



Event Report

National Workshop on Circular Economy:

Exchange of views on Opportunities, Challenges and Best practices

Turkey

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Live video conference



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1 Introduction

The national workshop for Turkey on *Circular Economy: Exchange of views on Opportunities, Challenges and Best practices* took place on November 17-18, 2020, via live video conference. The workshop was organized in cooperation with TAIEX, and under the EPPA project work programme, namely activity 2.3 “Organisation of regional and national conferences on resource efficiency and circular economy”.

The participants of the workshop came from the relevant authorities of Turkey involved in circular economy and waste management. They represented the Presidency of the Republic of Turkey, the Ministry of Environment and Urbanization, the Ministry of Agriculture and Forestry, the Ministry of Trade, and Ministry of Industry and Technology. In addition, the workshop was attended by representatives of the private sector (cement, packaging recyclers, food and drinks), research organizations and environmental NGOs. Details are available in the list of participants.

The speakers represented a mixture of EU Member States’ experience from Austria, Belgium, Italy, and Sweden. Several EU institutions also contributed, such as the European Commission (DG ENV, DG NEAR, DG GROW, DG SANTE), the EU Delegation to Turkey, and the European Environment Agency. Further expertise was brought from the European Environmental Bureau, the Association of Cities and Regions for Sustainable Resource Management, the Extended Producer Responsibility Alliance, the European Sustainable Business Federation, and the Food and Agriculture Organization of the United Nations. Turkey supplied with experience and knowledge with speakers from the Ministry of Environment and Urbanization, and the Business Council for Sustainable Development. Details are available in the agenda.

The presentations can be downloaded from both the TAIEX website and in the EPPA project website.

2 Objectives of the training and expected results

The aim of the Workshop was to share the EU’s policy initiatives and practical measures for the development of a sustainable, low carbon, resource efficient, and competitive economy in the frame of the Green Deal. It focused on sharing practical examples from EU Member States on Circular Economy in order to support the development of circular economy in Turkey.

The specific objectives of the workshop were:

- to explain the circular economy (CE) concept and to present the latest EU initiatives in this area;
- to present the latest CE initiatives in Turkey;
- to provide examples of CE business models in practice;
- to present and share experiences and best practices from EU Member States, from the public and the private sector, for sectors where the potential for circularity is high: plastic, packaging, and food;
- to discuss the CE opportunities and challenges in Turkey.

3 Highlights from the workshop

3.1 Welcoming addresses

Ms. Astrid Schomaker welcomed the participants to the workshop and expressed her satisfaction to have the opportunity to exchange experiences with Turkey regarding circular economy, and especially to hear from the private stakeholders on how circularity is being tackled in the country. Ms. Astrid Schomaker placed the efforts towards circular economy in the context of the EU Green Deal, a growth strategy that acknowledges and respects the carrying capacity of the planet. The Green Deal seeks to create a paradigm shift to a different economic model, at the core of which is the circular economy model.



Moreover, the European Green Deal is essential to strengthen our societies. The vast financial resources being mobilized around the world to respond to Covid-19 are also an opportunity to overcome bottlenecks in several policy areas. The EU is therefore putting the Green Deal at the centre of the recovery effort to rebuild towards the 2030 Agenda.

The new circular economy action plan, adopted in March 2020 as part of the Green deal, focuses on key value chains that have potential for circularity and for job growth. It seeks to empower consumers to be part of the transition, to foster green procurement rules addressing the role of states as consumers, to reduce waste and transform the remaining portion into a resource. The plan recognizes that the circular transition needs partnerships around the world, leading the EU to look towards a global transition.

Taking into consideration that Turkey is an important partner of the EU and that it has been making efforts to move closer to a circular economy, the workshop provides an occasion to learn from the Turkish experiences and reinforce the linkages between the EU and Turkey's economies. Circular economy can assist both partners to achieve sustainability and to build resilience against future shocks. Therefore, the sharing of best practices from both sides is mutually beneficial.

Mr. Bülent Üncü welcomed the participants on behalf of the Ministry. Mr. Bülent Üncü recognized the circular economy action plan as one of the cornerstones of the Green Deal, but also as an important landmark for Turkey. The present workshop is a forum to review the opportunities offered by circular economy, to share the experiences of EU Member States and to learn from the best practices within Turkey. Mr. Bülent Üncü sees the national workshop as an important event, not only for its scope but also for the variety of stakeholders represented.

Environmental policy is one of the most complex policies of the EU. Its aims to protect the natural environment and to foster a rational use of resources, not only in the EU, but globally. Turkey is part of the process to improve global, environmental governance. Circular economy focuses on efficiency and recognizes that linear models are no longer viable. Turkey's current waste policies put emphasis on reducing waste and recovering waste as raw material for production in a growing economy.

The National Waste Management and Action Plan (2016-2023) seeks to establish an integrated waste management system nationally and sets targets for waste recovery (35%) in the framework of a circular economy. In order to achieve that goal, the Ministry initiated a Zero Waste project in 2017 to prevent and decrease waste generation, to decrease the amount of waste sent to landfills, to implement source separation, recycling waste and therefore save resources.

The current workshop fits in Turkey's zero waste drive. It will give the participants a better conceptual understanding of circular economy and will provide real-life examples of EU Member States experience. Mr. Bülent Üncü congratulated the EPPA project team for its work and expressed his gratitude to all involved experts and speakers. In addition, Bülent Üncü also recognized the work of TAIEX in the organization of the workshop.

Ms. Marshall, on behalf of Mr. Lawrence Meredith, expressed hope that the workshop will be a steppingstone to identify the challenges to a circular economy, but also to identify opportunities to drive it further. TAIEX is delighted to host this workshop, with a wide diversity of experts and attendants. Ms. Marshall was grateful for the commitment of Turkey's authorities to the event, and to the support given by the EC DGs involved, as well as by the EEA and Member States. It represents well the collegial and collaborative approach that TAIEX pursues in its work.

Mr. Wim Van Breusegem introduced the objectives of the workshop, the agenda rationale, and the different thematic sessions, as well as the expertise of the speakers.



3.2 EU policies and measures to advance the CE: The European Green Deal, and the new Circular Economy Action Plan

Ms. Maria Rincon and Mr. Federico Porrà presented the new Circular Economy Action Plan. They started by setting the context and by explaining why urgent actions are needed. By 2050, the world will be consuming as if there were three planets. Global consumption of materials such as biomass, fossil fuels, metals and minerals is expected to double in the next forty years, while annual waste generation is projected to increase by 70% by 2050. Currently, only 12% of the materials used by EU industries come from recycling. At the same time, half of the total greenhouse gas emissions, and more than 90% of biodiversity loss and water stress, come from resource extraction and processing. Therefore, a circular economy can provide us with the right answers to today's and tomorrow's challenges.

Ms. Maria Rincon and Mr. Federico Porrà summarized the successes of the 1st Circular Economy Action Plan. They highlighted the Eco-Design Working Plan & Sustainable Products in a Circular Economy, the Product Environmental Footprint and Consumers REFIT, the revised Waste Legislation, the Interface wood-polymer composites (WPC) and Fertilising Products Regulation, the material-specific and systemic approach along entire value chains, the Single Use Plastic Items Directive & the Circular Plastics Alliance. The Action Plan also had strong stakeholder engagement, resulting in a EU Circular Economy Stakeholder Platform, a EU Platform on Food Losses and Food Waste and a Circular Economy Finance Support Platform.

The new Action Plan took the form of a Commission's Communication, which set a vision and announced a series of actions (35) to implement such vision. All actions will be implemented within the Commission's mandate; there are legislative and non-legislative actions, financial and non-financial actions, support actions, knowledge-base building actions, etc. It is a combination of different instruments.

The new Action Plan seeks to develop a sustainable product policy framework in key value chains that will generate less waste, but more value. It is a comprehensive action plan along the entire life cycle of products. It is expected that the Action Plan will make sustainable products the norm in the EU, empower consumers and public buyers, encourage sustainable production processes, reduce waste and waste exports and boost the market for high quality and safe secondary raw materials. The primary target areas are electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients.

EU initiatives and legislation already address, to a certain extent, sustainability aspects of products, either on a mandatory or voluntary basis (notably, the Eco design Directive or, at the same time, instruments such as the EU Ecolabel or the EU Green Public Procurement (GPP) criteria). However, there is no comprehensive set of requirements to ensure that all products placed on the EU market become increasingly sustainable and stand the test of circularity. This will be the new Sustainable Product Policy Framework, focusing on product design, consumer empowerment and circularity in production processes.

Considering that up to 80% of products' environmental impacts are determined at the design stage, this is an important phase to intervene in. The Commission will propose a "Green Products" legislation to set requirements on products placed in the EU market, namely in terms of durability, reusability, upgradability and reparability. The proposal is planned for 2021 and it will be based on the existing Eco design Directive.

Consumer empowerment will be achieved through a revision of consumer law (trustworthy and relevant information on products), the establishment of a right to repair, ensuring environmental claims by producers are substantiated, and the introduction of durability, recyclability and recycled content in EU Ecolabel criteria.



Since 14% of the EU's GDP is driven by public purchases, there will be a proposal for mandatory green public procurement criteria and targets, as well as mandatory reporting.

Circularity in production processes will be pursued in the context of the review of the Industrial Emissions Directive, and incentivized through a industrial symbiosis reporting and certification scheme, a EU Environmental Technology Verification scheme and a new Small and Medium Enterprise strategy to foster industrial collaboration.

Horizontally, reducing waste and, once waste is created, ensuring it is a high-quality resource, remains a priority. Therefore, the new Circular Economy Action Plan contains the following measures:

- Specific waste reduction targets for more complex streams;
- Enhance the implementation of the requirements for Extended Producer Responsibility (EPR) schemes;
- Continue modernizing EU waste laws (e.g., batteries, packaging, end-of-life vehicles, hazardous substances in electronic equipment);
- Propose to harmonize separate waste collection systems;
- Review rules on waste shipments facilitating recycling or re-use within the EU; with also the aim to restrict exports of waste that cause negative environmental and health impacts;
- Methodologies to track and minimize the presence of substances of concern in recycled materials and articles made thereof;
- The forthcoming Chemicals Strategy for Sustainability will further address the interface between chemicals, products and waste legislation;
- Assess the scope to develop further EU-wide end-of-waste criteria for certain waste streams.

The Action Plan also considers the growth dimension of the Green Deal. It is expected that circular economy transition will create new jobs.

Also, in line with the European Green Deal and the 2020 Annual Sustainable Growth Strategy, the Commission will reinforce the monitoring of national plans and measures to accelerate the transition to a circular economy as part of refocusing the European Semester process to integrate a stronger sustainability dimension.

The Commission will also update the Monitoring Framework for the Circular Economy. Relying on European statistics as much as possible, new indicators will take account of the focus areas in this Action Plan and of the interlinkages between circularity, climate neutrality and the zero-pollution ambition. At the same time, projects under Horizon Europe and Copernicus data will improve circularity metrics at various levels not yet reflected in official statistics.

Indicators on resource use, including consumption and material footprints to account for material consumption and environmental impacts associated to our production and consumption patterns, will also be further developed and will be linked to monitoring and assessing the progress towards decoupling economic growth from resource use and its impacts in the EU and beyond.

Finally, the Action Plan also has an international dimension. The EU will lead efforts at international level to reach a global agreement on plastics and promote the uptake of the EU's circular economy approach on plastics. In addition, the EU is backing a Global Alliance on Circular Economy and Resource Efficiency. A side event at the fifth session of the UN Environment Assembly (UNEA5) in 2021 is expected to launch the Alliance. Discussions are also starting towards an international agreement on natural resources management.



3.3 A New Industrial Strategy for Europe

Mr. Thomas Heinemeier presented the new EU Industrial Strategy, which was presented by the EC on 10 March 2020.

The Strategy's objectives are to foster the EU's green transition, increase the EU's global competitiveness and contribute to its digital transition.

The Strategy will support industry to reach climate neutrality by supplying clean, secure and affordable energy, taking into account energy efficiency and the role of renewables. In addition, the strategy foresees initiatives to transform the manufacturing processes of energy-intensive industries (steel and chemicals), to accelerate the shift to sustainable mobility and promote new initiatives regarding construction.

Furthermore, circularity is a key approach in the strategy. Experience from small and medium enterprises (SME) show that circularity allows for gains in every part of the value chains from design, to manufacture, and logistics. In fact, it is possible to reduce material waste up to 50% while increasing profit margins, by more than 10%, in relatively small timeframes, as short as 6 months.

Another area of focus is the Information and Communication Technologies (ICT) industry. Digital transformation should be linked with more energy efficient infrastructure, like data centres, but it can also be used to optimize the use of energy and resources in other areas of economic activity through the deployment of artificial intelligence, internet of things, cloud computing, etc.

The EU considers that the following factors are fundamental to achieve the industrial transformation:

- A deeper and more digital single market;
- Maintaining a global level playing field;
- Supporting industry towards climate neutrality;
- Building a circular economy;
- Embedding a spirit of industrial innovation;
- Skilling and reskilling the workforce;
- Investing and financing the transition.

Likewise, the transition will depend on a wide range of partnerships among ecosystem actors who share an interest in a specific part of the transformations. Authorities, academia, SMEs and large companies, and service providers should act in concert. In this light, the EU will also work with willing foreign partners, especially its immediate neighbours, to achieve the objectives of the Green Deal.

3.4 Paving the way for a CE: knowledge, skills, and governance approaches

Ms. Mieke De Schoenmakere presented EU policy initiatives and the EEA's knowledge pool, which can help countries move closer to a circular economy. She started by showing that our societies have an ecological footprint higher than the planet can sustain in the long run. Currently, biodiversity loss due to human activity is the biggest threat to planetary sustainability. It is necessary to find a balance between quality of life for all and respect for the planet's limits.

In this sense, policies like the UN Sustainable Development Goals, the EU Green Deal and the 8th Environmental Action Plan of the EU are essential to guide collective efforts.

The EU Green Deal, through its Circular Economy Action Plan, offers a new policy context for circular economy. It addresses key supply chains and waste prevention. It seeks to empower consumers and to



create a secondary materials internal market. It fosters a science-based approach and seeks to create linkages with energy transition and industrial transformation.

Ms. Mieke De Schoenmakere highlighted the systemic approach of EU's policy to transition. It proposes long-term, cross-sectoral targets, involving multiple stakeholders and emphasizing economic transformation.

She noted however that circular economy monitoring currently is not fit for purpose. Further work is needed to develop monitoring capacities at the heart of circularity, namely in the reuse, repair, redistribute, refurbish and remanufacture dimensions. She presented a data and metrics plan that can support knowledge creation, which in turn informs policy and action. In this context, she informed the participants about the Bellagio Process, an initiative to create a transparent CE monitoring system.

The European Environment Agency has a plethora of resources to support the proposed transitions and the implementation of circular economy. See slides for more detail and references.

During the discussion, a participant asked if there are any estimates about the investment costs of making to the transition to a circular economy. Mr. Wim Van Breusegem answered that both private and public entities will have to invest in the transition. The public sector must create an enabling environment, among other by applying policy instruments. Economic instruments applied by the public authorities include among other grants, subsidies, tax breaks, or direct investment in infrastructure, but it will be the private sector that needs to invest in making production more circular and in the development of new business models, such as such as product life extension models, sharing models or product service system models, to implement the circular economy principles in practice. Circular production and business models have already shown their potential to increase profitability.

3.5 EU Member State policies and measures to advance the CE: A case study from Italy

Mr. Francesco Loro presented the enforcement of circular economy policies in Italy. In the 90's, Italy introduced separate collection of urban waste to reduce pressure on landfills and incinerators. In parallel, it introduced a simplified procedure to permit waste plants that could treat the separated waste streams. The streams included were non-hazardous, such as paper, glass, metals, wood and cork, rubber and sludges. The new policies also defined treatment capacities, and technical standards.

Mr. Francesco Loro explained the simplified procedure, and its advantages. The permitting process is «simplified» because all the relevant aspects are defined by the law. There are no derogations at all. The proponent must use a predefined form to describe the process and technical standards. The competent authority (CA) can analyse the request and carry out an on-field control within 90 days. The new plant is registered in the local and national database. The permit duration is 15 years.

The system resulted in a high level of separate collection and a strong network of small and medium-sized companies that collect and recover waste.

This was further supported by the mandatory consortium scheme, a form of extended producer responsibility, to engage all stakeholders in waste recovery. The scheme brings together packaging producers, municipalities and waste sorting facilities to unify data on materials put on the market, materials collected and treated in waste facilities. Producers pay a fee -in relation to the amount of packaging produced- to the consortium, which spends it in support of the Municipality to introduce separate collection. The money is assigned based on the amount (and quality) of collected waste. The consortium also buys the sorted material from treatment plants to support the market.

Italy also established a public green procurement system as a way to increase market demand for products that are based on secondary raw materials, and thus to create an outlet for recovered materials.



In the future, Italy is planning to focus on reducing particular waste streams (for instance, paper and rubber), reuse and repair measures at municipal level, extend EPR and legislate on by-products.

3.6 EU Member State policies and measures to advance the CE: A case study from Belgium (Flanders)

Ms. Lieze Cloots presented the work of OVAM, the public waste agency of Flanders, one of the 3 regions in Belgium, where environmental management is fully a regional responsibility. The agency was created in 1981 to provide a policy background for waste management and soil management. Around 2017, it has become the engine in the transition to a circular economy in Flanders.

The agency has followed a path of increasingly ambitious policies. If in the beginning, it was focusing on responding to landfilling overuse, by the 90's it was implementing source-separated collection, creating the first EPR schemes and recycling centres. In the 2000's the policy focus shifted to prevention and sustainable materials management. Since 2017, the focus has been in creating a "circular Flanders".

The agency used a mix of legal, social and economic instruments to pursue its policies. . It has, for instance, proposed bans and taxes on landfilling and incinerating, which were adopted by the Government. It has supported the establishment by the Government of several forms of Extended Producer Responsibility. For batteries, tires, used oil, mattresses (and others) there is an acceptance duty. Packaging is subject to a take-back duty. Diapers, litter and pharmaceuticals are managed under a collective plan.

Mandatory separate collection at source is done door to door for PMD (plastic bottles, metal packaging, drink cartons), paper, biowaste and residual waste.

There are recycling facilities that receive separated waste and which cover 90% of the population within a 5km radius. The collection system is based on a pay-as-you-throw scheme (applying the polluter pays principle) with differentiated fees for different quantities and types of waste. For instance, a bag of 60L for the collection of plastic bottles and metal packaging costs EUR 0.15, whereas a 60 L bag for the collection of residual waste costs EUR 2.2. This resulted in a separate collection rate of almost 69% (the majority is recycled or composted), with only 31% of the total waste generated, being collected as residual waste (the majority of which is incinerated).

Circular economy in Flanders is being driven by the Minister of Economy, Innovation, Labour, Social Economy and Agriculture together with the Minister of Environment and Energy. The work is done by a steering group composed by representatives of public authorities, civil society, industry, finance and research. In parallel, public funds are being invested in innovative projects that aim to bring circular economy closer to reality. 30 million euros were already invested directly in circular economy initiatives. Ms. Lieze Cloots provided some concrete examples.

Other regulatory measures being taken are:

- Drinking cups at cultural events and within government institutions must be reusable;
- Minimum recycled content of waste collection bags (80% as of 1 January 2021 and 100% as of 2025);
- From 2023 there will mandatory collection of biowaste;
- By 2025 all packaging must be reusable, recyclable, compostable or biodegradable.

After the presentation, there was a question on criteria to define end-of-waste and if Italy is doing more than what is being done at EU level. Mr. Wim Van Breusegem clarified that the JRC is developing methodologies to define such criteria for each waste stream. Mr. Francesco Loro responded that Italy is



working on some additional criteria to those identified by the EU. The criteria defined so far at EU level are mostly for metals and glasses. In central Italy, for instance, specific criteria were developed for the salt used in ham production. Italy is working end-of-waste legislation for several other streams: rubber, nappies, road fragments, construction, and demolition.

A second question was about the legal competence in Italy to approve the production of by-products. Mr. Francesco Loro replied that there is no such approval in Italy because by-products are generally not considered waste. Italy is fostering inter-institutional cooperation to clarify the differences between waste and by-products by.

A third participant asked what the role of EPR schemes in the transition to a circular economy is. Ms. Lieze Cloots replied that EPR is a way to engage the producers in the management of the problem of waste being created by their products. . EPR schemes ask producers to either contribute financially and/or to set up systems for the collection and recovery of waste. EPR is a useful tool to deal with waste streams where the producers have not yet assumed responsibility for their end-of-life products. Furthermore, in the long run, EPR encourages producers to think about the ecological design of their products

There was a further question on the possibility of integrating informal waste pickers in legal collection and sorting activities and businesses. Mr. Francesco Loro, based on Italy's experience, recommended that countries create a limited, legal scheme to allow those people to shift to legal operations. In Italy, this industry, after legalization, resulted in growth of the small companies involved.

3.7 EU policies and measures to prevent plastic waste and to improve its management

Mr. Peter Wessman presented the EU measures to prevent plastic waste and to improve its management. He started by restating the importance of a circular economy approach to help businesses recover from the crisis and to build societal resilience to future shocks. The waste management sector is already very dynamic sector. It can be expected that in the future it will grow even more, with potential to create jobs and turnover, if circular economy is achieved.

One of the key elements in circular economy is to prevent waste, and to improve its management in accordance with the waste hierarchy. The new Circular Economy Action Plan sets several measures to improve waste prevention. Some Member States already have waste prevention programmes. The programmes are being compiled by the EEA and they will provide a basis to share best practices on waste prevention.

In the future, the EC will put forward targets for waste reduction in particular streams with high impact (for instance, packaging). Waste that cannot be prevented should be turned into high quality resources. The waste hierarchy is the cornerstone of waste policies in the EU. Prevention is the most preferred option, followed by preparation for reuse (refurbishing), recycling, other recovery, for instance energy, and finally disposal (landfilling and incineration). The hierarchy is legally mandatory, and it must be adopted by national institutions and reflected in investment, waste plans.



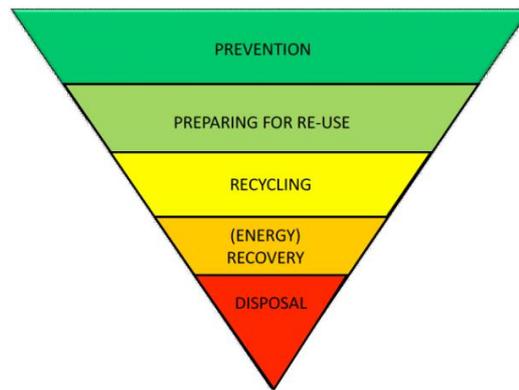


Figure 1 - The EU's waste hierarchy

In line with the waste hierarchy, the 7th Environment Action Programme, which guided EU policy from 2013 till 2020, sets the following priority objectives for waste policy in the EU:

- To reduce the amount of waste generated;
- To maximize recycling and re-use;
- To limit incineration to non-recyclable materials;
- To phase out landfilling to non-recyclable and non-recoverable waste; and
- To ensure full implementation of the waste policy targets in all Member States.

A key element of the waste hierarchy is the set up of separate waste collection. Separate collections obligations are set in the Waste Framework Directive (WFD), but it's up to the Member States to decide how separate collection systems operate in practice. From 2023, the obligation of separate collection will be extended to bio-waste, and from 2025 to textiles and hazardous household waste. The EC created guidelines on separate collection, available from its website.

The mandatory recycling targets act as drivers for member states to improve their collection and recycling rates, including plastic. For packaging, there is a 65% target by 2025 and 70% by 2030. There are also targets for municipal waste: 55% should be recycled by 2025, 60% by 2030, and 65% by 2035. In parallel there are targets to reduce landfilling of municipal waste: 10% or less by 2035.

EPR schemes are important to ensure the environmentally sound management of waste. There are specific provisions in the WFD to ensure that the EPR principle is applied throughout the EU in a similar way, for instance in the pricing of fees that producers must pay to cover the cost of management of the waste from their products. A guidance document is available on several aspects of EPR.

The EU Plastics strategy (2018) lays down a common approach to deal with the challenges raised by plastics. The strategy is part of the transition to a circular economy and contributing to the industrial policy objectives. The EC estimates that 26 million tonnes of plastic are generated in Europe every year, of which less than 30% is collected for recycling. This EU wants to significantly increase this rate, by building a market for the recycling of plastic waste. Therefore, the strategy lays down several actions to transform plastics along the entire value chain.

Last year the EU adopted the Single Use Plastics Directive. It targets the top-10 SUP products most often found on beaches, and provides among other for banning several SUP products. The Directive also has consumption reduction measures, product design and marketing requirements and EPR measures. Landfilling of plastic waste has been restricted. From 2030, all waste that can be recycled can no longer be accepted in landfills.

At the international level, the EU has been cooperating with other countries within the Basel Convention. At the last COP, the Convention has been strengthened as regards plastic waste. Exports of specified



plastic wastes are now under the convention, requiring a prior notification and consent before plastic waste is shipped. From 2021, the EU will enforce a ban on plastic waste exports to countries outside the OECD, and within it, the prior informed consent procedure will have to be applied.

The EU is also looking at the waste shipment regulations with a view to present a proposal to reduce waste exports that have negative environmental and health impacts in third countries.

The EC is proposing a new regulatory framework for batteries. It will facilitate the reuse, remanufacturing and recycling of batteries, and incentivize the use of rechargeable batteries. There are also proposals to revise the packaging and packaging waste directive and the end-of-life vehicles directive with the purpose of contributing to circular economy for these waste streams.

3.8 EU Member States policies and measures to prevent plastic waste and to improve its management: A case study from Austria

Ms. Francesca Montevercchi presented the Austrian experience with measures to prevent plastic waste. She gave an overview of policy instruments available to deal with plastics, such as bans, market-based instruments, EPR schemes and standards. She presented concrete examples from around the world where such policy instruments were applied and to what particular plastic items.

She then narrowed down the focus to policies available in the EU context, taking into account the legal framework, which includes:

- The revised Waste Framework Directive 2018/851
- The EU Plastic Strategy 2018 (COM/2018/028 final)
- The EU Single-Use Plastic Directive (Directive (EU) 2019/904 — on the reduction of the impact of certain plastic products on the environment)
- The new Circular Economy Strategy COM/2020/98 final

Ms. Francesca Montevercchi referred to the specific measures and targets that each document puts forward. See the slides for more detail.

In Austria, plastics in waste represent a significant amount of recyclable material, but the potential for the recovery and use of these recyclables has not yet been fully exploited. Ambitious targets for the management of plastic waste at European level have been defined, which will force Austria to explore that potential. In the pursuit of that goal, Austria benefits from a technological pioneering role in research institutions/ manufacturers of technologies for the sorting and recycling of plastic waste/ operators of recycling plants.

For instance, Austria recycles only 25 % of the 300,000 tonnes of plastic packaging produced every year. To achieve the EU's 50 % recycling target by 2025, Austria will have to double the amount of plastic packaging recycled over the next five years (from 75,000 tonnes to 150,000 tonnes). Austria already has a network of 37 plants for plastic recycling and 20 specifically for recovery of Styrofoam.

Austria is still in the process of transposition of the EU Single-Use Plastic Directive and the new Circular Economy Strategy. Some of the planned measures are:

- an outright ban on, and measures to reduce the consumption of selected products;
- requirements on packaging and labelling;
- rules and incentives for the use of recyclable packaging materials;
- higher recycling and reuse targets for packaging and municipal waste;
- extension of the Extended Producer Responsibility principle.



Austria has already operational EPR schemes for plastic packaging. Since 2014 the system is organized in a market competition system overseen by a Packaging Coordination Office. There are already 7 collection and recycling systems approved.

The administration is also involved in the development of studies regarding the use of plastic. Specific studies have looked at the bottlenecks to implement the EU acquis, opportunities to improve the recycling of plastic, and littering problems.

There was a question from a participant on the traceability of the recycled waste and to what extent it is safe to assume that the separated waste is recycled. Ms. Francesca Montecvecchi referred to the Environmental Data Management system in Austria. It is a register of waste and waste movements in/to/from Austria, based on reporting obligation by waste generators, handlers, recyclers. Operators report their annual quantities on which UBA runs validation checks and procedures. The data support the development and implementation of the Austrian Waste Management Plan and allow the country meeting its reporting responsibilities. .

Mr. Peter Wessman added that exported waste for recycling needs to be monitored to make sure it is treated in an environmentally sound manner. For that reason, there is a notification procedure between the EU Member State and the importing country. All the details should be available before the export and recorded in the national data management system of the Member State.

A participant asked how the producers of SUP products reacted to the SUP Directive, and how their concerns were addressed. Mr. Peter Wessman replied that the EC legal process has clear requirements on the stakeholder consultations that precede any EC legislative proposal. Consultations yield stakeholders views that are further considered against a regulatory impact assessment in terms of social, environmental, economic consequences of the new legislation. Those considerations are built into the legislative proposals that are sent to the EU Parliament and Council for review, which yield further amendments before adoption.

Another question was raised, on Austria's intention to adopt a Deposit-Refund Scheme (DRS) and on what scope it would have. Ms. Francesca Montecvecchi replied that Austria is at an early stage of consideration of a DSR scheme for multilayer beverage packaging (like Tetra Pak). Since it is at the very beginning, it is not clear what kind of packaging will be included.

3.9 Turkish policies on Zero Waste practices

Ms. Sadiye Bilgiç Karabulut stated that the Zero Waste concept is very important in Turkey. The Turkish Waste Management Strategy and Action Plan were drafted in 2016 (and apply until 2023). Because the conditions had changed, work to update them started at the beginning of 2020. The available data in 2016 showed a recycling rate of 13%, with the ambition to increase the rate, in 2023, to 35%.

In 2017 the Zero_Waste approach was launched by the Ministry of Environment and Urbanization, supported by the First Lady Emine Erdoğan. In 2019, specific legislation (By Law on Zero Waste, OG dated 12.07.2019 and numbered 30829) was published to pursue the policy aims. The aims were to change product design, reduce hazardous elements, increase the repair and reuse of products, reduce food waste, among others. They all represent dimensions of a circular economy. Turkey also established a transition calendar regarding in source separation.

Turkey initiated awareness raising campaigns. Since 2017, 9 million people have been trained. People are to take ownership of Zero Waste policies. In that sense, local Zero Waste plans are vital. At the moment, 81 cities have developed Zero Waste plans. In addition, specific types of institution have been targeted for awareness raising and for their role in source separated collection, such as schools, airports,



businesses, etc. The Ministry developed a set of guidelines to orientate those institutions to become more circular.

The underlying assumption is that individuals must contribute to society by reducing their consumption and participating in the reuse and recycling systems. Households are therefore expected to take the leading role in municipal waste reduction. The municipalities are supporting the individual duties by providing and/or supporting, for instance, second-hand markets and shops.

By the end of this year, it is aimed that in 24 metropolitan cities and 88 district municipalities, there will be separate collection, based on waste collection centres. The Ministry offers technical and financial assistance to the municipalities.

Another pivotal achievement was the creation of a fee for plastic bags that resulted in an 80% decrease in their use. A recovery contribution share, based on EPR principles, is to be introduced in the future. In addition, there will also be a DRS implemented. Further, legislation change will make Zero Waste compulsory, meaning non-abiding municipalities and businesses will be subjected to fines.

3.10 Best practice examples of circular business models in Turkey

Ms. Ferda Ulutaş İşevi and Ms. Münevver Bayhan presented the Turkish Circular Economy Platform, established by the Business Council for Sustainable Development Turkey (BCSD Turkey).

They started by conceptualizing the loss of value when a product is discarded by its user, by using the “value hill”. According to the explanation, each product holds in itself the value and the cost of its extraction, production and distribution. This value can be recaptured through reuse, refurbishment, remanufacture and recycling, in a growing scale of value recapture.

Ms. Ferda Ulutaş İşevi and Ms. Münevver Bayhan provided a timeline of the activities in Turkey, especially after 2016, which resulted in the establishment of the Turkish Circular Economy Platform in 2020. The platform acts a knowledge hub for circular economy, it offers trainings to businesses, it supports the “Material Marketplace”, it offers consultancy support under the name “circular vouchers” and maintains measurement tools. The platform has 150 members in 24 sectors. The major outcomes of the platform so far were the establishment of a pool of 110 sectoral consultants, technical support provided to about 30 companies, 16 “circular synergies”, and 3000 tonnes of material recovered.

3.11 Best practice examples of circular business models in the EU

Mr. Arthur ten Wolde presented best practices of circular business models in the EU. Mr. Arthur ten Wolde discussed 4 business models, namely the circular design model, the optimal use model, the value recovery model and the circular support model. He used the value recovery module to explain how the textiles industry could move towards circularity.

He highlighted that those sectors with the highest adaptive capacity will be the winners of circular transitions. In the short term, Mr. Arthur ten Wolde advocated for the benefits of being green:

- More value
- Innovation and competitiveness
- Asset management
- Customer loyalty and feedback
- Partnerships
- Risk reduction
- Motivated staff: attracting and keeping the best



Mr. Arthur ten Wolde concluded his presentation with an explanation of each of the 4 models, including examples of possible applications.

3.12 Preventing plastic waste in Europe

Mr. Ioannis Bakas presented plastic prevention initiatives in Europe. He started by providing an overview of plastic use in Europe. Since the 1950's plastic use and disposal continues to rise. Albeit recycling increased since 2010, it still represents a significant challenge. In 2018, 32.5 % of plastic waste was recovered in Europe. About 6 % of the current European demand for plastics is covered by recycled (i.e. secondary) plastics. One of the biggest sources of plastic waste is packaging, which shows a dramatic trend for increase since 2013. This is recognized by many EU Member States that have started to target plastics or packaging as a priority waste stream.

The EEA publication "Plastic waste prevention in Europe" (2019) mapped the measures aimed at preventing plastic waste in Europe, and it identified some best practices. Most measures identified dealt with waste reduction and the reduction of its impacts. The type of measures deployed are more varied in nature but leaning heavily towards "informative" measures. The other preferred type of measures are market-based measures and voluntary agreements. Financing and regulatory measures come at the bottom of countries preferences.

Mr. Ioannis Bakas highlighted the importance of having explicit prevention targets, because they are key for implementation and monitoring. Mr. Ioannis Bakas recommended that future action should put focus on the most impactful plastic types, should diversify the types of measures deployed, set concrete targets, and should foster eco-design.

3.13 Making packaging more circular

Mr. Piotr Barczak discussed the problem of plastic packaging and its runoff effect into nature, especially rivers and oceans, and the detrimental health effects. He proposed three strategies to transform the global plastic packaging market: redesign and innovation, reuse, and recycling with radically improved economics and quality. In this sense, he recommended a radical redesign of the plastics system itself. He offered several examples of reuse potential and even opportunities to abolish packaging. Reuse can bring many benefits:

- Compact products – cut costs (solids, concentrates)
- Deposit and reward – building brand loyalty
- Superior design – enhancing look
- Smart systems – digital tech: tags, RFID, GPS
- Shared design – optimizing logistics, scale
- Customization – chose desired quantities

Although Mr. Piotr Barczak recognizes advances in recycling, reuse should be one step above in the priority list as a waste packaging prevention strategy. In this sense, quantitative reuse targets by 2024 will be an important tool to reduce plastic packaging waste. An important complementary tool will be deposit return systems, that have the capacity to increase separate collection and reduce littering dramatically.

In parallel, Mr. Piotr Barczak called for wide EPR requirements across the EU to set higher EPR fees, as a way of integrating its environmental costs into the product price, to label plastic better to inform consumers and recyclers, to encourage innovation, to offer tax reductions for products with recycled content.



3.14 Extended Producer Responsibility measures to improve the management of packaging waste: experiences and lessons learnt from EU Member States.

Mr. Joachim Quoden presented experiences from EU Member States regarding Extended Producer Responsibility (EPR).

EPR is a resource management tool whereby producers are made responsible for the end-of-life management of their used products/packaging. This includes financial and/or financial and operational responsibility for the collection, sorting and treating these products/packaging for their recycling and recovery. This individual responsibility can be partly transferred to a collective entity, the so called “Producer Responsibility Organisation” (PRO), to which the producer pays a fee. The costs are internalized into the product price. In a circular economy, EPR seeks to connect the producer with the waste collection authority and the recycling operators.

The advantages of EPR schemes are:

- Provide economic incentives for businesses to develop more sustainable products (e.g. co-modulation);
- Promote greater dialogue between producers, local authorities and recyclers;
- Encourage design for recycling;
- Help improve the efficiency of the recycling process;
- Reduce waste and littering.

In Europe, the design of each national EPR system and each PRO is determined by EU legislation (Waste Framework Directive /Packaging and Packaging Waste Directive/ Single-Use Plastics Directive), the respective national implementation, and local authorities who usually decide about the concrete collection (and sorting) system in their district.

The PRO tasks are to:

- Register all obliged companies that want to use the PRO to fulfil their obligations, establishing a data system to collect the reports from members to be able to send aggregated data to the authorities and to calculate the fee per member.
- Develop in a transparent way a fee structure that reflects the costs of collection, sorting and recycling, communication and administration per (sub-) material in a fair and non-discriminatory way (eventually including eco modulation).
- Establishing and running a collection and treatment infrastructure to be minimum able to fulfil the targets set by government taking into account the existing infrastructure and the local situation.
- Establishing a data and reporting system that pictures the flow of material and can prove towards government and membership the fulfilment of the targets
- Developing tools and initiatives to support its members to improve the sustainability and the design of their packaging to ease collection, sorting and recycling (e.g. design for recycling guidelines).
- Running communication and awareness raising campaigns, often with local authorities to motivate inhabitants to sort their packaging waste in the right way.
- Developing tools and initiatives to support companies and people that are active in the operations of the system to improve their performance.
- Engaging with the whole value chain to create markets for secondary raw materials.

The implementation of the EU Packaging Directive resulted in 30 countries establishing EPR schemes, which in turn pushed packaging recycling rates up. In 2017, the overall recovery rate was at 54% across



Europe. Member States took different approaches in establishing their EPR systems, showing that the scheme can have results despite how countries decide to implement it. After presenting the general considerations of EPR establishment and operation, Mr. Joachim Quoden presented several examples of EPR schemes in Member States, namely: Belgium, Czech Republic, and Spain.

He concluded with the key ideas behind successful EPR schemes:

- EPR is only one tool within a comprehensive policy approach;
- Different stakeholders should have clear roles to play, ensuring no conflict of interests;
- EPR organizations should be run by the obliged companies, i.e., by the “producers”, on a not-for-profit basis;
- Focus on separate collection and collection infrastructure for inhabitants is key for the success of the system;
- Ensure transparency of operations and data;
- Calculate the fees for all products and materials covered in a fair manner;
- Producer Responsibility Organizations should control the use of the fees collected, and influence infrastructure design if necessary;
- Packaging optimization, design-for-recycling, clear communication and education of inhabitants and businesses are essential parts of successful EPR systems
- Continuously improve EPR system performance.

3.15 Deposit Refund Systems for one-way beverage packaging: experiences and lessons learnt from EU Member States

Ms. Françoise Bonnet provided an overview of Deposit Refund Systems for one-way beverage containers in Europe. Her presentation was based on the ACR+ report “Deposit Refund Systems in Europe for One-way Beverage Packaging” (2019¹). The report covers 10 countries in Europe with different population, density, geography, political and legal systems (Croatia, Denmark, Estonia, Finland, Germany, Sweden, Lithuania, Norway and the Netherlands).

Under a Deposit Refund system, the consumer pays an additional (visible) sum (i.e. a deposit) for the packaging containing the product. The consumer can recover the sum when returning the empty packaging to a collection point.

In the past, it was a widespread practice in Europe for reusable containers (link with local beverage production). By the end of the 1980s there was the first deposit system for single-use beverage containers, followed by several waves of introduction.

In many countries, deposit systems preceded the selective collection of packaging. Ms. Françoise Bonnet offered the current state of play of several Member States, the majority of which will introduce DRS for one-way beverages in 2022.

DRS increases the collection and recycling amounts and thus reduces littering. It can be applied to beverage containers of different materials (plastic, metal, glass) of different volumes and used for most drinks. Recycling targets can therefore be ambitious, in the 90% range.

The system operator is usually a single organization operated by the industry (except in Croatia - public authority operator and Iceland - hybrid organism), on a non-profit basis, where the governance is shared between producers and retailers. In Germany and in the Netherlands, retail chains operate their own deposit system separate from the central system.

¹ www.acrplus.org



ACR+ found that 7 out of the 10 studied countries cover the three categories of materials for single-use packaging: plastic, metal and glass. Sweden and Norway have deposit systems only for single-use plastic and metal packaging. The deposit system in the Netherlands covers only PET bottles (voluntary agreement). The systems cover all volumes in most countries, or between 0.1 and 3 litres for others. Denmark's upper limit is 20 liters for all containers. In the Netherlands, the system only applies to PET bottles > 0.5l.

The recycling rate is between 80% and 90% (and even more). The results are achievable in a few years. There is high quality of collected materials and integration into new products. There is however less rigorous control and lack of transparency in some cases. The problem of border movements worsens the reliability of rates.

Ms. Françoise Bonnet noted that context is crucial for EPR. The situation is different in each country and influenced by many factors influence it. DRS is not "THE" solution, but only one of the possible instruments in the mix of suitable instruments. The situation in one country may have repercussions on others, so a coordinated and comprehensive approach is needed.

Ms. Françoise Bonnet concluded with an example of DRS implementation in Finland.

3.16 An introduction to food waste prevention

Mr. Robert van Otterdijk discussed prevention and reduction of food loss and waste. Food loss and waste reduction is not a goal in itself, but an essential part of efficient value chains. Both are at the core of sustainable food systems, which ensure food and nutrition security, economic growth and climate change mitigation.

Food loss is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, including retail, food service providers and consumers.

Europe is the second region in the world with the highest food loss, at above 15% in 2016.

FAO identified indirect drivers and direct causes at all stages of food production, packaging, transport, distribution and consumption. In addition, food loss and waste have major carbon impact. If they would be reduced, there would be a substantial reduction of GHGs emission resulting from decreased production. The Intergovernmental Panel on Climate Change (IPCC) identified the mitigation potential of food loss and waste reduction measures to be 0.6-6.0 Gt CO₂ eq/yr of GHG emission savings in 2050. However, the consequences of food loss and waste are not limited to GHGs. They also extend to pressure on land and water resources, and biodiversity.

FAO's key intervention areas for food loss are:

- Awareness creation and information dissemination;
- Improve monitoring and reporting for SDG 12.3.1.a;
- Policy and strategy formulation;
- Capacity development;
- Improvement of infrastructure and technology;
- Support of sustainable agro-industries development;
- Strengthening of value chains linkages;
- Improvement of food handling, storage, packing and logistics;
- Enabling innovative financing mechanisms.

FAO's key intervention area for food waste is a circular/sustainable socio-economic and environmental model based on waste reduction, closed nutrient loops, by- and coproducts utilization, safe and high-



quality food, conducive food environment for changes towards healthy diets. In the short term, effective interventions include:

- Nudging (e.g., size of plates in hospitality environments);
- Communication on economic cost of food waste (i.e., short, medium, long term);
- Changing nutritional guidelines (e.g., in schools, universities, public sector canteens);
- Improvement of home cooking skills (i.e. food literacy);
- Information campaigns communicating social norms conducive to food waste prevention;
- Context based: former foodstuffs as feedstock and for bio-based products.

FAO has specific activities in Turkey. In May 2020, FAO, together with the Turkish Ministry of Agriculture and Forestry, launched a national awareness-raising campaign called “Save Your Food”. The campaign released Turkey’s first National Strategy Document on Prevention and Monitoring of FLW and its Action Plan. It aims to raise public awareness about FLW, stimulate action along the food supply chain. The campaign is part of the initiative “Reduction of Food Loss and Waste in the Countries of Central Asia”, that will also assist other regional countries to develop their national strategies and action plans to reduce food loss and waste (FLW).

FAO and the Ministry held a special session with the Union of the Municipalities of Turkey (TBB) in July. Given 1/3 of the actions stated in the Action Plan are addressed to the municipalities, the role of municipalities in tackling FLW is essential. TBB committed to the reduction of FW in marketplaces and redistribution of surplus food. In August, FAO held a series of meetings with Ankara and Istanbul Metropolitan Municipalities. Both municipalities provided their support to the campaign through promoting key messages, informational/visibility materials.

In the future, a National Platform on FLW is to be established to provide an environment of sharing knowledge and best practices among the related stakeholders in food chain and drive the implementation of the National FLW Reduction Strategy and the Action Plan. FAO will also prepare and disseminate guidelines on good practices, and train and build capacity of the food value chain actors.

3.17 EU policies and measures to prevent food waste

Mr. Bartosz Zambrzycki presented EU action to fight food waste. Food waste prevention was already an integral part of the 2015 Circular Economy package. Measures on food waste prevention envisaged in Circular Economy Action Plan included:

- EU Platform on Food Losses and Food Waste Prevention- Set up in 2016;
- Measure and monitor food waste – Decisions adopted in 2019;
- EU guidelines to facilitate food donation - Guidance adopted in 2017;
- Optimize safe use of food in feed – Guidance adopted in 2018;
- Promote better understanding and use of date marking – ongoing.

The EU also set up a Platform on Food Losses and Waste as an informal Commission Expert Group. It aims to support actors in monitoring progress towards SDG 12.3, defining measures needed to prevent food waste, fostering inter-sectorial cooperation and sharing best practice. The members are Member States, EFTA countries, other EU bodies, international organizations and actors in the food value chain.

The Platform is divided in subgroups:

- Subgroup on Food Donation;
- Subgroup on Food Waste Measurement;



- Subgroup on Action and Implementation;
- Subgroup on Date Marking.

There is a plenary meeting of the Platform twice a year since November 2016. Each subgroup meets once or (usually) twice per year. The current mandate is valid to 2021 and will be extended. All presentations, minutes, etc., are available online².

The platform adopted recommendations for action in food waste prevention in several areas: production, manufacturing, hospitality, consumers, etc³.

The EU adopted guidelines to facilitate food donation in the EU and guidelines of food to feed. The latter facilitates safe feed use of former food, in line with "food use" hierarchy, and prevents food waste. It clarifies the application of relevant EU rules: food, feed and waste, and presents best practice examples which comply with the regulatory framework and prevent unnecessary administrative burden.

Food waste was also taken into consideration in the Waste Framework Directive 2008/98/EC (as amended by 2018/851/EC). It provides a definition of food waste, sets obligations on food waste prevention, introduced a reporting obligation and measurement of food waste and left an option for future food waste reduction targets.

The recent Farm to Fork Strategy is stepping up action against food loss and waste with:

- EU-level targets for food waste reduction (proposal by 2023);
- Revise EU rules for date marking (proposal by 2022);
- Investigate food losses at production stage and explore ways of preventing them;
- Promote uptake of EU Platform's recommendations for action and implementation of food waste prevention hierarchy (including facilitating food donation);
- Further integrate food loss and waste prevention as part of all relevant EU policies;
- Strengthen evidence-base for food waste prevention and share best practice through the EU Platform on FLW;
- Support actors in taking action to fight food waste (e.g., Horizon Europe, grants through Single Market Programme).

One participant asked what EU changes are coming in food labelling. Mr. Bartosz Zambrzycki replied that there are discussions to remove the "best by" date from products with long shelf lives. However, the current understanding of the regulatory impact of labelling changes is insufficient. Further research and discussion with stakeholders are necessary. A proposal on food labelling by the EC is expected by the end of 2022.

3.18 Moving from policy to practice: good practices in food waste prevention from EU Member States

Ms. Tova Andersson presented food waste prevention strategies.

The EU provides good examples with its initiatives to set legally binding targets by 2023, promoting circular business models, legislating on food packaging, starting school schemes, and using date markings "use by" and "best before".

²https://ec.europa.eu/food/safety/food_waste/eu_actions/eu-platform/meetings-euplatform-food-losses-and-food-waste_en
³[HTTPS://EC.EUROPA.EU/FOOD/SITES/FOOD/FILES/SAFETY/DOCS/FS_EU-ACTIONS_ACTION_PLATFORM_KEYRECS_EN.PDF?WTCLEAR=LACO](https://ec.europa.eu/food/sites/food/files/safety/docs/fs_eu-actions_action_platform_keyrecs_en.pdf?wtclear=laco)



The EU-funded project REFRESH on food waste prevention analysed consumer behaviour, integrated supply chain policies and valorisation. It mapped consumer motivation to avoid generating food waste, consumers skills and abilities concerning household food management processes and the opportunities present in the consumer context for food waste prevention. Regarding integrated supply chain policies, especially voluntary agreements, it found several in Europe. In a specific case, such agreement reduced food waste by 23 % in homes, by 19 % across the whole supply chain, resulting in 60 million Euro saved, 1.5 million redistributed meals and 1.7 million tonnes of waste prevented.

Ms. Tova Andersson suggested that countries look at four main areas of intervention to reduce food waste:

- The first are policy instruments that can include interventions such as national waste acts, voluntary agreements, removing hindering regulations and VAT returns on food donations.
- The second is changing social norms with information campaigns, use of best before dates, media coverage, guidelines and food waste products.
- The third is nudging and changing practices, which includes smart packaging, end of bulk discounts, adjusted pricing, changes in physical environment.
- The fourth is intelligent technology, new products and business models including scanning of wasted products in retail, smart scales, rescued-food restaurants and use of 2nd grade and rejected food products in new ways.

One participant inquired if it is possible to measure the decrease in food waste. Ms. Tova Andersson replied that there are methods to assess it. One of them is the waste picking analysis, which consists of going through residual waste to see how much food waste is present.

There was a second question about situations when sanitary inspection agencies inspect food preparation areas and seize food not suitable for human consumption. Would the inspection service receive a fee in exchange for such food if it is reused for animal feed? Mr. Bartosz Zambrzycki replied that such arrangements are likely to be part of inspection regulations at country level and, that, to the best of his knowledge, there isn't a standard practice in the EU. Ms. Tova Andersson added in Sweden inspectors also have a pedagogical role in encouraging restaurants to waste less food.

A third participant asked who is responsible for food safety when food is redistributed via food banks. Mr. Bartosz Zambrzycki clarified that if the "best before" date expired there is no problem with its consumption, but if the "use by" date is expired it is highly likely that no food bank will redistribute it. He also pointed to the EU Guidelines on Food Donation. Ms. Tova Andersson added that the receiver takes responsibility for food safety.

3.19 Panel Discussion on Moving from policy to practice: measures to be taken on food waste

The panel discussion on measures to tackle food waste was moderated by Ms. Hülya Çakir, with the participation of Ms. Zeynep Oral, Mr. Olcay Silahlı, and Mr. Mehmet Tarakçıoğlu.

Ms. Hülya Çakir introduced the importance of tackling food waste, as a dimension of circular economy, but also as a goal in itself. She noted that according to WHO statistics, one third of food is wasted. Turkey, like other countries, is working to reduce its food waste. In addition, the waste created by food requires its own attention. Turkey has specific legislation. With the establishment of the Zero Waste approach, Turkey expects to have a Zero Waste system established across the country by 2023. There will be food waste prevention measures, but also measures to make sure it is separately collected and used for animal feed. She highlighted that food waste is a complex issue that requires the involvement of many stakeholders.



Ms. Zeynep Oral started by stating that one of the most important projects run in Turkey, regarding food waste, is a bread waste prevention initiative. According to studies, 1.4 million breads are wasted every day. The Ministry of Agriculture experts came together to discuss the sustainability of the food system. As a result, Turkey started a platform to reduce food and bread, waste. This work has been done in cooperation with the FAO. One of the outcomes was a public awareness raising campaign, which reached over 20 million people in social media. The initiative received attention from popular TV programmes. In terms of the broader circular economy context and to protect and reduce the need for natural resources, Turkey now has an approach based on sustainability. The Ministry implements many reuse and recycling projects, and it will continue to do so, in partnership with businesses, municipalities and NGOs.

Mr. Mehmet Tarakçıoğlu placed attention on food waste prevention as one of the most important pillars of the Zero Waste strategy. Food waste prevention measures will automatically contribute to the creation of a circular economy and assist in maintaining long-term sustainability. Technical cooperation between Turkish authorities and the FAO resulted in a national strategy and plan to reduce food waste. So far, the outcomes have been positive. The FAO is using the experience gained in Turkey as a basis to share best practices internationally. Mr. Mehmet Tarakçıoğlu warned that it is important to enhance food literacy. The FAO started the project “Protect your Food”, which was a campaign to promote sustainability and consumer awareness. Another area of work, in the future will be to intervene in the food value chain to prevent food loss during harvesting, manufacturing and distribution.

Mr. Olcay Silahlı informed the panel of the digital platform that his NGO created. They are reaching out to other businesses, either large or small, to integrate Enterprise Resource Planning (ERP) systems, thus unifying information about unused food stocks into a single database. This information makes it possible for the stakeholders to be aware of food stocks that are in risk of becoming waste and take action to redistribute them. One important dimension of the platform is the possibility to directly connect food surplus holders with food banks effectively creating a marketplace for food redistribution. In addition, the platform users are informed about their carbon footprint in terms of food used/saved. Mr. Olcay Silahlı also worked with small businesses, e.g., cafeterias, to estimate the amount of food waste at their micro level. The data collected will be used to report back to those small businesses. The platform was also used as a humanitarian tool to provide food to victims of natural disasters in Turkey.

There was a question from the audience asking the Ministry to clarify upcoming activities regarding the GHG emission potential of food waste in landfills, and what measures are being taken to separately collect and treat food waste. Ms. Hülya Çakır replied that the authorities want to reach all targets by 2023. The purpose is to adopt an integrated approach for the entire country. The Zero Waste regulation of 2019 was an important step, but there is still work to do.

4 Conclusions

Ms. Madalina Ivanica wrapped up the workshop with an overview of the main conclusions. Collecting and recycling waste is one of the key measures of Circular Economy (CE). In addition, measures must be taken by both the public and the private sector to make products more sustainable. The government must take policy measures to enable the transition to a CE, while business must be creative and adopt circular business models. Case studies from Italy and Belgium shared EU Member States’ experience to implement circular economy policies. The Turkish Business Council for Sustainable Development showed that the transition to a CE has started in Turkey. The Turkish Ministry of Environment and Urbanization showed its commitment to these private sector efforts.

However, challenges regarding plastic waste management remain. One of the key challenges is the ever-increasing amount of plastic waste, while the collection and recycling systems are not always following as rapidly as needed both in the EU Member States and in Turkey. The plastic sector has significant



potential for circularity through reduction and recycling. This is recognised by the new EU Action Plan on Circular Economy.

Circular business models, that maximize product value, are one of the tools to mobilize that potential. In this sense, the experience shared from several businesses, which have successfully adopted circular business models while increasing their profit margin, is very important. They showed the success of designs with less environmentally harmful characteristics, potential for a longer lifetime, through re-use, repair, refurbishment, and remanufacturing activities.

The EU experience with EPR schemes and DRS development was also relevant. Both have great potential to reduce waste, in particular packaging waste, one of the most problematic waste streams. Turkey is taking innovative steps in this field too. The Zero Waste regulation ensures the introduction of deposit refund systems in Turkey.

The panel discussion with Turkish officials and other food system stakeholders demonstrated that food waste is a priority for Turkey. There was valuable insight on the work done in Turkey to reduce food waste through the adoption and implementation of the National Strategy on the Prevention and Monitoring of Food Losses and Waste and a related Action Plan. At the EU level, the new Circular Economy Action Plan and the new Farm to Fork Strategy will help to reduce food losses along the food production and supply chains. Various good practices in food waste prevention from EU Member States were presented.

In conclusion, it is clear EU Member States and Turkey are facing similar challenges, making the exchange of experience and knowledge highly relevant and valuable. Moreover, the workshop offered a positive message: there are social (employment and health), environmental and economic benefits resulting from advancing to a circular economy.

Ms. Madalina Ivanica expressed her gratitude to all stakeholder involved in the organization of the workshop, among which the Turkish authorities, TAIEX and other EC services, the experts and the EPPA project team. The EC stands ready to maintain cooperation with Turkey and to provide technical assistance to promote circular economy models in the country.

Ms. Sadiye Bilgiç Karabulut concluded the meeting by expressing her gratitude to the European Commission, TAIEX and the EPPA project for the organization of the workshop. Turkey strongly believes that such workshops provide important contributions to the development of countries. During the last two days, thanks to the participation of experts from different backgrounds, Turkey was exposed to new experiences and examples of implementation of circular economy policies. Circular economy is a concept that shows its relevance and importance, especially when we are faced with the coronavirus crisis, in the efficient use of limited resources, effective waste management and the fight against food waste. International cooperation is essential to reach a truly sustainable circular economy. Turkey remains open to further cooperation in projects and other activities related to circular economy.

Workshop outputs

The workshop's main outputs were:

- Better understanding of circular economy;
- Information provided on the latest EU initiatives on circular economy;
- Information provided on the latest Turkish initiatives on circular economy;
- Enhanced exchange of experiences and knowledge between Turkey and EU Member states in the several components of a circular economy including circular business models and measures in plastic, packaging and food waste streams; and



- Contribution to the development of a shared international perspective and cooperation on circular economy.

5 Evaluation

The participants were asked to evaluate the workshop by TAIEX using an online survey after the event. The evaluation results are presented below in a summary table.



			No. Responses	Expert Score	Yes / Excellent	No / Good	Partially / Satisfactory	Do not know / Poor	
80288	Workshop - participant - B. Expert ratings	-	Ms. Schomaker, Astrid - Speaker EU	18	83.33%	6 (33%)	12 (67%)	-	-
		-	Ms. Çalkıvık, Konca - Speaker CC	18	77.77%	5 (28%)	11 (61%)	1 (6%)	1 (6%)
	Workshop - participant - C. Logistic Ratings	1	Conference venue	7	-	7 (100%)	-	-	-
		2	Interpretation	11	-	9 (82%)	-	2 (18%)	-
		3	Hotel	4	-	3 (75%)	1 (25%)	-	-
		4	Flight	4	-	3 (75%)	1 (25%)	-	-
		5	Catering	4	-	3 (75%)	1 (25%)	-	-
	Workshop - participant - D. Comments	-	--	-	-	-	-	-	-
		-	As the event was in online platform, the answers for hotel, flight and catering are not applicable. Thank you for the event and organization.	-	-	-	-	-	-
	Workshop - speaker - A. Questions	1	Did you receive all the information necessary for the preparation of your contribution?	7	-	7 (100%)	-	-	-
		2	Has the overall aim of the workshop been achieved?	7	-	7 (100%)	-	-	-
		3	Was the agenda well structured?	7	-	6 (86%)	-	1 (14%)	-
		4	Were the participants present throughout the scheduled workshop?	7	-	6 (86%)	-	1 (14%)	-
		5	Was the beneficiary represented by the appropriate participants?	7	-	6 (86%)	-	1 (14%)	-
		6	Did the participants actively take part in the discussions?	7	-	4 (57%)	-	3 (43%)	-
		7	Do you expect that the beneficiary will undertake follow-up based on the results of the workshop (new legislation, new administrative approach etc.)	7	-	3 (43%)	-	-	4 (57%)
		8	Do you think that the beneficiary needs further TAIEX - %pr_c_abbreviation% assistance (workshop, expert mission, study visit, assessment mission) on the topic of this workshop?	7	-	7 (100%)	-	-	-
		9	Would you be ready to participate in future TAIEX - %pr_c_abbreviation% workshops?	7	-	7 (100%)	-	-	-
	Workshop - speaker - C. Logistic Ratings	1	Conference venue	2	-	1 (50%)	-	1 (50%)	-
		2	Interpretation	5	-	5 (100%)	-	-	-
3		Hotel	2	-	-	1 (50%)	1 (50%)	-	
4		Flight	2	-	-	1 (50%)	1 (50%)	-	



				No. Responses	Expert Score	Yes / Excellent	No / Good	Partially / Satisfactory	Do not know / Poor
80288	Workshop - participant - A. Questions	1	Was the workshop carried out according to the agenda?	18	-	16 (89%)	-	2 (11%)	-
		2	Was the programme well structured?	18	-	17 (94%)	1 (6%)	-	-
		3	Were the key issues related to the topics addressed?	18	-	18 (100%)	-	-	-
		4	Did the workshop enable you to improve your knowledge?	18	-	17 (94%)	-	1 (6%)	-
		5	Was enough time allowed for questions and discussions?	18	-	14 (78%)	-	4 (22%)	-
		7	Do you expect any follow-up based on the results of the workshop (new legislation, new administrative approach, etc.)?	18	-	17 (94%)	1 (6%)	-	-
		8	Do you think that further TAIEX - %pr_c_abbreviation% assistance is needed (workshop, expert mission, study visit, assessment mission) on the topic of this workshop?	18	-	17 (94%)	1 (6%)	-	-
		Workshop - participant - B. Expert ratings	-	Mr. Loro, Francesco - Speaker MS	18	84.72%	7 (39%)	11 (61%)	-
-	Ms. Bonnet, Françoise - Other speakers		18	86.11%	9 (50%)	8 (44%)	1 (6%)	-	
-	Mr. Wessman, Peter - Speaker EU		18	80.55%	4 (22%)	14 (78%)	-	-	
-	Mr. Bakas, Ioannis - Speaker EU		18	81.94%	6 (33%)	11 (61%)	1 (6%)	-	
-	Ms. Cloots, Lise - Speaker MS		18	81.94%	6 (33%)	11 (61%)	1 (6%)	-	
-	Mr. Van Breusegem, Wim - Other speakers		18	91.66%	12 (67%)	6 (33%)	-	-	
-	Mr. Barczak, Piotr - Other speakers		18	80.55%	6 (33%)	10 (56%)	2 (11%)	-	
-	Mr. Quoden, Joachim - Other speakers		18	84.72%	7 (39%)	11 (61%)	-	-	
-	Mr. ten Wolde, Arthur - Other speakers		18	83.33%	6 (33%)	12 (67%)	-	-	
-	Mr. van Otterdijk, Robert - Other speakers		18	84.72%	7 (39%)	11 (61%)	-	-	
-	Mr. Ūncū, Bülent - Speaker CC		18	83.33%	6 (33%)	12 (67%)	-	-	
-	Ms. Andersson, Tova - Speaker MS		18	84.72%	7 (39%)	11 (61%)	-	-	
-	Ms. Bayhan, Münevver - Speaker CC		18	81.94%	6 (33%)	11 (61%)	1 (6%)	-	
-	Ms. De Schoenmakere, Mieke - Speaker EU		18	81.94%	6 (33%)	11 (61%)	1 (6%)	-	
-	Ms. Montevecchi, Francesca - Speaker MS		18	83.33%	6 (33%)	12 (67%)	-	-	





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