

INTERNATIONAL SCAN 2016

EMERGING ISSUES
IN AN INTERNATIONAL CONTEXT

NOVEMBER 2016

This International Scan 2016 has been conducted at the request of the board of the EEAC network and was written by the secretariat of the Dutch Council for the Environment and Infrastructure (Rli).



FOREWORD

This International Scan 2016 has been conducted at the request of the board of the EEAC network and was written by the secretariat of the Dutch Council for the Environment and Infrastructure (Rli).


The International Scan gives an overview of relevant international and European policy developments and sketches trends and emerging issues which could become relevant for the EEAC network and its member councils over the coming years.

The aim of the report is to contribute to the agenda setting of the members of the EEAC network, the EEAC network itself and the EEAC working groups.

The report presents a brief overview of the rapidly changing and challenging global and European arena that forms the context of our advisory activities. The implementation of the Sustainable Development Goals (SDGs) and the Paris Agreement on Climate Change (COP21), both adopted in 2015, will challenge governments, the private sector and civil society to engage in new alliances and partnerships. At the same time, important new questions arise about the institutional architecture, the role of UN institutions and the accountability of relevant actors.

In this International Scan 2016, we explore a number of specific policy areas. By doing so, we hope the document serves as a useful source of information and inspiration to those preparing and advising on policies in the fields of sustainability, the environment and infrastructure.

The Hague, 5 October 2016



Dr. R. (Ron) Hillebrand
Secretary General of the Council for the Environment and
Infrastructure (Rli)



CONTENT

FOREWORD	2	APPENDIX I: Overview of the most relevant global and European policy agendas for the medium to long term	36
1 INTRODUCTION	4		
2 SETTING THE SCENE	5	APPENDIX II: Responsibility and Acknowledgement	48
3 SUSTAINABLE DEVELOPMENT GOALS	11		
4 CLIMATE AND ENERGY	15		
5 ENVIRONMENT AND WATER	19		
6 FOOD AND AGRICULTURE	24		
7 GREEN ECONOMY	28		
8 TRANSPORT AND MOBILITY	33		



1 INTRODUCTION

This International Scan aims to provide a usable overview of relevant European and global policy developments over the period 2017-2020. Furthermore, the International Scan gives insight into developments, trends and emerging issues which could potentially become of relevance to the activities of the EEAC working groups, the EEAC network and the EEAC Member Councils over the coming years.

General outline of the International Scan

The report starts with the chapter 'Setting the Scene' in which the overarching state of play of the policy domains – relevant to the EEAC and its members - is introduced. The Sustainable Development Goals and the Climate Agreement reached in 2015 now need to be implemented. A major challenge! The need for implementation also highlights the weaknesses of our present political and institutional structures. The need to transcend sectoral policies and focus on cross-cutting issues comes to the forefront. Three cross-sectoral issues - where all challenges come together - are highlighted in this overarching chapter: rapid urbanisation, the land use-nexus and technology uptake. The chapter ends with a call for an informed public debate on the effect of developments and the public values at stake and highlights the role of the EEAC network and EEAC councils (Chapter 2).

The second part of the report gives a concise update on the state of play, the current challenges and the emerging and wicked issues that are present with regard to the implementation of the Sustainable Development Goals and the topics of Climate and Energy, Environment and Water, Food and Agriculture, Green Economy and Transport and Mobility (Chapters 3 – 8).

The International Scan also includes an overview of the most relevant global and European policy agendas for the medium to long term (Appendix I). This appendix features a table with an overview of the main policy issues on the global and European agenda, convergence with identified policy topics, responsible policy institutions and bodies, important assessment moments and emerging issues and signals of change for the period 2017-2020.

Approach

The secretariat of the Council for the Environment and Infrastructure (Rli) has - together with colleagues from other national and regional advisory councils within the EEAC network - collected and analysed material for this International Scan (see Appendix II). The analysis of policy developments stays close to the wording of original documents and interested readers can easily consult additional information through the provided hyperlinks and footnotes. The scan does not have the ambition to be an exhaustive reporting exercise; rather, it is merely a concise exploration of relevant policy issues. The report was finalised in the beginning of October 2016.



2 SETTING THE SCENE

2.1 Implementing global goals

At the Annual Meeting of the World Economic Forum in January 2016, the successes of 2015 were evaluated. Ban Ki-moon, Secretary-General of the United Nations, said: “We have delivered the 2030 Sustainable Development Goals (SDGs) and the Paris Climate Agreement (COP21). The only agenda greater than our promises is to deliver and implement these two important agreements.”¹

In this report, the challenges to deliver and implement these international agreements will be highlighted from different perspectives.

Feeling the need for action

While working on this report, the need for action to achieve the Sustainable Development Goals and deliver on the Climate Agreement was very apparent. For this report, we analysed contributions from within the Rli secretariat and from EEAC colleagues; we also visited the websites of international and European institutes to gain insight into the agendas of relevant policy fields and searched for signals of change from diverse sources. Looking through the agendas of the UN and other international institutions, and observing what is happening in the world of business and NGOs at the ground level, you feel a sense of urgency and readiness

¹ <https://www.weforum.org/press/2016/01/sustainable-development-goals-and-paris-climate-agreement-now-it-s-time-to-act/>

to make these goals work while at the same time realising the risks of non-action. There is a call for a different institutional architecture² and for systemic stewardship³, not command and control, in order to respond to the speed and magnitude of change and volatility.

Where is the EU now?

However, the EU currently seems to be resting on its laurels following the successful negotiations to establish the Sustainability Development Goals in 2015.

The Commission did invite its Political Strategy Unit to develop a European Vision entitled ‘Sustainability now!’ but the promised next steps for a sustainable European future announced by the Commission seem to have faded away amidst the overarching priorities of Jobs, Growth and Investment. It is the fifth bullet point under the heading ‘A New Boost for Jobs, Growth and Investment’ in the Working Programme 2016. In the State of the Union 2016, the SDGs are only mentioned twice: as part of the modernisation and simplification of the Common Agricultural Policy and as part of the modernisation of the EU development policy. Furthermore, President Juncker mentions the 2030 Agenda for Sustainable Development just once; ‘The EU played a leading role in defining the 2030 Agenda for Sustainable Development’.

² <https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/ita-findings-and-conclusions-16-jun-2016.pdf>

³ <http://www.fdsd.org/site/wp-content/uploads/2015/10/The-critical-role-of-effective-accountable-and-inclusive-institutions.pdf>



However, it must be noted that in the same State of the Union 2016, President Juncker promised a swift ratification of the Paris Climate Agreement by the EU and the Member States; already a fact at the time of publishing of this report⁴!

The interface between science and policy

To implement the SDGs, inclusive, effective and accountable institutions are needed in which science is engaged systematically and sustainably. In this report, different proposals to fortify strategic governance, build a working interface between science & policy makers and strengthen mechanisms for accountability are mentioned. For example, the Independent Team of Advisors (ITA)⁵ and the Scientific Advisory Board of the United Nations⁶ have both presented fundamental proposals to change the system.

As Karl Falkenberg states in 'Sustainability Now', sustainability and climate change are political issues that need informed debate at the political and societal level. With its Sustainable Development Observatory (SDO), the European Economic and Social Committee (EESC) is actively setting up a consultative structure: the 'Sustainable Development Forum', with close links to the EEAC councils and the EEAC network.

4 <http://climateanalytics.org/hot-topics/ratification-tracker.html>

5 <https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/ita-findings-and-conclusions-16-jun-2016.pdf>

6 <http://unesdoc.unesco.org/images/0024/002458/245801e.pdf>

2.2 Facing the accelerated speed of change

The world is experiencing change at a speed and with an intensity that often seems unprecedented. To meet the global agreements regarding the Sustainable Development Goals and Climate Change whilst at the same time keeping up with this accelerated change in our societies and economies, systemic change is needed. All governmental levels, civil society and the business community need to be involved in and be facilitated by advisory bodies, as do scientific and technological institutes. This paragraph puts the identified policy developments and emerging issues in a cross-sectoral perspective. The paragraph ends with a call for an informed public debate on how to meet risks.

Rapid urbanisation as a game changer

The 21st century will be the century of the cities. The global urban population is expected to increase from 7.3 billion in 2015 to 9.7 billion people by 2050⁷. This process of urbanisation has a formative effect on such things as quality of life, the global consumption of resources and energy and on the environment and water as well as on the movement of people and goods. This momentum of urbanisation and its impacts are so massive that we have no choice but to address this rapid change. Opting for business as usual – allowing for unstructured, quasi-automatic urbanisation- would lead to a non-sustainable 'world cities society'.⁸

7 <http://www.un.org/en/development/desa/news/population/2015-report.html>

8 <http://www.wbgu.de/en/flagship-reports/fr-2016-urbanization/>



In October 2016, Habitat III will decide upon a new urban agenda that will set global standards of achievement in sustainable urban development. This will include rethinking the way we build, manage and live in cities in cooperation with committed partners, relevant stakeholders and urban actors at all levels of government as well as the private sector⁹. At the European level, an Urban Agenda has been developed to promote cooperation between member states, the European Commission and cities in order to stimulate growth, liveability and innovation in the cities of Europe. The challenges encased in the sustainable development goals, the Paris Agreement and the biodiversity targets all come together in the urban areas. Will the new global and European Urban Agendas be able to enable the great transformation that is needed in urban areas and thereby realise the action that is needed in the transformative areas, as proposed in the WBGU-flagship report on urbanisation¹⁰?

With the bulk of energy use and greenhouse gas (GHG) emissions emanating from urban areas, cities have a key role to play in combating climate change. Consequently, the mitigation of climate change is one of the greatest challenges of the transformative process. Despite the magnitude of the challenges, urban areas have a good starting position to face up to these challenges. Innovations, organised civil society and geographic characteristics might create a living lab for climate mitigation. Major efforts must be made to for example achieve inclusive urban mobility (SDG 11.2) and a gradual reduction of motorised individual

⁹ <https://habitat3.org/the-new-urban-agenda>

¹⁰ <http://www.wbgu.de/en/flagship-reports/fr-2016-urbanization/>

transport in inner cities, and to arrange the complete decarbonisation of transport systems in the long term¹¹.

Enabling material use and material flows plays a pivotal role in the transformation as well. Cities should minimise waste flows while optimising the recovery of non-renewable resources and close loops. By reducing their environmental footprint, cities will not only lower their contribution to global GHG emissions, but they will also be able to enjoy significant local benefits such as improved air quality, better health, local economic development and job creation¹².

Cities could make use of the opportunities for sustainability and successfully follow the urban transformation pathways, provided that their communities are sufficiently empowered, as the Dutch Council for the Environment and Infrastructure (Rli) concluded in the advisory report the 'Future of Cities'. Cities need a new governance model that is capable of recognising, supporting or facilitating the development of new initiatives. Residents and businesses want to shape their environment themselves, independently of governments or other institutions. Now that governments are often taking a step back and the limits to what market forces and economies of scale can achieve have been exposed, more room is opening up for community-based initiatives. Self-organisation is strengthening

¹¹ <http://www.worldbank.org/en/topic/urbandevelopment/brief/the-curb-tool-climate-action-for-urban-sustainability>

¹² <http://www.worldbank.org/en/topic/urbandevelopment/brief/the-curb-tool-climate-action-for-urban-sustainability>



the ability of the city or urban region to continually adapt to changing circumstances, making cities more resilient, adaptive and robust.¹³

Land use nexus: meeting competing goals and strengthening robustness

Water managers and water users have long considered the energy implications of some of their actions, partly because energy costs can be a major component of their bottom lines. Energy managers must always consider where they will source the water they need in the energy production chain, from fuel extraction and processing to transforming fuel into energy. Food producers rely on both water and energy as inputs, and this reliance is strongest in irrigated, market-oriented food-production systems. This interdependency of different sectoral issues has been further stretched in the light of scarcity of natural resources. Many institutes are involved in understanding the nexus-perspective¹⁴. Choosing a nexus-perspective highlights the complex and dynamic interactions between sectors. Sectoral issues cannot be looked at in isolation from one another. Instead, they co-exist within a wider context of transformational processes – or drivers of change – that need to be taken into account. Implementing the SDGs, especially SDG 2 (Food security), SDG 6 (Water), SDG 7 (Energy) and SDG 13 (Climate) will require an approach geared to handling the complex interactions, lock-ins and challenges for land use, especially in situations where the competing resource uses come together in local hotspots. The way that climate change is regionally differentiated regarding

¹³ <http://en.rli.nl/sites/default/files/wtkthefutureofthecity.pdf>

¹⁴ See e.g. http://www.fao.org/nr/water/docs/FAO_nexus_concept.pdf & <https://www.sei-international.org/mediamanager/documents/Publications/SEI-initiative-nexus-2015.pdf>

its effect on land use strengthens the need for an integrated nexus-perspective. 'SDGs are characterised by multiple interlinkages all of which can be approached by the strategic concept of a Nexus approach', UNEA stated in their call for action to strengthen the science-policy interface¹⁵ in the delivering of the environmental dimension of the 2030 Agenda.

Technology as a facilitator and accelerator

An overview of the UN technology initiatives shows that there exist significant differences across the proposed 17 SDGs in terms of the stage of development of and access to relevant technologies, their application and impact assessment. Different gaps can be identified based on these findings. First, the well-known gap between laboratories and markets ('the death valley'). Secondly, the gap between SDGs linked to economic activities¹⁶ and SDGs linked to the 'global commons'¹⁷. The SDGs linked to economic activities seem to have a better uptake of technology, than the SDGs linked to the global commons, with the exception of SDG 13 (Climate Change). There is also a third gap, the gap between global and national actions. There is often a gap in time between global political alignment and resource mobilisation to national actions. Achieving the SDGs may call for alternative or diversified models of connections between global

¹⁵ <http://www.unep.org/about/sgb/Portals/50153/UNEA/UNEA%20Science%20Policy%20Forum%20Call%20for%20Action%20Final.pdf>

¹⁶ SDGs linked to economic activities, primarily 2, 7, 8, 9 (agriculture, energy, growth & jobs, infra & industrialization)

¹⁷ SDGs linked to the global commons, primarily SDG 6, 13, 14 en 15 (water, climate change, oceans, forests, ecosystems and biodiversity)



frameworks and national actions¹⁸. In this context, it is important to recall the aforementioned need to build a working interface between science & policy makers and to strengthen mechanisms for accountability. The Independent Team of Advisors (ITA)¹⁹ and the Scientific Advisory Board of the United Nations²⁰ have both given proposals for this. To strengthen the potential of science, technology and innovation for all parties to achieve the sustainable development goals, the Multi-stakeholder Forum on Science, Technology and Innovation for the Sustainable Development Goals (STI Forum) met for their first annual meeting in June 2016.

Public debate on how to meet risks

The failure to understand and address risks related to technology, such as the systemic cascading effects of cyber risks or the breakdown of critical information infrastructure, could have far-reaching consequences for national economies, economic sectors and global enterprises²¹. The risk with the greatest potential impact in 2016 was found to be a failure of climate change mitigation and adaptation. This is the first time since the report was published in 2006 that an environmental risk has topped the ranking²².

Technological innovations are succeeding one another with increasing speed and are more and more interconnecting. New and faster dynamics

18 <https://sustainabledevelopment.un.org/content/documents/2091Mapping%20UN%20Technology%20Facilitation%20Initiatives%20Sept%202015%20clean.pdf>

19 <https://www.un.org/ecosoc/sites/www.un.org.ecosoc/files/files/en/qcpr/ita-findings-and-conclusions-16-jun-2016.pdf>

20 <http://unesdoc.unesco.org/images/0024/002458/245801e.pdf>

21 http://www3.weforum.org/docs/GRR/WEF_GAC16_Risk_Resilience_Insights.pdf

22 <https://www.weforum.org/agenda/2016/01/what-are-the-top-global-risks-for-2016/>

in technological advances, with closer interaction between technology and society, are predicted. Innovations have a major impact on how we live and on social and moral values such as privacy and transparency, often before we have jointly given it careful consideration.

The Council for the Environment and Infrastructure (Rli) concluded in their report 'Survey of technological innovations in the living environment' that we need broader public debates, at an earlier stage on the impact innovations have on our values²³. In Germany there are plans to make a black box mandatory in self-driving cars. This technical advancement has sparked a debate about responsibility, insurance and legal obligations, also outside Germany. A sharper societal response can be seen when assessing how TTIP and other trade agreements will affect how different markets deal with technologies such as GMOs. To what extent can and do GMOs need to be regulated and be a part of global food production chains? Trade agreements bring about harmonisation or mutual recognition of environmental and consumer protection requirements and technical rules. However, this can also affect areas where the two sides of the Atlantic have very different ideas about the form protection should take, for example in the field of agriculture and food production. Steps must be taken to ensure that there is no lowering of standards and no delay in establishing regulations to protect the environment, the German Advisory Council for the Environment (SRU) stated earlier in 2016.²⁴

23 <http://en.rli.nl/publications/2015/advice/survey-of-technological-innovations-in-the-living-environment>

24 The Hungarian council NFFT, and the Dutch SER have given comparable advices.



2.3 The role of the EEAC network and EEAC councils

EEAC councils and other institutes have taken a clear position on issues like the one mentioned above and fulfil a role in facilitating an informed public debate through their advisory publications and other activities.

A clear advantage of the EEAC network is the solid foundation on scientific and evidence-based research and consultation on a broad range of policy topics ranging from specific environmental issues to broad issues covering the circular economy, new trade agreements and energy transition. The EEAC network – together with other networks like ESDN and ENCA – offers an intermediate structure between the global and EU policy arena and the national political and democratic institutions.



3 SUSTAINABLE DEVELOPMENT GOALS

3.1 State of play

As of January 2016, 193 countries have started to move from the commitments undertaken at the UN to the task of integration and implementation of the SDGs at the national level. Together, the 17 SDGs and 169 related targets form the 2030 Agenda for Sustainable Development which addresses various global challenges over the next fourteen years. A first opportunity to gain global insight into the state of the implementation process was provided in June 2016 through the High Level Political Forum's SDG report 2016 and the 22 voluntary national reviews.

The SDG report 2016 concludes that in general improvements are being made on a wide variety of SDGs at the global level. Nevertheless, the challenges remain significant, both for developed and developing countries. Issues such as severe income inequality and the vulnerable position of women and girls were especially mentioned as global concerns by the High Level Political Forum (HLPF evaluation).

Besides the data from the HLPF, other analyses have also been shared. The Independent Team of Advisors (ITA) took a more fundamental look at the

requirements for the 2030 Agenda as reflected in the document 'The Future We Want – The United Nations We Need' (June 2016). The ITA argued that the SDGs require institutional change at the UN level. In their proposal, they furthermore stated a number of concrete proposals to strengthen strategic governance at the inter-governmental level and at the national level.

In turn, the Scientific Advisory Board of the United Nations stated in a report to the UN (September 2016) that science should not be an add-on but an integral part of the response to global challenges. 'Science needs to be engaged systematically and sustainably to resolve global problems and facilitate the implementation of the SDGs.'²⁵

The European Commission included the implementation of the 2030 Agenda as a sub goal in its ten priorities. But at its highest level, the European Commission omitted to reflect on the contents of the 2030 Agenda. Only 'climate' made it as a top priority as this is part of the agenda to strengthen economic competitiveness. Furthermore, the Commission invited its Political Strategy Unit to come forward with a European vision for sustainability entitled 'Sustainability now!'. Although initiative has been shown by the Commission, an actual overarching implementation proposal had not yet been published in mid-2016; experts however expect the Commission to present a proposal in the autumn of 2016. Complex internal cooperation processes and the presence of internal power struggles are both frequently mentioned causes for the delay.

²⁵ <http://unesdoc.unesco.org/images/0024/002458/245801e.pdf>



When considering initiatives undertaken by developed countries in the European area to implement the 2030 Agenda, it seems that countries which already have a National Sustainable Development Strategy (NSDS) or similar tools with accompanying structures for monitoring and stakeholder inclusion are taking the lead as to the implementation of the 2030 Agenda. Whereas a start has been made by several countries in Europe, there are clear signals that more work definitely needs to be done. Studies by [The Bertelsmann Stiftung](#), [the German Development Institute](#) and [the Stakeholder Forum](#) show that the developed countries are lagging behind on such issues as the targets related to SDG 2 (Zero Hunger, with a clear emphasis on agricultural production), SDG 7 (Sustainable energy), SDG 8 (Economy and Employment, with an emphasis on resource efficiency), SDG 12 (Sustainable consumption and production) and SDG 13 (Combating climate change). Although these studies provide an indication of the state of play, work is needed on transforming the indicators used. These indicators are often implicitly and structurally conservative. More transformative indicators such as footprint, resilience, sufficiency and food waste are needed to fully show our achievements.

It is broadly recognised that sustainable development strategies and policies require multi-layered decision-making, multilevel coordination and cooperation with a multitude of stakeholders²⁶. From that perspective, it is encouraging that at the global, European and national level interesting platforms for stakeholder inclusion are being (re)established. Examples are

²⁶ Berger, G. and Streuner, R. (2009). *Horizontal policy integration and sustainable development: Conceptual remarks and governance examples*. ESDN quarterly report. June 2009

the European Forum for Sustainable Development, monitoring platforms such as SDG-Watch and platforms for knowledge sharing such as the ESDN, EEAC and, at the global level, SDGclub.Berlin. Besides governments establishing frameworks, bottom-up, multi-stakeholder partnerships such as the European Sustainable Development Week are required as well.

3.2 Challenges ahead

The universal nature of the SDGs is both a strength and a serious challenge. The fact that it is to be implemented in all countries, regardless of income or wealth, still has to gain mainstream political acceptance. And this is an uphill battle. Too often, SDGs are still treated as if they are an extension of the Millennium Development Goals. Not only governments struggle with the concept of universality. Civil society too still tends to think along the more classical north-south axis. To fully understand the implications of the universality of the SDGs and make governments, civil society and the business community accountable is a challenge which needs to be rapidly overcome to ensure a successful implementation of the 2030 Agenda.

The [international community](#) has acknowledged that systemic change is needed to achieve the SDGs and the 2030 Agenda as a whole. However, enabling - let alone driving- systemic change is highly complex. We need to understand systemic change better, including resistance to change, disruptive change and viral change. Considering the complexity of enabling systemic change, this will be one of the major challenges ahead. EEAC



councils can play specific roles in this²⁷, but much work still needs to be done in understanding, sharing and handling systemic risks.

Although the importance of data collection and the need to strengthen the interlinkage between science, research and policy was underlined in both the HLPF and in the Global Sustainable Development Report 2016, there is a growing sense that the actual understanding of the role of science and research is insufficient at the political level. Furthermore, a proper science-policy interface that would cover the SDGs is lacking. In addition, the scientific community also needs to undergo changes with regard to its methods, programmes, feedback, outreach and institutional approach.

Another challenge is to change the fact that the worlds of scientists/ researchers, policy makers, civil society and the private sector rarely meet. This could have serious implications for the deeper understanding and implementation of the SDGs, weakening informed decision-making. “In a world of increasing limits, we must nurture our greatest renewable energy – this is ingenuity and creativity,” the Scientific Advisory Board of the United Nations recently stated. Sciences hold keys to answering many of the questions facing countries across the globe today. We need to strengthen the institutional architecture and the interface between science, policymaking and concrete action²⁸.

²⁷ WBGU has tackled the complex nature of system risk in a number of advisory reports (Humanity on the Move, governing the Marine Heritage etc.). Rli has looked into energy transition and change of behaviour (...) RNE is actively playing leading roles in Germany's R&D transformative agenda for a) High Tech b) Sustainable Business, c) Cities of tomorrow

²⁸ <http://unesdoc.unesco.org/images/0024/002458/245801e.pdf>

The cross-sectoral and overarching nature of the 2030 Agenda will also challenge the EU and its member states. New institutional arrangements must be made and new balances between policies must be found. The EU must strike a new balance between the 2030 Agenda, the European Semester, the European Sustainable Development Strategy and the policy package that will follow Europe's 2020 strategy. At the national level, governments will be challenged to establish interlinkages between such factors as development aid, trade, international relations and environmental and social policies to meet the 2030 Agenda.

3.3 Emerging and wicked issues

Acceleration of change

The ‘continuing acceleration of changes affecting humanity and the planet’²⁹ is a concern for political leaders and scientists the world over. Earth system changes have become directly linked to the global economic system and the rate of depletion of natural resources and the effects of climate change have escalated. Western, energy-intensive lifestyles (for example due to diet & mobility) have increased the pressure on the finite capabilities of the planet beyond its limits. This is not new; however, the scale of the joint sense of alarm in combination with the notion that avoiding a collapse is possible seems unprecedented.

²⁹ quote from the Pope Encyclical ‘Laudato si’, used as opening in the paragraph ‘Great Acceleration’ in EPSC Strategic Note ‘Sustainability Now’



Rebuild trust in the European Union

Inevitably, the European Union's future faces risks and challenges. The main risks and challenges are internal and reconfirm the need to rebuild trust in the European Union and to deliver concrete and beneficial results for its citizens.³⁰ Concerns about the economic situation in Europe have been superseded by fears of immigration in the course of the last two years. Since 2015, European citizens have been ranking 'immigration' and 'terrorism' as respectively their first and second main sources of anxiety.³¹ The European Union as a political and economic project has not been able to reduce inequality. According to a recent publication by Stiglitz³², the euro has even led to an increase in inequality. The social dimension - rising inequalities, denied access, failing social inclusion, growing tensions between different groups within the European Union - is an important cross-cutting issue for the implementation of the SDGs which touches all the policy fields described in chapters 4-8.

Towards a Sustainable Europe

In the light of these risks and challenges, we must not forget that in securing 70 years of peace, the European Union offers the basis for sustainable development. Europe is becoming aware of the limits of the Blue Planet and of the need for fair wealth distribution, notably in relation to the rapidly growing developing nations and the younger generations. Europe needs to rediscover social market economy principles,

30 <http://europa.eu/espas/pdf/espas-report-2015.pdf>

31 http://ec.europa.eu/epsc/pdf/publications/eu2016_from_trends_to_policies.pdf

32 https://www.amazon.co.uk/Euro-its-Threat-Future-Europe/dp/0241258154#reader_B01C544KUO

including solidarity, and to match this with planetary boundaries to create an inclusive society for all Europeans. Having achieved peace among the European nations, the European Union must secure economic success, social peace and harmony with nature: that is the challenge of sustainability, as stated by Karl Falkenberg in 'Sustainability Now! A European Vision for Sustainability'.³³

Implementing the SDGs is a sign of solidarity both within and beyond the borders of Europe that will bring food security, sanitation and fresh water as well as global health to all. Furthermore, other SDGs challenge the private sector and the government to work towards sustainable Global Value Chains (GVCs) in which social and environmental concerns are fully addressed. A global climate policy needs to align international agreements with national policy.³⁴ The question whether we can address the primary concerns of Europeans at this moment - immigration and terrorism - by fully implementing the 17 SDGS and the Climate Agreement arises. And thereby also the need to confront the challenge to facilitate orderly, safe and responsible migration and enable immigrants - women, men and children - to positively contribute to a sustainable future (also one of the SDGs). We have been able to secure 70 years of peace in Europe: now, the time has come to secure peace and access to justice on a global level (SDG 16).

33 http://ec.europa.eu/epsc/publications/notes/sn18_en.htm?_cldee=bHVjYS5waXRyb25lQGVlc2MuZXVyb3BhLmV1&urlid=0

34 http://www.partos.nl/fileadmin/files/Documents/Partos_RFC_Publication_May_2016.pdf



4 CLIMATE AND ENERGY

4.1 State of play

The results of the Paris COP21 conference in 2015 have sparked new energy; by many, including Chatham-House, they are seen as a triumph of diplomacy and international cooperation following the low point of Copenhagen in 2009.

The outcome document of COP21 includes a clear goal. The aim to keep the increase in the global average temperature well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C is considered transformative by a broad spectrum of scientists. Besides these aims, the number of countries involved in the agreement is often also mentioned as a key element to potential success. Whereas the Kyoto Protocol covered 14% of global emissions, the Paris Agreement – with the US and China participating- covers 98% of global emissions. The world currently awaits ratification of the agreement. According to UN rules, the agreement comes into force on the 30th day after the date on which at least 55 Parties to the Convention, in total accounting for at least an estimated 55 % of total global emissions, have deposited their instruments of ratification. This report was finalised in early October 2016, a period in which important steps were taken in the ratification process. What seemed

unlikely earlier has now become fact: the Paris agreement will already come into force on the 4th of November 2016³⁵.

The outcomes of the Paris Agreement were also swiftly translated to the EU level. As a follow-up to the agreement, the European Commission published its proposal on Effort Sharing Regulation and the rules for accounting the land use, land-use change and forestry (LULUCF) up to 2030. These new rules will provide Member States with a framework to incentivise more climate-friendly land use. Emissions of biomass used in energy will be recorded and counted towards each Member State's 2030 climate commitments. The framework amongst other things sets out the EU's commitment to a binding target of a domestic reduction in economy-wide greenhouse gas emissions of at least 40% by 2030 compared to 1990. All sectors should contribute to achieving these emission reductions. Sectors within the Emission Trading System (ETS) should provide a 43% reduction vis-à-vis 2005 and non-ETS sectors should reach a 30% reduction by 2030 compared to 2005. This commission proposal is a continuation of current effort sharing policies. However, it should be noted that a number of flexibilities have been incorporated as for example analysed by the Finnish Ministry of Environment³⁶.

When assessing the Intended Nationally Determined Contributions (INDCs) of the European countries, the International Institute for Applied System Analysis concluded that the collective ambition of the INDCs for 2030 falls short to keep the global temperature increase well below 2 °C. However, if

³⁵ <http://unfccc.int/2860.php>

³⁶ <http://www.vtt.fi/inf/julkaisut/muut/2016/VTT-R-02315-16.pdf>



fully implemented, the INDCs will deliver significant emission reductions from business-as-usual trends. Many parties, such as the [Clingendael Institute](#), furthermore argue that the Paris Agreement should not be seen as an end in its own right, but rather as a part of a long-term process of decarbonisation.

4.2 Challenges and dilemmas

The world is facing a major two-sided challenge when it comes to its climate policies. Although the Paris Agreement sets clear ambitions, the time frame within which the major challenges of climate change need to be dealt with seems to be getting narrower. In a study by the [National Oceanic and Atmospheric Administration](#), scientists claim that environmental records are being shattered and that the process of climate change is unfolding much faster than anticipated.

Furthermore, it is not just the time frame within which action is needed that appears to be narrower than anticipated. Reports from, amongst others, [UNFCCC](#), [Climate Action Tracker](#) and the [International Institute for Applied System Analysis](#) conclude that the collective ambition of the INDCs put forward for 2030 will fall short of the requirements to put the world directly on a cost-effective pathway to keep the global temperature increase well below 2 °C. Consequently, the window for action is narrowing, increasing the pressure on countries to deliver rapidly. Simultaneously, increased efforts seem a must in order to meet the Paris Agreement goals; however, ensuring the political support needed to increase these efforts appears complex. This divergence constitutes a serious challenge.

This challenge is also felt at the European level. Whereas several [NGOs](#) criticise the lack of ambition of the Effort Sharing Regulation, several EU member countries, especially from Central and Eastern Europe, are preparing for a fierce discussion to avoid stringent national reduction targets. The expected set-off between segments of civil society and the European institutions and amongst EU member states is expected to create a major challenge for the EU to arrange its INDCs. If scientific measurements turn out to be correct and politicians continue to refuse to increase their efforts to reduce green house gas emissions in the coming years, then annual emissions reduction efforts will abruptly have to triple after 2030 to still meet the goals established in the Paris Agreement. Postponing reduction policies could therefore lead to a severe economic – and politically almost unrealistic – task after 2030. In light of these challenges, it is a relief that – while preparing and writing this report – the political climate has changed and that this important agreement will already come into force this year (2016).

Data produced by the World Resources Institute indicates that by 2030, more than half of the greenhouse gases emitted globally will be produced by countries that have reached or have passed their peak emission levels (calculated based on 2012 levels). Amongst these countries is China. The latest [official government statistics](#) from China support the idea that its coal usage peaked in 2014. China's falling coal consumption seems to be a permanent trend and long-term transformations towards a next economy focusing on hi-tech and the service sector are taking place. In the US, similar trends are emerging. In 2015, electricity generated from natural gas



surpassed the generation from coal for the first time ever in the US. Coal's role in US power generation is steadily eroding, a trend that is expected to continue. Although Germany has increased its consumption of (brown) coal in the aftermath of its nuclear phase-out, it is expected that the countries of the EU have also peaked in terms of their usages.

The need to reduce greenhouse gas emissions and our fossil fuel dependency - and to change our energy-intensive lifestyles - has however strengthened the reliance on nuclear energy in many countries. Despite costs, safety, national security and environmental risks, new nuclear power plants are projected with approval of governments and at the cost of taxpayers³⁷. The dependence on nuclear power in Europe is relatively high. France obtains around three-quarters of its power from nuclear energy; in Belgium, the Czech Republic, Finland, Hungary, Slovakia, Sweden, Switzerland, Slovenia and Ukraine this is one-third or more while in the UK, Spain and Romania nuclear energy accounts for almost one-fifth. Among countries which do not have nuclear power plants, Italy and Denmark get almost 10% of their power from nuclear sources.³⁸ Here lies a complex challenge to balance the need to reduce emissions, guarantee a reliable energy supply and weigh societal and environmental costs.

Oil prices have been declining from mid-2014 on, mostly on account of news about strong supply magnified by risk-off behaviour in financial

markets. The further collapse in oil prices has continued in spite of geopolitical tensions in the Middle East, suggesting that market expectations are firmly anchored in 'low for long' oil prices. Natural gas and coal prices have also declined, as the former are linked to oil prices, among other things through oil-indexed contract prices, albeit with a lag.³⁹ In light of the low oil prices, companies and countries have had to reconsider their energy choices. Researchers from SEI looked into the consequences the low oil prices had on structural change in economies and energy systems. They concluded that opportunities for structural change remain, even in a situation of lower oil prices.⁴⁰

4.3 Emerging and wicked issues

Stranded assets and 'lock-ins'

The remaining global fossil carbon reserves already owned by public or private investors are likely to vastly exceed the amount that can be released into the atmosphere if temperatures are to stabilise at or near the internationally agreed-upon goal of 2°C. Furthermore, investments in infrastructure, both in the energy sector and in the broader economy, risk 'locking in' emissions that exceed a safe cumulative total. With a global community aiming for a path change, investors are faced with potentially stranded fossil fuel assets. Many are already attempting to divest from coal, and some from all extractive fossil fuel operations.⁴¹

37 <https://www.theguardian.com/business/2016/sep/18/hinkley-point-not-precedent-other-nuclear-bradwell-sizewell-cgn>

38 <http://www.world-nuclear.org/information-library/current-and-future-generation/nuclear-power-in-the-world-today.aspx>

39 https://www.imf.org/external/pubs/ft/weo/2016/01/pdf/SF_Commod.pdf

40 https://www.sei-international.org/mediamanager/documents/Publications/NEW/NCE-SEI-2015-Oil_prices.pdf

41 <http://www.oxfordmartin.ox.ac.uk/research/programmes/carbon-investment>

Strategic and political leadership needed

This divestment is expected to generate a widening split among political leaders. Economic forces move in separate directions whereas 'lock-ins' and the costs for dismantling the fossil fuel infrastructure are expected to become a major economic burden for states and hence the tax payer. The wicked issue of economic controversy is for example clearly emerging in Germany. Hard coal and lignite plants generated about 43 % of Germany's power last year. At the same time, investors, including Allianz SE and Commerzbank AG, have advocated for a speedy phase-out of coal. This controversy has spurred the Merkel government to strategically phase out coal. Similar situations are occurring in the Netherlands, where natural gas reserves bring opposite political, economic and societal forces into action. In turn, France and Belgium are expected to be confronted with major costs to dismantle their (mostly) nuclear infrastructure. In order to arrange a manageable transition process, strategic planning should start to focus on these emerging issues.

Private and public climate financing

Effectively and accurately tracking climate finance is an emerging issue for the international climate regime. The Paris Agreement tasked the SBSTA to by 2018 develop accounting rules for Parties to follow in order to better track public climate financing and increase transparency. Developed countries, also committed to continue reporting every two years on provided and mobilised finances, have also started reporting on intended public funding. The Agreement encourages developing countries to follow this practice as well. The APA is tasked with determining the specific

information these countries should report on, when this information should be due and how it will be reviewed. There is considerable interest from private investors in 'low-carbon' investment opportunities, but currently the answer to the longer-term question of how investment can provide a route to a zero carbon economy is less clear. Some argue that active engagement with the fossil fuel industry is needed and that simple divestment alone will not bring the required changes as long as the world economy remains overwhelmingly fuelled by fossil energy⁴².

Crucial role of non-state actors

Non-state actors, regions and cities are expected to increasingly alleviate the weakened interstate compliance regimes, some scientists argue. Societal pressure is expected to ensure that countries will try to live up to expectations. Non-state actors might play an interesting role in the implementation process of the Paris Agreement. The Dutch NGO Urgenda was the first to file a lawsuit against the Dutch government, demanding governmental action in light of the Paris Agreement. Using legal instruments to enforce state actors to honour their promises might become a strong tool for non-state actors. Besides non-state actors, regions and cities will most likely also play a crucial role in this process. Cities will grow even further in the next decades, making them important drivers of change at the ground level. Consequently, scientists and analysts expect that there will be a shift in focus from national action towards local action at the city level. New alliances, such as 100resilientcities.org and the European Energy Cities are speeding up this process.

⁴² <http://www.oxfordmartin.ox.ac.uk/research/programmes/carbon-investment>



5 ENVIRONMENT AND WATER

5.1 State of play

The United Nations Environment Programme (UNEP) carries out work to improve coherence and synergy in environmental governance and to mainstream the ecosystem approach in policymaking and implementation processes. Furthermore, UNEP reviews the global environmental situation and provides early warning on emerging issues for informed decision-making by policymakers and the general public⁴³. UNEP is involved in integrating environmental sustainability in the elaboration process and the debate on means of implementation for the Sustainable Development Goals (SDGs) and, with that, in the perspectives and interests of a wide range of stakeholders of the environmental sector, including environmental scientists, Secretariats of Multilateral Environmental Agreements (MEAs), environmental NGOs and other UN agencies working on various aspects of the environment. Conservation and the sustainable management of ecosystem goods and services is directly connected to the implementation of SDG 15 (Biodiversity), SDG 2 (Food security), SDG 6 (Water), SDG 13 (Climate) and is interrelated to other SDGs. Improved water and ocean governance is directly related to the implementation of SDG 6 (water)

⁴³ <http://www.unep.org/>

and SDG 14 (Oceans), but also to SDG 2 (Food security) and other SDGs like SDG 3 (Health) and SDG 4 (Education). Scaling up climate change adaptation and mitigation is directly connected to SDG 13 (Climate) and SDG 7 (Energy), but also very important for achieving SDG 16 (Peace), SDG 3 (Health), SDG 2 (Food security) and other SDGs⁴⁴. In May 2016, UNEA - as the global authority on the environment - called for action to strengthen the science-policy interface⁴⁵ with the aim of delivering the environmental dimension of the 2030 Agenda for Sustainable Development.

At the European level, the European Environmental Agency has a comparable role. In the last State of the Environment (SOER, 2015⁴⁶), a review of the last 40 years shows that the implementation of environment and climate policies has delivered substantial benefits for the functioning of Europe's ecosystems and for the health and living standards of its citizens. However, the challenges that Europe faces today are considerable. The European natural capital is being degraded by socio-economic activities and global pressure on the environment has grown at an unprecedented rate since the 1990s. At the same time, a growing understanding of the characteristics of Europe's environmental challenges and their interdependence with economic and social systems in a globalised world has brought with it increasing recognition that existing knowledge and governance approaches are inadequate to deal with said challenges.

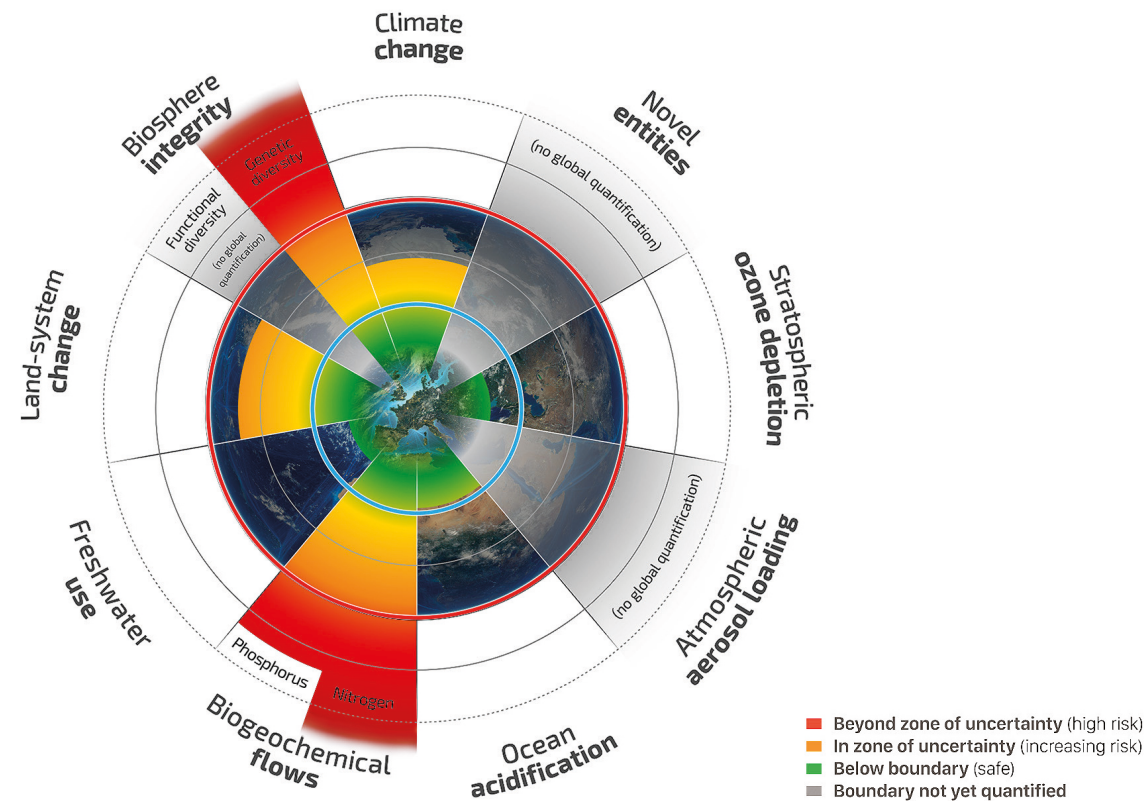
⁴⁴ <https://www.cbd.int/doc/meetings/biodiv/impws-2015-01/other/impws-2015-01-presentation-day3-sdg-undp-en.pdf>

⁴⁵ <http://www.unep.org/about/sgb/Portals/50153/UNEA/UNEA%20Science%20Policy%20Forum%20-Call%20for%20Action%20Final.pdf>

⁴⁶ <http://www.eea.europa.eu/soer-2015/synthesis/report/0c-executivesummary>



Figure 1: Planetary Boundaries: A Safe Operating Space for Humanity



Source: Steffen et al. 2015⁴⁷

5.2 Challenges and dilemmas

Stockholm Resilience Centre: Planetary boundaries⁴⁸

An important concept for understanding the threats and challenges to our society is the Planetary Boundaries framework. This framework identifies nine intrinsic biophysical processes that regulate the stability and resilience

⁴⁷ <http://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries/about-the-research/the-nine-planetary-boundaries.html>

⁴⁸ <http://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html>

of the Earth System – the interactions of land, ocean, atmosphere and life that together provide conditions upon which our societies depend. Four of these nine planetary boundaries have now been exceeded as a result of human activity. They are: climate change, loss of biosphere integrity, land-system change and altered biogeochemical cycles (phosphorus and nitrogen). The concept of planetary boundaries has impacts far beyond the scientific community and has influenced the Sustainable development and Climate Change agenda without being explicitly referred to in the 2030 Agenda. The concept has clearly shown that everything in the global commons of the Earth’s operating system is interrelated, meaning specific parts of it cannot be addressed in isolation⁴⁹.

European Environmental Agency: Understanding systemic challenges⁵⁰

Europe has made progress in reducing some key environmental pressures, but in many cases these reductions have not yet yielded improved ecosystem resilience or reduced risks to health and well-being. Furthermore, the long-term outlook is often less positive than recent trends might suggest. A variety of factors contribute to these disparities. The dynamics of environmental systems can mean that there is a substantial time lag before declining pressures translate into improvements in the state of the environment. In addition, many pressures remain considerable in absolute terms despite recent reductions. For example, fossil fuels still account for three-quarters of the EU energy supply, imposing a

⁴⁹ <http://web.unep.org/ourplanet/may-2016/articles/opportunity-commons>

⁵⁰ <http://www.eea.europa.eu/soer-2015/synthesis/report/0c-executivesummary>

heavy burden on ecosystems through climate change, acidification and eutrophication impacts.

Feedback loops, interdependencies and lock-ins in environmental and socio-economic systems also undermine efforts to mitigate environmental pressures and related impacts. For example, improved efficiency in production processes can lower the costs of goods and services and actually stimulate increased consumption (the 'rebound effect'). Changing exposure patterns and human vulnerabilities, for example in relation to urbanisation, can offset reductions in pressures. And the unsustainable systems of production and consumption that are responsible for many environmental pressures also provide various benefits, including employment and income. This can create strong incentives for sectors or communities to resist change.

Perhaps the most difficult challenges for European environmental governance arise from the fact that environmental risks, trends and impacts are increasingly becoming globalised. Nowadays, a variety of long-term megatrends affect Europe's environment, consumption patterns and living standards. For example, the escalating resource use and emissions that have accompanied global economic growth in recent decades have offset the benefits of Europe's success in cutting greenhouse gas emissions and pollution as well as creating new risks. The globalisation of supply chains also means that the impacts of Europe's production and consumption often become manifest in other parts of the world, where European businesses, consumers and policymakers have relatively limited knowledge, incentives and scope to influence them.

Handling dynamic features

There is an urgent need to more fundamentally understand which ecological and evolutionary processes are important for creating the right conditions for resilience, persistence and the prevention of crossing thresholds (and of irreversible changes in ecosystems) and to understand how sensitive these ecosystems are to environmental changes over short and long time-scales. Climate change and human impact are putting increasing pressure on existing protected areas and as a result, biodiversity conservation needs to take place beyond these reserves. These are issues that require further research in order to be able to develop policies to address these rapid changes in an adequate way. Essential to the development of policies to handle the dynamic changes of nature and landscape are new biodiversity technologies for the identification of species and for mapping dynamic features⁵¹.

5.3 Emerging and wicked issues

Proper management of freshwater

Freshwater is a key resource for human health, prosperity and security. Yet billions of people worldwide are confronted with serious freshwater-related challenges, from water scarcity, poor water quality, lack of sanitation facilities to water-related disasters such as floods and droughts. Some 80% of the world's population live in areas with high water security threats. Water resources are under increasingly severe pressure from climate

⁵¹ <http://www.oxfordmartin.ox.ac.uk/research/programmes/biodiversity>



change and other global drivers. Climate change alters rainfall patterns, soil moisture, humidity, glacier-mass balance and river flow and also affects underground water sources. At the same time, floods or droughts are rising in frequency and intensity. Over the next 40 years, approximately 800,000 new residents will move to cities around the world every week. Population growth and rapid urbanisation will create further pressures on water resources; this will have a tremendous impact on the natural environment. Given these challenges, the need to adequately manage freshwater is essential. Sustainable water development has been incorporated in the 2030 sustainable development agenda, with water-specific goals explicitly linked to other development targets.⁵²

Ocean ecology and economy

The emission of carbon dioxide will have severe consequences for the world's oceans. In 2006⁵³, WBGU already identified the complex and wicked problems in relation to the marine environment. The marine environment is doubly affected by the emission of carbon dioxide: continuing warming and ongoing acidification both pose threats. In combination with over-fishing, these threats are further jeopardising already weakened fish stocks. Sea-level rise is exposing coastal regions to mounting flood and hurricane risks. But there are also a number of other threats and pressures to the marine environment, such as the influx of agricultural residuals, increasing amounts of plastic litter floating into the oceans, hazardous substances from multiple sources or the introduction of non-indigenous

52 <http://en.unesco.org/themes/water-security/hydrology/ihp-viii-water-security>

53 <http://www.wbgu.de/en/special-reports/sr-2006-the-future-oceans/>

species. To keep the adverse effects on human society and ecosystems within manageable limits, it is essential to successfully implement the EU-Marine Strategy Framework Directive as well as the Water Framework Directive which is closely linked with the MSFD. Important measures in this context are the adoption of new coastal protection approaches and the designation of protected marine areas. Ambitious climate protection is a key precondition to achieve a good environmental status in European seas⁵⁴. In 2016, OECD⁵⁵ published their global forward-looking assessment of the ocean economy, defining the risks and uncertainties surrounding emerging ocean-based industries and the policy options most suited to boost their long-term prospects while managing the ocean in responsible, sustainable ways.

Biodiversity/ecosystem management

The degradation of ecosystems is a complex and wicked issue.

This degradation also poses a threat to human life, livelihoods and development. Agriculture is the dominant land use and plays a key role in the protection of biodiversity. Without a reduction of the pressures from this sector – such as the influx of nutrition and pesticides – it will not be possible to halt the loss of biodiversity in Europe⁵⁶. A further ecological transformation of the agricultural sector is a prerequisite to protect our aquatic and terrestrial ecosystems. One priority in this context is to shape

54 <http://www.wbgu.de/en/special-reports/sr-2006-the-future-oceans/>

55 <http://www.oecd.org/futures/oceaneconomy.htm>

56 http://www.umweltrat.de/SharedDocs/Downloads/EN/01_Environmental_Reports/2016_06_UG16_Chapter1.html, http://www.umweltrat.de/SharedDocs/Downloads/EN/02_Special_Reports/2012_2016/2015_01_Nitrogen_Strategies_summary.html



the Common Agricultural Policy (CAP) more in a direction in which public money is allocated only to public goods and services, as the German Advisory Council on the Environment stated in their advisory report 'Reform of the Common Agricultural Policy'⁵⁷. The midterm review of the CAP is the next – albeit small – chance to increase sustainability in European agricultural policies.

Another aspect is ecosystem management that can help to halt and reverse the increasing degradation of ecosystems while also providing economic and job opportunities. Hence, ecosystem management plays a pivotal role in green and circular economy development⁵⁸.

The main tool for the conservation of biodiversity in the EU is the European network Natura 2000. The current REFIT process shows that the two underlying directives are suitable, but shortfalls concerning their implementation remain. The future implementation of the Birds and Habitats Directives, including their financing, is an essential future task for nature conservation.

Air quality and related health issues in cities

According to the World Health Organisation (WHO, 2016), more than 80% of people living in urban areas are exposed to air quality levels that exceed the WHO limits. While all regions of the world are affected, populations in

low-income cities are the most impacted. However, 56% of people in high-income countries are also exposed to risks which exceed WHO-limits. As urban air quality is still poor, the risk of strokes, heart diseases, lung cancer and chronic and acute respiratory diseases (including asthma) remains high for the people who live in these urban environments⁵⁹. Transport is the dominant source of emissions of particulate matter and nitrogen oxides in ambient air; it is also responsible for other problems such as noise and a poor quality of life in cities. Without an ecological transformation of the mobility sector, it will not be possible to reduce these pressures to an acceptable level nor to reach climate targets.

57 http://www.umweltrat.de/SharedDocs/Downloads/EN/05_Comments/2012_2016/2013_01_KzU_11_GAP.html

58 <http://unep-iemp.org/wp-content/uploads/2016/06/Securing-a-Green-Economy-through-Ecosystem-Management.pdf>

59 http://www.who.int/phe/health_topics/outdoorair/databases/cities/en/



6 FOOD AND AGRICULTURE

6.1 State of play

By 2050, global food production will need to increase by 60 percent to feed the more than nine billion people projected to live on our planet⁶⁰. The majority will live in an urbanised environment. With a growing middle-class, the demand for food, in particular animal proteins, will increase more than the growth in population suggests⁶¹. A profound change of the global food and agriculture system is needed. If done right, agriculture, forestry and fisheries can provide nutritious food for all, generate decent incomes, support inclusive rural development and protect the environment⁶².

However, natural resources are currently still deteriorating; ecosystems are coming under pressure and biological diversity is being lost across the globe. Climate change poses an added threat to global food production.⁶³

This increasing global demand is mirrored by considerable uncertainties of supply linked to unpredictable economic and political- as well as climatic and biological (e.g. new crop and animal diseases)- developments.⁶⁴

In general, of all the economic activities, the food sector has by far

the largest impact on the use of natural resources as well as on the environment. An estimated 60% of global terrestrial biodiversity loss is related to food production; food systems account for around 24% of global greenhouse gas emissions and an estimated 33% of soils are moderately to highly degraded due to erosion, nutrient depletion, acidification, salinisation, compaction and chemical pollution.⁶⁵

Agricultural commodity prices influences food security, agricultural productivity and sustainability.

After a succession of agricultural commodity price surges between 2008 and 2012 and concerns that international markets were becoming excessively volatile, markets have become calmer and prices have declined in 2016. The conclusion is that agricultural prices could either be too low to spur investment or too high to ensure adequate food and nutrition for all.⁶⁶

FAO has developed a common vision and an integrated approach to sustainability that covers agriculture, forestry and fisheries to achieve the 2030 Agenda for Sustainable Development. This unified perspective is meant to ensure the effectiveness of action at the ground level, underpinned by the best available science, and of adaptation at community and country levels to ensure local relevance and applicability⁶⁷.

60 <http://www.fao.org/3/a-i5499e.pdf>

61 https://www.wur.nl/upload_mm/c/c/1/d282c21f-4053-4742-8888-bd91e04d320f_Towards_CAFP_LR.pdf

62 <http://www.un.org/sustainabledevelopment/hunger/>

63 <http://www.fao.org/3/a-i5499e.pdf>

64 <https://ec.europa.eu/jrc/en/research-topic/global-food-security>

65 <http://www.unep.org/resourcepanel/AreasofResearchPublications/AssessmentAreasReports/Food/tabid/133335/Default.aspx>

66 <http://www.fao.org/3/a-mr119e.pdf>

67 <http://www.fao.org/3/a-i5499e.pdf>



According to FAO, two elements are fundamental in order to achieve substantial and rapid progress towards global food security: (1) coherence and convergence among policies and programmes of countries, donors and other stakeholders when addressing the underlying causes of hunger and (2) recognition of the human rights dimensions in relation to food security. An increasing number of countries have now included the right to adequate food in their national constitutions, national laws and strategies and in policies and programmes that aim to fulfil the right to adequate food for all.⁶⁸

6.2 Challenges and dilemmas

Achieving sustainable food security in a world with a growing population, changing diets and a changing climate is a major challenge. Food consumption is related to health issues - increasing rates of obesity and excess weight⁶⁹ - and to issues related to the climate and the environment. The increasing consumption of animal products, linked to more wealth in upcoming and developing economies, has an impact on our planet. Raising awareness of the resource-intensity of food products and the need to reduce food loss and food waste is needed.

More food is needed in the future, but climate change means less food production potential and poor people will be most affected by this. Climate-related crop failures, fishery collapses and livestock deaths already cause

68 <http://www.fao.org/right-to-food-around-the-globe/en/>

69 <http://www.who.int/mediacentre/factsheets/fs311/en/>

economic losses and undermine food security and such occurrences are likely to become more severe as global warming continues⁷⁰. The global food system will need to feed a growing and more affluent population while simultaneously preserving sensitive ecosystems, competing for limited natural resources, increasing agricultural productivity growth while mitigating and adapting to climate change and other threats and contributing to rural well-being. OECD has developed scenarios that highlight the fundamental uncertainties surrounding forward-oriented decision making and point to the crucial importance of international cooperation across multiple policy areas⁷¹. The World Bank recently recommended the implementation of agriculture and food production practices that secure a triple win: boosting productivity, enhancing resilience and lowering greenhouse gas emissions (GHG) – these three pillars form the basis of Climate-Smart Agriculture (CSA)⁷².

As the demand for food grows, there is an increasing competition for resources; energy production, agriculture, fisheries, forestry and other sectors have unpredictable impacts on livelihoods and the environment. Large-scale water infrastructure projects, for instance, may have synergetic impacts, producing hydropower and providing water storage for irrigation and urban uses. However, this might occur at the expense of downstream agro-ecological systems and with social implications such as resettlement.

70 <http://www.cgiar.org/about-us/our-programs/cgiar-research-program-on-climate-change-agriculture-and-food-security-ccafs/>

71 http://www.oecd-ilibrary.org/agriculture-and-food/alternative-futures-for-global-food-and-agriculture_9789264247826-en

72 <http://www.worldbank.org/en/topic/agriculture/publication/shaping-a-climate-smart-global-food-system>



Similarly, growing bioenergy crops in an irrigated agriculture scheme may help improve energy supply and generate employment opportunities, but it may also result in increased competition for land and water resources with impacts on local food security. In this context, the Water-Energy-Food Nexus has emerged as a useful concept to describe and address the complex and interrelated nature of our global resource systems on which we depend to achieve different social, economic and environmental goals⁷³.

Wageningen UR⁷⁴ has shared new insights and solutions regarding the European food and agricultural system for the future. Five challenges have been identified: food and nutrition security and safety, climate change and water & energy use, reducing ecological impacts, healthy diet for a lifelong healthy lifestyle and tackling inequality in the world, in Europe and in the agricultural sector. Five intertwined innovation areas could address these challenges as well as add further complexity and societal debate: new animal and plant breeding techniques (genetics), digitalisation and big data, energy and bio-based transitions, redesigning the food chain and social innovations.⁷⁵ The Oxford Martin Programme on the Future of Food is another important research institute that addresses the challenges of feeding the global population sustainably, healthily and equitably, whilst considering the trade-offs and synergies between health, environmental sustainability and economic development⁷⁶.

73 http://www.fao.org/nr/water/docs/FAO_nexus_concept.pdf

74 http://www.wur.nl/upload_mm/c/c/1/d282c21f-4053-4742-8888-bd91e04d320f_Towards_CAFP_LR.pdf

75 http://www.wur.nl/upload_mm/c/c/1/d282c21f-4053-4742-8888-bd91e04d320f_Towards_CAFP_LR.pdf

76 <http://www.oxfordmartin.ox.ac.uk/research/programmes/future-food>

The International Panel of Experts on Sustainable Food Systems (IPES-Food), co-chaired by Olivier de Schutter, former Special Rapporteur on the right to food, has developed a food systems lens which focuses on interconnections, feedback loops, power imbalances and political lock-ins at the systems level⁷⁷. IPES-Food strives for a paradigm shift from industrial agriculture to diversified agroecological systems and a growing role for urban farming in feeding the rapidly urbanising world population. They highlight the state of concentration in agrifood systems with respect to recent corporate mergers; this was also touched upon by Janez Potocnik, co-chair of the International Resource Panel-UNEP, during the Cork2-conference 2016⁷⁸. Some of these ideas - such as agro-ecology and urban farming - are also touched upon in the ESPC Strategic Note 'Sustainability Now! A European Vision for Sustainability' by Karl Falkenberg⁷⁹.

The question arises whether these different perspectives will be able to deliver increased production using fewer resources and emitting less greenhouse gas emissions. There is a debate about the role of European agriculture in fulfilling this need to increase production to feed the world: should we produce more trying to use fewer resources or should we use fewer resources trying to produce more? Will we find the right balance? The circular economy paradigm as presented by the Ellen MacArthur Foundation shows a possible way out. In the circular economy, a synergetic relationship between the ecological and economic system is created

77 <http://www.ipes-food.org/reports>

78 http://ec.europa.eu/agriculture/events/2016/rural-development/potocnik_en.pdf

79 http://ec.europa.eu/epsc/pdf/publications/strategic_note_issue_18.pdf



whereby a balance is struck between efficiency & streamlining on the one hand and diversity & interconnectivity on the other. Fostering this balance creates resilience, the Ellen MacArthur Foundation states⁸⁰.

6.3 Emerging and wicked issues

Robustness of the food system

Geopolitical developments (partly in anticipation of the expected scarcity of natural resources) and more extreme weather conditions create a more volatile environment. The increasing concentration of companies and a decreasing variety of crop species, livestock and ecological systems used for food production pose risks to the robustness of the food supply system. Complex interdependencies within the food system need to be taken into account.⁸¹

Climate-smart and resource-smart agriculture

Globally, ecosystem services supporting food production are often under pressure. 33% of soils in the world are degraded, 60% of global terrestrial biodiversity loss is related to food production and food systems across the world account for 24% of the global GHG emissions. A new form of climate-smart and resource-smart agriculture is needed.

80 <https://www.ellenmacarthurfoundation.org/circular-economy/interactive-diagram/efficiency-vs-effectiveness>

81 http://www.wrr.nl/fileadmin/en/publicaties/PDF-samenvattingen/Synopsis_Report_93_Towards_a_food_Policy_DEF.pdf

Data-driven innovations in relation to unequal power of actors

Ownership of and access to data, access to future markets, the balance of power between farmers, companies and the government and the need for open knowledge systems are issues that need further attention in order to create an environment conducive to the implementation of SDGs⁸².

Healthy and sustainable diets

Facilitating consumer choice towards sustainable and healthy diets, reducing food waste throughout the entire food chain and creating awareness about resource-intensive food products is an interrelated issue that is ongoing, but still very relevant.

82 https://www.oecd.org/tad/events/Session%202_Krijn%20Poppe%20OECD%20Big%20Data.pdf



7 GREEN ECONOMY

7.1 State of play

Green economy: living well within the planet's limit

The concept of the 'green economy' has emerged in recent years as a strategic priority for governments and intergovernmental organisations to meet the financial and economic crises and global environmental challenges. Various international initiatives – UNEP, World Bank, OECD – have now been brought together in the Green Growth Knowledge Platform (GGKP), a global network of international organisations and experts that identifies and addresses major knowledge gaps between green growth theory and practice⁸³.

In Europe, the green economy concept has been integrated in a range of medium-term and long-term EU programmes and strategies, including the Europe 2020 Strategy, the 7th Environment Action Programme, the EU Framework Programme for Research and Innovation (Horizon 2020) and sectoral policies in areas such as transport and energy. The growing prominence of the green economy in EU policy reflects a recognition that the prevailing international economic growth paradigm is inconsistent with Europe's long-term development goals, encapsulated in the 2050 vision of 'living well within the limits of our planet'⁸⁴.

⁸³ <http://web.unep.org/greeneconomy/what-we-do/green-growth-knowledge-platform>

⁸⁴ <http://www.eea.europa.eu/soer-2015/europe/green-economy>

Natural resources, raw material flows and volatile world markets

Natural resources are part of the ecosystems that support the provision of services such as climate regulation, flood control, natural habitats, amenities and cultural services that are necessary to develop man-made, human and social capital. Natural resources also provide essential inputs to production. Apart from production, the extraction, processing and ultimate disposal of materials are important sources of income and employment in many countries. The way natural resources and materials are managed throughout their life-cycle is associated with environmental pressures (such as pollution, waste, habitat disruption) and affects environmental quality (for example air, climate, water, soil, biodiversity, landscape), ecosystem services and human health. In the last decades, there has been an unprecedented growth in demand for raw materials worldwide, driven in particular by the rapid industrialisation of emerging economies and continued high levels of material consumption in developed countries. International commodity markets have expanded, with increasing mobility of production factors and closer linkages among countries and regions. This has been accompanied by highly volatile commodity prices and growing competition for some raw materials. Therefore, to be successful, economic policies need to be founded on a thorough understanding of the material basis of the economy, international and national material flows and the factors that drive changes in natural resource use and material productivity over time, across countries and in the different sectors of the economy.⁸⁵

⁸⁵ http://www.oecd.org/greengrowth/MATERIAL%20RESOURCES,%20PRODUCTIVITY%20AND%20THE%20ENVIRONMENT_key%20findings.pdf



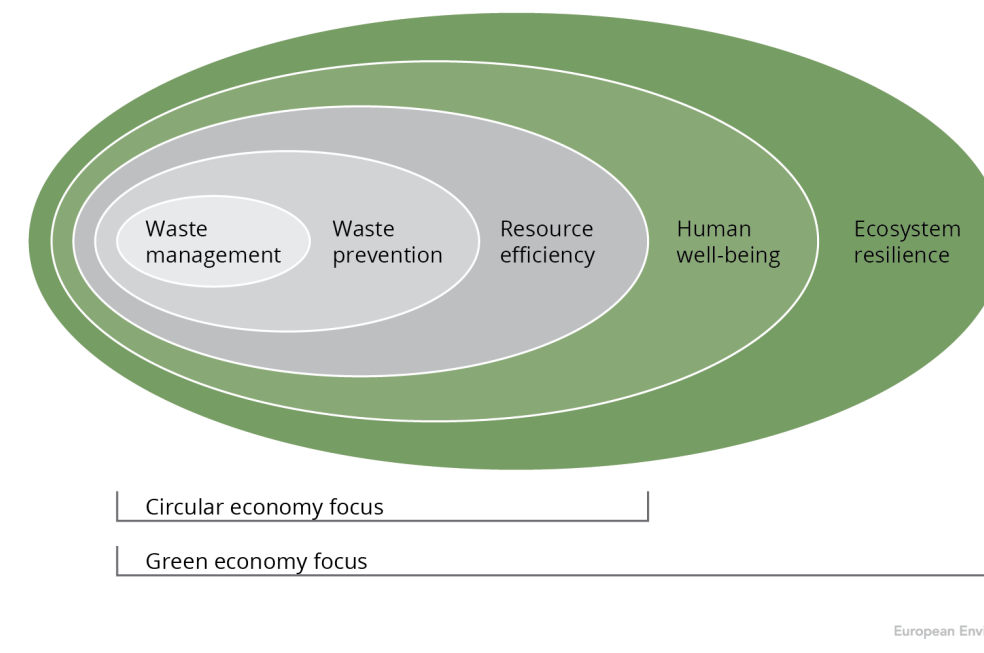
From a linear towards a circular model

The last 150 years of industrial evolution have been dominated by a one-way or linear model based on the principle of 'take-make-waste'. In the face of sharp volatility increases across the global economy and proliferating signs of resource depletion, the call for a new economic model has increased. The quest for a substantial improvement in resource performance across the economy has spurred companies to explore ways to re-use products or their components, preventing the use of raw materials and retaining more of their precious energy and labour input. The economic benefit of transitioning to this new business model is estimated to be worth more than one trillion dollars in material savings worldwide, according to the World Economic Forum⁸⁶. A circular economy is defined as 'an economic and industrial system that takes the reusability of products and raw materials and the resilience of natural resources as a starting point, minimises the destruction of value throughout the entire system and strives for the creation of value in each link of the system'.⁸⁷

86 <http://reports.weforum.org/toward-the-circular-economy-accelerating-the-scale-up-across-global-supply-chains/1-the-benefits-of-a-circular-economy/>

87 <https://www.ellenmacarthurfoundation.org/circular-economy/interactive-diagram/efficiency-vs-effectiveness>

Figure 2: The green economy as an integrating framework for policies on material use



Green and circular economy

The green economy can be seen as an integrating framework for policies on resource management. Creating a green economy will require fundamental changes to the production-consumption systems that meet basic demands, such as for food, mobility, energy and housing. This is dependent on a better implementation and integration of environmental and economic policies, a broader knowledge base for long-term transitions and the use of finance and fiscal policies to support major investments in innovation and infrastructure⁸⁸.

88 <http://www.eea.europa.eu/soer-2015/europe/green-economy>



A green and circular economy offers advantages that require the support and alignment of the social agenda (labour), the education/ innovation agenda (new skills), the financial agenda (fiscal change) and the economic development agenda (independence, competitiveness) as well as the environmental agenda (waste regulations, environmental goals). The circular economy is a fundamental approach to our economy, but the advantages will only be harvested if we are willing to set goals and follow an aligned enabling strategy. Failure to do so means the circular economy will have little impact and the intended strengthening of the economic power of our region will not be achieved⁸⁹.

7.2 Challenges and dilemmas

From wish to practice

To realise a circular economy, a transition is needed involving different actors at different levels. There is no lack of theory and initiatives. Now, these initiatives need to be brought into practice. The key challenge is to evolve from wish to practice⁹⁰.

Vested interests

Dilemmas include overcoming vested interests (stranded assets and internalising environmental costs) and fragmentation in diverse circular initiatives and arriving at a systematic and coherent approach towards a circular economy. Public authorities can in their own procurement seek

⁸⁹ http://en.rli.nl/sites/default/files/input_eesc_on_european_circular_economy.pdf

⁹⁰ <http://en.rli.nl/publications/2015/advice/circular-economy-from-wish-to-practice>

to purchase goods, services and works that stimulate the transition to a circular economy and reduce the environmental impact throughout the product life-cycle. However, purchasing policies are often led by cost-reduction principles rather than sustainability and cost of ownership thinking.

Carbon lock-in

The 'carbon lock-in' hypothesis proposes that modern industrial economies have put in place strong stabilising forces that reinforce dominant technologies with a built-in commitment to high emissions. Environmental externalities arising from climate change are accompanied by a network externality that leads to underinvestment. To address environmental and climate challenges, lock-ins must be overcome. For that to happen, societies must pursue, and governments must promote, novel technological and societal changes with uncertain benefits. Such a path requires experimentation and learning-by-doing; consequently, changes must be made through intentional, policy-driven efforts that increase uncertainties for private investors and citizens.

Rapid changes are likely to be resisted by institutions, firms and individuals with a stake in the current socio-technological regime, as well as by those who do not want their lives disturbed and do not recognise the need for urgency. Actors invested in the current regime typically have considerable resources at their disposal that they can deploy to influence opinion and, in the case of a policy-driven transition, they can cast doubt on the benefits and political sustainability of the programme. A central issue



in a low-carbon transition is the economic, social and political role of fundamental uncertainty.⁹¹

7.3 Emerging and wicked issues

Green economy in a globalised system

The International Centre for Trade and Sustainability warns that unless producers upgrade, they will be consigned to a race to the bottom (that is, declining incomes and working conditions) or be excluded from Global Value Chains. The nature of international economic interdependence and competition has undergone fundamental changes as a result of the emergence and operations of global and regional value chains. Today, we live in a networked economy led by investment flows. Promoting a better understanding of the implications of Global Value Chains from a sustainable development and trade governance perspective has become a critical and emerging task.⁹²

Green finance

In October 2015, China announced that green finance would be a priority during its Presidency of the G20 in 2016. A G20 Green Finance Study Group reported to the G20 summit, putting the topic more firmly on the agenda. The G20 leadership then for the first time ever pleaded that financing environmentally sustainable growth - 'Green financing' - should be at the

⁹¹ Eric Kemp-Benedict (2014) STOCKHOLM ENVIRONMENT INSTITUTE <http://www.netfund.go.ke/images/2015/01/Shifting-to-a-green-econ.pdf>

⁹² http://e15initiative.org/wp-content/uploads/2015/09/E15_ICTSD_Global_Value_Chainreport_2016_1002.pdf

centre of economic development strategies. This emerging trend should not strand in governments' reflexes to sometimes resist addressing an emerging issue or even denying its relevance. The issues of green and climate finance need more attention, possibly also from the EEAC-councils.

The green race and corporate sustainability reporting

Green finance is expected to gain more momentum and emerging markets such as China are making major investments to green their economy. A 'green race' is emerging. National governments and regional blocks (such as the EU, China and the US) experience completion in their markets as well as in their regulations to foster sustainable solutions and environmental technologies. In the peer review of the German Sustainable Development Strategy, scientist warned that Europe is losing competitiveness in the 'green race'. A green economy constantly looks to and demands entrepreneurial practices that transform potential production and consumption areas. One way in which the European Union is aiming to strengthen this process is through the implementation of the EU Directive on Corporate Sustainability Reporting. Its national implementation (expected to start in 2017) will create new emerging challenges. Amongst others, the German Council for Sustainable Development has introduced a Sustainability Code for businesses. This Sustainability Code allows companies to demonstrate their commitment to sustainability to investors and consumers in a way that is transparent, comparable and thus clear. The code has attracted great interest in Europe, making the Europeanisation of the Sustainability Code a possible upcoming issue.



Tax reform and jobs

A shift towards a circular economy model, as laid down in the European Commission's Circular Economy Package, could open new employment opportunities and hence income for a wide variety of differently skilled workers. Transforming the growth model to foster innovation could also be an opportunity to reflect on the respective contribution of differently skilled forms of labour to our society. Different signals are given as to whether the introduction of a circular economy model would indeed be a major generator for job creation. However, there is consensus on the emerging need for fiscal change in order to boost the green economy and, in particular, the circular economy.

Labour taxes are high in most European countries, accounting for about 30 to 40 percent of total labour costs on average⁹³. On the other hand, the taxation of resources is rather low in Europe when compared to the taxation of labour. A lot of public debate has taken place on taxing labour less in comparison to other production factors. Although most Member States have started the debate surrounding a tax shift away from labour, few have actually effectively moved in this direction.

⁹³ http://siteresources.worldbank.org/INTECA/Resources/2578961182288383968/FiscalPolicy%26EconomicGrowthinECA_Ch9.pdf



8 TRANSPORT AND MOBILITY

8.1 State of play

According to the World Bank, transport and mobility are crucial drivers of global economic and social development and contribute to achieving the Sustainable Development Goals (SDGs). However, they also cause substantial adverse impacts on the global climate, the environment and human health. Transport accounts for 23% of worldwide CO2 emissions. With motorisation rates on the rise, that share is expected to grow dramatically. The Paris Agreement might turn out to be a useful framework to address the emissions by transport (and mobility). Despite their emissions, air traffic and international maritime transport however have not been included in the Agreement. Today, global urbanisation already shows alarming signs. In many cities, urban air pollution, largely linked to transport, kills an estimated 800,000 people each year. Furthermore, high mobility costs cut the disposable income of the poor and more than 1.2 million people are killed and up to 50 million are injured on the world's roads every year.

Transport policy has been one of the EU's common policies for more than 30 years. Alongside the opening-up of transport markets and the creation of the Trans-European Transport Network, the 'sustainable mobility' model

will take on even greater importance between now and 2020. There is a real urge for the EU to take measures. Transport is the only sector in the EU whose emissions have been rising since 1990 – by 22% in total – forcing European institutions to acknowledge that the transport sector threatens to jeopardise the European Union's efforts to achieve its climate goals.

With a set of policy initiatives, the EU aims to safeguard fairly priced and efficient transport and mobility whilst minimising external costs such as road accidents, respiratory diseases, climate change, noise, environmental damage or traffic congestion. Despite all the efforts made, the European transport policy still faces many challenges in the area of sustainability, particularly in relation to the combating of climate change.

The 2011 White Paper on Transport recommends a 20% reduction in transport emissions (including those from international aviation, but excluding international maritime transport) between 2008 and 2030 and a reduction of at least 60% between 1990 and 2050. The White Paper urges that sustainable, low-carbon fuels should account for 40% of fuel consumption in aviation by 2050; furthermore, a 50% shift away from conventionally fuelled cars in urban transport should be achieved by 2030, with the aim of phasing them out totally by 2050⁹⁴.

⁹⁴ http://www.europarl.europa.eu/RegData/etudes/fiches_techniques/2013/050601/04A_FT%282013%2905060_EN.pdf



8.2 Challenges and dilemmas

Rapid global urbanisation drives the need for safer, cleaner and more efficient and accessible transport systems that reduce congestion and pollution, facilitate access to jobs and lower transport-related energy consumption.

The transport and mobility sector has now joined the global discussions on sustainable development and climate change. The World Bank sees a challenge in this to strengthen its vision with accountability. Success in establishing a tracking framework will require bringing together all interested parties that are active in this field and delivering a truly multi-stakeholder initiative.

The mobility system in general and the transport sector in particular are drivers and drags for the European Union as it faces a combination of challenges. Transport will fuel the modernisation of the economy and is a key source of European employment, but it also tops the ranking of polluters.

Transport represents almost a quarter of Europe's greenhouse gas emissions and has not seen the same rate of decline in emissions as other sectors. EU transport is responsible for 33% of the final energy consumption (353 MTOE) and for 23% of total EU emissions (excluding international maritime transport)⁹⁵.

⁹⁵ [http://ec.europa.eu/transport/themes/strategies/news/doc/2016-07-20-decarbonisation/swd\(2016\)244.pdf](http://ec.europa.eu/transport/themes/strategies/news/doc/2016-07-20-decarbonisation/swd(2016)244.pdf)

At the EU level, new rules will require Member States to build minimum numbers of recharging and refuelling points to promote the use of cleaner transport such as electric and hydrogen cars and gas-powered trucks, barges and ships. These and other measures aim to reduce the EU's transport overdependence on oil and reach a low carbon mobility in major urban centres by 2030. Cycling and the eBike are mentioned in a number of EU policies; not surprising, as research clearly shows the social, economic, environmental and health benefits of urban cycling⁹⁶.

However, the need to improve urban transport, the global initiatives to arrange accountability and the policy options displayed at the European level require far reaching change. These challenges will change the way in which transport and mobility are organised within our economies and societies and will require changes in the way governments, the private sector and civil society decide, plan and act.

8.3 Emerging and wicked issues

A successful sustainable mobility strategy requires a systemic approach which acts at the point of convergence between technology, infrastructure financing, multi-modal mobility and public-private partnerships⁹⁷. This creates wicked problems, not only for governments but also for the private sector, and needs to be seen within the broader international and political context of changing borders.

⁹⁶ <https://www.wired.com/2015/06/copenhagenize-worlds-most-bike-friendly-cities/>

⁹⁷ http://ec.europa.eu/epsc/pdf/publications/strategic_note_issue_17.pdf



New technologies

Although new technologies are considered drivers for change and are often seen as part of the solution for future challenges, complex issues in the shadow of technological advancement need to be confronted. The impact of low-emission alternative energy for transport, such as advanced biofuels, renewable electricity and renewable synthetic fuels, on nexus-issues needs to be taken into consideration. Markets are being disrupted by companies offering cheap transport alternatives – e.g. Über – but at the cost of putting taxi drivers out of a job. The self-driving car is expected to have unpredictable effects on the transport system, both at the local level and on the EU transport system on the whole: more efficiency and lower costs, but also reduced employment opportunities and completely new ethics, values and legal questions.

Cities and local authorities

Cities and local authorities are crucial for implementing incentives for low-emission alternative energies and vehicles, encouraging modal shifts to active travel (cycling and walking), public transport and/or shared mobility schemes, such as bike, car-sharing and car-pooling, to reduce congestion and pollution⁹⁸.

98 http://ec.europa.eu/transport/themes/strategies/news/2016-07-20-decarbonisation_en.htm

A unified and inclusive trans-European transport network?

The EU transport and mobility system creates a Connected Europe; it facilitates the free movement of persons and goods, thus lowering any transaction costs, be it monetary or otherwise. This system is under pressure by developments such as the Brexit and the refugee crisis. The Schengen Area is once again the subject of discussion and this could possibly undermine the strength of the EU as a single economic block⁹⁹. The ultimate goal of a unified trans-European transport network suffers the risk of being delayed¹⁰⁰.

99 http://www.realinstitutoelcano.org/wps/portal/web/rielcano_en/contenido?WCM_GLOBAL_CONTEXT=/elcano/elcano_in/zonas_in/commentary-lisa-after-brexit-schengen-balance-shall-not-be-neglected

100 <http://www.europeaninstitute.org/index.php/ei-blog/276-february-2016/2129-can-the-schengen-agreement-survive-the-eu-refugee-crisis-2-18>



APPENDIX I: OVERVIEW OF THE MOST RELEVANT GLOBAL AND EUROPEAN POLICY AGENDAS FOR THE MEDIUM TO LONG TERM

Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
<u>Agenda2030</u>	<p>Sustainable Development</p> <p>Marine and Fresh Water</p> <p>Built environment</p> <p>Environment and climate</p>	The High-level Political Forum on Sustainable Development	<p>The High-level Political Forum on Sustainable Development will meet on an annual basis to follow up on and review progress on the 2030 Agenda.</p> <p>Every four years (next event 2017), the High-level Political Forum (HLPF) will meet at the Heads of State and Government level.</p> <p><u>HLPF-agenda for the next three years:</u> 2017: 'Eradicating poverty and promoting prosperity in a changing world'; 2018: 'Transformation towards sustainable and resilient societies'; 2019: 'Empowering people and ensuring inclusiveness and equality'.</p>	<p>Implementing the Sustainable Development Goals (SDGs) in their entirety; reaching out to the most vulnerable; better data collection; mobilising resources at the national and international level; and coordination, coherence and integration¹⁰¹</p>

¹⁰¹ <http://unstats.un.org/sdgs/report/2016/>



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
<u>UN Conference on Climate Change</u>	<p>Climate (adaptation and mitigation) Transport and Traffic</p> <p>Agriculture and Environment</p> <p>Energy</p>	<p>Working Group on the Paris Agreement supported by UNFCCC</p> <p>UN Conferences of the Parties (United Nations Framework Convention on Climate Change)¹⁰²</p> <p>IPPC</p>	<p>COP 22 in Marrakech, November 2016</p> <p>Climate agreement (COP21) enters into force on 4 November 2016.¹⁰³</p> <p>First stocktaking will focus on ensuring the coming into force of the Paris Agreement; to be expected: 2023</p> <p>Strengthening action on mitigation and adaptation by all Parties before 2020; (Mobilising finance, technology and capacity-building support before and after 2020);</p>	<p>Environmental records shattered and process of climate change developing much faster than anticipated.¹⁰⁴</p> <p>Role of China and US after their ratification Paris Agreement on 3 September 2016.</p> <p>Cities will play a major role in successful implementation¹⁰⁵</p> <p>Peak in coal usages is expected to be reached earlier than expected¹⁰⁶</p> <p>Societal pressure is expected to ensure that countries will try to live up to expectations¹⁰⁷</p> <p>Role of legal accountability of states (Urgenda case)</p> <p>Political escape to be used to postpone harsh measures and the expected technical advancement to enable climate mitigation.¹⁰⁸</p>
<u>Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets</u>	<p>Biodiversity and Environment</p> <p>Marine and Water</p> <p>Agriculture</p>	<p>Convention on Biological Diversity</p>	<p>Archi targets, decade of biodiversity will end in 2020.</p> <p>COP 13 will be held in Cancun, Mexico, in December 2016</p> <p>Global Biodiversity Outlook 4, published in 2014. Next edition expected in 2020. In addition, IPBES will conduct assessments between now and 2019.¹⁰⁹</p>	<p>COP 13 of the Convention on Biological Diversity (CBD) will focus on Biodiversity Mainstreaming: the embedding of biodiversity considerations into policies, strategies and practices of key public and private actors¹¹⁰.</p>

102 http://ec.europa.eu/environment/international_issues/relations_hlpf_en.htm

103 <http://unfccc.int/2860.php>

104 https://www.climate.gov/news-features/features/2015-state-climate-highlights#wows1_3

105 <http://eeac-network.eu/wp-content/uploads/2016/04/Cop21-a-counter-in-climate-policy-a-Column-and-Mainline-Summary.pdf>

106 <https://www.theguardian.com/environment/2016/jul/25/china-coal-peak-hailed-turning-point-climate-change-battle>

107 <http://eeac-network.eu/wp-content/uploads/2016/04/Cop21-a-counter-in-climate-policy-a-Column-and-Mainline-Summary.pdf>

108 <http://www.bloomberg.com/news/articles/2016-08-02/germans-hesitate-on-coal-phase-out-target-in-merkel-policy-paper>

109 See UNEP/CBD/COP/13/20, 7 September 2016 <https://www.cbd.int/doc/?meeting=cop-13>

110 <http://www.idlo.int/sites/default/files/pdfs/events/Framing%20paper%20IDLO%20Event%2010%20June.pdf>



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
UN-Habitat	<p>Spatial Planning and the Built Environment</p> <p>Demography, Environment</p> <p>Sustainable development (SDG#11)</p> <p>Resilience</p>	UN-Habitat, (the UN Human Settlements Programme)	<u>Habitat III</u> conference, including the establishment of a new urban agenda, to be held in Quito, Ecuador, from 17 – 20 October 2016.	<p>Trend of urbanisation is expected to continue in the form of (1) mature cities or city districts, (2) newly planned cities or city districts, and (3) informal settlements¹¹¹</p> <p>Identified issues for the developed world: migration, affordability, emissions and health, climate changes adaptation.</p> <p>Identified issues for the developing world: poverty (inequality), security, health, climate adaptation and resilience.</p> <p>What is new: acknowledgement of the crucial role of cities for the future of sustainable development.</p>
UN food security	Food, Resilience, Agriculture	<p>FAO (Food and Agriculture Organisation), High level UN task force on food and food-related issues.</p> <p>Committee on Food Security</p>	<p>The HLTF Coordination Team established and supported five working groups on each of the Zero Hunger Challenge elements in 2015. The Working Groups are expected to start their work in the course of 2016.</p> <p>CFS has launched an <u>open inquiry on critical and emerging issues in the area of food security and nutrition</u> (final date 6 October 2016)</p>	<p>Work on food security is expected to be closely related to Agenda2030¹¹² including cross silo (nexus) approach and ever growing interdependencies¹¹³</p> <p>Preliminary list of <u>critical and emerging issues</u> for food security and nutrition:</p> <ol style="list-style-type: none"> 1. Healthy nutrition in changing food systems 2. Livestock systems and food security and nutrition: challenges and opportunities 3. Inequalities and food security and nutrition: the imperative of addressing the needs of disadvantaged and vulnerable populations 4. The increasing role of financial markets in food security and nutrition

111 <http://www.wbgu.de/en/flagship-reports/fr-2016-urbanization/>

112 <http://www.un.org/en/issues/food/taskforce/pdf/ZHC%20ANs-%20All%20Merged%20Rev%20May%202016.pdf>

113 http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/Critical-Emerging-Issues-2016/HLPE-2016-Critical_and_Emerging_Issues_6-August-2016_Concept_-_Process-Note_EN.pdf



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
Food (sustainability, security and resilience)	Food Agriculture Water Environment Biodiversity Energy	FAO	FAO is expected to work on several focus points during the 2015 – 2020 period.	The overarching challenge is how to ensure food security and nutrition for an increasing world population, now and in the future, from limited and diversely available resources, given social and economic imbalances, unequal access to resources and distribution of potential for economic growth income, purchasing power ¹¹⁴ and severe impact of climate change ¹¹⁵ In more detail: financial markets worldwide are increasingly influencing land transactions, agricultural production decisions, rural credit provision, risk insurance and commodity pricing as well as food distribution and retail
UN Fresh Water and Sanitation	Fresh Water Sustainable Development	UN Water	In 2015, UN Water discontinued two major projects: The Water for Life project and the Sanitation for All project. ¹¹⁶ The annual SDG monitor conference 2017.	For now, UN focuses on ‘ensuring availability and sustainable management of water and sanitation’ Effects of climate change on water supply and sustainable water management Transboundary waters ¹¹⁷
Global NCD Action Plan (2013-2020)	Food and agriculture	World Health Organisation	3rd UN High-level Meeting on NCDs in 2018 The plan will end in 2020 after a seven-year period.	<u>In July 2016, the WHO raised the priority given to NCDs in national SDG responses</u>

114 <http://www.fao.org/documents/card/en/c/d607b4f6-9e13-45ea-aaa6-c6d1885c27ff/>

115 <http://www.oxfordmartin.ox.ac.uk/news/2016-03-Food>

116 <http://www.unwater.org/campaigns/en/>

117 <http://www.unwater.org/activities/ar/>



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
Green Economy	Sustainable development, Energy and Climate Change, Natural resources	GGGI , UNEP , OECD , UN SDGs et al.	Green economy is on the agendas of governments, the scientific community, knowledge platforms, the business community, trade unions, NGOs. Overview international organisations involved in green economy	Implications Global Value Chains (GVCs) Green finance Corporate Sustainability Reporting Tax reform
Sustainable Financing	SDGs Climate actions Biodiversity	Initiative by UNEP FI	Global Round table UNEP FI In Dubai, 25&26 October 2016 #GRT2016 G20 Finance Ministers and Central Bank Governors Meeting 24 October 2016 in Chengdu	What is new: financial sector as driver of SD, importance of technology innovations and accelerated transition, better quantification of environmental and social risks. What is new: G20 states for the first time that 'green finance' – financing environmentally sustainable growth – should be at the centre of economic development strategies
Circular Economy				A circular economy is restorative and regenerative by design, and aims to keep products, components and materials at their highest utility level and value at all times, distinguishing between technical and biological cycles



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
World Bank	Agriculture, Sustainable Development, Energy and Climate Change	World Bank	Growth prospects have weakened throughout the world economy, according to the June <u>2016 <i>Global Economic Prospects</i></u> . From 2016 on, <u>the World Development Indicators</u> will help to measure the 169 targets of the 17 Sustainable Development Goals (SDGs).	SDGs & Climate agreement appear to become leading in work of World Bank in several areas such as poverty, water, climate change, food and agriculture, transport etc. However, only a few of these targets can currently be tracked and measured completely. Investing in public statistical systems and strengthening partnerships with the private sector and emerging actors for advancing new techniques for data collection, analysis and use is needed.
UNISDR	External safety and resilience	UNISDR	The Hyogo Framework ended on 2015 and has a successor instrument in the form of the agreement of the <u>Sendai Framework for Disaster Risk Reduction</u>	Strong emphasis on disaster risk management as opposed to disaster management. Whereas previously it was often a primary responsibility of states to prevent and reduce disaster risk, now all-of-society and all-of-State institutions engagement is expected to become leading. Strong link to the 17 SDGs (10 of the 17 have targets related to risk) and the Paris Agreement on Climate Change.
International Energy Agency	Energy and climate change	IEA	The annually presented Energy Outlooks of the IEA are always considered leading in the energy field. The next Outlook will be presented in 2017.	Divestment, shifting focus from fossil fuels towards renewable energy. What will be the role of nuclear?



Global Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the period 2017-2020
WTO and Trade agreements (TTIP, TPP)	Agriculture, Energy, environment	WTO DG Trade Council of Ministers	In 2015, the 10th ministerial Conference in Nairobi took place and the <u>20th anniversary of WTO</u> 15th round of TTIP negotiations On the EU side, ministerial discussions in Bratislava in September 2016	How can the WTO play a role in the implementation of SDGs, (e.g. indicators for monitoring and assessing trade agreements, values in dispute settlement) and in supporting development and building trade capacity? Increasing criticism from the general public. Growing distrust. ¹¹⁸ Political signal: TTIP is a means to enhance ability to influence globalisation in accordance with our values. ¹¹⁹ Questionable whether Obama administration will finish TTIP talks. What will happen if Trumps wins US elections? What will happen with private arbitration tribunals planned under TTIP? ¹²⁰

118 <https://global.handelsblatt.com/edition/159/ressort/politics/article/is-the-ninth-time-the-charm>

119 http://ec.europa.eu/trade/policy/in-focus/ttip/documents-and-events/index_en.htm#_videos

120 http://www.umweltrat.de/SharedDocs/Pressemitteilungen/EN/CurrentPressReleases/2012_2016/2016_02_Nr_10_PM_TTIP.html?nn=396872



EU Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the 2017-2020 period
Next steps for a sustainable European Future	17 SDGs cover all relevant policy domains	DG ENV, DEVCO et al. <u>EESC</u>	The EU made a positive and constructive contribution to the development of the <u>2030 Agenda for Sustainable Development</u> . Next steps after 'Sustainability Now!' will follow, <u>but when?</u>	Is there a tendency to look at the implementation of the SDGs as a call for <u>strengthening global commitment, in combination with a further integration of environment in other policy fields?</u> And is the call to place the SDGs at the heart of a new European Strategy being overlooked? What will the broader political framework look like that will shape the <u>MFF review?</u>
<u>Circular Economy Package</u>	Circular economy, Environment, Resources (efficiently)		The circular economy package includes a set of policy fields (e.g. waste, product design, re-use) which will be developed in the period 2015 to 2019. ¹²¹ The Parliament and Council of Ministers is expected to vote on the amendments of different waste directives (as part of the Circular Economy Package) in the course of 2016-2017.	The Council of Ministers was largely positive about the initiative; nevertheless, it is expected that some countries wish to have derogation possibilities on e.g. waste directives. Specialists and experts consider the upcoming four to five years critical since the circular economy is now moving from the drawing tables to practice. The success or failure of its implementation will more or less become visible in the next couple of years.
<u>EU Climate and Energy</u>	Energy, climate, environment, transportation	DG Energy, DG Industry, DG Climate	Meeting the 2020 targets. Current state of play: Annually, an update report is submitted. The latest dates from 2015. In the autumn of 2016 an updated version is expected	Complex negotiations on national effort sharing decisions ahead. Differences between 'old' and 'new' Europe are expected to become visible again. Questionable whether the ambitions of the commissions will actually be met. Green and environmental NGOs challenge the commission proposals to implement cop21, stating that it lacks ambition. Loopholes in EU legislation could damage European effort to contribute to 'well below 2 degrees' aim.

121 http://eur-lex.europa.eu/resource.html?uri=cellar:8a8ef5e8-99a0-11e5-b3b7-01aa75ed71a1.0012.02/DOC_2&format=PDF



EU Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the 2017-2020 period
Economic and Monetary Union (EMU)	Housing and economics	5 presidents (European Council, Euro Group, ECB, and EP)	Stage 1, 1 JULY 2015 - 30 JUNE 2017 Stage 2 after 2017 Final stage in 2025 at the latest.	How will monetary union develop in light of increasing euro scepticism? Set of identified focal points for 2017 and beyond, including the creation and finalisation of an Economic, Financial, Fiscal, and Political Union ¹²²
Internal Market	Cross-sectoral	European Parliament Council for the European Union European Commission DG Trade and SMEs	In 2017, the Commission will present a legislative proposal for a definitive VAT system for cross-border trade. ¹²³	How will the relation between Great Britain and the internal market be after GB leaves the European Union? Taxation issues (fair taxation, single EU VAT area) expected to be important in internal/single market policies in upcoming period ¹²⁴ (labour) migration vs. freedom of persons in single market
Europe 2020	Energy, transportation, biodiversity, agriculture, spatial and economic planning	European Council, Council of the EU, EC, EP, EIB	Final stage of Europe2020 is 2020. In July 2016, the EC provided country-specific recommendations for 2016 and 2017. A growth survey is annually published. Regarding flagship initiative 'resource-efficient Europe' several initiatives are about to end in 2020 (Energy2020, Energy Efficiency, Biodiversity, Bio-based Economy) whereas other initiatives have a 2050 horizon (Energy Roadmap, Low-carbon Economy)	European Commission will most likely focus on structural reforms at member state level to strengthen economic growth. Stronger focus on employment and social performance. E.g. taxation rates on labour are expected to be brought down. ¹²⁵

122 http://ec.europa.eu/priorities/sites/beta-political/files/5-presidents-report_en.pdf

123 http://ec.europa.eu/taxation_customs/taxation/vat/action_plan/index_en.htm

124 http://europa.eu/rapid/press-release_IP-16-1022_en.htm

125 http://ec.europa.eu/europe2020/pdf/csr2016/csr2016_eecom2016_en.pdf



EU Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the 2017-2020 period
Horizon2020	Cross-sectoral	European Commission	First Horizon 2020 monitoring is published in 2016. The report describes the 2014-2015 period. The next report is expected to be issued in 2017. The project will end in 2020 after a seven-year period in which 80 billion euro has been made available.	Horizon fits the global trend of excellence, internationalisation and economisation of scientific work.
Smart and better Regulation	All policy domains	European Parliament, the European Council, the European Commission, Member States and stakeholders	2015 review of REFIT Programme ¹²⁶	UK exit could further strengthen REFIT en improved regulation initiatives during last years of Juncker Commission. It is not expected that deeper integration (through additional laws) will accrue. Interesting to see how Parliament will react to improved regulation. There are signals that Parliament wishes 'more work' and therefore is aiming for more initiatives, in contrary to EC aims to reduce policy initiatives.
<u>EU regional policies</u>	Environment, transportation, sustainable development, energy	Directorate-General for Regional and Urban Policy	Current policy package ends in 2020 (started in 2014) ¹²⁷	The investment framework to meet the goals of the <u>Europe 2020 Strategy</u> for <u>smart</u> , <u>sustainable</u> and <u>inclusive</u> growth in the European Union.
Territorial Agenda	Demography, environment, energy, transportation, SD.	<u>ESPON</u>	Current policy package ends in 2020 (started in 2014)	Cross-border cooperation between regions. Sectoral policies which have an impact on – non-EU policies- such as spatial planning. Demography challenges and developments important ¹²⁸

126 http://ec.europa.eu/smart-regulation/better_regulation/documents/swd_2015_110_en.pdf

127 <http://www.espon-usespon.eu/library?page=1>

128 http://www.espon-usespon.eu/dane/web_usespon_library_files/1224/territorial_agenda_of_the_european_union_2020.pdf



EU Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the 2017-2020 period
<u>Common Agricultural Policy</u>	Food, agriculture, environment, water, energy	DG Agri, DG Envi and fisheries	Measures for simplification of CAP were submitted in 2015 and will be implemented in 2016. Several subjects were amended by the European Commission, such as: direct payments, coupled support payments, simplified conditions for implementing the ecological focus area. ¹²⁹ Changes on greening of direct payments and market support expected to be made in the course of 2016 and 2017.	Simplification and better regulation. Shift focus from direct aid to rural development ¹³⁰ while others claim that the focus should move towards agriculture and food policies ¹³¹ Implementation of COP21 agreement and its effects on non ETS sector, agriculture Outcomes nature legislation fitness-checks
7th Environment Action Plan	Environment, biodiversity,	Member states and EU institutions (EC)	9 priority objectives set out are to be met by 2020. Includes several policy fields which have directives and/or regulations which have their own deadlines.	' <u>Living well within the limits of our planned</u> ' also focuses on sustainability in urban areas and is strongly connected to latest EU sustainability slogan 'Living Well and Sharing Fairly within Planetary Boundaries'.
Birds and Habitats Directives	Environment and biodiversity	DG Envi	Outcome report <u>Fitness check last quarter 2016</u> <u>Evaluation study</u> finalised in March 2016	Conclusion of evaluation was overall positive. Challenges lie in costs and burdens placed on authorities and stakeholders and the ability to simultaneously achieve the goals of other EU policies, especially in key economic sectors.

129 http://ec.europa.eu/agriculture/simplification/index_en.htm

130 <https://www.agra-net.com/agra/agra-europe/policy-and-legislation/cap/next-cap-should-shift-focus-from-direct-aids-to-rural-development-juncker-told-523400.htm>

131 <https://www.rijksoverheid.nl/actueel/nieuws/2016/05/21/van-dam-pleit-voor-gemeenschappelijk-landbouw-en-voedselbeleid>



EU Policy Agenda	Convergence with relevant policy domains	Responsible policy institutions and bodies	Important assessment moments	Emerging issues and signals of change in the 2017-2020 period
Water	Environment etc.	DG ENV	<u>White Paper on adapting to climate change</u> (2009) see <u>website for measures and studies</u> . Communication of the progress of the WFD and the Floods Directive (FD) in March 2016	<u>Water and its availability and quality</u> will be the main pressures on, and issues for, societies and the environment under climate change The <u>new circular economy package</u> . In particular, the commitment to develop a number of actions to promote further uptake of <u>water reuse at the EU level</u>
Marine and Maritime Policies	Environment etc.	<u>DG Maritime</u> <u>DG ENV</u>	<u>The Integrated Maritime Policy (IMP)</u> encompasses fisheries and aquaculture, shipping and seaports, marine environment, development of coastal regions etc. The <u>Marine Directive</u> aims to achieve Good Environmental Status (GES) of the EU's marine waters by 2020 and to protect the marine-related resource base.	The extent and location of the impacts of climate change is difficult to predict. What is the effect of ocean acidification on carbon sequestration and what are the consequential effects on the marine foodweb and ecosystems?
Mobility and transport	Transport and mobility etc.	DG Transport	<u>White Paper on Transport and the Single Market (2011, 202)</u> <u>A European Strategy for Low-Emission Mobility</u>	Raising awareness of the economic benefits of investing in safe, clean transport for people and companies.
Trade and Investment Strategy	Sustainable Development	DG Trade	<u>Trade for all</u>	Public debate around TTIP and public value Influence Global Value Chain on business strategies
Digital Single Market	Impact on all relevant policy fields	DG DIGIT, CNECT, GROWTH	The <u>Digital Single Market strategy</u> , adopted on the 6th of May 2015, includes 16 initiatives to be delivered by the end of 2016.	Disruptive and facilitating for development and growth, public debate necessary on issues concerning public value, trust and privacy



APPENDIX II: RESPONSIBILITY AND ACKNOWLEDGEMENT

Project team

Agneta Andersson, secretariat Rli

Anneke Koose-Verschoor, secretariat Rli

Michiel de Vries, MM.V-Consultancy

Consultees/contributors

Günther Bachmann, Secretary-General RNE

Gábor Bartus, Secretary-General NFFT

Dominique Blom, secretariat Rli

Mirjan Bouwman, secretariat Rli

Miklos Bulla, Secretary-General OKT

Nicole van Buren, secretariat Rli

Lianne Doeswijk, secretariat Rli

Lianne van Duinen, secretariat Rli

Folmer de Haan, secretariat Rli

Julia Hertin, Secretary-General SRU

Hannah Koutstaal, secretariat Rli

Jan Mertens, secretariat FRDO

Michiel Ooms, secretariat Rli

Yvette Oostendorp, secretariat Rli

Meritxell Rota Claret, secretariat CADS

Erik Schmieman, secretariat Rli

Bart Thorborg, secretariat Rli

Ton Wagenveld, secretariat Rli

Bas Waterhout, secretariat Rli

Douwe Wielenga, secretariat Rli



Publication Rli

November 2016

Design

Jenneke Drupsteen Grafische vormgeving, The Hague

ISBN 978-90-77166-65-9

NUR 740

Council for the Environment and Infrastructure

Bezuidenhoutseweg 30

P.O. Box 20906

2500 EX The Hague

The Netherlands

info@rli.nl

www.rli.nl

