POSITION // JUNI 2016

Restart of the EU sustainability policy in the context of the implementation of the Sustainable Development Goals at EU level

German Environment Agency

Umwelt Bundesamt

Imprint

Publisher:
German Environment Agency
Section I 1.2
PO Box 14 06
D-06813 Dessau-Roßlau
Tel: +49 340-2103-0
info@umweltbundesamt.de
www.umweltbundesamt.de

/umweltbundesamt.de
/umweltbundesamt

Authors:
Kabel, Claudia; Abeling, Thomas; Blum, Christopher; Brandt, Marc; Bünger, Björn; Burger, Andreas; Daschkeit, Achim; Ehlers, Knut; Ginzky, Harald; Günther, Jens; Koch-Jugl, Juliane; Knoche, Guido; Kosmol, Jan; Lambrecht, Martin; Langner, Marcel; Löwe, Christian; Matezki, Steffen; Matthey, Astrid; Mönch, Lars; Mohaupt, Volker; Mutert, Tina; Nöh, Ingrid; Oehme, Ines; Penn-Bressel, Gertrude; Richter, Marianne; Richter, Nadja; Richter, Simone; Rose, Johanna; Schreiber, Hedi; Stolzenberg, Hans-Christian; Thierbach, Claudia; Wolke, Frank; Wuttke, Joachim

Design:
Atelier Hauer + Dörfler GmbH, Berlin

Publications as a pdf:
http://www.umweltbundesamt.de/publikationen/restart-of-the-eu-sustainability-policy-in-the

Photo credits:
shutterstock

As at June 2016

ISSN 2363-8273

Contents

1 Summary

In September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development including the 17 global Sustainable Development Goals (SDGs) and their 169 targets. The EU is currently discussing the shape of a strategic framework to implement the SDGs as a complementary implementation framework to a national SDG implementation.

The German Environment Agency (UBA) is in favour of using the implementation of the Sustainable Development Goals to restart the sustainability policy at EU level. These include, in our view, the revision of the EU Sustainable Development Strategy and the mainstreaming of sustainability aspects in the Europe 2020 strategy.

In this position paper the German Environment Agency's experts have identified twelve action fields within UBA's environmental responsibility area from an environmental and sustainability perspective, relating to sustainable consumption and its conditions, sustainable modes of production, the transformation of the economy and the protection of human health and the environment. Objectives and required actions for sustainable development in the EU have been specified from the analysis of deficiencies in existing regulations at an EU level. We see the following objectives in the identified priority action fields for the implementation of the SDGs at the EU level:

- **Climate protection and adaptation:** Reforming and strengthening existing EU guidelines, measures and instruments as well as strengthening existing objectives at the EU level by 2030 and beyond to 2050 in all sectors: Targeting emissions reduction within the EU by at least 50 % by 2030 compared to 1990; aiming to achieve greenhouse gas neutrality by mid-century; expansion target for renewable energies 30 %; increasing energy efficiency by at least 40 %; promoting transformational climate adaptation by the Member States;

- **Resource conservation, resource efficiency:** Increasing raw material productivity by at least 30 % by 2030 (base line 2014) for the absolute reduction of raw material demand and for decoupling raw material demand from economic growth and environmental use;

- **Transition to a green economy:** Orienting the economy along ecological guard rails; promoting sustainable consumption and production among others by introducing transparency and monitoring instruments; internalisation of environmental costs by further development of an environmentally oriented tax and finance system including the reduction of environmentally harmful subsidies and reorientation of EU funding programmes; development of an innovation strategy to promote European competitiveness on the green markets; improving companies' environmental performance by strengthening an ambitious environmental management;

- **Sustainable consumption:** Establishing a European strategy for sustainable lifestyles and consumption patterns as an integrated approach to European innovation, environmental, economic, consumption and social policies; absolute reduction of consumption-related environmental impacts; increasing the market share of green products and services; strengthening consumers' orientation ability and handling competence for sustainable consumption; activation of civil society engagement and social innovation for sustainable lifestyles and consumption patterns;

- **Circular economy:** Mainstreaming waste reduction targets, particularly with regard to food waste, in all EU policies; increased integration of waste prevention in the roadmap to a resource-efficient Europe;

- **Environment and health:** Developing an "EU Strategy on Environment and Health";

- **Air quality control:** Ambitious reduction targets for sulphur dioxide (SO_2), nitrogen oxides (NO_x), NMVOCs, NH_3 and PM2.5;

- **Chemicals management and chemicals safety, sustainable chemistry and minimising the use of hazardous chemicals:** Minimising the negative effects of the production and use of chemicals on human health and the environment by 2020; transformation of the chemistry sector to sustainable chemistry; minimising the use of hazardous

chemicals (REACH, pesticides, biocides and pharmaceuticals); minimising the use of hazardous chemicals (REACH, pesticides, biocides and pharmaceuticals);

- **Urban environmental protection:** Reducing land use (or land take) and increasing material and energy efficiency of settlements;

- **Pollutant discharge and terrestrial ecosystems:** Strengthening protection and improving the condition of terrestrial ecosystems, including biodiversity and ecosystem services by 2030; mandatory protection targets or limits on nutrient and pollutant inputs, especially for nitrogen compounds; impact assessments of policy decisions with regard to ecosystems and their services;

- **Water protection, marine protection and protection of soils:** Consistent implementation of existing EU framework directives to protect the waters and oceans and their ambitious update by 2030; implementation of the 7th EAP measures to achieve a land degradation neutral world;

- **Mainstreaming sustainability aspects in the Europe 2020 strategy** (incl. impact assessment): Development of the Europe 2020 strategy with the aim to harmonise the EU's economic development with SDGs and ecological guard rails; ensuring full and equal consideration of all negative and positive consequences of regulatory initiatives (environmental, economic, social) in the EU's impact assessments

Summing up, the added value of an ambitious strategic framework to implement the SDGs at EU level lies in the following items:

- **Reference framework for all relevant players in Europe,** also with regard to coordination of 28 Member States, and, in addition, as guidance for the entry candidate countries and the countries included in the European Economic Area (EEA). A framework agreed by the EU Council, the European Parliament (EP), and the European Commission would create a binding framework for the implementation of SDGs for all EU policies.

- The environmental policy action fields identified in this paper are central to the protection of **human health and the livelihood of people and the further development and securing prosperity.** This applies both to the contribution to a sustainable development in Europe and to Europe's contribution to a global sustainable development.

- **Coherent policy approaches in environmental and sustainability policies** to implement the SDGs represent the long-term requirement for a sustainable development path.

2 Occasion and purpose of the German Environment Agency's positioning

In September 2015, the UN General Assembly adopted the agenda "Transforming Our World: The 2030 Agenda for Sustainable Development" at an extraordinary summit in New York[1]. The 17 global Sustainable Development Goals (SDGs) and their 169 targets are important parts of the 2030 Agenda and were developed through a long term negotiating process. The EU are currently discussing the shape of a strategic framework to implement the SDGs. Such a framework for the EU's sustainable development policy should act as an implementation framework for the objectives at an EU level and, in its orientation, be complementary to the implementation of the SDGs at national level.

The aim is not just ensuring a sustainable development in Europe, but, in addition, specifying Europe's contribution that the EU is prepared to afford global sustainable development and for ensuring the livelihood of all people. The challenges of the 2030 Agenda for European politicians to take more responsibility for global sustainable development go far beyond developmental policy issues. In addition to fighting hunger and poverty, the 2030 Agenda identifies a sustainable economic development to secure the livelihoods and the protection of human health as central objectives.

It is expected that the EU will adopt the strategic framework for the implementation of the SDGs by mid-2017. The framework's key aspects have not yet been specified. The German Environment Agency believes that the European Commission should urgently submit a relevant proposal.

The discussion of such a strategic framework at the EU level takes place in the context of a possible new direction of the EU Sustainable Development Strategy and the forthcoming revision of the EU 2020 strategy. The EU Sustainable Development Strategy was adopted in June 2001 by the EU Council in Gothenburg and renewed in 2006[2]. The European Commission published progress reports on the EU Sustainable Development Strategy in October 2007 and 2009[3]. The EU Sustainable Development Strategy identifies the key challenges, higher and intermediate objectives (operational goals) and actions to achieve these goals. The seven key challenges for sustainable development in Europe specified in the strategy, which are still highly relevant, are as follows:

- Climate change and clean energy,
- Sustainable transport,
- Sustainable consumption and production,
- Conservation and management of natural resources,
- Public health,
- Social inclusion, demography and migration,
- Global poverty and sustainable development challenges.

In October 2012 the Environment Ministers' Council decided that the EU Sustainable Development Strategy should be checked as soon as possible and by 2014 at the latest. This has not been implemented or introduced by the European Commission as yet for different reasons.

Moreover, the European Commission's work programme plans a 2016 Midterm Review[4] for the Europe 2020 Strategy[5] adopted in March 2010, which focuses on "smart, sustainable and inclusive" growth.

In January 2014, the new 7th EU Environment Action Programme (7th EAP) entered into force[6] that already contained a number of suitable approaches for the SDGs, which must now be implemented. As opposed to the 2030 Agenda, the 7th EAP is targeting 2020 as the time horizon and outlines a vision for 2050, which aims both in the title and content that we "live well within the capacity limits of our planet".

From the perspective of the German Environment Agency there is an urgent need for a restart of the EU sustainable development policy and a new edition of the EU Sustainable Development Strategy, which should constitute a strategic framework to implement the SDGs at an EU level. Many of the objectives of the EU sustainable development strategy are aimed at 2010 and are therefore outdated, especially against the 2030 Agenda, as the new global frame of reference for international sustainability policy. Also,

some of the proposed measures/initiatives of the strategy are now obsolete.

The European Commission was previously cautious about a concretisation of the strategic framework for the implementation of SDGs or a new edition of the EU Sustainable Development Strategy. Since the end of 2015, the European Commission has announced a roadmap for sustainable development for early 2016, which, despite the insistence of some EU Member States, has not yet been submitted. A Commission communication is expected for mid-October 2016 that aligns existing EU policies with the SDGs to identify action fields and, where appropriate, courses of action for the implementation of SDGs (gap analysis).

In its 2016 work programme the European Commission announced a a new approach "taking into account the Europe 2020 review and the internal and external implementation of United Nations Sustainable Development Goals". This new approach is intended to ensure "Europe's economic growth and social and environmental sustainability beyond the 2020 timeframe". In addition, Karl Falkenberg, former Director General of DG Environment in his new role as Senior Advisor for Sustainable Development of the European Political Strategy Centre, has been commissioned to deal with EU sustainability approaches[7]. His report was published in July 2016.[8]

The eighteen-month program of the Dutch, Slovak and Maltese EU Presidency (the so-called "troika") from the beginning of January 2016 until the end of June 2017 envisages a new approach to Europe's growth and sustainability. This will proceed under the subheading of the Economic and Monetary Union (EMU) and take into account the review of the Europe 2020 strategy.

In addition to developing a strategic framework to implement the SDGs at the EU level, the implementation of individual SDGs is currently being discussed within the Europe 2020 strategy and the European Semester.[9] In addition to the main approach of establishing a cross-disciplinary strategic framework to implement the SDGs, the German Environment Agency takes the view that it is also an important approach to further develop the Europe 2020 strategy with the aim of harmonising the EU's economic development with the SDGs and the ecological guard rails. Actions and initiatives for more climate protection and an improved protection of natural resources or for more chemical safety should be increasingly tackled and integrated into the process of the European Semester.

With this position paper, the German Environment Agency makes an expert contribution within its responsibility area to central objectives for the implementation of the SDGs at the EU level from the environmental and sustainability perspective. Objectives and measures required to implement the SDGs at the EU level will be described for twelve action fields from an environmental perspective. The developed objectives and measures were designed as an important contribution to implement the SDGs at the EU level.

Another important aspect of an ambitious implementation of the SDGs at the EU level is that the EU should take a leading role in sustainability issues which has repeatedly been emphasised by a number of its Member States, in particular Germany and France. These announcements on the international stage are only credible if they are underpinned by concrete approaches at home. The specific measures necessary for sustainable development in the EU must be implemented from the deficits' analysis. This applies both to new strategies or action programmes and to the updating of existing approaches with ambitious objectives, which should align with the time horizon of 2030 and are supposed to create the conditions for a correspondingly ambitious implementation through existing or possibly new approaches at the EU level. For this, an exchange of positive examples from the EU Member States (best practice) may help to implement the SDGs at a national level.

Summing up, the added value of an ambitious strategic framework to implement the SDGs at the EU level lies in the following items:

- Reference framework for all relevant players in Europe, also with regard to coordination of 28 Member States, and, in addition, as guidance for the entry candidate countries and the countries included in the European Economic Area (EEA). A framework agreed by the EU Council, the European Parliament (EP), and the European Commission would create a binding framework for the implementation of SDGs for all EU policies.
- The environmental policy action fields identified in this paper are central to the protection of human health and the livelihood of people and the further development and securing of prosperity. This applies both to the contribution to a sustainable development in Europe and to Europe's contribution to a global sustainable development.
- Coherent policy approaches in the fields of environmental and sustainability policies to implement the SDGs represent the long-term requirement for a sustainable development path.

3 Action recommendations by the German Environment Agency

Central objectives and strategic actions from the German Environment Agency's perspective are described below against the background of the framework for the SDG implementation at the EU level described above.

The following twelve action fields have been identified at EU level because of their key role in an ambitious implementation of the SDGs:

- Climate protection and adaptation
- Resource conservation, resource efficiency
- Green economy
- Sustainable consumption
- Circular economy
- Environment and health
- Air quality control
- Chemicals management and chemical safety, sustainable chemistry and minimising the use of hazardous chemicals
- Urban environmental protection
- Pollutant discharge and terrestrial ecosystems
- Water protection, marine protection and soil conservation
- Mainstreaming of sustainability aspects in the Europe 2020 strategy including impact assessment

The list of the action fields does not constitute an exhaustive catalogue, but highlights priority needs for action. Both existing action fields can be developed and new ones added.

3.1 Climate protection and adaptation action field

In the field of climate protection, a number of legal acts and policy decisions exist at the EU level. These relate to the time horizons of 2020, 2030 and 2050. Of particular importance are the binding regulations on the reduction of greenhouse gas emissions in the EU, renewable energy and energy efficiency to 2020. In addition, relevant legal instruments (Emissions Trading Directive, Effort Sharing Decision, Renewable Energy Directive, and Energy Efficiency Directive) on the three topics mentioned above are currently in legislative or revision processes to be adapted to the period to 2030. Moreover, the EU issued schedules for a "low-carbon economy"[10], energy[11] and transport[12] for the period to 2050 in 2011 that provide guidelines as to how the EU should continue to develop until mid-century. With last year's Energy Union package,[13] the EU imposed another programmatic objective, applied across five dimensions, one of which calls for the reduction of CO_2 emissions from industry. Finally in March 2016, the European Council welcomed[14] the Paris Convention completed in December 2015 as a historic step for tackling climate change. A global action plan was agreed in the Paris Convention with which the peak of global greenhouse gas emissions must be reached as soon as possible followed by greenhouse gas neutrality in the second half of the century. The European Council emphasised that the commitment's most important key stipulation that must be observed was a binding ceiling of global warming well below 2 degrees Celsius with a view to

a lower limit of 1.5 degrees Celsius. The UN Intergovernmental Panel on Climate Change (IPCC) outlined the necessary mitigation efforts in the 5th progress report in 2014.[15]

Before and during the Paris UN climate summit in the end of 2015 the EU made a significant contribution to the accomplishment ("coalition of the ambitious") of the new climate convention.

According to the German Environment Agency, the current climate protection goals of the EU to 2030 and beyond are not sufficient to provide the corresponding EU contribution to comply with the 2 °C temperature limit formulated in the Paris Convention[16]. This applies even more in the light of the European Council's spring decisions on the Paris climate convention (see above). In addition, the IPCC recommended in 2014 (see above) that global GHG emissions must be reduced by 40–70 % by 2050 compared to 2010, to zero or even lower in order to meet the 2-degree limit by the end of the century.

Ambitious emission reduction objective for greenhouse gases (GHG)

Relevant SDGs/Targets

SDG 13

Objective

Reform and tightening of existing EU policies and measures, and tightening of existing objectives at the EU level by 2030 and beyond by 2050 in all sectors:

- Emissions reduction within the EU by at least 50 % by 2030 compared to 1990
- Greenhouse neutrality should be pursued by mid-century
- Expansion target for renewable energies 30 %
- Increasing energy efficiency by at least 40 %

Content description

The EU should set a more ambitious EU internal GHG emissions reduction target for the period to 2030 of at least 50 % compared to 1990 against the status quo in order to achieve greenhouse gas neutrality by mid-century. This target requires further actions to be taken beyond those already adopted.

The EU target should be reviewed and increased along with discussion about more ambitious nationally determined contributions (NDCs) under the UN Framework Convention on Climate (stock-taking, a 5-year review mechanism) in 2018. This in particular applies to emissions trading by increasing mitigation efforts and tightening the annual reduction factor. Sectors outside the EU emissions trading scheme (for example, transport) have to contribute additional climate protection efforts.

This ambition increase is imperative. If the EU remains at the previous ambition level, it can be foreseen at this early stage that annual emission reduction rates so far unmatched would have to be applied in the subsequent decades in order to provide the necessary climate protection contribution by 2050. Moreover, the EU would run the risk of being compelled to resort to technologies (e. g. CCS, BECCS[17]), which are still little explored in the current situation and are considered as questionable from an environmental perspective.

Implementation

- Ambitious reform of the Emissions Trading Directive, including
  - anchoring the 5-year cycle to enhance ambition and increasing the linear reduction factor;
  - final cancellation of excess emissions trading certificates from the 2008–2020 trading periods;
  - more intensive coordination between the EU ETS and complementary, national and European climate actions;
  - stronger mitigation incentives in the industry by providing tailored differentiation of the carbon leakage risk.
- Ambitious recast of the effort sharing decision (ESD) and registration of the field of LULUCF (land use, land use change and forestry) – separately from the ESD;
- Increasing the expansion target for renewable energies (currently 27 % across the EU) to at least 30 % of gross electricity consumption, specifying expansion targets for individual EU Member States. Transport must be considered as an additional consumer to reflect the growing importance of transport as a relevant power consumer;

- Increasing the energy efficiency target (currently 27 %, including transport) to 40 %;[18]
- Ambitious implementation of the measures in the White Paper on transport and an increase in transport-related GHG emissions reduction target (currently 60 % by 2050) to achieve almost complete greenhouse gas neutrality.

The climate adaptation theme received little attention by the previous EU Sustainable Development Strategy. The renewed EU Sustainable Development Strategy in 2006 only specified a generally worded objective that adaptation to climate change (and emission reduction) should be integrated into all relevant European policies. The 2009 amendment of the EU Sustainable Development Strategy explicitly identified the adaptation to climate change as a challenge, which was not yet recognised or only marginally touched by the EU Sustainable Development Strategy[19].

In addition to the economic transformation towards a low-carbon economy, sustainable development also requires long-term profound economic and social changes (transformation) in climate adaptation, particularly in the case of increased climate change. Against the background of the establishment of a long-term strategic framework at EU level that also provides the impulse for national strategies implementing SDGs, the concept of transformation creates a wide platform for the design of national sustainable development strategies. It opens creative spheres for far-reaching processes of societal learning as well as of change. that go beyond technical solutions and strengthen willingness and opportunities for long-term profound change.

According to the German Environment Agency's assessment, a framework-based target for transformative adaptation at the EU level should indicate the need for such profound changes at a national level and encourage Member States towards early action.

Transformative climate adaptation

Relevant SDGs/Targets
SDG 13, Targets 13.1, 13.2 and 13.3

Objective
Promoting transformational climate adaptation at the Member States level

Content description
Taking into account SDGs, aside from mainstreaming the adaptation to climate change in other policy fields, the EU should additionally strive to promote transformational adaptation at the Member States level through the EU as an objective for 2030.

The required transformative adaptation needs profound changes at all administrative levels (national, regional, local). Due to the extensive need for changing implied in the transformation concept, changes are not only necessary in the field of established adaptation measures, but also in the organisational and administrative system designed to launch and carry out these measures. To achieve this, the need of transformative adaptation in particular must currently be engrossed in the stakeholders from all relevant societal sectors (change of awareness). This can be achieved through successful examples of transformative adaptation for instance.

Transformative adaptation should be aimed at societal changes (adaptive capacity) and should not specifically focus on infrastructure (resilience) alone. This would enable the creation of a structure for national sustainability measures and policies.

Implementation:
- The need to promote extensive knowledge and example networks between the EU Member States to put established transformative adaptation measures into practice. Concrete examples of transformative adaptation can be taken out of the local context and expanded.

3.2 Resource conservation, resource efficiency action field

The decoupling of economic growth and environmental degradation, the promotion of sustainable production and consumption patterns as well as the preservation and management of natural resources, including avoiding their overexploitation have

been key components of numerous EU strategies for more than a decade[20]. The 7th Environmental Action Programme also establishes resource efficiency as a priority for the EU.

Almost all policies and programmes, including the 7th EAP, of the resource-efficient Europe flagship initiative and the recently released circular economy package discuss and highlight the importance and necessity of establishing indicators and goals for resource efficiency as a backbone for public and private decision makers. However, attempts to set concrete objectives at the macroeconomic level have not yet been successful. The "Resource Efficiency Scoreboard"[21], soon supplemented by the "Raw Material Scoreboard"[22], has established the first sets of assessment indicators. These enable a data-based assessment of progress towards higher resource efficiency for the EU as a whole, but also for individual Member States.

The aspiration of a resource-efficient Europe is key in the elaboration of a strategic framework for the implementation of SDGs at the EU level. This requires the absolute decoupling of economic growth from resource use in order to harmonise economic development and ecological guard rails (see also proposed measures in the green economy action field). The EU sustainable development strategy should anchor key targets of this longstanding thematic focus point in EU environmental policy.

Updating the roadmap to a resource-efficient Europe

Relevant SDGs/Targets

SDG 8, SDG 12, Target 12.2

Objective

Increasing raw material productivity by at least 30 % by 2030 (base line 2014) for the absolute reduction of the raw material demand and for the decoupling of raw material demand from economic growth and environmental use

Content description

The implementation of SDGs at a European level requires the implementation of the roadmap to a resource-efficient Europe[23] and must devise ways to achieve the vision contained therein (see objective of the circular economy action field).

The absolute reduction of raw material demand and the decoupling of raw material demand from economic growth and environmental use should be defined as overall objectives. Thus, the negative environmental impacts generated by the use of/substitution with renewable raw materials should be avoided by falling back to sustainably produced renewable raw materials (see, among others, green economy and chemistry action fields).

A target for raw material/material productivity should be developed and named for the absolute reduction of raw materials and material demands. This should be based on the recommendations of the European Resource Efficiency Platform (EREP) and the European Parliament[24], which suggest among other things, an increase in raw material productivity by 30 % by 2030, with the base line in 2014. However, we believe that this objective should be understood as a minimum target since it is merely a trend continuation.

Following Target 12.2, the EREP objective for raw material productivity should at least be fulfilled and an objective for raw material use per capita including a corresponding indicator should be pursued at the EU level. The German Environment Agency believes that the Raw Material Consumption (RMC) indicator per capita is well suited for this purpose.

The roadmap to a resource-efficient Europe described the first concrete milestones up to 2020 on the way to Vision 2050 and formulated proposals for corresponding measures. These milestones should continue to be updated, substantiated and underpinned with corresponding packages of measures for the period beyond 2020.

The recently published circular economy package should also be actively implemented and substantiated regarding the identified gaps (see proposed measures in the circular economy action field).

In its policy recommendations, the EREP identified and described further relevant approaches and packages of measures for the implementation of

the resource-efficient Europe vision. These should be actively adopted.

In addition to the recommendations listed below, the ambitious and coherent design of the product policy, the promotion of new, resource-efficient business models and the reduction of environmentally harmful subsidies are further important measures for an advanced resource-efficient Europe roadmap. These are further elaborated in the thematically closely linked circular economy, sustainable consumption and green economy action fields.

Implementation

- Raising public awareness on sustainable consumption and production patterns through education and information measures; anchoring the mediation of resource efficiency and sustainable consumption in all educational sectors;
- Establishing a platform for resource efficiency and involve all stakeholders to coordinate the implementation of the roadmap to a resource-efficient Europe, the circular economy action plan, EREP recommendations, the Green Action Plan for small and medium enterprises (SMEs) and to support an absolute reduction of resource requirements;
- Establishing appropriate supporting and consulting tools for SMEs, among others through the establishment of a European Resource Efficiency Excellence Centre;
- Establishing a working group for sustainable financing across the Directorates General with the aim of integrating resource efficiency indicators into corporate reporting and to review possibilities for embedding resource efficiency in credit ratings and equity capital requirements for banks (for example in the form of key performance indicators[25]);
- Increasing resource efficiency through resource-efficient production, increased use of secondary raw materials and substitution of critical raw materials;
- Making resource extraction in the EU and in raw material producing countries more environmentally friendly, strengthen accountability and transparency in raw materials supply chains, apply the polluter-pays-principle across value chains in order to internalise environmental and societal damage costs: extend due diligence in raw materials supply chains to environmental and societal standards as well as to other raw materials according to the EU's Conflict Resources Regulation model;
- Recovering precious and special metals (critical raw materials): create resource efficiency standards in the disposal chain – from detection and treatment to metal recovery, further development in parallel eco-design requirements (design for recycling), improving data and information exchange;
- Establishing anthropogenic raw material reserves by developing detection and classification methods (urban mining) as a key strategy for the development of a circular economy.

3.3 Transition to a green economy actio field

The concept of a green economy is embedded in the overarching vision of sustainable development and substantiates it at the same time. A green economy characterises an economy in harmony with nature and the environment, which

- avoids harmful emissions and pollutant discharges in all environmental media (see climate protection and air quality control action fields),
- relies on the development of a circular economy and closes regional material cycles as much as possible (see circular economy action field),
- brings about an absolute reduction in the consumption of non-renewable resources, particularly through more efficient use of energy, raw materials and other natural resources and the substitution of non-renewable resources by sustainably produced renewable resources (see resource conservation and chemistry action fields),
- achieves a long-term energy supply based exclusively on renewable energies (see climate protection action field) and
- maintains, develops and restores biodiversity and ecosystems and their services (see pollutant discharge and terrestrial ecosystems, chemistry and air quality control action fields).

It is therefore of great importance that a strategic framework for implementing SDGs applies to the concept of a green economy at the European level. In

addition to the relationship between economy and ecology, this concept also addresses social impacts, such as the fair, socially responsible organisation of the transition to a green economy, employment effects and qualification aspects. The green economy promotes an environmentally friendly economic development by recognising ecological limits and anticipating economic shortages and costs. It thus makes an important contribution towards preserving the EU's competitiveness.

The transformation towards a green economy requires a fundamental change in production and consumption practices, as well as a comprehensive ecological modernisation of the entire economy and its sectors. Thus, measures for the promotion of sustainable consumption and production play a central role (see among others, sustainable consumption and resource conservation action fields). This includes an environmentally friendly shaping of products and the entire added value chain. The promotion of environmental innovations also plays a central role, which should include social innovations in addition to technical and organisational innovations (see among others the recommendations of the climate protection and adaptation, air quality control, resource conservation, sustainable consumption action fields).

The German Environment Agency believes that a framework for implementing SDGs at the EU level should apply explicitly to the green economy model and promote the transformation of the economic sector towards a green economy.

Transformation of industry towards a green economy

Relevant SDGs/Targets

SDG 8 and SDG 9 as well as SDG 12, SDG 13, SDG 14 and SDG 15

Objectives

- Guiding the economy along ecological guard rails
- Promoting sustainable consumption and production practices, among others by introducing transparency and monitoring instruments
- Internalisation of environmental costs
- Further development of an environmentally oriented tax and finance system
- Reduction of environmentally harmful subsidies and reorientation of EU support programmes
- Developing an innovation strategy for the promotion of Europe's competitiveness on the green markets
- Extensive improvement of companies' environmental performance by strengthening an ambitious environmental management

Content description

In the long term, EU industry should remain within environmental guidelines. The EU's objectives for 2030 should be based on this level of ambition. This concerns both environmental objectives and objectives that address the question: "Does the State set the right course for the transition to a green economy?" (See also Europe 2020 strategy and impact assessment action field).

The required transformation of the entire economy implies that classical economic sectors such as vehicle construction, the chemical industry or agriculture must be oriented more strongly towards environmental protection and resource conservation, and economic opportunities that provide the dynamic growth of green markets must be utilised better. Economic opportunities exist in the service sector,e. g. regarding environmental technology services. It is also important to promote green founders and innovative green business models. This strengthens international competitiveness, enhances the resistance to rising or fluctuating raw materials prices and provides the basis for an environmentally friendly economic development.

Implementation

- Promoting environmentally friendly production and consumption practices among others by suitable measures to internalise environmental costs, further development towards a sustainable tax and finance system; reducing environmentally harmful subsidies and consistent alignment of all EU support measures with the green economy model. This can be achieved for example, by refocusing the Common Agricultural Policy (CAP) according to the motto "Common money for common goods" (supporting different targets from the SDG 12 Sustainable Production and Consumption (esp. Targets 12.2, 12.6, 12.7, 12.8) and targets from the

SDG 13 (climate change), SDG 14 (seas) and SDG 15 (terrestrial ecosystems));
- Extensive improvement of companies' environmental performance by strengthening ambitious environmental management; measures to reduce negative ecological and social impacts in the supply and added value chains, for example, through a binding sustainability reporting on environmentally relevant undertakings;
- Increasing the share of green procurement in total public procurement (Target 12.7), for example, stronger integration of circular economy aspects in the procurement of the EU institutions;
- Developing an EU innovation strategy to strengthen the EU's competitiveness on the rapidly growing green markets (for example, renewable energies, energy efficiency, sustainable mobility, circular economy);
- Increasing the proportion of public expenditure for environmental research within the total public expenditure for research and development (see Target 9.5, enhancing total research);
- Increasing the proportion of green support programmes for businesses and private households within the total funding amount (see Target 9.4 "Retrofitting industry to make it sustainable");
- Measures to reorient the tax system away from the burden on labour towards taxing environmental stress, among others through further development of the EU Energy Tax Directive and an environmentally oriented reform of VAT (Target 12.c regarding energy).

3.4 Sustainable consumption action field

Recent trends in key environmental parameters indicate that the framework set for a required socio-ecological change in society towards the greater sustainability of markets and in living environments of the EU population is not provided by the present EU environmental and sustainability policy and falls short regarding requirements for a structural and cultural change[26].

In addition to the adjustment of the regulatory legal framework (re-calibrating), tackling the environmental and societal-political challenges of the transformation agenda described by the SDGs additionally requires measures that match the size of the challenges and that devise ways in which EU institutions and Member States and their population can prepare for these structural and cultural changes. The necessary long-term decisions for a climate-neutral, resource-conserving Europe will not succeed with the present instrumental approach of "incremental improvements" (e. g. in the gradual ecologisation of the product offer) alone (see also circular economy action field) because the cultural path dependencies of unsustainability present in society and everyday consumption cannot be overcome. Thus, the successful implementation of SDGs requires politically substantiated additional measures and ways towards alternative forms of prosperity which activate the (latent) existing societal capital in the economy and civil society and motivate people to participate in sustainable consumption and establish sustainable lifestyles.

The EU sustainable development strategy should place the promotion of sustainable consumption at the centre of the strategic mission development and expand the well-being initiative developed in the 7th EAP in accordance with the UN agreement of the SDGs/2030 Agenda.

Ecologisation of markets and strengthening societal framework conditions for sustainable consumption and lifestyles

Relevant SDGs/Targets

SDG 12

Objectives

Establishing a European strategy for sustainable lifestyles and consumption patterns as an integrated initiative of European innovation, environmental, economic, consumer and social policies:

- Absolute reduction of environmental impacts related to consumption
- Increasing the market share of green products and services
- Strengthening consumers' orientation ability and capacity for sustainable consumption
- Activation of civil society engagement and social innovation for sustainable lifestyles and consumption patterns

Content description

An integrated understanding should guide all EU policies towards ways in which an absolute reduction of consumption-related environmental impacts can be substantially advanced step by step in order to provide central decisions for a climate-neutral, resource -conserving Europe (2050/2070 perspective) while providing improved living conditions for all Europeans. Further ecologisation of market offer and development of positive societal framework conditions for improved orientation ability and handling competence for more sustainability in EU citizens' everyday consumption are key prerequisites.

Moreover, the increasing global interdependence and the impacts of European consumer culture must be taken into account (reducing the global ecological backpack) as a contribution to higher global environmental justice.

Within the framework of SDGs implementation, the EU should be ambitious in strengthening existing product and consumer policy initiatives and measures to promote sustainable consumption and systematically expand them in the EU Member States in terms of their scope and applicability. It also is important to strengthen synergies between national and European activities, taking into account the diversity of societal realisation conditions of sustainable consumption within the EU for example in the areas of "ecological product innovations" (eco-design), "consumer information" and "environmental and social labels".

To raise the ecological, economic and social potential of a sharing economy and new social consumption practices (share, swap, do it yourself) for more sustainability in the daily lives of EU citizens, conditions should be created that enable the strengthening of civil society commitment to social innovations in sustainable consumption, for example through targeted promotion of civil society initiatives. Additionally, this would enable the creation of synergies for a sustainability policy in Europe aimed to promote social inclusion.

Implementation

- Further development of the EU's regulatory legal framework for a consistent ecologisation of all life spheres and consumption areas as an overriding guiding principle of all EU policies;
- Achieving an ambitious "top-runner-initiative" as the basis for the ecologisation of the entire European internal market and strengthening synergies between environmental, product and consumer policy instruments of the EU policy with a focus on (see also green economy action field):
  - ecological product standards, eco-design, including product lifetime;
  - further development and strengthening of the Ecolabel instrument;
  - strengthening and obligation of environmentally friendly procurement;
  - consistent mandatory/voluntary consumer information including the promotion of legal framework conditions for advertising with "green claims";
  - strengthening market/fiscal and non-market incentives for green products (for example, Germany does this through the German Federal Ecodesign Award) and sustainable consumption;
  - Further development of regulatory legal frameworks for green public procurement, including the related comprehensive capacity building;
  - strengthening ecodesign in the context of Corporate Social Responsibility (CSR) and integrated environmental management systems in enterprises.
- Establishment of European "consumption indicators" within the context of a happy-life index[27] (oriented at the OECD);
- Strengthening European environmental and consumer organisations in their driving role for social innovations and societal change towards sustainability;
- Strengthening the role of sustainable consumption in transnational collaborations, support programmes and financial tools of the EU and increasing engagement within the framework of global partnerships of international sustainability policy to achieve SDG 12.

3.5 Circular economy action field

The European Commission's circular economy package contains legislative proposals on waste regulations and an action plan for the life cycle of products from production to recycling. The action plan in particular contains proposals on "closing the cycle" in circular economy and proposes to involve all phases of a product's life cycle, from the production and consumption across waste management to the market for secondary raw materials.

A strategic framework for implementation of SDGs at EU level should place the promotion of waste prevention, the reduction of resource consumption and the closing of material cycles in the centre of the strategic mission development (see also resource conservation and sustainable consumption action field).

Promoting waste prevention, reducing resource consumption and closing material cycles

Relevant SDGs/Targets

SDG 12, Targets 12.3, 12.4 and 12.5

Objectives

- Mainstreaming waste reduction targets, particularly with regard to food waste, in all EU policy areas
- Increased integration of waste prevention in the roadmap to a resource-efficient Europe

Content description

All EU policies should be guided with an integrated understanding along ways in which an absolute reduction of waste generation can be achieved in the EU. The avoidance of food waste plays a special role.

A concept on how circular economy can fit into a resource-conserving Europe should be developed (see also resource conservation action field). This should be tied to the roadmap to a resource-efficient Europe. The circular economy package submitted by the EU should make reference to the resource utilisation of a primary raw material economy with regard to the implementation of the action plan measures and to the substitution impacts of primary raw materials.

Implementation

- Key measures to avoid food waste:
  - Strengthening waste prevention in the food waste area;
  - Research, in particular developing valid methods for measuring the success of waste prevention; development of guidelines;
  - Recommendations and support for the distribution of food, strengthening the dialogue between relevant stakeholders.
- Key measures to avoid the negative impacts of waste, and safe handling including environmentally friendly waste disposal:
  - Strengthening the reuse; ensuring proper handling of waste;
  - Research, participation in the international elaboration of guidelines;
  - Developing appropriate tools for the prevention and reduction of hazardous waste (for example, separation of pollutants in recycling processes).
- Key measures for waste prevention:
  - Reducing waste and the harmfulness of waste;
  - Research, dialogue with relevant stakeholders;
  - Exchange at the European level (EEA) and within the framework of the OECD;
  - Strengthening the recycling of products such as reusable packing systems;
  - Strengthening the recycled proportion of plastic waste by improving separate collection of plastic waste and improving their recyclability.
- Key measures for product design and shaping:
  - Promoting durable products as well as repair, retrofitting and dismantlability of products;
  - Measures to facilitate the recognition of materials for improved recyclability;
  - Systematically improving repairability, upgradeability, durability, recyclability and identification of certain materials within the framework of the Ecodesign Directive;
  - Improving framework conditions for independent repairers at EU level through uniform rules, availability of spare parts, basic repair manuals and tools for non-proprietary spare parts dealers and repairers as well as diagnostic tools and detailed repair information for a corresponding nominal fee.

3.6 Environment and health action field

Environment and health is a cross-cutting theme of high importance for the implementation of SDGs. Several SDGs demand a comprehensive protection of human health from harmful environmental influences. An example is Target 3.9 which demands the considerable decrease of the number of deaths and illnesses caused by dangerous chemicals and the pollution of air, water and soil by 2030. The EU's 7th EAP has also set targets for better health protection against harmful environmental influences by 2020.

The protection of human health from harmful environmental impacts affects nearly all relevant fields of national and international environmental policy and has interfaces to various regulatory processes. Important starting points for the protection of human health exist in the following policy areas (see also air quality control, chemistry and urban environment action fields):

- Air quality control including exposure to particulate matter and ozone, as well as production of healthy indoor air without chemical, physical (for example, particles such as particulate matter) or microbiological impacts especially for sensitive population groups, such as children, the elderly and the ill;
- Water protection, for example, for the protection of drinking and bathing water from pollutants and microbial impacts;
- Noise abatement, for example, for the containment of negative health impacts such as acute hearing loss or cardiovascular diseases and
- Chemical safety including impacts on the endocrine system or exposure to multiple chemicals and pharmaceutical residues.

Aside from hearing loss, noise causes an increased risk of cardiovascular diseases including heart attack and stroke. The 7th EAP notes that 65 % of Europeans living in major cities are exposed to high noise levels with a day-evening-night noise indicator (LDEN) in excess of 55 dB(A) and more than 20 % nocturnal noise levels with a night-time noise indicator (LNight) of 50 dB(A), where health effects occur more frequently.

An overall objective of the EU should be to develop an "EU Strategy on Environment and Health" as part of the implementation of SDGs at the EU level, which includes the key environmental policy elements for the protection of health from harmful environmental influences.

Protection of human health against harmful environmental influences

Relevant SDGs/Targets:
SDG 3, Targets 3.9, 3.d, SDG 6, Targets 6.1, 6.a, SDG 11, Targets 11.6, 11.7 and 11.3, SDG 12, Target 12.4Target 12.4

Objective
Developing an "EU Strategy on Environment and Health"

Content description
The objectives of the 7th UAP to protect public health, which, among others, concerns air quality control, water protection, noise situation and chemical safety in Europe, should be developed ambitiously with a 2030 perspective and should ensure the protection of all population groups.

All measures must ensure that all population groups – regardless of their social status and migrant background – are protected against harmful environmental influences and thus creating EU-wide environmental justice.

Implementation
- In order to ensure a healthy air quality, at worst the current WHO recommendations must be complied with by 2030. The WHO recommendations are significantly lower than the air quality standards within the EU;
- Likewise, the WHO recommendations on noise protection, which stipulate that night time noise impacts should not exceed an average sound level of 40 dB(A), must also be accomplished by 2030 at the latest. This enables a substantial reduction of disease impacts and deaths from air pollution and noise pollution;
- A Europe-wide improvement in the current protection level is desirable in order to ensure healthy indoor air. For this purpose, an EU-wide regulation on the harmful substances

relevant to indoor air should be established by 2030. This requires a European harmonisation process for substance verification values and health assessment of emissions from building products and interior furnishings. Adequate ventilation must be stipulated in low-energy construction and energetic restoration in order to avoid moisture and mould indoors;
- The goals outlined in the 7th UAP must be achieved and, if necessary, updated in order to protect health from harmful chemicals. The REACH Regulation should be further developed and implemented (see chemistry action field);
- Long-term European human-biomonitoring should be established to detect the chemical impacts on people and their living environment and to monitor the effectiveness of the REACH measures. The "European Joint Programme HBM4EU" is currently creating the basis for this;
- The revision of the Bathing Water Directive should include an indicator of the presence of viruses because most diseases stem from viruses in bathing waters. Moreover, vibrios must be taken into account as pathogens whose numbers increase due to climate change.

3.7 Air quality control action field

Air pollutants adversely affect human health. Particulate matter (PM10, PM2.5), nitrogen dioxide (NO_2) and ozone in particular, all cause significant health issues. According to calculations by the German Environment Agency, the excessive particulate pollution in Germany causes 47,000 premature deaths each year.

Furthermore, currently there is a high input of nutrients and acids in marine and terrestrial ecosystems. In 2009, about 48 % of natural and semi-natural terrestrial ecosystems in Germany were affected by high levels of nutrients (see pollutant discharge and terrestrial ecosystems action field). Plants can also be damaged directly by ozone causing crop losses.

Therefore by 2030, the directive on the reduction of national emissions (update of Directive 2001/81/EC on national emission ceilings for certain atmospheric pollutants) must set and achieve reduction targets for sulphur dioxide (SO_2), nitrogen oxides (NO_x), volatile organic compounds without methane (NMVOCs), ammonia (NH_3) and PM2.5 (particulate matter). This directive is currently being negotiated at the European level.

Overall, a further improvement of air quality is necessary for the protection of humans and the environment within the EU. Therefore, highly consistent implementation of existing policies is needed to improve air quality through the EU and its Member States together with an ambitious updating of agreed directives.

Improvement of air quality

Relevant SDGs/Targets:
SDG 2, SDG 3, SDG 14 and SDG 15

Objective
Ambitious reduction targets for sulphur dioxide (SO_2), nitrogen oxides (NO_x), NMVOCs, NH_3 and PM2.5

Content Description
The air quality values of the WHO are in some cases significantly lower than the air quality standards within the EU. For the protection of human health, the WHO recommends that an annual average of 20 µg/m³ of PM10 should not be exceeded; the EU limit value is 40 µg/m³. At the same time, entry of reactive nitrogen compounds and acids into ecosystems is reduced through improved air quality.

Therefore, under the current negotiating directive on reduction of national emissions, significantly more ambitious reduction targets must be set and achieved by 2030 through the implementation of appropriate measures.

To achieve these objectives a number of different measures are required. The planned reduction of national emissions of air pollutants will only be achieved if more far-reaching mitigation measures are implemented within the energy transition than previously decided (see also recommendation of the climate protection action field).

Implementation

- Reduction of industrial emissions, including through ambitious implementation of the Industrial Emissions Directive (IED);
- Reduction of emissions from the transport sector, inter alia through ambitious targets for RDE (real driving emissions) and their consistent monitoring;
- Reduction of emissions from private stoves and fires etc., which goes beyond the requirements of the 1st Federal Exposure Control Ordinance (BImSchV) and can be reached by educating consumers;
- Reduction in the intensive use of fertilizers and pesticides and the related emissions from agriculture, including by promoting the integration of agroecological principles in land management;
- In addition to these measures, for more far-reaching emissions reduction and thus improved air quality, it is imperative to change consumer behaviour. There is a link to SDG 12 results (see also recommendations of the sustainable consumption action field). Thus reduced meat consumption can lead to a necessary decrease of livestock and an increased use of environmentally friendly modes of transport can help reduce the emissions from the transport sector.

3.8 Chemistry action field: Management of chemicals and chemical safety, sustainable chemistry and minimising the use of hazardous chemicals

The internationally agreed target on chemicals management is to minimise negative effects of the production and use of chemicals on human health and the environment by 2020[28]. This 2020 target was adopted at the World Summit in Johannesburg in 2002. The international framework for the combining of activities to achieve the 2020 target is the Strategic Approach to International Chemicals Management (SAICM).

In particular, SDG 12 related to 'sustainable consumption and production' includes interfaces on chemical safety at the target level. In addition, chemicals as a cross-section topic have a number of interfaces to other targets. Here target 12.4 covers the substance of the 2020 aims, although with significant formulation adjustments[29].

Strategic Approach to International Chemicals Management (SAICM)

SAICM was adopted in 2006 under the auspices of UNEP, serving the implementation of the 2020 target. In an overarching framework the various activities on chemical safety are combined on a global scale and synergies generated (integrated approach). SAICM is a participant- and cross-sector strategy, which is not binding under international law.

SAICM implementation

Relevant SDGs/Targets

SDG 12, targets 12.4, 12.1, 12.6, 12.2, 12.5, also 12.8, SDG 3, targets 3.9 and 3.d, SDG 6, targets 6.3 and 6.1, SDG 2, target 2.4, SDG 11 target 11.6, SDG 14, target 14.1, SDG 8, target 8.4, SDG 9, target 9.4, SDG 17, targets 17.16 also 17.17

Objective

By the year 2020 minimise negative effects of the production and use of chemicals on human health and the environment

Content description

Key issues under SAICM are risk reduction, knowledge and information, good governance and administration, capacity building and technical cooperation and illegal international trade. Here SAICM provides a unique platform for the treatment of emerging priority policy issues. These are topics that cover all phases of the life cycle of a chemical that are either not yet recognised, are treated inadequately or are only known by new scientific evidence and have potentially adverse effects on humans and the environment. To-date the priority policy themes recognised under SAICM are the following: 'lead in paint', 'chemicals in products', 'hazardous substances in the life cycle of electrical and electronic products', 'nanotechnology and manufactured nanomaterials', 'endocrine-disrupting chemicals', 'environmentally persistant pharmaceutical pollutants' and 'highly hazardous pesticides'.

The 5th and most recent International Conference on Chemicals Management, the decision-making body in SAICM, will be convened 2020. Up to this conference achieving the 2020 target is continuously and

with even more effort pursued; on the other hand, an intersessional process is running to design the framework for International Chemicals Management beyond 2020. Germany holds the presidency of the SAICM Office until 2020.

Implementation

- Actively introduce European participants in the technical and political support of the "Overall Orientation and Guidance" (OOG) to achieve the 2020 target, particularly with respect to the known core activities and for 11 elements for implementation of SAICM;
- The EU and its Member States can support other countries/regions by implementing the "Overall Orientation and Guidance" and thereby actively contribute to achieving the 2020 target;
- With the aim to achieve objectives, more effective networking between levels (national/regional/international) and between sectors;
- Greater involvement of stakeholders such as NGOs and the active contribution of industry;
- Active involvement of European participants in the more technical-political support and development of the SAICM processes, for example by monitoring existing emerging policy issues and the introduction of new topics (pharmaceuticals in the environment, highly hazardous pesticides);
- Active contribution from the EU and its Member States to the development of the 'beyond 2020' process in terms of organisation and synergies on topics and content and on financing. To this end, all political and technical levels are required and also strong networks as well as the development of concepts for the design framework;
- Support of the German presidency in the intersessional process through EU institutions.

Sustainable chemistry

Sustainable chemistry is a holistic approach, which considers the life cycle of chemical substances and products in the context of sustainable development. Furthermore, it is not just about effects on humans and the environment but also on social and societal issues around the inclusion of research, science and culture and a successful long-term sustainable form of economic activity in which the very limits of the Earth are taken into account (see also the green economy and resource conservation action field).

Sustainable Chemistry:

- contributes to a long-term positive development in society, the environment and the economy with new approaches and technologies to create attractive materials, products and services for society's needs;
- increasingly uses substances and procedures that have the least possible adverse effect, makes use of substitutes, alternative procedures, recycling concepts and conserves natural resources. This avoids damage and adverse effects on people, ecosystems and resources;
- is based on a holistic approach and sets measurable objectives for a continuous process of change. Scientific research and education for sustainable development in schools and vocational training are an important basis for this.

Sustainable chemistry

Relevant SDGs/Targets

SDG 12, targets 12.1, 12.4, 12.5, 12.6, SDG 9, target 9.4, SDG 17, target 17.16, SDG 8, SDG 6, targets 3.9 also 3.d, SDG 6, target 6.3, SDG 2, target 2.4, SDG 11, target 11.6, SDG 14, target 14.1

Objective

Transformation of chemistry (chemical industry) to sustainable chemistry

Content description

Sustainable chemistry involves a central objective to use inherently safe chemicals that do not have an adverse effect on humans and the environment. It approaches hazardous substance groups with great caution.

Sustainable chemistry often creates sustainable products (see recycling action field). They must be both economically successful (competitive) and have a social benefit to contribute more effectively to sustainability. Sustainable products also require sustainable production methods on-site

and often include steps before or after the actual production. A holistic understanding of sustainability also includes assessing whether the use of a product is itself sustainable and serves sustainable objectives. Sustainable chemistry can and will make a significant contribution to reducing current burdens and achieving global sustainability targets.

Implementation

- Use of inherently safer chemicals: use increasingly less hazardous, inherently safer and readily degradable substances. If they are not available, as a minimum plainly less problematic substances will be used;
- Development of alternative substances and methods: problematic substances and applications are replaced by new methods. Within these, sufficiently tested and less hazardous substances will be used. At the same time respect is also paid to other characteristics such as raw material selection and deployment as well as energy consumption;
- Reduction of discharge: negative impact on the environment and health are avoided by largely limiting the discharge of problematic substances into the environment throughout the entire life cycle – during production, services provided by chemical substances and in the use and disposal of products;
- Conserving natural resources: the necessary energy and natural resources must be used as efficiently as possible in the manufacture and use of chemical products. Wherever possible, limited raw materials are conserved. Priority will be given to the efficient use of sustainably extracted, renewable raw materials and the optimisation of energy consumption (see resources conservation action field);
- Promotion of reuse: by dispensing with problematic substances, materials and products are easier to recycle or dispose of (see circular economy action field);
- Improving market opportunities: looking for innovative solutions to previously problematic usage; developing successful long-term products and services that require less application for occupational safety and environmental protection and are subject to no, or less regulatory intervention (see green economy action field);
- Perception of social responsibility within a company: sustainable products arise in the workplace where employees are dealt with in a responsible way. This also applies to the often global supply chains of chemical products and their applications.

Minimising the use of hazardous chemicals

The use of hazardous chemicals can be viewed in different ways; on the one hand to consider keeping hazardous chemicals out of the environment per se, on the other hand to reduce the use of active substances to an environmentally acceptable level. For example, the aim of pesticides, biocides and sometimes medicines is precisely to have a dangerous effect on living organisms – even when used as intended.

Minimising the use of hazardous chemicals complies with the 2020 target (see target 12.4 and SAICM). Achieving this requires the provision of information, the disclosure of information along the supply chain and, if necessary, the evaluation and regulation of the identified dangerous chemicals.

1. REACH

Another central pillar in terms of achieving target 12.4 is the EU chemicals regulation REACH. REACH is the European central regulatory mechanism for all chemicals that are not regulated by special law (inter alia pesticides, biocides, pharmaceuticals and veterinary products).

Under REACH, these chemicals must be registered by the manufacturing or importing firms, and principally all available data on substance properties and use must be added. REACH has created an extensive collection of data on substance properties and safe use of chemicals throughout the entire supply chain in the world for the first time. These data are publicly available to a large extent. REACH also envisages mechanisms to check these data for the evaluation of chemicals and the regulation of any potential concern arising from them.

The REACH contribution to achieving the 2020 objective (cf. Target 12.4) and as an integral part of SDGs is

currently being evaluated in the context of the 2017 REACH Report. The evaluation results are integrated into the "non-toxic environment" EU strategy and the 7th UAP.

However, REACH fails to properly influence regulation of mixtures and substances in articles, the assessment and regulation of endocrine disruptors, polymers and nanomaterials, mechanisms for constant review and improvement to data quality for substances registered under REACH and the constant adaptation of all specifications and guidelines to the latest developments in science and technology. If the recognised shortcomings[30] of the regulation cannot be eliminated or no unilateral simplification of the regulation takes place, taking into account the cost of its fulfillment, then the objective formulated in the SDGs cannot be achieved.

2. Pesticides

The intensification of conventional agricultural production is based on a high input of energy and additives (pesticides, mineral fertilizers) and is environmentally costly, including through contamination of soil, water and food and the associated impact on the environment and human health (see pollutant discharge and terrestrial ecosystems, protection of seas, waters and soils and climate protection and adaption action fields). Conventional intensive farming is substantially responsible for persistent loss of species and impairment of important services of agroecosystems (natural regulation of pests, pollination, habitat function etc.).

Since chemical pesticides are also one of the stabilising factors for the continuation of non-sustainable agricultural production methods, achieving targets 2.4 and 12.2 (sustainable production in agriculture) is directly dependent on successes in minimising the intensity of pesticide use.

Alongside the funding policy agri environmental measures, the regulation within the specialist legislation represents further important support for the protection of biodiversity and associated ecosystem services (see green economy action field). The integration of biodiversity in the approval of pesticides is therefore an important interface for achieving targets 2.4 and 12.2 as well as the objective to protect biodiversity (inter alia SDG 15).

Previous EU-wide biodiversity monitoring programmes allow no or only limited statements about the environmental impact of different farming systems and especially the associated intensity of the use of pesticides (also mineral fertilizers) on biodiversity and associated ecosystem services (for example, pollination, natural pest control). However, the detection and estimation of relationships between changes in agricultural practices and trends in the development of biodiversity are essential for monitoring the effectiveness of agri environmental measures and for progress in the restoration of natural habitats.

Given that a high political priority is attached to halting the loss of biodiversity in the EU and agriculture has been identified as one of the main drivers of this loss, the high expenditure on the support of non-sustainable modes of production through the CAP and the lack of resources for monitoring biodiversity in agricultural ecosystems are incomprehensible.

The implementation of targets 2.4 and 12.2 require a greater application of agroecological principles in agricultural production. For pesticides this means a return to the principles of integrated pesticides with the concept of "chemistry as a last resort".

3. Biocides

In line with their purpose to kill living organisms, biocides pose a general risk for the environment and the health of humans and animals, even if they have been approved under EU Biocide Regulations. Consequently, the precautionary principle and the minimisation requirement have been embedded in the EU Biocidal Products Regulation 512/2012 (see also environment and health action field). The EU biocide law has not yet been fully applied: the work programme for the systematic testing of all existing active substances will conclude at the earliest in 2024. Accordingly, biocide products containing these active substances are still not tested and approved by the EU biocide law.

At EU level, to-date the use of these products in the context of biocide product approval has not been developed. This concerns in particular the sustainable use of biocides and materials treated with biocides. Not only national but in particular EU-wide regulations are lacking here, for example with regard to distribution, the necessary expertise, good pro-

fessional practice, the use of low-drift equipment, risk reduction measures for treated materials and the assessment of sales and consumption volumes of biocidal products. Since many biocidal products are used within the consumer-related arena, public information can and must be improved regarding the risk of the use of biocides and their alternatives (see SDG 3, 6 and 12).

Biocides may especially cause a conflict between protected goods. Experience has shown that such conflict can question the consistent application of EU approval law, in these cases usually at the expense of environmental protection.

4. Medicines

Related to pharmaceuticals, the SDGs show different conflicting objectives: on the one hand, feeding the world's population must be ensured (target 2.3: doubling the productivity and income of producers by 2030) and on the other, sustainable agriculture is encouraged. On the one hand, AIDS and malaria are fought and according to target 3.7, birth control is addressed. On the other, drugs that are currently used in contraceptives represent a risk to the environment. Therefore, there is a conflict with target 6.3. Antibiotics also have a particular importance. Their intensive use in the treatment of infectious diseases in human and veterinary medicine is not associated only with positive outcomes. Significant health risks for humans and animals are associated with the emergence and spread of resistant and multi-resistant bacterial strains.

In summary, this means that in order to achieve the SDGs, effective drugs for each individual must be available while risks must be identified and effective mitigation measures developed.

At present there is not sufficient information for all medicines to enable an environmental risk assessment. Environmental risk management measures have been discussed but not yet effectively implemented. By 2030 environmental data should be collected for all medicines in Europe (even for those approved before the introduction of the environmental assessment) and then used to work out risk mitigation measures. By the end of 2015 the European Commission was asked to develop a strategic approach to water pollution caused by pharmaceutical substances and by September 2017 to propose measures to be taken at Union and/or Member State level to protect against the possible environmental impact of pharmaceutical substances (Directive 2013/39/EU). The concept is not yet available.

Minimising the use of hazardous chemicals

Relevant SDGs/Targets

SDG 2, SDG 3, SDG 6, SDG 9, SDG 12, SDG 14 also SDG 15

Objectives

- Further development and implementation of the REACH Regulation by 2030
- Eliminating shortcomings in recent chemical management
- Sustainable use of pesticides, biocides, human and veterinary drugs as well as detergents and cleaning agents
- Minimising the use of biocidal products, in particular in the consumer field
- General reduction in the use of pesticides in agriculture
- Improving information to the public on the risks of the use of biocides and on alternatives to the use of biocides
- Reducing consumption of veterinary medicines in agriculture
- Veterinary medicines, with identified risks to the environment, should either not be authorised or effective risk management measures should be implemented
- Promoting prevention, reducing consumption of human pharmaceuticals in industrialised countries, providing medicines for epidemics (as target 3.3 requires) while minimising impact on the environment through effective risk management measures
- Reducing the consumption of ingredients in detergents and cleaning agents that are not readily biodegradable and have adverse effects on environmental organisms
- Use of surfactants produced from renewable raw materials, provided this does not use land otherwise used for growing food for subsistence needs

Content description

REACH regulation as a central pillar of the "non-toxic environment" strategy calls for increased implementation and adaption. The existing level of protection for humans and the environment must be maintained and improved.

On the basis of the long-term horizon of chemicals regulation a further development of the REACH regulation to achieve a "non-toxic environment" by 2030 will only be possible if an appropriate direction is set in the next four to five years.

The current intensity of use of pesticides is ecologically unsustainable as the observed damage to the environment , including biodiversity, and the resulting cost to society show. One reason for this is the lack of implementing risk regulation with respect to appropriate consideration of the impact on biodiversity.

A review of the 'National Action Plans (NAP) implementing Directive 2009/128/EC by the European Commission[31], to be drawn up by all EU Member States, showed that they view the current practice of pesticides as sustainable and are oriented towards a maintenance of the status quo. Therefore, a lot more effort is needed than previously to achieve the objectives of Directive 2009/128/EC.

By 2030 at the latest, regulatory measures are to be taken at EU level to promote an environmentally sustainable use of biocides. The inclusion of biocides in Directive 2009/128/EC via a framework for Community action for the sustainable use of pesticides or the creation of an independent framework for environmentally sustainable use of biocides, seems expedient. This framework should include varying content that can be implemented in detail nationally. This includes: mandatory "good professional practice" and the inclusion of alternative methods, prohibition or restriction of certain applications (e. g. air release) and restricting the use of biocides in sensitive areas.

Basically the legal provisions for a sustainable environmentally sound use of biocides and treated materials are lacking both nationally and at EU level. Appropriate regulations must ensure that measures laid down in the approval of biocides to identify and minimise potential risks should be adhered to within their sale and use (risk reduction measures). Concrete measures for the sustainable use of all biocides must also be established as part of a mandatory regulation of "good professional practice".

Apart from the requirement to minimise use, these measures include testing biocide-free alternatives prior to the use of biocides, the provisions of strategies for the prevention of pest infestation (preventive measures), a check for alternatives and following this the replacement of environmentally hazardous biocides by biocides less damaging to the environment, including the necessity to always use biocides as a last choice. In addition, "good professional practice" for the use of biocides also includes provisions regarding the selection of equipment which ensures the most targeted application of biocidal products. The application accuracy of delivery equipment determines, to a large degree, the extent to which the environment is unnecessarily affected as a direct result of the application of biocidal products.

Moreover, there is currently no overview of the extent to which the environment is adversely affected by biocides in the EU. Biocides are normally only measured when they are also used as pesticides. For many biocides, however, there is no information regarding their existence in the environment. This knowledge is important in order to prioritise and target risk reduction measures.

Specifically, the ongoing processing of veterinary medicines regulation offers first approach opportunities for a reduction in their use (for example, prohibition of PBT substances). In addition, however, it is particularly important to sustainably remodel agriculture to avoid the current high input amounts, for example because of a high density of animals.

For human medicines, the objectives should include the reduction of consumption through prevention (Prevention Act), the determination of risks by requiring an environmental review of all medicines and to the development of effective risk management measures.

In 2010 the European Commission was called upon to draw up a report on the extent of pollution

of waters and soils by human and veterinary medicines, on the basis of data transferred from the European Medicines Agency (EMA), the European Environment Agency (EEA) and the Member States. Within this context, the need for changes to the EU human pharmaceutical legislation or other relevant EU legislation is to be assessed (Official Journal of the European Union of 31/12/2010). The final report on environmental risks from medicinal products (Bio Intelligence Service (BioIS) 2013) was presented by the European Commission in June 2014, made available to the public on the General Directorate of Health website, and contains various proposals for action by the EU. Moreover, for active substances where a risk has been identified, end-of-pipe technologies should be developed to remove them from the water. Since active pharmaceutical substances are often produced in areas of the world where there are low environmental standards for wastewater treatment, the provision of these technologies should be tested with critical consideration of the country-specific situation. In order to achieve target 3.9 therefore, the environmental standards in the countries that produce these active pharmaceutical substances must be increased.

Implementation

- Central measures for the implementation of REACH:
  - Substances giving particular concern should be substituted by less problematic substances or techniques using the process of REACH approval requirements. Here a precautionary focus and a risk-based regulation must be maintained and/or expanded;
  - Known shortcomings in the regulation must be reviewed and resolved. Collaborative, participatory and committed implementation of the content of the regulation should be standard practice by all stakeholders, i. e. national and European authorities, European Commission and industry;
  - Regulation is required by those authorities involved with REACH in each Member State and the European Chemicals Agency (ECHA) to support the central regulatory objective of the EU chemicals policy under REACH, the "SVHC Roadmap to 2020", which is expected to require an update for beyond 2020. The European Commission as the central decision maker is required, in particular, to continue and update the list of substances subject to authorisation under REACH on an annual basis. This is because only then will a long-term substitution for substances causing particular concern come about;
  - The European Commission is launching and promoting initiatives that lead to a steady improvement of the database of registered chemicals and to prudent, forward-looking chemicals management focussed on the 2030 Agenda. It supports, warns and calls on the industry to advance this because the responsibility for the safe management of chemicals throughout their life cycle lies with industry, but to-date this is frequently not achieved. In particular, the European Commission has emphasised and defended the substitution principle for substances causing particular concern, until this is recognised by all REACH participants.
- Central measures for avoiding adverse effects and/or rectifying the negative impacts of pesticides:
  - EU-wide implementation of the objectives of Directive 2009/128/EC for sustainable crop protection;
  - Reorientation of the Common Agricultural Policy (CAP) under the motto "Common money for common goods";
  - Effective embedding of the minimisation principle for the use of pesticides in crop protection law;
  - Increasing the area percentage of organic farming in the total agricultural area by an ambitious EU target and the measures derived from it;
  - Overall assessment of risks for the use of pesticides (inter alia indirect effects, spray series etc.);
  - Inclusion of all environmental costs of pesticide use in assessing the sustainability of production systems and compensating for unavoidable (indirect) consequences related to pesticide use on biodiversity and associated ecosystem services (see also green economy action field)[32];
  - Developing a coherent EU agri environment policy strategy for the promotion of sustainable farming systems in agriculture, not only competitive and productive, but inter

alia are also safe in terms of environmental, climate, nature and animal protection;
    - Providing additional (temporary) resources for the European Food Safety Authority (EFSA) to develop guidelines for the implementation of a well-protected environmental biodiversity in the review, faster than previously;
    - Development of a suitable monitoring plan and consideration of any necessary monitoring costs in a coherent strategy for agri environmental policy;
    - Rapid elimination of existing implementation shortcomings in the consideration of biodiversity in the relevant sectoral specialist laws to regulate agricultural chemicals such as Pesticides legislation;
    - Development of a comprehensive biodiversity monitoring system for agricultural ecosystems.
- Central measures for the reduction of adverse effects of biocides:
    - Consistent use of EU legal approval options; stay the course on trade-offs to avoid burdens at the expense of environmental protection;
    - Establishing regulations for sustainable use of biocides similar to pesticides (for example extension of the Directive 2009/128/EC);
    - Survey of consumption and use figures — (e. g. specifying in the Statistics Ordinance at EU level or national regulations);
    - Regulation of sale, expertise and equipment requirements;
    - Definition of good professional practice and assessment of alternatives;
    - Intensifying monitoring of biocides in environmental media;
    - Promotion of information systems about biocides for the public. In order for the German Environment Agency to keep the biocidal portal continuously up-to-date and to further expand it, permanent funding is required. For example, the essential content of the intended English translation of the German Environment Agency's biocidal portal could be supportive here.
- Central measures to minimise the risks from medicines:
    - Establish legal regulations that improve data availability and enable the prohibition or restriction of drugs that pose a risk to the environment;
    - Promote the prevention of diseases in humans and animals to optimise the use of drugs (developing an EU agro environment policy strategy for promoting sustainable animal husbandry);
    - Develop and implement risk management measures.

3.9 Urban environmental protection action field

Land use is a key factor in the sustainable development of settlements.

In addition to the loss of open spaces, fertile soils, habitats and water retention areas, the excessive expansion of settlements leads to more traffic and a growing dependence on private cars (see also pollutant discharge and terrestrial ecosystems action field). More traffic generates noise and air pollutants that have an impact on the quality of life in settlements, especially in metropolitan areas where the impact accumulates (see also air quality control and environment and health action fields). The need for parking spaces amplifies the shortage of space especially in cities at the expense of green areas, living areas, playgrounds and activity areas, thus worsening the living conditions particularly for the less mobile groups of the population who rely on a high quality living environment.

In addition, the expansion of settlements and infrastructure is extremely energy and resource intensive and also encourages long-term resource consuming lifestyles and farming practices (see also resource conservation action field).

The relationship between urban districts and environmental and health impacts also requires special attention. Environmental and health impacts in conurbations are predominantly caused by pollutants, noise, etc. (see also air quality control action field). Low-income groups, due to the lower cost of rent, inhabit these heavily affected districts, so the reduction of the impact in these areas is a crucial contribution to environmental justice in cities. The selection of healthy and environmentally friendly construction techniques and building products (e. g. biocide free)

is another important step in the reduction of higher impacts in densely populated areas (see also environment and healthaction field).

Urban sprawl additionally promotes social segregation of the population and weakens social cohesion: middle class families are moving into new buildings on the outskirts or into the hinterland, while disadvantaged households remain in or move into older districts. The high concentration of children from disadvantaged families in certain districts jeopardises their education and future opportunities.

The German Environment Agency believes that the development of space-saving settlements combined with the maintenance and upgrading of existing settlements is a central prerequisite for the achievement of all SDGs and targets for inclusive, resilient and sustainable settlements. Target 11.b addresses mainly the establishment of planning instruments for a resource efficient and more resilient construction of settlements. According to the subsidiarity principle, this task applies mainly to the Member States or at a local level.

Sustainable development of settlements

Relevant SDGs/Targets

SDG 11, Targets 11.3, 11.b, 11.c and 11.d SDG 15, Targets 15.3, 15.5 and 15.9

Objective

Reduction of land use and increase of material and energy efficiency of settlements

Content description

The EU should assume concrete, quantitative targets for 2030 and 2040 to limit land use by settlements and transport (land-take) and to end it completely by 2050 (net) (see EU Resource Strategy; Target 15.3 in conjunction with Targets 11.3, 11a and 11b).

The EU should set policy and action objectives for 2030, 2040 and 2050 for the initial obtainment and (subsequent) continuous improvement of material and energy efficiency, as well as of material pollution on settlements, infrastructure, and local and regional transport (depending on the respective initial situation and in particular taking into account the regional/local population density).

Starting with densely populated/populous regions/communes, the EU should set policy and action objectives for 2030, 2040 and 2050 in order to detect deficits at a regional and local level and establish action plans to improve environmental and climate justice (mitigation and adaptation) in urban areas (Target 11b).

Implementation

- Consistent indicators should be selected based on Corine Landcover or other EU-wide remote sensing data on land use/soil sealing, which would enable target compliance monitoring;
- The EU should encourage Member States through recommendations to commit themselves to land-saving objectives and to monitor their compliance, as well as to report the trend of land-take and targeted measures to the EU;
- The EU should link its facilitating instruments for the promotion of rural areas or disadvantaged/structurally weak regions to the prerequisite that Member States establish land saving targets and action plans to achieve these goals and make progress in their compliance. The facilitating arrangement should additionally support the recovery/unsealing of redundant residential and commercial locations;
- The EU should consider an appropriate directive with binding deadlines for monitoring, action plans and reporting. The directive could also be based on the proviso of an equal economic framework in all Member States so that land use intensive enterprises are not lured from one Member State to another because of land dumping (hidden subsidy);
- The EU should develop relevant green and white papers (e. g. regarding indicators and potential targets, as well as targeted measures and instruments) and initiate relevant recommendations for Member States;
- If necessary, an EU directive with deadlines for deficit identification and the development of action plans for regions with particularly high deficits should be established;
- In addition, the EU could launch relevant research and development programmes and also promote knowledge transfer between different regions/communes within this framework.

3.10 Pollutant discharge and terrestrial ecosystems action field

Ecosystems and their services are the basis of all human existence. The pollution of ecosystems with ozone and particularly nitrogen inputs via the air pose significant and large-scale problems. High nitrogen inputs are still the main cause of the destabilisation of ecosystems and a threat to biodiversity. In addition to climate change, land use changes and intensification of agricultural production processes, terrestrial ecosystems are frequently polluted through airborne nutrient and pollutant inputs (see air quality control action field).

The 7th EAP envisages the need for action by the EU to better protect, maintain and improve the Union's natural capital. It explicitly refers to the need to reduce air pollution and its effects on ecosystems and biodiversity so as not to exceed long-term critical impacts and levels.[33]

The directive on national emission ceilings (NEC Directive) follows the long-term aim to comply with the critical loads for sensitive ecosystems nationwide. The European Commission is currently working on an update to the Directive. An optimistic scenario analysis by the German Environment Agency, which is based on the Commission's emission reductions proposals by 2030 as compared to 2005 (NH_3 -39 %; NO_X -64 %), suggests that the reduction targets could decrease the ecosystem surface affected by eutrophication in Germany by another 42 %. Germany's NH_3 reduction commitments are 29 % according to the draft NERC Directive that is now available (the Directive on National Emission Reduction Commitments for the main air pollutants will replace the NEC Directive). The long-term goal of a nationwide compliance with critical loads will still not be achieved everywhere by 2030 through the proposed emission reductions. This is due to the cross-border long-distance transport of air pollutants.

A consistent protection of biodiversity and ecosystems therefore requires not only direct protection goals, but equally the consideration of the consequences of policy decisions for ecosystems and their services as part of impact assessments (see Europe 2020 strategy and impact assessment action field).

Protection and improving the conditions of ecosystems including ecosystem services

Relevant SDGs/Targets

SDG 15, Targets 15.1, 15.2 and 15.9

Objective

Strengthening the protection and improving the condition of terrestrial ecosystems, including biodiversity and ecosystem services by 2030 through:

- Binding protection targets or limits on nutrient and pollutant inputs, especially for nitrogen compounds
- Impact assessments of political decisions regarding ecosystems and their services

Content description

Objectives and measures should be aimed not only at the protection and preservation of biodiversity, but also at ecosystems and the preservation of their functionality as described in detail, for example, in the context of the TEEB process. The relevant directives currently lack binding objectives or limits on nutrient and pollutant inputs for the protection of these ecosystems (see also chemistry action field).

Firstly, it should be ensured at the European level that the protection of terrestrial ecosystems is consistently underpinned by ambitious reduction targets for nitrogen compounds in the EU clean air policy and the accompanying introduction of a concentration value for ammonia and a reorientation of EU agricultural policy, and obtains a higher liability. Secondly, the involvement in impact assessments is desirable, which means that the impact on terrestrial ecosystems, including biodiversity and ecosystem services should have the same weight as other impacts,e. g. on agriculture, economy or transport in the design of all EU legislative proposals, strategies, funding programmes, etc. This applies to all consequences of an action, regardless of whether they are qualitatively described, quantified or monetised. The neglect of the impacts on ecosystem services can lead to a reduction in social welfare (see Europe 2020 strategy and impact assessment action field).

Implementation

- Passing and enforcing ambitious reduction commitments in the NEC Directive by 2030 and consistent updating beyond this period to achieve the goal of comprehensive compliance with the "critical loads" for sensitive ecosystems;
- Accompanying introduction of an ammonia concentration value for the protection of terrestrial ecosystems (comparable to those for NO_x or particulate matter on human health);
- All emission control measures may contribute to the improvement of the condition of terrestrial ecosystems (see air quality control, pollutant discharge and terrestrial ecosystems and water protection action fields) also by an ambitious implementation of the Industria Emissions Directive (IED) in intensive animal husbandry;
- Reorientation of the Common Agricultural Policy (CAP) by irrevocably linking payments to the provision of specific environmental, natural, climate and animal protection services;
- With regard to fertilizers and pesticides used on arable land in agriculture, all exposure reduction measures can contribute to the improvement of the condition of agricultural ecosystems. Sufficient compensation areas that are not treated with pesticides are particularly relevant to compensate for the unavoidable (indirect) effects of pesticides on biodiversity in agricultural landscapes (see also chemistry action field);
- Anchoring the targets at the EU level for the implementation of SDGs can also strengthen the protection. A target value including an indicator for the eutrophication of terrestrial ecosystems is currently being discussed within the framework of the German sustainability strategy to implement the SDGs, which should be verified for its transferability at the EU level. This target/indicator describes the area percentage of sensitive ecosystems where the critical impact limits for eutrophying nitrogen inputs have been exceeded. The aim should be to reduce this area percentage to a long-term "zero", which should be strengthened by a 2030 intermediate goal. The research into databases and methodology of specifying and evaluating the ecosystems and their services must be extended in order to be able to comprehensively consider the consequences for biodiversity and ecosystems and their services within the context of impact assessments. In addition, a balanced consideration of all consequences must be ensured, for example, through appropriate review processes (see Europe 2020 strategy and impact assessment action field).

3.11 Water protection, marine protection and soil conservation action field

The key instruments of European water protection are the Water Framework Directive (WFD) of 2000 and the Marine Strategy Framework Directive (MSFD) of 2008. The MFD has been very successful, however, the water protection requirements must also be considered in other policies such as the common agricultural and chemicals policy (see chemistry and pollutant discharge and terrestrial ecosystems action fields). MSFD measure programmes to achieve good environmental status of marine waters were first established in 2015 and are operationalised to carry out by 2016. Marine protection particularly lacks quantitative hence measurable and verifiable targets at the EU level.

In addition to the necessary global and national activities, it would make sense to establish flanking activities at the EU level to develop strategies and approaches for target definition and achievement within the framework of the implementation of Target 15.3 "land degradation neutral world".

Consistent protection of waters and seas Land degration neutrality in Europa

Relevant SDGs/Targets

SDG 6, SDG 14 and SDG 15

Objectives

- Consistent implementation of existing EU framework directives to protect the waters and seas and their ambitious update by 2030
- Implementation of the 7th EAP measures to achieve a land degradation neutral world

Content description

Two types of measures can be distinguished. First, the EU can take additional measures that fall under

its regulatory authority. These must be targeted at the objectives mentioned above. Second, the existing relevant EU Directives and rules must be designed so that they support achievement of the objectives.

Regarding SDG 6 "Ensure availability and sustainable management of water and sanitation for all", the objectives of the WFD – achieving a good condition for all waters in Europe – must be reached by no later than 2027.

Regarding SDG 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development", the objectives of the Marine Strategy Framework Directive (MSFD) are relevant for the EU. According to the MSFD, all marine waters within the EU must achieve a good environmental condition by no later than 2020.

Regarding SDG 15 "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss", the target of a land degradation neutral world in terms of Target 15.3 should be implemented within the EU by 2030.

Implementation

- Necessary measures include a redirection in the common agricultural policy, EU chemicals (incl. pharmaceuticals) and transport policy in order to minimise (diffuse) substance inputs in the waters/seas, morphological changes of rivers or soil degradation due to agricultural, industrial and other practices. Furthermore, it must also be ensured that the revised common fisheries policy which came into force in 2015 contributes to the marine objectives (see chemistry and pollutant discharge and terrestrial ecosystems action fields);
- With regard to the MSFD, the objectives described only by qualitative descriptors should be concretised as much as possible through quantitative requirements;
- Ambitious objectives in the WFD must be maintained even after their potential updating (a revision is being planned in 2019). The same applies to a possible revision of the MSFD;
- As far as the objective of a "land degradation neutral world" is concerned, the requirements of the 7th EAP must mainly be implemented (sustainable management of land, precautionary approaches to reduce erosion, increase of "soil organic matter", rehabilitation of contaminated sites and consideration of land/ soil in infrastructure projects and assessing the suitability of legally binding requirements by 2020).

3.12 Mainstreaming of sustainability aspects int the Europe 2020 strategy (incl. Impact assessment) action field

Since the adoption of the Europe 2020 strategy in 2010, the previous EU Sustainable Development Strategy adopted in 2001 (and revised in 2006) has been practically superseded in importance as a central, European strategy.

The German Environmental Agency believes that the review of the Europe 2020[34] strategy announced by the European Commission in its 2016 Work Programme is urgently needed in order to further develop the Europe 2020 strategy in terms of the reference framework of the 2030 Agenda.

However, since the Europe 2020 strategy primarily tackles economic issues, its further development through the integration of sustainability aspects is an important step in the implementation of SDGs at the EU level, but it cannot substitute the establishment of a strategic framework at the EU level such as an amendment of the EU Sustainable Development Strategy. The German Environment Agency believes that, from an environmental perspective, there is an urgent need for a new start to the EU's sustainability policy that goes beyond a further development of the Europe 2020 strategy.

The global challenges formulated in the 2030 Agenda will also have to be met with new regulations at the EU level. A comprehensive and balanced view of all consequences of the rules is necessary to promote sustainability. The costs of neglected environmental protection and the benefits of environmental protection for society should also be considered. Focusing solely on the individual economic costs – in particular the cost for the economy – complicates the transition to a Green Economy and is contrary to the objective of a sustainable development (see also pollutant discharge and terrestrial ecosystems action field).

Further development of the Europe 2020 strategy

Relevant SDGs/Targets

SDG 12, Targets 12.1, 12.2, 12.c, 2.b and 14.6

Objectives

- Further develop the Europe 2020 strategy with the aim of harmonising the EU's economic development with SDGs and ecological guard rails
- Ensuring a full and balanced consideration of all positive and negative consequences of regulatory initiatives (environmental, economic, social) in the impact assessments of the EU

Content description

The SDGs specify an action plan for the people and the preservation of the planet and prosperity for the objectives of the 2030 Agenda for sustainable development. Social and economic development depends on the sustainable management of natural resources (see declaration of the 2030 Agenda).

Target 12.1 emphasises the special role of developed countries ("taking the lead") regarding the measures towards achieving sustainable consumption patterns and economic practices. The EU should ambitiously lead the way towards substantiating its declared leadership role in the implementation of SDGs and include the objectives in its strategy for the economic development of the EU – the Europe 2020 strategy.

The Europe 2020 strategy is the central strategy of the EU's economic development and thus the economic dimension of sustainable development in the EU. The objective of the Europe 2020 strategy's revision should therefore prioritise the promotion of the EU's economic development within ecological guard rails in order to obtain and secure long-term foundations for social progress.

Implementation

- Review of the Europe 2020 strategy with the aim of promoting economic development while taking into account SDGs and the objectives of the 7th EAP. These include:
  - additional initiatives within the Europe 2020 strategy to promote a transformation towards a Green Economy with a focus on a comprehensive ecological modernisation of the entire economy and its sectors;
  - additional initiatives to improve the integration of climate protection, resource conservation and sustainable production in the Europe 2020 strategy and the review process of the Europe 2020 strategy, the "European Semester", as an important prerequisite for the sustainable development and implementation of SDGs;
  - a gradual reduction of environmentally harmful subsidies, particularly subsidies for fossil fuels, by 2030;
  - adequate consideration of environmental aspects in trade agreements.
- Shaping policy processes at European level in such a way that enables the impact assessment to provide a balanced basis for policy decisions, but without replacing them. This includes an appropriate specification of the impact assessments provisions and their application by the European Commission. These are meant to ensure that all foreseeable relevant consequences caused through the implementation of the 2030 Agenda measures (i. e. benefits and damage/costs) are given equal weight in all considered matters in the analysis. This presupposes the implementation of methods that attribute appropriate importance to the exclusively quantitatively/qualitatively describable consequences (these are often consequences for the environment) in addition to monetary consequences.

4 Conclusion

The German Environment Agency is in favour of using the implementation of the Sustainable Development Goals to restart the sustainability policy at a European level. These include, in our view, the revision of the EU Sustainable Development Strategy and the mainstreaming of sustainability aspects in the Europe 2020 strategy.

We see the following objectives in the identified priority action fields for the implementation of the SDGs at the EU level:

- **Climate protection and adaptation:** Reforming and strengthening existing EU guidelines, measures and instruments as well as strengthening existing objectives at the EU level by 2030 and beyond to 2050 in all sectors: Targeting emissions reduction within the EU by at least 50 % by 2030 compared to 1990; aiming to achieve greenhouse gas neutrality by mid-century. expansion target for renewable energies 30 %; increasing energy efficiency by at least 40 %; promoting transformational climate adaptation by the Member States;

- **Resource conservation, resource efficiency:** Increasing raw material productivity by at least 30 % by 2030 (base line 2014) for the absolute reduction of raw material demand and for decoupling raw material demand from economic growth and environmental use;

- **Transition to a green economy:** Orienting the economy along ecological guard rails; promoting sustainable consumption and production among others by introducing transparency and monitoring instruments; internalisation of environmental costs by further development of an environmentally oriented tax and finance system including the reduction of environmentally harmful subsidies and reorientation of EU funding programmes; development of an innovation strategy to promote European competitiveness on the green markets; improving companies' environmental performance by strengthening an ambitious environmental management;

- **Sustainable consumption:** Establishing a European strategy for sustainable lifestyles and consumption patterns as an integrated approach to European innovation, environmental, economic, consumption and social policies; absolute reduction of consumption-related environmental impacts; increasing the market share of green products and services; strengthening consumers' orientation ability and handling competence for sustainable consumption; activation of civil society engagement and social innovation for sustainable lifestyles and consumption patterns;

- **Circular economy:** Mainstreaming waste-reduction targets, particularly with regard to food waste, in all EU policies; increased integration of waste prevention in the roadmap to a resource-efficient Europe;

- **Environment and health:** Developing an "EU Strategy on Environment and Health";

- **Air quality control:** Ambitious reduction targets for sulphur dioxide (SO_2), nitrogen oxides (NO_x), NMVOCs, NH_3 and PM2.5;

- **Chemicals management and chemicals safety, sustainable chemistry and minimising the use of hazardous chemicals:** Minimising the negative effects of the production and use of chemicals on human health and the environment by 2020; transformation of the chemistry sector to sustainable chemistry; minimising the use of hazardous chemicals (REACH, pesticides, biocides and pharmaceuticals);

- **Urban environmental protection:** Reducing land use and increasing the material and energy efficiency of settlements;

- **Pollutant discharge and terrestrial ecosystems:** Strengthening protection and improving the condition of terrestrial ecosystems, including biodiversity and ecosystem services by 2030; mandatory protection targets or limits on nutrient and pollutant inputs, especially for nitrogen compounds; Impact Assessments of policy decisions with regard to ecosystems and their services;

- **Water protection, marine protection and protection of soils:** Consistent implementation of existing EU framework directives to protect the waters and oceans and their ambitious update by 2030; implementation of the 7th EAP measures to achieve a land degradation neutral world;

- **Mainstreaming sustainability aspects in the Europe 2020 strategy (incl. Impact Assessment):** Development of the Europe 2020 strategy with the aim to harmonise the EU's economic development with SDGs and ecological guard rails; ensuring full and equal consideration of all negative and positive consequences of regulatory initiatives (environmental, economic, social) in the Impact Assessments of the EU.

From an environmental policy point of view, the implementation of SDGs requires long-term and coherent policy approaches at EU level in the mentioned action fields. An ambitious and consistent implementation of the 7th EAP is a good starting point. This applies particularly to the implementation of the proposed measures in the environment and health, air quality control, chemical safety and resource conservation action fields.

The action fields show important objectives and courses of action for the European Commission for implementation of SDGs. The EU can increasingly assume responsibility for a global sustainable development especially through the proposed measures to implement SDG 12 "Ensuring sustainable consumption and production patterns" (see sustainable consumption, green economy, circular economy, chemistry, resources, environment and health, air quality control action fields).

Other approaches repeatedly mentioned in the individual action fields, in which measures to implement SDGs at EU level in addition to the national level are of particular importance, are:

- Promoting the implementation of SDGs in the Member States e. g. through:
  - Promoting broad knowledge and example networks between the EU Member States to put the concrete measures of transformative adaptation into practice (see climate protection and adaptation action field);
  - Establishing research and development programmes to promote the knowledge transfer between different regions/communes within this framework (see urban environment action field);
  - Reducing the intensive use of fertilizers and pesticides and the generated emissions from agriculture, amongst others through increased consideration of agroecological principles in land cultivation.
- Encouraging civil society initiatives to develop sustainable lifestyles as well as participatory opportunities for relevant players, e. g. through:
  - Establishing a civil society oriented initiative for social innovation for sustainable lifestyles and consumption patterns (see sustainable consumption action field);
  - Strengthening the dialogue between relevant players as a key measure for the prevention of food waste (see circular economy action field);
  - Establishing a platform for resource efficiency involving all stakeholders for the implementation of the roadmap to a resource-efficient Europe (see resource conservation action field);
  - Active involvement of European players in the specialist and political support of the "Overall Orientation and Guidance" (OOG) to achieve the 2020 target on chemicals management (see chemistry action field).
- Support measures to implement SDGs within the framework of existing or new funding programmes, e. g. through:
  - Reinforcing the role of sustainable consumption in the support programmes and financing instruments of the EU and increasing participation within the global partnerships of international sustainability policy framework to achieve SDG 12 (see sustainable consumption action field);
  - Combining EU support tools for promoting rural areas or disadvantaged/ structurally weak regions with the establishment of land-saving objectives (see urban environmental protection action field);
  - Establishing suitable support and consulting instruments for SMEs, among others through the establishment of a European Resource

Efficiency Excellence Centre (see resource conservation action field);
  - Increasing the share of green funding programmes for businesses and private households in the overall funds (see green economy action field).
- Limiting cross-border consequences of environmental impacts on ecosystems and their services (see pollutant discharge and terrestrial ecosystems and air quality control action fields), e. g. through:
  - Binding protection targets or limits on nutrient and pollutant inputs, especially for nitrogen compounds (see pollutant discharge and terrestrial ecosystems action field);
  - Impact assessments of policy decisions with regard to ecosystems and their services and increasing the internalisation of external costs (see, among others, pollutant discharge and terrestrial ecosystems action field);
  - Ambitious implementation and consistent monitoring of requirements to reduce emissions (see air quality control action field).

1 http://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf

2 http://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2010917%202006%20INIT

3 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52009DC0400

4 http://ec.europa.eu/atwork/key-documents/index_de.htm

5 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:DE:PDF

6 http://bookshop.europa.eu/en/general-union-environment-action-programme-to-2020-pbKH0113833/

7 http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2016-0224+0+DOC+PDF+V0//EN

8 http://ec.europa.eu/epsc/publications/notes/sn18_en.htm

9 http://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52015DC0600&from=DE

10 EU COM (2011): Roadmap for a transition to a low-carbon economy by 2050. Doc. COM (2011) 112 final.

11 EU COM (2011): Energy roadmap 2050. Doc. COM (2011) 885 final.

12 EU COM (2011): WHITEBOOK – Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system. Doc. COM (2011) 144 final.

13 EU COM (2015): A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy. Doc. COM (2015) 80 final.

14 EU COM (2016): After Paris. Evaluating the impacts of the Paris Convention. Doc. COM (2016) 110 final

15 IPCC (2014): Climate Change 2014: Mitigation of Climate Change. Contribution of WG III to the Fifth Assessment Report of the IPCC. Edenhofer, O. et al. (eds.).

16 see also Meinshausen, M. et al. (2015): National post-2020 greenhouse gas targets and diversity-aware leadership. Nature Climate Change, Vol. 5, Dec. 2015. DOI: 10.1038/NCLIMATE2826

17 CO_2 underground storage; Bioenergy coupled with CO_2 underground storage

18 Reference quantity is the primary energy demand from a projection in the 2007 EU energy reference scenario.

19 EU-COM (2009): EU policies support sustainable development: Review of the 2009 EU Sustainable Development Strategy. Doc. COM (2009) 400 final.

20 Among others, COM(2005) 670, Review of the EU Sustainable Development Strategy – renewed Strategy (10917/06), COM(2011) 21

21 http://ec.europa.eu/environment/resource_efficiency/targets_indicators/scoreboard/index_en.htm

22 https://ec.europa.eu/growth/tools-databases/eip-raw-materials/en/content/eip-raw-materials-monitoring-and-evaluation-scheme

23 EU-COM (2011): Roadmap to a resource-efficient Europe. Doc. COM (2011) 571 final.

24 EU-PA (2015): Resource efficiency: The road to a circular economy. Doc P8_TA-PROV(2015) 0266

25 See also EU-PA (2015): Resource efficiency: The road to a circular economy. Doc P8_TA-PROV(2015) 0266

26 EEA (2015): The European environment – state and outlook 2015: synthesis report, European Environment Agency, Copenhagen

27 www.oecdbetterlifeindex.org

28 "23. Renew the commitment, as advanced in Agenda 21, to sound management of chemicals throughout their life cycle and of hazardous wastes for sustainable development as well as for the protection of human health and the environment, inter alia, aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimisation of significant adverse effects on human health and the environment…" The complete text is available on p. 29 of SAICM at: http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

29 Target 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 – Quelle: CW/SDG.1/INF.2

30 A compilation of known deficiencies can be found e.g. in the documentation of the 2014 REACH Congress, which was held at the UBA: https://www.umweltbundesamt.de/publikationen/reach-kongress-2014-dialog-verantwortung

31 EC (2014): Report of the Food and Veterinary Office on the evaluation of National Action Plans required under Article 4 of Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides (September 2014)

32 German Environment Agency (2016): "5-point programme for sustainable crop protection"; Publication Series 'Position', January 2016; Available at: http://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/5-punkte-programm_fuer_einen_nachhaltigen_pflanzenschutz_1.pdf

33 Correspondingly quoted from the 7th Environmental Action Programme of the EU, Preamble 15; this corresponds to the long-term goal of the Gothenburg Protocol to the UNECE Convention on Air Pollution "Achievement of critical loads/levels".

34 cf.TEEB (2010), Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB: doc.teebweb.org/wp-content/uploads/Study%20and%20Reports/Reports/Synthesis%20report/TEEB%20Synthesis%20Report%202010.pdf

▸ **Download**
shortlink: bit.ly/2cTppaY

www.facebook.com/umweltbundesamt.de
www.twitter.com/umweltbundesamt