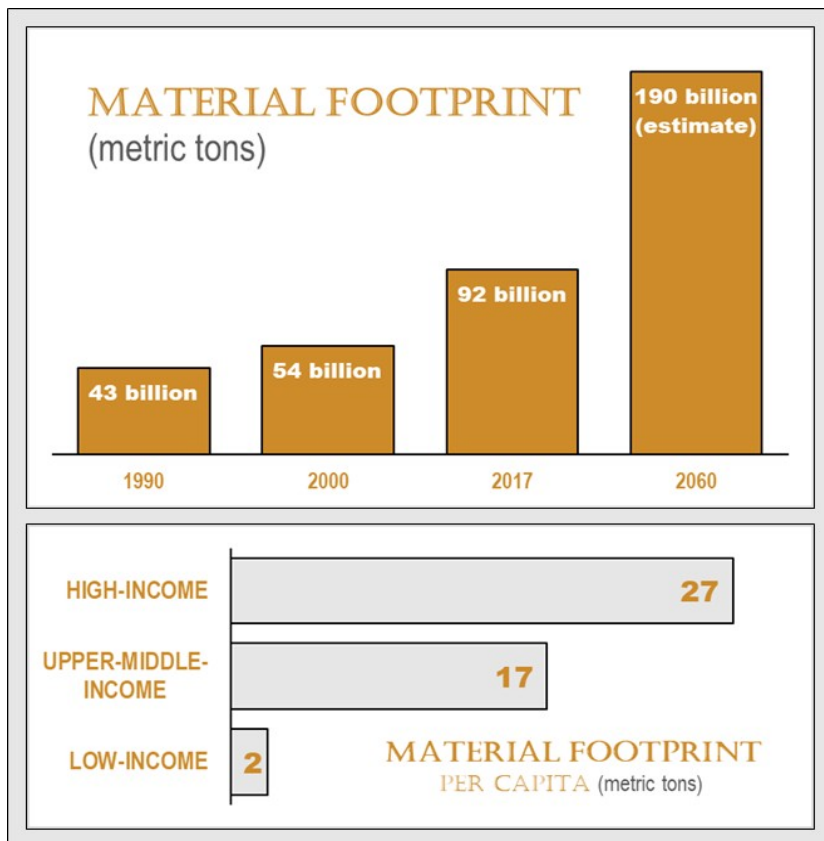
both human beings as well as the environment in various parts of the world. SDG15 on the other hand deals with productive land use, which includes, among other things, deforestation, biodiversity, wildlife and poaching. The latter is a problem especially in different African countries, where poachers hunt down rhinos and elephants in order to sell their tusks. This is where SDG12 and SDG15 come together, since life on land can only be protected when the consumption and use of those tusks stops.

1.2.4: Challenges in the Implementation

According to the last report on the progress of the Sustainable Development Goals (United Nations, 2019), the global material footprint is rapidly growing, even more than economic growth and rising populations worldwide. The report calls for urgent action to fight the over-extraction of resources and environmental degradation. The main challenges are related to:

- Increased amounts of natural resources to support economic activity (e.g. Wang et al., 2019) which contribute to an increase in the global material footprint (Figure 3). This footprint is expected to more than double until 2060 if no action is taken, and the situation is even more worrying when analysing data locally: the material footprint per capita in high-income countries is more than 13 times the level of low-income countries, although the latter are the ones that suffer the most with the negative impacts of it. In order to mitigate the need of natural resources, there is a need to invest in innovation focusing on recycling and on the use of alternative and eco-friendly raw materials.

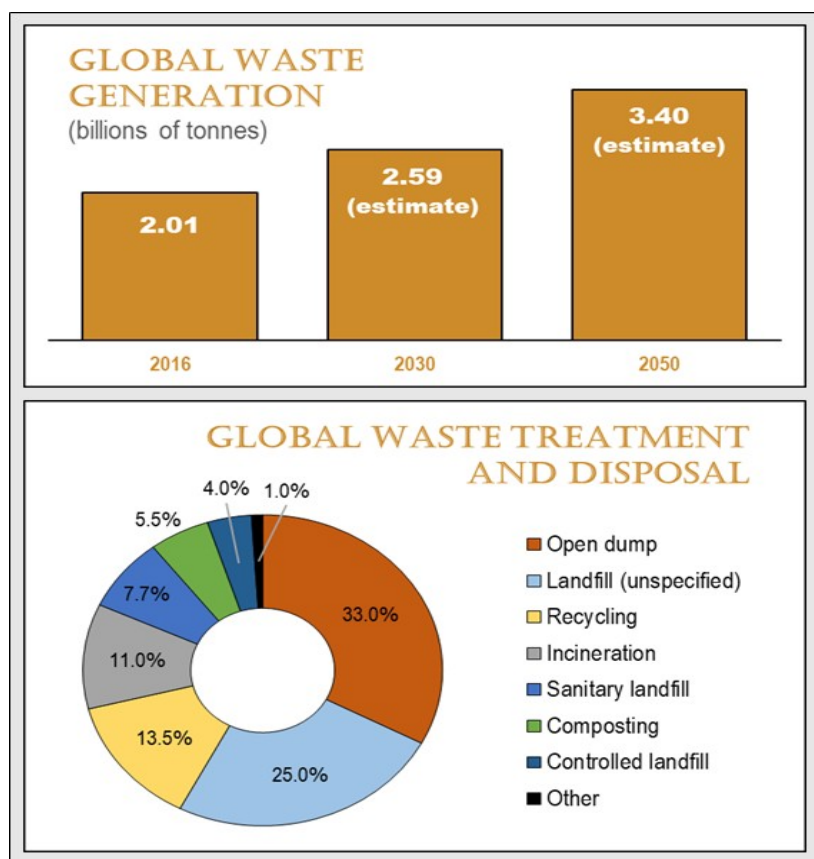
Figure 3 - Data on increase and contrast of global material footprint



Source: based on United Nations (2019)

- Inefficiency in the use of resources (e.g. Berglund, 2017) which hinders the decoupling of economic growth and the consumption of natural resources. A mitigation strategy could be to evaluate the inefficiency of resource use through Sustainable Impact Assessments, and then establish indicators to improve resource management.
- Increased waste generation (e.g. Chan et al., 2018), including food waste (e.g. Hagedorn & Wilts, 2019). As shown in Figure 4, projections indicate that until 2030 the generation of waste may increase by approximately 70%. In addition to problems related to waste generation, waste treatment and disposal are also global challenges, especially because a high percentage (>30%) of waste is still disposed in open dumps. This figure is even higher when analysing developing countries, with more than 50% of waste being disposed in open dumps in some regions of Africa and Asia, reaching 75% in its poorest areas. The waste problem could be tackled by two mitigation strategies: First, trade agreements between countries and companies could include conditions on which party has to handle the waste. Second, the World Trade Organization could develop standard penalties for countries and companies that send waste to other countries as if it was another product, or do not give a proper treatment to the generated waste.

Figure 4 - Global waste generation, treatment and disposal



Source: based on Kaza et al. (2018)

- Behaviour change, including lifestyle and/or organisational plans (e.g. Schröder et al., 2019). Strategies to promote behaviour change could be (1) to include the SDGs in general as part of curriculum at schools, universities and training at companies, and (2) to promote sustainable consumption as a national policy.

Another challenge is the current COVID19 pandemic, that started in December 2019 and that hinders the plans of governments and companies to implement sustainable consumption policies. Many of these plans were already defined, but as of May 2020 nobody can predict which impacts the pandemic will have on the financial market, tourism, and sports events (Cohen, 2020), only to name a few. According to the progress chart of the SDGs (UN Stats, 2019) which evaluated the indicator “Reduce the domestic material consumption (DMC) per unit of GDP” for SDG12, the result is rather negative (Table 1). The ratio presented in the table refers to the present (latest available data) level of development in the specific area addressed by the indicator and the colour shows indicator progress.

Table 1 - Results for SDG12 - Sustainable Development Goals Progress Chart 2019

Target	World	Sub-	Northern	Central	Eastern	Latin	Australia	Oceania	Europe
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		Saharan Africa	Africa and Western Asia	and Southern Asia	and South- Eastern Asia	America and the Caribbean	and New Zealand		and Northern America
Reduce the domestic material consumption (DMC) per unit of GDP	High ratio	Very high ratio	High ratio	Very high ratio	Very high ratio	High ratio	Moderate ratio	Very high ratio	Low ratio

	Moving away from the target/deterioration
	Limited or no progress
	Fair progress but acceleration is needed

Source: adapted from UN Stats (2019)

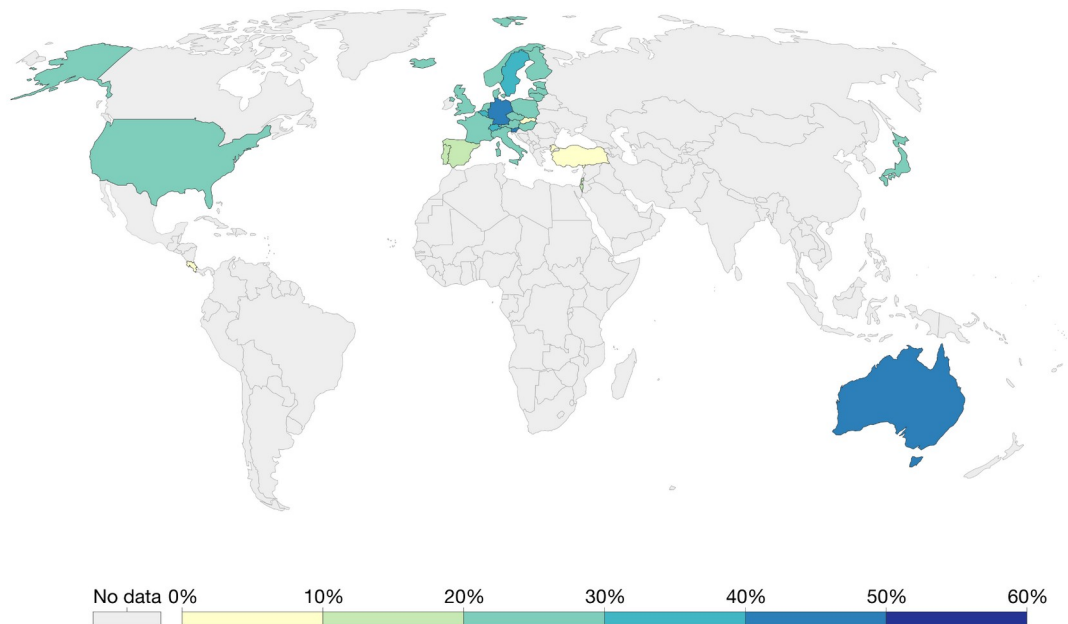
It can be seen that much progress is needed in all global regions, highlighting the importance of policies to support resource efficiency and the reduction of waste (United Nations, 2019). Slow progress in different parts of the world may also be traced back to challenges in monitoring. For example, target 12.5, may be relatively easy to monitor, once the relevant quantitative data is available and frequently updated. Other targets, however, might prove more difficult to track, particularly those of a more qualitative nature. For instance, target 12.8 states that by the year 2030, we need to “ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature”. Its accompanying indicator 12.8.1 elaborates that this target can be tracked through the extent to which “(i) global citizenship education and (ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment”. This list of more qualitative instead of quantitative oriented criteria illustrates the possible difficulties associated with tracking the progress of various targets mentioned under SDG12.

Further challenges arise from the need to have access to reliable data that can be tracked over time in order to measure progress. This data, however, is not readily available in numerous countries as seen in Figure 5.

Figure 5 - Municipal waste recycling rates (%) in 2015

Municipal waste recycling rate (%), 2015

Municipal (including household) waste recycling rates, measured as the percentage of total waste generated that is recycled.



Source: OECD/Eurostat

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Source: Our World in Data (2015).

The 'SDG tracker' lists the progress of several of the targets of SDG12, yet highlights that "definitions of, and indicators for sustainable resource consumption" are currently limited (SDGTracker-SDG12). This shortage of data is evident in the progress of several of the indicators listed under SDG12, since no progress can be reported. The challenges for some countries are therefore twofold: they first need to establish an appropriate system in order to draw on the necessary data, and subsequently they must keep track of the data generated over a period of time. In the case of the SDGs, this period would ideally be the years 2015 to 2030, and possibly beyond.

1.3: Good Practices

Some examples connected to SDG12 were selected, especially for their innovative approach and/or the opportunity to apply them in different contexts. Different countries also have different ideologies, governance structures, economic contexts and physical conditions; but the willingness and need to contribute towards responsible production and consumption should not be different.

- “Earth Mall with Rakuten”: with the slogan of “shopping that changes the future”, this online shopping mall from Japan represents an initiative to gather sustainable products (particularly with international certifications) “in one place” and promote SDG12. The main motivation was the lack of information for consumers regarding where to find more sustainable options (SDGAction30633).
- Organic Farming in Ilgin Village: this initiative was applied in Turkey from 2015 to 2017 and had positive aspects in several SDGs. Concerning SDG12, it aimed to increase the production of value-added organic products. Organic agriculture is valuable for protecting consumers and producers (with safe food) and for minimising the impact on soil (SDGAction28435).
- Project CONDUZIR: this project was developed in the south of Brazil and aimed to teach local agricultural producers’ best practices to ensure responsible production and consumption. In addition to capacity building, the project provided producers with recycled bags to be offered at local agricultural fairs (to encourage clients to avoid plastic bags).
- 3D printing in the building sector: 3D printing technology progressed rapidly during recent years. Whole buildings can now be printed by a single machine as was recently shown in Dubai in the United Arab Emirates. According to the Dubai Government, using this technology decreased the amount of waste generated as well as overall project costs by around 60% compared to conventional building techniques. The two-storey building that was printed in late 2019 stands almost 10 meters tall with a total area of around 640 square meters and is designated for use as private rooms and offices (Dubai Future Foundation).
- FairTrade: the FairTrade initiative intends to create better working conditions for producers of goods and more transparent systems, since producers of agricultural goods live mostly in countries of the Global South. The Fairtrade International, for example, is working on a pilot project in partnership with a supermarket in Germany to enable Peruvian farmers to know more about climate change and its impact on their banana production (FairTrade, b).

Additional positive initiatives to facilitate actions towards SDG12:

- Reporting/monitoring data: The One Planet network (One Planet Network) measures and reports progress on SDG12 through a monitoring and evaluation framework developed in 2017;
- Dissemination of good examples: the United Nations Department of Economic and Social Affairs (UN DESA) receives descriptions of good practice, success stories and



lessons learned by all stakeholders aiming at the success of the 2030 Agenda. The results are made available online (SDG Good Practice);

- Education and Awareness: a partnership between the Brazilian government and the United Nations resulted in the preparation of glossaries for each SDG, describing the meaning and definition of important terms and expressions connected to each goal (for SDG12: https://www.br.undp.org/content/dam/brazil/glossario_ODS12.pdf). Such an initiative is important for all stakeholders to be aware of the terms involved in different contexts.

1.4: Exercises

In this section, the module rolls out a proposed set of exercises that teachers can conduct among their students to eventually produce knowledge manifested in written articles, videos, and presentations that help to disseminate ideas and solutions regarding SDG12. Each exercise is presented with an example (in bold) accompanied by some material from which the lecturer can commence the exercise.

1.4.1: Exercises

Sustainable Consumption and Production Making Sense: This exercise tackles teachers' and students' perceptions. For example: **as SDGs are finalized and in the process of execution, how do you see yourself, as a teacher, and your students, making sense of SDG12?** Sub-questions that you can pose include: To what extent is SDG12 feasible?; What are the difficulties in implementing sustainable consumption and production in your community? [This exercise is in the PPT \(1.3 Exercises on SDG12: Sustainable Consumption and Production Making Sense slide 21\).](#)

Climate Change and surroundings: Map SDG12 in relation to all other SDGs. You can use Venn diagrams and radar charts in this activity. Questions to be raised in this activity could be, for example: How strong is the link between SDG11 and SDG12? Or: How can SDG12's focus on sustainable production and consumption support the completion of SDG13? Or: How does SDG12 foster healthy lives and promote well-being for everyone at all ages (SDG3)? The overarching question in this activity is: **How can an integrative approach be adopted to tackle SDG12 in tandem with other SDGs?** [This exercise is in the PPT \(1.3 Exercises on SDG12: Describing links with other SDGs, slide 22\).](#)

Data4SustainableConsumption: Gather and analyse global, regional, national and local data on SDG12. Begin for example with data from the UN Sustainable Development Knowledge Platform¹, then go to other analytical platforms such as Eurostat². You can also inspect the online SDG Indicators and SDG Tracker³. Other options to collect data on sustainable consumption and production include The World Bank⁴, the Global Partnership for Sustainable Development Data⁵, and the SDG Compass⁶. Analysing the data via the following question is one option: What are the positive and negative effects of improving SDG12? Students could also gather data in their community (classroom / university / school / neighbourhood / house) and analyse the trends in both a qualitative and quantitative manner to find out the major narratives, frequencies, correlations and causalities, and see how well the data is situated in comparison to the local (if available) or otherwise national data from other platforms. Another purpose of this exercise is to see the extent to which the data collected can marry with the timeframe and expectations set by SDG12. [This exercise is in the PPT \(1.3 Exercises on SDG12: Gather and analyse data on SDG12, slide 23\).](#)

If in this case, however, you decide to do the comparison between your locally gathered data and institutional data, decide first on a baseline from the data collected by other institutions and platforms since 2015. Thereafter, you can compare this baseline with your local data in terms of rates of change, i.e. frequency of progress in the SDG targets according to the SDG indicators. Noteworthy: present the data in a visually appealing way⁷. The baseline data from both institutional and local sources would be useful for a future monitoring and evaluation assignment you could do with the students to see how far there is in terms of progress or retraction.

Localizing4Development: How can you identify the benefits of SDG12 in your community (classroom/university/school/neighbourhood/house) and at the individual level? Localizing SDG12 comes with challenges. Thoughts to reflect on, for example, include: What are the benefits of countries promoting climate change compared to countries with no such view in developing SDG12? Discuss the pros and cons of such an approach.

¹ Data on SDG12 from the UN Knowledge Platform:
<https://sustainabledevelopment.un.org/sdg12>

² See here: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=SDG_12_-_Responsible_consumption_and_production and
<https://unstats.un.org/sdgs/indicators/database/>

³ See here: <https://sdg-tracker.org/sustainable-consumption-production>

⁴ See here: <http://datatopics.worldbank.org/sdgateas/SDG-12-responsible-consumption-andproduction.html>

⁵ See here: <http://www.data4sdgs.org/sdg12>

⁶ See here: <https://sdgcompass.org/sdgs/sdg-12/>

⁷ You can see example of data visualization for interlinkages (and the respective SDG per country) on this platform: <https://sdginterlinkages.iges.jp/visualisationtool.html>

Pick specific countries/states as examples when comparing. Setting them into context with your respective local system will help in providing an understanding for where changes can be lobbied for. Taken altogether, contextualizing the SDGs in its local context is an important assignment prior to and along the road of implementing SDG12. [This exercise is in the PPT \(1.3 Exercises for SDG12 – Localizing4Development on SDG12, slide 24\).](#)

Policy Briefs: In this activity, the teacher will **encourage students to write policy briefs on any topic pertinent to sustainable consumption and production as identified by SDG12**. Students will follow a similar structure as stipulated in policy briefs by international organizations and national agencies (see for example the FAO on SDG12⁸). This will serve to elevate the students' policy-related writing skills in addition to directing them towards formulating their own manuscript of briefs on clean water and sanitation issues of their primary concern. They will also develop a grounded realization of the challenges of implementing SDG12 at all levels, from the international arena all the way to the local level. [This exercise is in the PPT \(1.3 Exercises for SDG12 – Policy Briefs on SDG12, slide 25\).](#)

@SustainableConsumption: Drive your social media platforms in ways that promote sustainable consumption and production awareness in your community (classroom / university / school / neighbourhood / house). For example: this can be through simple daily/weekly photo campaigns as well as conversations that bring together the default behaviours of students that tend to gravitate towards constantly viewing social media together with the purpose of the exercise. That is, this exercise will bring their awareness closer to what they can do to promote sustainable consumption awareness for everyone in their community. You may firstly check for already existing campaigns on sustainable consumption and production awareness and discuss them. [This exercise is in the PPT \(1.3 Exercises for SDG12 – @SustainableConsumption, slide 26\).](#)

SustainableProductionPreneurs: Finding stories and instilling a sense of belonging by bringing together those working on sustainable production can be motivating to those doing the work, inspiring to the community and the entire world. For example, you can use **vlogs, blogs and journals** as well as fairs and expos to promote this exercise of **promoting SDG12**. It will also allow those good ambassadors of sustainable production from the business community to network and widen their perspective with each other and the broader community. [This exercise is in the PPT \(1.3 Exercises for SDG12 – SustainableProductionPreneurs, slide 27\).](#)

⁸ See <http://www.fao.org/sustainable-development-goals/goals/goal-12/en/>

BreakingSilos: Taking its name from the silo-effect, this activity promotes **actively thinking and writing about SDG12 from the perspective of a wide variety of sciences and arts**. As a lecturer, you could have an interest or expertise in literature, and may approach SDG12 from a more philosophical perspective. Another lecturer could be interested in addressing education issues in SDG12 from a managerial perspective. For example, a question you could pose is: Using a cost-benefit analysis, what benefits are there for implementing SDG12? Another example could be: If you are a natural scientist, what indicators might there be missing to better include sciences in sustainable consumption and production? This exercise intends to break through the silos of each discipline and stimulate cross-disciplinary discussions on SDG12. [This exercise is in the PPT \(1.3 Exercises for SDG12 – BreakingSilos, slide 28\).](#)

1.4.2: Assessments

Below is an outline of several different questions related to the SDGs in general, and to SDG12 in particular, that help assess your understanding of the topic and the interlinkages and challenges. These questions are also designed to act as questions for your students to discuss the topic further and/or prepare presentations on them.

Questions:

1. How could our current consumption patterns be made more sustainable?
2. How many earths would we need to satisfy our needs if all people globally consumed energy and materials like we do in the Global North?
3. List some good practices that targeted the implementation of the SDG12.
4. What do you see as the challenges in realizing sustainable consumption and production patterns until 2030? What could be your own contribution to the goal?
5. How is SDG12 interconnected with the other SDGs?
6. What are the difficulties in implementing SDG12 in your country? Which are the barriers?
7. What role can stakeholders play in improving and promoting SDG12?

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Additional Links:

- Information on SDG data: <http://www.data4sdgs.org/sdg12>
- IISD-SDG Knowledge Hub: <https://sdg.iisd.org/sdgs/goal-12-responsible-consumption-production/>
- Learning Portal: <https://learningportal.iiep.unesco.org/fr>
- Learning assessment: <https://en.unesco.org/themes/learning-assessment>
- Sustainable Development Knowledge Platform. Sustainable Development Goal 12: <https://sustainabledevelopment.un.org/topics/sustainableconsumptionandproduction>
- UNESCO - Leading Education 2030: <https://en.unesco.org/education2030-sdg4>
- United Nations Development Program: <http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-4-quality-education.html>
- App „SDGs in action“: <https://sdgsinaction.com/> (teachers can use it with their classes or introduce students to it to find actions they want to support or to create an own action)
- United Nations Virtual Reality (UNVR): <http://unvr.sdgactioncampaign.org/vr-films/> (immersive storytelling to inspire viewers towards increased empathy, action and positive social change. The project is implemented by the UN SDG Action Campaign and includes films by UNDP, UNFPA, UN Foundation, UNHCR, UNICEF, UNOCHA, UN Women, World Food Program)

Annex A

	Targets	Indicators
Out co me targets	12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies
	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP 12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP
	12.3 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	12.3.1 Global food loss index
	12.4 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	12.4.1 Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals that meet their commitments and obligations in transmitting information as required by each relevant agreement 12.4.2 Hazardous waste generated per capita and proportion of hazardous waste treated, by type of treatment
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	12.5.1 National recycling rate, tons of material recycled
	12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	12.6.1 Number of companies publishing sustainability reports
	12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	12.7.1 Number of countries implementing sustainable public procurement policies and action plans
	12.8 By 2030, ensure that people everywhere have	12.8.1 Extent to which (i) global citizenship education and

	the relevant information and awareness for sustainable development and lifestyles in harmony with nature	(ii) education for sustainable development (including climate change education) are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment
Means of implementation	12.A Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	12.A.1 Amount of support to developing countries on research and development for sustainable consumption and production and environmentally sound technologies
	12.B Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	12.B.1 Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools
	12.C 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	12.C.1 Amount of fossil-fuel subsidies per unit of GDP (production and consumption) and as a proportion of total national expenditure on fossil fuels

