EPSC Strategic Notes

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Sustainability Now!

A European Vision for Sustainability

European Political Strategy Centre

In securing 70 years of peace, the European Union offers the basis for sustainable development on this continent. The EU has created unprecedented wealth with its social market economy approach, building more egalitarian societies based on democracy and rule of law. Even when contested from within, the EU remains attractive to its neighbours.

Europe becomes aware of the limits of the Blue Planet and of the need for a fair share for all, notably the rapidly growing developing nations and the younger generation.

Europe needs to rediscover social market economy principles, including solidarity, and to match it 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 peace with nature: that is the challenge of sustainability.

This report seeks to assess the stakes, argues for new forms of governance and addresses a limited number of sustainability hotspots.

A European Brand

A sustainable society is one where economic growth is compatible with planetary boundaries and fairly distributed among its citizens. Europe has a track record for inclusive growth, somehow lost in the last decades. It needs to strive for a new vision: living well and sharing fairly within the limits of the planet.

Which Requires Governance

Sustainability is here to stay. It requires policy designs to shape the future, political awareness and new forms of governance based on participation, transparency and leadership.

Focus on Hotspots

Sustainability covers all aspects of living together. This report focusses on a limited number of hotspots, recognising the need for sustainability concepts to be applied throughout all policy-making.

Sustainability Now

The European model is being challenged from within, while still looking attractive for many people living in less favourable conditions. Europe therefore urgently needs to introduce sustainability concepts into its domestic and foreign policies.

EPSC Strategic Notes are analytical papers on topics chosen by the President of the European Commission. They are produced by the European Political Strategy Centre (EPSC), the European Commission's in-house think tank. This report has been drafted by Karl Falkenberg, Senior Adviser for Sustainable Development to the President of the European Commission.

Sustainability, A European Brand

"Logic will get you from A to B, imagination will take you everywhere. Only imagination has the power to make that paradigm "leap" necessary to design the future" - *Albert Einstein*

The European Union has a proven **record for decades of successful socio-economic development**, leading the European nations out of a devastating war into the longest period of peace that this continent has ever experienced. European policies have helped overcoming post war poverty and famine and creating unprecedented levels of wealth for its citizens. Thereby, Europe became a pole of attraction to neighbouring countries, eventually overcoming dictatorships on the Iberian Peninsula and in Greece, breaking down the East/West divide and integrating Central and Eastern European countries. For 500 million people **Europe had become a good place to live**, in peace, based on equal rights and rule of law, prosperity, non-discrimination and a reasonably egalitarian society. People live longer healthier lives in Europe. Visible air pollution has been substantially reduced as has the industrial pollution of many of our rivers and surrounding seas. The social market economy approach is underpinning the economic success of the European Union, building a social net within countries and solidarity through regional policies among Member States, as a basis for growth.

But this **development has come at a cost** in terms of global issues and is being challenged by global demographic trends and growing ecological problems. Nearly 10 billion people seeking by 2050[1] a European lifestyle would require, under present production and consumption patterns, natural resources of at least two Planet Earth[2]. Europeans are emitting too much greenhouse gas into the atmosphere, thereby feeding global climate change. Europe is using too many raw materials, is overfishing the world's oceans and continues rapidly losing biodiversity. The Lehmann Brothers' initiated financial crisis has demonstrated that the **global financial system is not sustainable** and the European financial system is **lacking resilience**. Under pressure from the downturn of our economies, the key notion of **solidarity** has somehow been side-lined, leading to growing income disparities within and among European countries and unsustainable levels of unemployment. Still Europe looks a safe attractive place for the millions of refugees and immigrants seeking shelter from war and destruction or simply a better life than what they can find in their home countries. Europe is experiencing the fact that it is not an isolated island, but an economy fully integrated into a world economy facing daunting megatrends. Willy Brandt warned already in the late '70s that Europe would not survive as an island of wealth in a sea of poverty...

Source: https://sustainabledevelopment.un.org/sdgs

The **adoption in September 2015 at the UN of the 17 Sustainable Development Goals**[3] (SDGs) - the **UN 2030 Agenda for Sustainable Development** - reflects the broad recognition that the global *status quo* is untenable and that **change is necessary** to deal with the negative global trends affecting economic, social and ecological perspectives: growth, jobs, well-being, natural capital, social cohesion. The need for a change is recognised as a **universal challenge**, no longer simply focussed on the developing countries. Europe has been an active driver for the UN process, having understood the **need to reconcile its social market economy approach and the concept of planetary boundaries**. The success of the UN negotiation is also a European success and sustainability could well become the rejuvenated brand of Europe: "***living well and sharing fairly within the limits of our blue planet***".

On that basis, how to operate the change needed? **What is the direction for the European Union** and what governance implications flow from it? What is the EU's vision for its future? What do EU citizens hope for? How are EU policies responding to these aspirations and how could EU policies become a driver towards a sustainable future?

This report focuses on the **EU's internal dimension** – with some considerations for the external dimension where it served the reflection. The EU's Global Strategy adopted in June 2016, integrates the SDGs into a coherent EU Foreign and Security Policy[4].

The aim is to provide some thoughts for a wider answer that will need to be defined and shaped by the Commission, the Member States and other EU and global actors. The Commission in its work programme for 2016[5] has committed to take an initiative on the "***Next steps for a sustainable European future***", to "*set out a new approach to ensure Europe's economic growth and social and environmental sustainability beyond the 2020 timeframe, taking into account the Europe 2020 review and the internal and external implementation of the United Nations Sustainable Development Goals*". Adoption by the Commission of a Communication on *"Sustainable Development: A Mapping of the EU's internal and external policies*" is planned for autumn 2016[6]. **This report seeks to contribute to an informed debate within the Commission and the College**, in view of developing an inclusive reflection and vision for a sustainable European Union. It calls for a **new governance approach** based on transparency and stakeholders ' participation for longer term policy-making. It does not claim to cover all sustainability aspects, but seeks to illustrate sustainability challenges in a number of sectoral hotspots.

Why Now? What is Different Today?

"*Twenty years ago, the Earth Summit laid out a roadmap for sustainable development. We have not followed the map… **The old model is broken**. **We need to create a new one**… - a new model for dynamic growth… Clearly, we must unite around a shared vision for the future, a vision for equitable human development, a healthy planet, an enduring economic dynamism that will carry us far beyond the troubles of today*"[7]: Ban Ki Moon's statement from 2012 has kept all its relevance. The **urgency** in Europe is highlighted by the **growing disenchantment of the European citizens with the European construction itself**. Contrary to some beliefs, this disenchantment is not so much fuelled by concerns over the curve of the cucumber, as by the perceived worsening economic perspectives for a growing part of the European population. The European Union is increasingly seen as a restriction to growth and not as a source for growth and employment. You may think we heard this song before – economic crisis occurred in the past, species have disappeared, rich and poor have always been part of the social landscape… **Why is it different now**? Calls for sustainability are not new but they start being understood by a much wider audience and a much wider set of economic actors. And they are translated into challenging political realities that are undermining the very basis of European integration. It is not "just" another statement by the UN General Assembly or a call by Pope Francis: *"Today, however, we have to realize that a true ecological approach always becomes a social approach; it must integrate questions of justice in debates on the environment, so as to hear both the cry of the earth and the cry of the poor"*[8]. Sustainability is internalised more and more by financial markets and business leaders, who see that recent facts, figures and scientific evidence support the call for **engaging into transformation of our society**. **And this transformation should happen now**. This reality has been recognised in September 2015 by all UN Members, including the EU and its Member States.

The challenge of defining sustainable policies, as highlighted in the 17 Sustainable Development Goals, is to assess the economic, social and ecological consequences of actions in parallel and with equal weighting. This may **create tensions calling for political choices and trade-offs**. In such situations, it is essential to ensure full transparency and participation in the decision-making process. Sustainability requires comprehensive and longer term approaches, overcoming sectoral short-termism as the current prevailing form of governance.

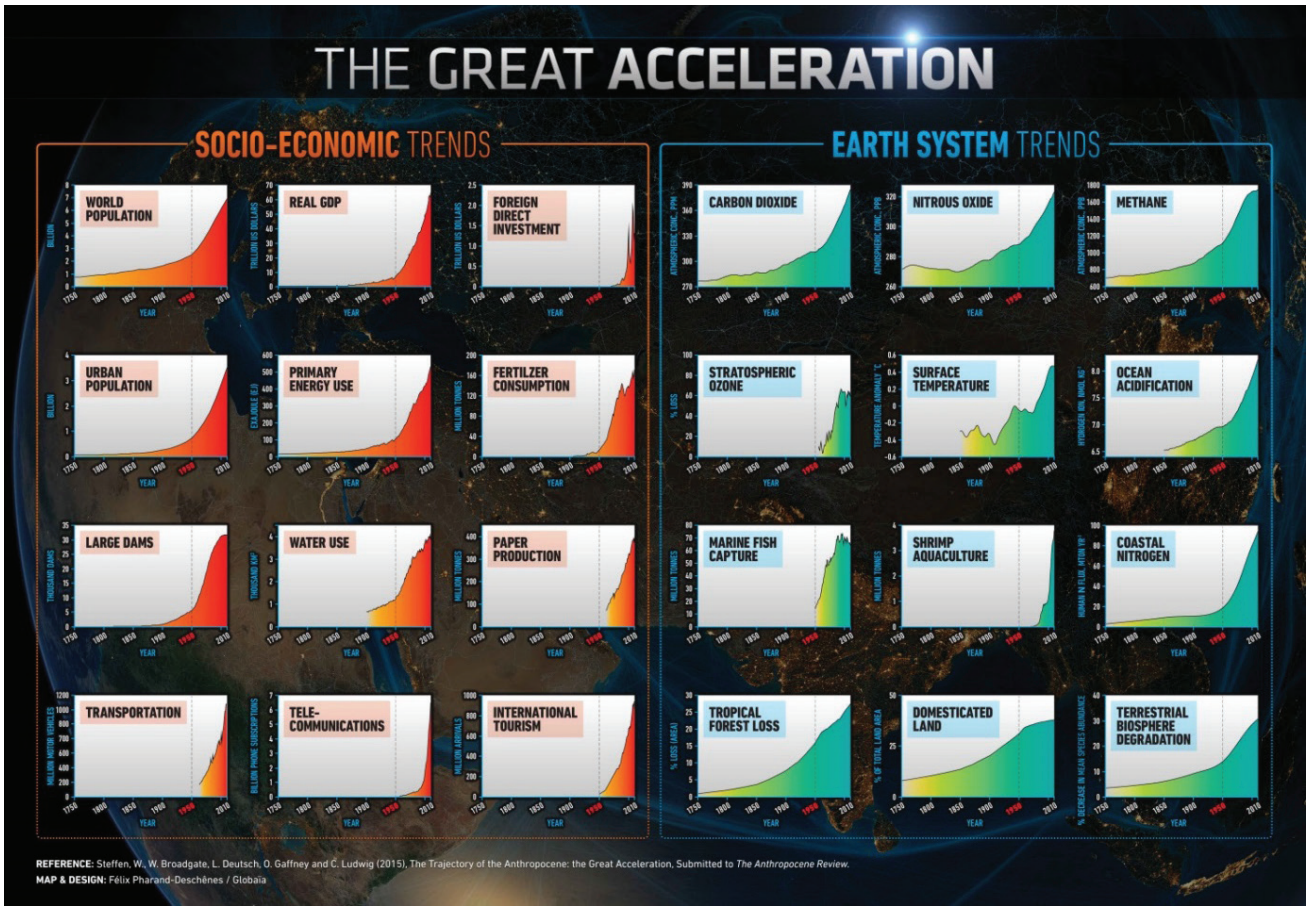
Resolution Adopted by the UN General Assembly on 25 September 2015 (extract)

"We are meeting at a time of immense challenges to sustainable development. Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiralling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk"[9].

The Great Acceleration

"The continued acceleration of changes affecting humanity and the planet is coupled today with a more intensified pace of life and work which might be called "rapidification" - *Laudato Si, Pope Francis*[10]

Since the end of World War II, the planet has seen an **unprecedented acceleration of human impact on the planet**. Population has grown from 3 billion people to over 7 billion, and is expected to peak somewhere around 10 billion by 2050, so within one century. This growth has essentially appeared in developing countries, adding to poverty and exponentially increasing demand on energy, food and raw materials. Western lifestyles have led the way to dramatically increase the pressures on the finite capability of Planet Earth, as shown in the following graph:



Source: The Stockholm Resilience Centre, Steffen, W., W. Broadgate, L. Deutsch, O. Gaffney, C. Ludwig (2015), The Trajectory of the Anthropocene: the Great Acceleration, submitted to the Anthropocene Review; Félix Pharand-Deschênes/Globaïa

"***After 1950 you can see that major Earth System changes became directly linked to changes largely related to the global economic system***. *This is a* ***new phenomenon*** *and indicates that* ***humanity has a new responsibility at a global level*** *for the planet*"[11].

Science makes a clear link between human activities in the current economic and social model that are detrimental to the Earth System and that at the same time do not bring the expected benefits to society overall: the economic crisis is deep and **the usual recipes are not working anymore**, as **the International Monetary Fund (IMF) has also recognised** in the April 2016 World Economic Outlook[12]. Not only are we facing a critical stage in terms of resources, but limits are also attained in terms of social "de-cohesion".

Although literature and modelling about "civilisation collapse" abounds, the recent model "HANDY"[13] concludes that "*collapse can be avoided and population can reach equilibrium if the per-capita rate of depletion of nature is reduced to a sustainable level, and if resources are distributed in a reasonably equitable fashion*".

Inequalities Widen

On the **social and labour front**, European trends show that pre-crisis levels of wellbeing are not in reach, as detailed in the most recent Commission's assessment of the social landscape[14]:

"The impact of the crisis has differed widely across Member States. Despite some signs of convergence since 2013 – with a reduction in unemployment rates and an increase in employment in the countries that have been hit hardest by the recent crisis – **differences remain and are now much larger than they were in 2008**. In some countries, **income inequalities and poverty have also increased significantly**, despite the recent stabilisation or even improvement in the general economic and labour market situation (...) While there are signs of economic recovery in all Member States, unemployment rates remain particularly high in some, with **differences in both employment and unemployment** rates **now much greater than before the crisis"**.

"Household incomes in the EU are on the rise again, benefitting from stronger economic activity and improving labour market circumstances. On average in the EU, gross disposable household income (GDHI) increased by around 2 % in real terms in the year to the first quarter of 2015. Growth in household income is coming from both work and social benefit support. However, note that the level of GDHI is still below the 2009 peak"... and that it hides substantial differences for individual households. "Following a continuous increase since 2009, the share of **people at risk of poverty or exclusion** reached its peak in 2012 (24.7 %). Since then it has shown a small decrease but **remains very high: in 2014, 24.4 % of the EU population – about 122 million people – were at risk of poverty or social exclusion"**.

"The previously observed convergence in the levels of income inequality across the EU also stopped with the crisis. **Despite the long-term progress made in improving opportunities for all**, notably by promoting universal access to education and health care, **improvements in living standards** (e.g. as measured by median income and material deprivation rates) **have stalled**, and socio-economic status remains one of the main determinants of educational and health outcomes".

"According to estimations ('nowcasts') available for 17 countries, the at-**risk-of-poverty rates** [were] **not expected to improve** in 2015 (reference income of 2014)". This is worrisome "as the income thresholds under which people are considered to be at risk of poverty are also declining for some countries, reflecting a **continuous deterioration in living standards**... Reductions in unemployment contribute to reducing the levels of poverty, but only half of the poor who find a job actually escape poverty". Even in a rather successful Member State as Germany, a stunning number of over 1 million employed people have recourse to state subsidies ("Aufstocker") to secure minimum income[15].

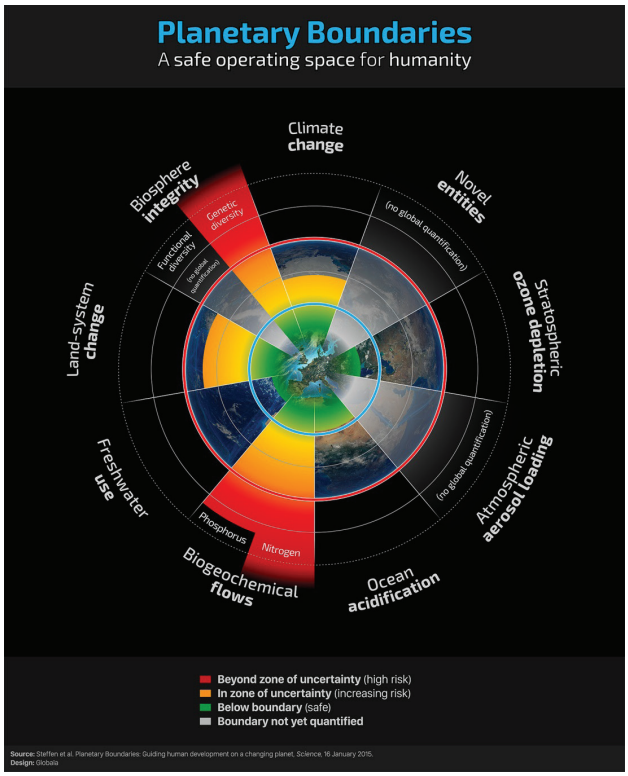
Put Simply: Rising Inequality is Bad for Long-term Growth

The overall assessment at EU level is confirmed by the OECD findings[16] that "***income inequality has increased in a majority of OECD countries since the mid-1990s***. *Households' disposable income has grown by less than gross domestic product (GDP) and income of the poorest households by less than that of the richest*"[17]. **Income inequality rose not only in bad economic times but also in good economic times**. The OECD is also highlighting that in recent decades, "*as much as 40% of the population at the lower end of the distribution has benefited little from economic growth in many countries. In some cases, low earners have even seen their incomes fall in real terms. Just as with the rise of the 1% [of the top richest], the decline of the 40% raises* ***social and political questions***. *When such a large group in the population gains so little from economic growth, the* ***social fabric frays and trust in institutions is weakened"***.

Recently exploring "*Why Less Inequality Benefits All*", the OECD shows that new research finds consistent evidence that the **long-term rise in inequality** of disposable incomes observed in most OECD countries **has indeed put a significant brake on long-term growth**. Further, it shows that efforts to reduce inequality through redistribution – typically, certain forms of taxes and benefits – do not lead to slower growth.

Planetary Boundaries

Planet Earth represents a closed, finite system that offers a unique environment within which humans can live. Except for solar energy, **there are no add-ins**. Science has developed a more profound understanding of the main challenges for a safe operating space for humanity on Planet Earth. The following graph represents the most recent assessment of the main global anthropocene **pressures** on the system, i.e. man-made impacts.



Source: The Stockholm Resilience Centre, Steffen et al. Planetary Boundaries: Guiding Human development on a changing planet. Science, 16 January 2015, Globaïa

The graph shows that for Phosphorus and Nitrogen, as for the Genetic Diversity, we are globally in **high risk zones** and that Land-System Change and Climate Change have gone **beyond the safe operating space**. Ocean Acidification is rapidly reaching the boundary and is known to be further deteriorating under climate change pressures. For some aspects global quantification has not been completed and for one of the nine areas, Ozone Depletion, the trend has been turned around through a multilateral Treaty on the ban of ozon destroying substances. **Working together, reversal of dangerous trends is possible**.

The ecological challenges for Europe are equally worrisome with additional regional aspects. The rate at which Europe is changing **land-use**, sealing off land under urban and infrastructure pressures is evidently not sustainable. **Europe loses yearly an area of the size of Berlin (a little less than 1000 km²) through urban and infrastructure expansion**[18], and continues to lose biodiversity, in particular in agricultural areas. In many parts of Europe, **water** use exceeds the regional regeneration capability and new pressures on drinking water quality include hormonal and antibiotic substances, as well as residues of fertilizers and pesticides. And the bad ambient **air** quality, largely due to our choice for diesel engines, is prematurely killing 400 000 Europeans every year[19]. The number one health risk, just ahead of noise.

And the Economy? Globally Problematic and in Europe Equally Challenging!

Despite this alarming picture, **it is true that globally society has "progressed"**, as described in the Resolution adopted in September 2015 by the UN General Assembly: "*It is also, however, **a time of immense opportunity**. Significant progress has been made in meeting many development challenges. Within the past generation, hundreds of millions of people have emerged from extreme poverty. Access to education has greatly increased for both boys and girls. The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy*"[20].

The IMF is more sober in its latest World Economic Outlook: "*Among advanced economies, **growth is again projected to increase marginally...** Relative to the October 2015 World Economic Outlook, global growth has been revised downward by 0.4 percentage point in 2016 and 0.3 percentage point in 2017*"[21].

And for the European Union? President Juncker in the press point of 26 May 2016 ahead of the G7 meeting commented on the **general economic situation**: "*The EU's recovery continues despite a more difficult global environment. In 2015, the European growth reached 2%, in the euro area 1.7%. These figures are confirming that the **recovery is on solid ground and well on track**. The GDP level of the euro area has now surpassed the pre-crisis high records in 2008. Unemployment*

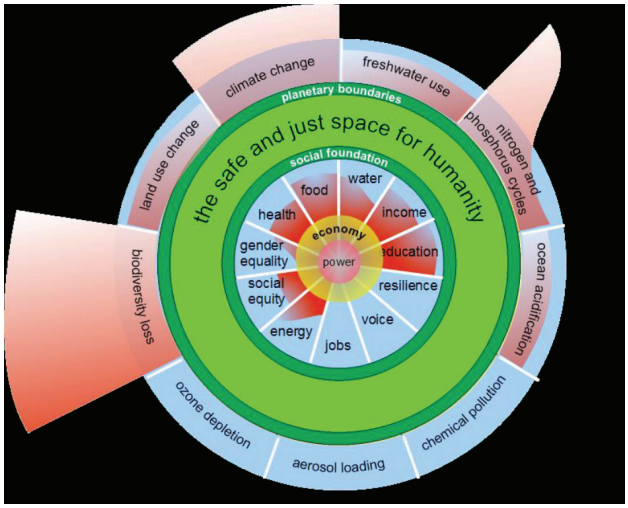
continues to fall. There are 5 million more jobs in 2016 by comparison to 2013, even if the weight of unemployment is still too high. ***Investment is picking up*** *in the euro area and in the European Union as a whole. We are sticking to the strategy we developed in the recent year. That means that we are building a virtuous triangle of investment, structural reforms and fiscal responsibilities. And we are deepening our greatest asset - that is the Single Market - by launching new initiatives in the field of energy, digital services and capital markets*"[22].

So, yes, the EU has achieved some growth again, with major regional differences, **but remains deeply shaken** in a systemic way by social, economic and ecological challenges: financial markets remain cautious, environmental impacts become more worrisome and social discontent is translated into **growing mistrust towards elected bodies and the European project itself**. The outcome of the recent UK referendum is evidence to these facts and can at least partially be explained by them.

Re-think Growth Models

Growth remains necessary, as long as human population grows and billions have to be lifted out of poverty. But **the planet requires a different form of growth**: one that relies less on scarce resources, like water, soils and raw materials, one that relies no more on fossil fuel based energy, one that respects the regeneration capabilities of renewable resources. We need economic growth largely dematerialized, based on renewables and maintaining materials within the production cycle. We need growth that is **socially inclusive** and **innovative within the safe boundaries of our planet**. So we need to re-think our growth models and to **reflect on the current production and consumption patterns**[23]. It requires fresh thinking and being innovative in shaping new growth models.

The graph seeks to integrate the social and environmental issues: social foundations and planetary boundaries. It identifies an area of safe and just space for humanity, as a basis for a sustainable society. The quantification of the different aspects may still be disputed at the political and scientific level, but **there are clear examples of developments going well beyond the necessary balance**. **China** is probably the best known example of an economy that appeared to be doing well, producing year after year growth rates approaching 10% per annum and only now realising the substantial ecological damage caused in the process, and the not less problematic social challenges of the rapid export oriented growth. The present leadership is paying a lot more attention[24], **reorienting policy** priorities to more focus on the environmental impacts and beginning to



Source: Oxfam + UNDP https://www.cbd.int/doc/meetings/biodiv/impws-2015-01/other/impws-2015-01-presentation-day3-sdg-undp-en.pdf

focus on income disparities among the different Chinese regions. The **cost of remedying the environmental damages** for soil, water and air pollution has been estimated at $2 trillion in a World Bank Report[25] already in 2007. The costs for remedying pollution today have become substantially higher. "*China, now the world's largest economy on a purchasing-power-parity basis, is navigating a momentous but* ***complex transition*** *toward more sustainable growth based on consumption and services. Ultimately, that process will benefit both China and the world*"[26].

While China is waking up to this reality, a new growth model has been taking shape mainly in Europe. Europe has effectively de-linked economic growth from CO2 emissions over the last 25 years, contrary to the rest of the world. But the EU is still emitting 10% of the global greenhouse gas with a world population share of just below 7%. European enterprises produce goods more energy- and raw material-efficiently which consume relatively less energy than in most other parts of the world. **Green technology capability is one of Europe's outstanding competitive advantages** as highlighted by the 2016 European Semester[27]: "*at sectoral level, there is significant potential for* ***growth and employment*** *creation in the production of energy from renewable sources, energy efficiency, waste and water management, air quality, restoring and preserving biodiversity and developing green infrastructure, which is resilient to changes in the business cycle. Employment in the sector of environmental goods and services in the EU increased from 3 million in 2002 to 4.2 million in 2013, growing by 24% in the period 2007 – 2013*"[28], at a time of economic crisis where most sectors were shrinking and losing jobs. It is vital for its competitiveness that the EU maintains this "**first mover advantage**".

The EU is building a **Circular Economy**[29] concept that aims at changing present consumption and production patterns, by focusing on design of products (durability, reparability, re-use and recyclability), waste (avoidance, material recycling, energy recovery, avoidance of landfilling) and consumer awareness. These policies open substantial 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**.

Over the last months, the question of a "**universal basic income**" has been debated in a number of Member States (Finland, the Netherlands) and even formally tested and rejected by referendum in Switzerland in June 2016. Beyond its complexity, the idea of a basic income is part of the growing debate around new forms of economic growth and jobs in light of further robotisation and digitalisation of our workplaces. It could be seen as a solution for giving people access to basic needs, disconnected from employment, but does not however address inequalities.

A lot of public debate has taken place with a view to **taxing labour less**, in comparison to other production factors. Through taxes, labour productivity has dramatically increased over the last century. To accommodate 10 billion people on this planet, material and capital productivity need to catch up. Most Member States have started the debate around a tax shift away from labour, few have effectively moved in this direction. This move becomes more urgent in light of digitalisation and robotisation of the production processes and the ensuing loss of many simple repetitive workplaces. This requires investment in upgrading the **skills** of people, but an inclusive society will have to provide employment also to less skilled labour.

New business models are being tested, often facilitated by new digital technologies. Carpooling, often offered by the car manufacturers themselves is but one of these concepts that will put more emphasis on durability versus obsolescence of goods. The movement needs to accelerate and good initiatives need to be replicated and up-scaled. This requires **enabling frameworks at all levels of governance for proper infrastructures and legislation**, including taxes and subsidies, further investment in education and skills as well as continued broad awareness campaigns. This can support a **change in mind-set** and allow Europeans to **embrace the change**.

«Science sans conscience n'est que ruine de l'âme» - Rabelais[30]

Digitalisation has boosted **new collaborative models** of economy. The Commission has set out in June 2016 "a **European agenda for the collaborative economy**"[31] to provide guidance on how existing EU law should be applied to this dynamic and fast evolving sector. While sharing or re-using goods may help more circular patterns, these new business models also **trigger questions as to their social/labour/fiscal and environmental impacts**, on which research is ongoing. One should not forget that use of emails, sms, apps is energy intensive and production of digital equipment is resource intensive (water, rare earth). Information Technology is partly responsible for climate change and is the fastest growing part of electronic waste.

Yes, sustainability can well be a European brand, rallying Europeans from all quarters around a societal choice that would combat poverty, end hunger, improve nutrition, promote sustainable agriculture, ensure healthy lives and equitable quality-education for all, achieve gender equality, provide access to clean water and renewable energy, secure inclusive economic growth and decent work for all, provide resilient infrastructures, reduce inequalities, build liveable cities, preserve oceans, terrestrial ecosystems and biodiversity within a peaceful, democratic and rule of law based society: **effectively implementing the Sustainable Development Goals' agenda**.

Sustainability, Now!

"It always seems impossible until it is done"
- *Nelson Mandela*

A sustainable society is one where economic growth is compatible with planetary boundaries and distributed fairly among its citizens. **Sustainable development is not a new concept**. Although it has been put on the international scene in 1987 by the Brundtland report[32], 30 years later **it remains a concept poorly implemented**, if at all. In September 2015, the UN Members reaffirmed that sustainable development is the way to go, but now urgently and universally, for developed and developing countries alike. The **European Union committed to implement this action plan**. The European Union committed to "**transforming our world**".

When taking office in 2014, the present Commission called for a "***European Union that is bigger and more ambitious on big things,*** *and smaller and more modest on small things*"[33]**. Transforming the**

world seems to be a rather big thing, which the EU should therefore embark on. And this is fully consistent with President Juncker's stated intent **to be a different Commission, "*to really change and renew Europe*"**. "*'This time it's different' was the European Parliament's motto for the election campaign. Let us jointly show that we are able to make this promise a reality. That together we are able to really change and renew Europe. And that we will jointly work to re-gain citizens' trust in the European project. I will do my utmost to make this difference*"[34]. The 2030 Agenda for sustainable development is the perfect tool to turn this promise into a concrete deliverable.

Source: http://www.torbenrick.eu/blog/change-management/change-management-comic-strips/

From a **subsidiarity perspective**, there is clear **added value for action at EU level. Member States have embraced the 2030 Agenda while pointing at the need for a renewed EU sustainability strategy**[35]. The EU has in fact a number of common policies such as Internal Market, Trade, Agriculture, Climate Change, Fisheries or Competition, that could contribute to the sustainability agenda and where Member States alone could not take action. As both the EU and its individual Member States have adopted the SDGs, they each will have to report on their respective implementation actions.

This would call for an EU implementation plan or a strategy, closely coordinated with the Member States.

Sustainability is a very European brand, enshrined in Article 3.3 of the Treaty on European Union: it builds on" *balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment*". Implementation requires equal attention to all three aspects: they must be addressed together.

Because the EU has been a key player in designing the UN 2030 Agenda and the Sustainable Development Goals, **expectations are high**. It is a matter of **credibility for the EU** to deliver on implementing domestically the Sustainable Agenda that it has contributed building, as pointed out recently by President Juncker: "*Une Europe, ouverte sur le monde, c'est aussi **une Europe qui sait prendre ses responsabilités**. L'Union européenne, ce n'est pas seulement une «puissance douce»; c'est aussi un acteur pleinement engagé sur tous les fronts, et qui participe à la définition des règles du monde à venir. Nous l'avons vu sur le climat et lors de l'adoption des objectifs de développement durable l'année dernière*»[36]. So Europe's leading role in driving the transition towards a different development model, designed for the European citizens, is recognized and reflected in the universal character of the SDGs.

Turning the **Sustainable Agenda** into "**THE" vision for the European Union** is important to deliver a positive message about transformation and change to come. It could be a common European political project that is urgently needed[37]. The EU should subscribe to the UN definition, that the SDGs are "*an Agenda of the people, by the people and for the people ".*

Most Member States, many business actors and civil society are supporting this new Agenda as the hook for game-change. There is a clear **call for "no business as usual**" in policy and in practice. Major global firms are sponsoring, participating, attending virtually all the conferences, forum, panels, workshops organised on "sustainability" issues since the adoption of the SDGs: there is a **strong call emerging from civil society and a clear business case to innovate and invest**. **European firms are competitive** in this regard and should be encouraged by an enabling public policy. At the same time, **change is always a challenge** due to an innate fear of the unknown and societal inertia. **Change requires leadership**. In his address to the Pope in May 2016, President Juncker said "*Cela ne fut jamais et ne sera jamais facile. Mais nous retrancher dans nos petites zones de confort n'est pas une solution.*

Retrouvons donc le courage de nos prédécesseurs, le courage d'affronter les difficultés pour les vaincre, celui de ne pas subir l'histoire mais de faire l'histoire, d'en être les architectes, les artisans, les constructeurs. Audaces fortuna juvat. Nous le devons aux jeunes Européens»[38].

Resilience

The debate for sustainability has been complemented by the concept of **resilience**. It seeks to define measures that would allow societies **to bounce back after a crisis** to the pre-crisis situation. It is a useful concept, but different from sustainability. **A sustainable society would seek to prevent a crisis**, which would be a policy setting process based on learning. Resilience accepts the crisis as unavoidable, but seeks to limit the consequences. The concepts are thus complementary, with resilience relevant for unforeseeable crises, for example natural disasters like earthquakes or volcano eruptions. Sustainability would seek to prevent the incident and therefore be useful for man-made, foreseeable events, which could be avoided through better policy-making. **Bouncing back to a pre-financial bubble situation without a change in policy would simply lead to the next bubble**. Better algorithms to predict a bubble may be useful for individual actors, but not for the global economy, as they would allow the early actors to withdraw their assets before they lose value. If all act at the same time, all would lose. Both options are not sustainable.

A New Governance Approach for Delivering Sustainable Policies

"Nothing is possible without men; nothing is lasting without institutions" - *Jean Monnet*

Implementation of the SDGs requires new governance approaches at all levels, including at EU level. In line with Jean Monnet, institutional decisions will be necessary to secure the longer term validity of the Sustainability Agenda.

There is a **widespread plea for a renewed EU sustainability strategy from a large number of Member States**, who all but two have formulated their own national sustainability strategies and are in the process of updating them in line with the SDGs. There is broad recognition that implementation at national level requires EU level coordination. In its resolution of 12 May 2016[39], the **European Parliament called on the Commission "*to come forward with a proposal for an overarching Sustainable Development Strategy* encompassing all relevant internal and external policy areas, with a detailed timeline up to 2030, a mid-term review and a specific procedure ensuring Parliament's full involvement, including a concrete implementation plan coordinating the achievement of the 17 goals, 169 targets and 230 global indicators and ensuring consistency with, and delivery of, the Paris Agreement goals; and stressed the importance of the universality of the goals, and the fact that the EU and its Member States have made a commitment to implementing all the goals and targets fully, in practice and in spirit"[40].

> One step to respond to these expectations may be to endorse at the highest political level the EU commitment to sustainability, as an overarching policy objective for the Union. A European Council Summit Declaration on sustainable development may be the appropriate tool.

It would be logical to confirm at the Heads of Government such a commitment, as all EU Member States and the EU itself have adopted the SDGs in September 2015 in New York. **A Declaration should urgently be drafted considering that the UN decision is almost one year old**.

Foster European Foresight

This Agenda sets **longer term policy objectives**. It is an opportunity for the Commission to re-focus on the big picture, to be **a space for innovative global thinking**, a place for **foresight** to avoid short-termism and reflect about a long-term project for the European society. The **Commission could make full use** of its own strategic long-term foresight capability (EPSC), of the European Strategy and Policy Analysis System (ESPAS) and of other relevant Agencies such as the European Environmental Agency.

The European Environmental Agency has called for "***increased use of foresight methods***, *such as horizon scanning, scenario development and visioning [which] could strengthen long-term decision-making by bringing together different perspectives and disciplines, and developing systemic understanding. Impact assessments of the European Commission and EU Member States, for example, could be enhanced if they were systematically required to consider the long-term global context*"[41].

Ensure a Participatory Process

The SDGs have been negotiated through an **open, participatory process** involving a wide range of stakeholders alongside the traditional governmental representatives. Implementation will have to continue to be broad-based, to reflect the understanding that holistic governance approaches are needed to address the growing complexity of the global challenges. Buy-in of civil society and businesses can only be secured by inclusive open and transparent processes. **An ambitious EU Sustainability agenda certainly has the capacity to rally large parts of businesses and civil society**.

Sustainability is a very **political concept**, which means Parliaments and broader stakeholder groups need to be associated. Representative Sustainability Councils exist in some Member States (e.g. Germany, Belgium) and national Parliaments have in different forms sought to address sustainability issues. The **European Parliament may want to consider an overarching Sustainability structure**. It would be important to avoid setting up such structure within existing sectoral structures to reflect the overarching economic, social and ecological assessment required. The European Economic and Social Committee (EESC), with its Sustainable Development Observatory (SDO), is actively setting up a consultative structure: the "Sustainable Development Forum".

Start Within the Commission

The Juncker Commission intends to take more integrated actions in the direction of a sustainable development of the European society: "*That is why my Commission will not only look different but will also work differently. Not as the sum of its parts, but as a team. Not through silo mentalities, clusters and portfolio frontiers, but as a collegiate, political body. I want a political, executive Commission at the service of the common good and of Europe's citizens*"[42].

A number of Member States have appointed **sustainability Ambassadors** within their respective sectoral ministries, to make sure that sustainability concerns are taken on board at the very outset of defining sectoral policies.

Appointing "sustainability Ambassadors" and developing a "sustainability network" or a "vision network" within the Commission may be a practical means to breaking silos. It could be organised by themes, for instance organised around individual SDGs, while keeping track of the overall picture.

Setting up such an **internal network within the Commission** would **raise awareness** about sustainable development. This network could generate continued interest in using sustainability and the Sustainable Development Goals as a **reading grid** for policy-making.

Even if the sustainability concept is more adequately built into the system from early stages the Commission might also want to strengthen the role of the Regulatory Scrutiny Board (RSB) in assessing the sustainability of Commission proposals against the economic, social and environmental impacts. The RSB assessment would be of advisory nature, but should be publicly available, as part of transparent governance. It would require the definition of clear and timely indicators.

Making sustainability concrete to colleagues is key to enable integrating policies better, by creating a sense of shared-ownership and responsibility. A better understanding of what sustainability stands for is also necessary[43]. **trained staff on sustainability issues in-house** may be an effective way of building this overarching notion into policy-making from the outset rather than only verifying through impact assessments at the final stages.

The Commission is engaged through Horizon 2020 in a 3-year project with the OECD about **public sector innovation**[44]. This is an opportunity for the Commission to being innovative about its internal structure and to foster **systems-thinking**, in view of delivering sustainable policies as its overarching objective.

The Commission should **also lead by example**: strengthening the use of its own Eco-Management and Audit Scheme (EMAS)[45] and using strategically public procurements (food, energy, transport).

Refining the Commission's Tools to Assess and Monitor Sustainability

Despite growing awareness of the need for more sustainable activities in civil society, but also among growing numbers of businesses, the **main megatrends are still pointing in the wrong, unsustainable direction**. This is not really surprising: when concrete measurement and monitoring is lacking, results are slow to emerge, if at all. Hence the **need to define a series of reliable relevant indicators** for the respective goals to enable governments, businesses and civil society to assess progress in the implementation of the collectively agreed sustainable goals.

The **EU Statistical Office** produces a Sustainable Development Report for the EU every two years, since 2000. This allows identifying major trends, which the report describes on the basis of a number of headline indicators. The value of these trends obviously depends on the appropriateness of headline indicators. The **major indicator for economic development remains Gross Domestic Product (GDP), despite the considerable shortcomings of this indicator in terms of sustainable growth**. Work on GDP and beyond is ongoing, but we need urgently to develop an integrated headline indicator incorporating the ecological gains or cost of economic activity in a State's performance.

A proper lead indicator should at least also represent the natural capital accounts[46] as a more adequate reflection of a society's overall wealth.

The main headline indicator for socioeconomic development is GDP per capita, hiding the effective income distribution, and hence the perception of individual European citizens of their relative economic performance. It is true that in the more detailed analysis, indicators for people at risk of poverty, including a gender based analysis are offered. They show a more problematic reality, in particular as a consequence of the financial/economic crisis of 2008. Only with correct bearings could political decisions be oriented in the desired overall direction.

Within the UN work on SDGs, monitoring and measuring has played a substantial role and is one of the reasons for including a set of 169 sub-targets, formulated in more precise and measurable form. The detailed work to identify those precise indicators is ongoing at UN level, with full participation of the EU Statistical Office. Information Technology, Satellite observation and crowd science contribute to substantially more information (Big Data), useable in parallel to official statistics.

As the first UN High Level Political Forum (HLPF) will take place in July 2016, and first States will table assessments of their sustainability achievements, there is a risk that individual choices of indicators will be made, leading to complications in assessing the comparability of outcomes. It would be **appropriate to develop at least a common European set of basic indicators**, leaving room for individual Member States or their regions and/or municipalities to define more locally relevant forms of measurement, simply because both the EU and its Member States will have to report back to the HLPF. It would be more than absurd if these reports were not aligned and capable of showing a coherent set of facts, identifying comparable longer term trends.

The Commission should request EUROSTAT to urgently publish existing data covering all SDGs, drawing as appropriate on big data, in line with the UN list of 241 indicators.

JRC and EUROSTAT should be asked to develop urgently composite indicators for each of the 17 SDGs.

EUROSTAT should be asked to develop a plan to speed up the availability of these data, including flash estimates, to allow for a more up to date monitoring of the effects of policy decisions. Many of the presently used EUROSTAT data in the sustainability report are two to three years out of date.

Use Existing Tools as Sustainability Drivers

Reflection about indicators and monitoring could take place along reviewing the "**European Semester**" mechanism and the Country-specific recommendations (CSRs)[47]. They aim at giving guidance to individual Member States on what can realistically be achieved in the next 12-18 months to make growth stronger, **more sustainable and more inclusive**, in line with the EU's long-term jobs and growth plan. The Agenda 2030 and the SDGs provide an adequate "reading grid" to the challenges – and the subsequent recommendations – highlighted in the recent Spring Semester package.

The 10 Juncker priorities for Europe and the Agenda 2030 reinforce each other and must be read in conjunction. They hold real potential to steer the Semester process in a more sustainable direction.

In the Annual Growth Survey for 2016, published in December 2015, the Commission mentioned that it "*will start a process for developing a longer term vision going beyond the horizon of the year 2020, also in the light of the new Sustainable Development Goals agreed by the United Nations for 2030. The lessons of the Europe 2020 review mentioned above will be taken into account in this exercise*"[48].

A legislative proposal to expand the **Structural Reform Support Service**[49] into an EU instrument for all Member States is currently under discussion with co-lawmakers to establish a Structural Reform Support Programme. It will allow the mobilisation of technical support for a broad range of key reform areas to provide targeted technical assistance to the Member States, at their request, to assist them with the design and implementation of institutional, structural and

administrative reforms. At operational level it would be important to **ensure full integration of Agenda 2030 and Sustainable Development Goals in the implementation phase of the proposal**.

Better Communicating

Better communicating **about the positive impacts of common EU policies** is key to empower citizens and create ownership about "EU rules made by Europeans with Europeans for Europeans". The Commission has many success stories to tell. Better communicating about the EU in general and about the Commission in particular should not be left to the Member States only. The present Commission has reinforced the citizens' dialogue with the direct involvement of the Commissioners. But **reaching out to a broader audience is essential**. We need to address especially the younger generation, raise awareness to enable understanding of political life at an early stage. They are the future and their commitment is a must.

Back to School?

Engaging younger generations starts at school. In 2010 already, the Council conclusions[50] on "**education for sustainable development**" called for developing a "whole-school" approach, to harness the motivation and commitment of all pupils and students, to develop their critical thinking and to improve their educational attainment in general. It fundamentally concerns the way we think about our complex world and the way we behave, so that people respond effectively and confidently to current and new challenges. It therefore has implications for education and training at all levels which may go beyond simply including sustainable development as another subject in the curriculum. It requires **interdisciplinary learning, new knowledge, skills and attitudes, creative thinking, innovation and a long-term perspective**.

> Educational institutions at all levels should strive to be sustainable organisations and to act as role models, by integrating the principles of sustainable development in policy and practice, i.e. through energy-saving buildings, working with natural resources and developing a sustainable purchasing and consumer policy.

Member States are primarily responsible for content of teaching and education **but the Commission can contribute with exchange of best practices at EU level**. The **synergies** between the Sustainable Agenda and the priority areas of the "Education and Training 2020 Framework" could **clearly be linked and reinforced**.

But education and training is **not only a matter for kids**, it also concerns university curricula and other forms of professional learning: engineers of tomorrow must learn how to build sustainable infrastructures and products. The 4th Sustainable Development Goal calls for ensuring inclusive and equitable quality education and **promoting lifelong learning opportunities**[51]. Education is both an objective and the means to achieve sustainable development. All conferences and workshops in all domains – e.g. agriculture, finance, energy and transport, production and consumption – dedicated to implementing the Sustainable 2030 Agenda since September 2015 pointed towards "education and training" as the indispensable link to raise awareness, share knowledge and innovative thinking, **transform perception and attitudes** towards a more integrated systems-thinking, a more sustainable approach, in short: to **create a sustainability culture**.

Monitoring at Business Level

Many large enterprises have started to report on their **Corporate Social Responsibility** (CSR) as part of their business strategy. Frequently, these reports are verified by third parties. **Sustainability reports** are also produced, in reaction to investors demands for more transparency over longer term risks. The EU has adopted a **non-financial disclosure Directive**[52] requiring large public-interest entities (listed companies, banks, insurance undertakings and other companies that are so designated by Member States) with more than 500 employees to disclose basic information on their exposure to sustainability risks.

Sustainable Business Identity

Source: http://www.solvay.com/en/sustainability/solvay-way/index.html

Part of the lacking business focus on sustainability stems from the fact that environmental **impacts of a production process are viewed as externalities**, i. e. not accounted for in the company's individual account. For a more responsible attitude, businesses would have to price in to their accounts these externalities. One of the few attempts to define a price for pollution is the EU's Emission Trading System (ETS), where certificates for each ton of greenhouse gas emission have to be bought by enterprises. This leads to the integration of greenhouse gas emission directly into the balance sheet of a company and constitutes a strong incentive for innovative, cleaner production processes (provided the price is right). **Working with the accounting sector, to examine how accounting rules could be developed to include individual enterprises' shares of externalities into their individual accounts**, would be a strong driver for innovative, sustainable production processes.

Sustainability Hotspots

Errare humanum est, perseverare diabolicum - *Seneca*

Money, Money, Money...

In the last three years plus, central banks have had little choice but to do the unsustainable in order to sustain the unsustainable until others do the sustainable in order to restore sustainability - *Mohamed El-Erian*

Finance is the life blood of any market economy. Financial services are an essential element of any sustainable society, allowing savings to be invested in economic activity, ideally additional, innovative and sustainable. In the words of Janet Yellen, Chair of the US Federal Reserve Bank, "*a smoothly operating financial system promotes the efficient allocation of saving and investment, facilitating economic growth and employment*". With few exceptions, financial assets are traded freely and basically cost free around the planet since the negotiated liberalisation under WTO rules.

In our globalised world, **finance has become substantially more complex**, from traditional savings banks to investment banks, equity trading, hedging etc. The end of the last century has seen a considerable shift in profitability of investments away from the real economy towards more speculative financial products. **New actors** have come onstage: sell-side financial brokers and buy-side Fund managers, Investment Consultants and Retail Financial Advisors, all seeking to match present or future needs of companies with global savings. Some of these actors effectively are **remunerated per transaction, increasing the**

Source: http://www.torbenrick.eu/blog/change-management/change-management-comic-strips/

short-termism in today's financial markets, despite the longer term stability required by institutional actors, such as Pension Funds. **New products** and substantive increases in global public debt have fuelled an unprecedented increase of global financial assets which from a 1 to 1 relation to global GDP in 1980 jumped to a 4 to 1 relation in 2015 (300 trillion versus 75 trillion). The phenomenon is described in academic literature as "**financialization**" of the economy: financial products are more and more disconnected from the real economy, trading more and more in debt financed futures and highly volatile. Financial engineering has attracted a lot of players, but is considered by a former World Bank Director, Steve Denning, as a source of no less than 2% loss in annual economic growth. **A typical example of financial engineering against collective wellbeing**.

It is interesting to note that out of the 32 US companies benefitting from **triple A ratings** in 1980, only two still have this rating in 2015. The trend away from conservative finance started in the 1980's and continues to grow. 13 of the 32 US companies lost their rating due to financialization, showing that Rating Agencies see the phenomenon with critical eyes.

Traditionally, governments had to pay interest on **bonds** to finance their spending. Now investors are paying some governments for the opportunity to lend them money. Traditionally, banks would compete for **deposits**. Today a growing number of banks are cutting down on their savings activities, actively discouraging deposits. In the past, society trusted the banking system to channel loanable funds to productive uses. The crisis of 2008 changed all this when banks' irresponsible risk taking, coupled with lax regulation and even laxer monitoring and enforcement, pushed the world economy into a major crisis.

The financial system has been at the **source of the 2008 crisis**. The collapse of Lehmann Brothers has hit European economies dramatically, when basic mistrust in financial products related to the US housing market was extended to question the overall risk in bank's lending structures altogether. Ailing banks had to be rescued with taxpayers' money in a number of Member States. The bail-out of banks put at risk the **viability of public finances** and, in turn, impacted banks through the government bonds held on their balance sheet (the so-called feedback loop or bank-sovereign nexus). In Europe, this triggered a dramatic economic crisis for Member States with large fiscal deficits, questioning the Euro itself and Euro Area participation for a number of Member States. The crisis hit Europe at a time, when Monetary Union had not yet been completed with a number of necessary common policy instruments.

Central Banks emerged as the key actors preventing the crisis to spiral on. But their capacity to ease monetary policy for a prolonged period of time is being questioned and unprecedented, while even negative interest rates have not really kick-started the major economies.

Mohamed El-Erian, chair of President Obama's Global Development Council, describes the present global economy as travelling towards a **T** junction. He argues that the **role of Central Banks** as sole actors against the crisis with unprecedented monetary easing will come to an end soon and **will be replaced by one of two fundamentally contrasting road**s. "***One road*** *out of the T junction involves a restoration of high-inclusive growth, that creates jobs, reduces the risk of financial instability, and counters excessive inequality. It is a path that also lowers political tensions, eases governance dysfunction, and holds the hope of defusing some of the world's geopolitical threats.* ***The other road*** *is one of even lower growth, persistently high unemployment, and still worsening inequality. It is a road that involves renewed global financial instability, fuels political extremism, and erodes social cohesion as well as integrity*". Europe is embarking on the positive road, with the Five Presidents Report, the Juncker Investment Plan, the Capital Markets Union Plan and a number of financial regulations in addition to the stabilisation efforts for its worst hit Member States (Greece, Ireland and Portugal).

In the IMF's words: "***Cooperation to enhance the global financial safety net and the global regulatory regime is central*** *to a resilient international monetary and financial system. Some of the risks coming from noneconomic sources likewise present public goods problems solvable through international coordination, on the model of the December 2015 Paris climate agreement. The current diminished outlook and associated downside possibilities warrant an immediate response.* ***If national policymakers were to clearly recognize the risks they jointly face and act together to prepare for them, the positive effects on global confidence could be substantial***"[53].

Returning to sustainability would require according to El-Erian **four broad actions**: 1) Getting serious about inclusive economic growth, 2) Match ability and willingness to spend, 3) Remove debt over-hangings and 4) Getting the architecture right. All four areas are a challenge for Europe, unless we manage to put the collective interest and welfare above the individual national interests. **The Five Presidents Report has sketched a way forward, receiving only lukewarm reception from Member States**.

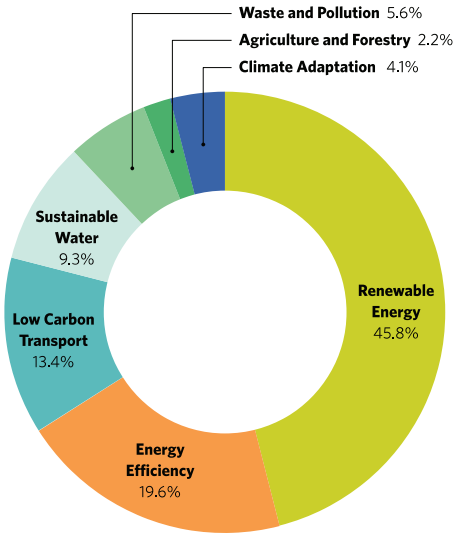
Inclusive economic growth implies harnessing financial engineering or financialization in favour of real economic prosperity, defining supply-side measures from education to infrastructure, removing antigrowth fiscal distortions to creating more public-private partnerships for leveraging investment.

Ability and willingness to spend goes to the heart of **fiscal policy** and the capacity of states to act countercyclical, including the design of tax and notably corporate tax systems. The EU has taken important steps in challenging special tax deals for individual companies and seeking to close tax avoidance loopholes for companies doing business in the European Union. A majority of EU Member States has a clear necessity to secure state revenue for collective actions on infrastructure, health, education, social protection. Hence the **problem of fiscal evasion** estimated to cost the EU 50 to 70 billion euros annually!

Removing debt overhangs implies burden sharing among creditors and debtors across different Member States and different political constituencies. Another real political challenge testing limits of solidarity.

As for the **architecture** the **Five Presidents' Report** sets out the necessary steps for the European Union becoming more resilient to outside shocks: "***Progress must happen on four fronts****:* ***first****, towards a genuine Economic Union that ensures each economy has the structural features to prosper within the Monetary Union.* ***Second****, towards a Financial Union that guarantees the integrity of our currency across the Monetary Union and increases risk-sharing with the private sector. This means completing the Banking Union and accelerating the Capital Markets Union.* ***Third****, towards a Fiscal Union that delivers both fiscal sustainability and fiscal stabilisation. And* ***finally****, towards a Political Union that provides the foundation for all of the above through genuine democratic accountability, legitimacy and institutional strengthening*"[54].

Green Bonds: More than Renewable Energy



Source: http://www.climatebonds.net

An additional challenge for refocusing the financial system to the real economy will be the respect of planetary boundaries and the need to move the present economy based on fossil fuel and raw material use to substantially more efficient use of non-renewable resources and getting out of fossil based energy altogether in the perspective of 2050. "*Sustainable development requires changes in the deployment and relative value of financial assets and their relationship to the creation, stewardship and productivity of real wealth. A sustainable financial system is therefore one that creates, values and transacts financial assets in ways that shape real wealth to serve the long-term needs of an inclusive, environmentally sustainable economy*"[55].

Green bonds are increasingly used and reached US$66 billion by June 2015[55]. It still has considerable potential to grow. **Credibly defined and monitored green bonds** are being requested by a growing number of long-term investors and actively discussed by a G20 Green Finance Study Group. Central Banks and the European Central Bank's (ECB) Risk Assessment Board have warned of stranded assets related to fossil based energy and the necessity to progressively move out of them.

Establish a small Financial Transaction Tax, at least at European level, better globally, as an element of stability in the global financial markets

Implement more vigorous merger and acquisition policies to limit the potential of too big to fail actors

Implement an appropriate level of efficiency versus precaution through capitalisation requirements

Strengthen further the transparency requirements on financial assets held by financial actors against longer term sustainability criteria to be developed

Reflect on ways to limit hedging, in particular in natural commodities to those actors that effectively need these commodities for their economic activity

Support the creation of green bonds, credibly defined, as an alternative for interested investors

Require risk-labelling for financial products, reflecting the risk of the worst element of the package

Deepen the European Monetary Union (EMU) as suggested by the Five President's report

Fiscal policy can be a substantive element in moving towards more sustainable production in several ways: public budgets can directly support new technologies, or seek to lever public/private investment. Public budgets would obviously benefit from closing **tax evasion** schemes, estimated by the European Parliamentary Research Service to cost the EU Member States annually between 50 and 70 billion euros[56]. Feed-in tariffs have played a crucial role in developing renewable energy production. "***Environmental taxes*** *are an efficient market-based instrument to achieve environment policy objectives while supporting growth-friendly fiscal consolidation. Some* ***Member States have achieved*** *a relatively larger proportion of environmental tax revenues as a share of total taxes (up to around 10%), whilst maintaining fiscal revenues and improving competitiveness and energy efficiency.* ***This demonstrates that it is possible to shift taxation onto environmentally harmful activities within a sound economic framework****... A complementary action is to reform the subsidies offered for inefficient activities that also harm the environment, including tax reductions to fossil-fuel consumption or production, which can weaken the effect of environmental taxation. For instance, adding up fossil fuel subsidies by Member States gives a figure of about €25 billion*"[57]. If this amount of subsidies could be shifted towards renewable energies, the necessary transition out of fossil fuels could be substantially accelerated.

From Field to Fork

"Someone is sitting in the shade today because someone planted a tree a long time ago" - *Warren Buffett*

FAO Principles for Sustainable Food and Agriculture[58]

1. Improving efficiency in the use of resources is crucial to sustainable agriculture
2. Sustainability requires direct action to conserve, protect and enhance natural resources
3. Agriculture that fails to protect and improve rural livelihoods, equity and social well-being is unsustainable
4. Enhanced resilience of people, communities and ecosystems is key to sustainable agriculture
5. Sustainable food and agriculture requires responsible and effective governance mechanisms

Agriculture plays a substantial role in the UN 2030 Agenda for Sustainable Development and in any sustainable future. The second SDG explicitly refers to: end hunger, achieve food security and improved nutrition and promote sustainable agriculture. There are also related goals on water, decent work, health, terrestrial ecosystems, forests, desertification, land degradation, climate change and biodiversity.

What Does Agriculture Look Like in Europe Today?

European agricultural policy has increased productivity tremendously and made the European Union not only largely self-sufficient, but even a large exporter of food products to the world. This **achievement has come with a price**: continued reduction of the number of farms and farm employment, larger specialised production units, leading to monocultures with considerable environmental impacts and food quality that is increasingly questioned by consumers[59]. According to the latest Eurobarometer[60], a third of Europeans disagree with the fact that the EU is fulfilling its role in protecting the environment. Despite several reform projects of the CAP, its monetary benefits still largely go to large intensive farming practices. This **pattern increases not only social inequalities**, **but also environmental problems**, monocultures and rural desertification. Long-term trends on rural employment, farming incomes and major environmental indicators for soil quality and biodiversity remain problematic[61]. In the perspective of the next mid-term financial forecast, a **number of questions could/ should be addressed**:

Should more attention be placed on **stopping the rural exodus**? Agriculture potentially can offer significant **employment opportunities** if organised **in less industrial** fashion. New research tends to demonstrate that this by no means would imply a reduction in output, nor substantial price increases. Indeed, real life testing by a French agro-research Institute[62] has shown that halving both nitrate and herbicide use has produced a 200 euro/hectare better result in grain production, mainly attributable to a larger presence of natural pollinators in a more diversified landscape. It represents a **double bonus for farm income and environment**.

A European policy that would support more labour intensive integrated farming could not only contribute to stop the exodus but also to create additional employment in rural areas to maintain a traditional landscape, reduce qualitative and quantitative water and soil problems and help restoring biodiversity in agriculturally used land. Creating additional employment in rural areas is not only about jobs in farms, it is also about diversifying employment opportunities in the countryside through better infrastructures (transport, energy, communication, high-speed internet).

> Planning the next agricultural reform, more attention should be placed on sustainability, and strengthening rural development support type instead of direct payments linked to acreage.

This would be a first step.

Bon appétit Europe!

The primary role of agriculture is to provide **food,** which should be **nutritious** to play its role for health, and be **affordable**. The Commission's public factsheet "EU explained: agriculture" highlights that in most EU countries today the average family spends around 15 % of its monthly income on food. The proportion is half what it was in 1962. Spending on food has decreased but European **consumers are increasingly concerned over food quality** with regard to nutrition, pesticides and antibiotics. Eurobarometer shows that more than half of Europeans think the EU's main objectives in terms of agriculture and rural development policy should be ensuring reasonable food prices for consumers (51%) and ensuring agricultural products are of good quality, healthy and safe (56%).

Scientists warn notably about current and future health risks[63] due to exposure to pesticides and to resistance to antibiotics built up through meat and fish consumption. This is directly linked to the present intensive model of industrial animal farming.

The 2014 Council conclusions on nutrition[64] recognise that "*overweight and obesity have considerable impact in terms of human suffering, that* ***social inequalities*** *are particularly important, that every year citizens lose their lives due to diseases related to unhealthy diet and lack of physical activity; that there is an* ***economic burden*** **with** ***up to 7 % of EU health budgets*** *are spent each year directly on diseases linked to obesity, with more indirect costs resulting from* ***lost productivity*** *due to health problems and premature death*". In the EU today, **6 of the 7 biggest risk factors for premature death** – blood pressure, cholesterol, Body Mass Index, inadequate fruit and vegetable intake, physical inactivity and alcohol abuse – **relate to how we eat, drink and move**.

Healthy choice is about **ensuring the existence of healthy options** for the consumer: the Commission's Strategy on Nutrition, Overweight, and Obesity-related Health Issues adopted in 2007[65] recalled that the Common Agricultural Policy (CAP) plays an important role in food production and supply in the EU. The most recent public talks about the European agriculture, notably the Forum for the Future of Agriculture[66] organised by the agricultural sector and agrochemicals business in March 2016, are also focusing the agricultural debate on nutrition, health, environment/ climate impact and consumer perception. These are key elements to be integrated on equal footing in the shape of the next reform of the Common Agricultural Policy.

The Commission factsheet also notes that "***many EU consumers prefer local or regional products*** *where these are available. As a result,* ***farmers are increasingly selling directly*** *to consumers at farmers' markets and are* ***processing their own products*** *to add local value*"[67]. This trend should not be underestimated and could be a key element to re-establish the Common Agricultural Policy into its first function: to **increase farm revenue** and **to provide quality food** to European citizens. Eurobarometer highlights that the majority of Europeans consider two priorities as being "very important": investing in rural areas to stimulate economic growth and job creation (47%), and strengthening the farmer's role in the food chain (45%).

What a Nice View! What a Landscape!

Around **half the EU's land is farmed**: **agriculture and environment are key to each other**. But there are serious concerns about the environmental impact of our present agricultural production methods. Large-size animal production leads to large amounts of manure, which the crop production cannot absorb, at least at local level. This leads to unhealthy levels of nitrogen in surface waters in the main production areas. There are scientific studies showing that the denitrification capacity of soils is rapidly declining, which would lead to nitrogen pollution also of the ground water reserves. All of this argues for a lower animal per hectare production process. Comparable problems exist in intensive fish farming and intensive farming overall. The number of infringements and Court cases against Member States for not respecting the Nitrates and the Water Framework Directives illustrates that intensive farming negatively impacts the environment.

Large monoculture affects biodiversity negatively to a point where pollinators are coming under real threat. Bee populations appear to fare better nowadays in urban or even industrial environments, like Airbus production sites in Hamburg and in Toulouse[68], than in intensively used monoculture agrarian areas.

The Value of Services Rendered by Nature: Ecosystems Services

Human well-being, but also the whole human activity – be it recreational or economic- depends on ***natural capital***, which provides vital services including fertile soil, fresh water, pollination, natural flood protection and climate regulation. We depend on healthy ecosystems to continue to deliver a range of essential services, such as food, water, clean air and recreation, into the future[69]. The importance of this "*natural capital*" - assets that are given for free by nature – **is still largely under-recognised** in the agricultural sector. These services freely rendered by nature have been taken for granted, whereas they represent economic assets indispensable to human activities: **the cost saved by using these services is big**. The **business community**[70] **is actively engaged** in identifying best practice guidance and tools available to support informed business decision related to the development of natural capital accounting systems.

Natural Capital Counts!

Another example is the cost (or the value!) of pollination for producing food (e.g. crops and fruits): the **economic value of insect pollination in the EU** is more than **€14 billion per year[71].** Globally, science estimates that 5–8 per cent of current **global crop production** is **directly** attributed to animal pollination with an **annual market value of $235 billion–$577 billion** (in 2015, US$) **worldwide**[72]**.** It is proven that insect pollination dramatically impacts the quantity and the quality of production (apples and blueberries)[73]: **50**% of the production **value** and more than 50% of the profits of these crops depends on pollinators. Therefore measures aimed at ensuring the **preservation** of pollinating insects in general terms (such as minimisation of harmful pesticides and a sufficient level of crop diversity for their nutritional needs) are essential. **So the Commission must think "circular" when it will redefine the Common Agricultural Policy.**

The Commission and the European Environment Agency have developed science-based knowledge in view of **mapping and assessing the ecosystems services**. It shows that there is a price to pay for abusing these natural services. China evaluates to one trillion$ the cost for depolluting its soil[74]. Overexploitation of **soils** exists also in Europe, and is addressed often by ever more sophisticated industrial fertilizers, putting ever more financial pressure on the farmers to increase production. A vicious circle that has brought many farmers to give up their business altogether, to return to more traditional crop rotation practices. Some current agricultural practices may also lead to soil erosion and reduced water retention capability. The recent **floods** in Bavaria are partly explained by rapid increase in corn production and corresponding loss of water retention capability of ploughed land. In large parts of Europe, the irrigation needs put substantial strain on water reserves for water demanding crops like rice, cotton, sugar beet, corn. **Climate** change modelling shows regional warming up, especially in the Mediterranean part of Europe, adding pressures on already strained water resources in these areas. **Water pricing** is a decisive issue in the speed of introducing new technologies and new crops.

Ecosystem services should be part of a sustainable European **agriculture**, using "**green infrastructures**"[75] to address issues like floods, climate change, soil erosion. Equally in urban areas, green walls and roofs can help absorb CO_2 emissions, improve air quality, reduce rainfall runoff and increase energy efficiency. **Green Infrastructure investments** are generally characterized by a **high level of return over time**, provide job opportunities, and can be a cost-effective alternative to 'grey' infrastructure. They serve the interests of both people and nature and are therefore a sustainable alternative that **should be supported throughout the Commission's financial instruments** (e.g. EFSI).

GDP provides only a limited representation of the wealth of a country. This is particularly true for agricultural activity, where it not only omits the positive contribution of nature, such as pollination, but it also omits the loss of natural capital due to human activity, such as soil erosion This confirms the need to **adapt our wealth indicators** and to **empower EUROSTAT** in this respect.

Medicine Man

Linking rural development and agricultural policy back to **health and environment** is an economic, social and environmental must. The nexus economics/health/environment is highlighted in the latest report by UNEP "healthy environment, healthy people"[76]. There is robust scientific and practice-based evidence that **nature can contribute to addressing the health challenges that EU citizens are facing**[77] – from access to Natura 2000 sites and other protected areas, to investments in wider green infrastructure. A more holistic approach in EU policies towards these issues could provide results. There is also potential for the Natural Capital Finance Facility (NCFF) of the European Investment Bank (EIB) to integrate health-social-nature issues into the objectives and selection criteria for eligible investments. A potential Trans-European Network Green Infrastructure offers an interesting solution.

Nature's Opportunities

Rural exodus is one of the causes for continued urban sprawl, competing with agricultural land needs. This often affects good **quality land**, as urban settlements have historically started in rich agricultural areas. The degradation, fragmentation and unsustainable use of land needs to be stopped, through the introduction of "**no net loss"** policies, **building on new economic opportunities to remediate contaminated land** in an effort to move towards a land degradation neutral Europe.

Innovation in the use of **timber** as construction material, as a basic fibre or as renewable fuel will put more strain on European forests. This could be problematic not only for forest related biodiversity and water management, but also negatively affect climate change, because it would reduce the capability of forests to absorb CO2. Sustainable use of this renewable resource on the other side holds considerable promise for economic activity, provided rules for sustainable use are clearly defined. The general trend to rely more on renewable resources for our future material needs could make forest related economic activities a real winner in rural employment and income.

Maintaining **wetlands** remains a challenge, because they represent real common goods for biodiversity and climate change, without however producing direct value to the owners. Payments for eco-services could create real improvement, by strengthening CAP payments for maintaining viable wetlands in farms.

A Different Common Agricultural Policy, Putting People, Environment and Profit on Equal Footing

On the **social** front, there is a **high degree of discontent** among farmers: the European Union has 12 million farmers and the vast majority of farms are relatively small. The average EU farmer has only 12 hectares of land (equivalent to about 20 football pitches) and 70 % of farms are less than five hectares in size [78]. The general pattern shows that a **high proportion of farms have a relatively low income level per worker**, while a small proportion of holdings record a very high income level per worker[79]. This is a sector with **large inequalities**.

Demonstrations of farmers in Brussels and in the Member States have become "business as usual", but this needs not remain the case. The Common Agricultural Policy is complex- it is at the crossroads of **what keeps us alive**: **food, biodiversity, air, water. These issues should be at the core of defining the agricultural policy of tomorrow**.

"We Commit to Making Fundamental Changes in the Way that Our Societies Produce and Consume Goods and Services"[80]

The **EU and the Member States have committed in the SDGs to sustainable agriculture and food production**. The changes needed must lead the EU to re-think the Common Agricultural Policy with a long-term and inclusive vision: inclusive of people who produce and people who consume; and inclusive of the land where food is grown. The previous reforms have started a more comprehensive approach, but not yet to the necessary level. The OECD advocates for an **integrated approach**: *"a comprehensive approach to improve coherence with other policies (macroeconomic, trade, social and environmental) and to reduce impediments to structural adjustment will be more effective than marginal fine tuning of existing agricultural policies in most countries. Such a reorientation requires a clear vision of the endpoint of policy reforms at national and international levels... **Greater attention should be paid to the wider enabling environment in which the sector operates**; farm policy matters a great deal, but wider economic, social and environmental policies also play an important role"*[81].

In the 2014-2020 funding period, under the CAP's new direct payments scheme, 30% of direct payments are dependent on meeting greening requirements. Following the 2013 reform, in order to receive their full entitlement of income support payments, farmers have to adopt some environmentally-sustainable farming methods. While this is positive, there are questions about its implementation and about the effective level of ambition. The Commission also recognises that an in-depth assessment of impacts on the environmental performance of EU agriculture brought about by the green direct payment scheme cannot yet be completed in particular as environmental benefits generally take more than one year to become apparent[82].

The review of the Multi Annual Financial Framework (MFF) provides an opportunity to examine whether the Rural Development Programmes and greening of the CAP are delivering the expected results.

Farmers and Member States Already Embarked on Transforming Farming - Let's Produce Differently!

The area under **organic agriculture** has **increased significantly** in the last years (period 2002-2011). In ten years, the **total fully converted and in-conversion organic area increased** from 5.7 million ha to an estimated 9.6 million ha (+6% per year) for the EU-27. The total organic area amounted during the same period to an estimated 5.4% of the total utilised agricultural area in 2011 increasing from 3.1% in 2002. When analysing the **number of organic holdings** in comparison to the total number of holdings in EU agriculture, a **diverging trend** can be observed. Available Eurostat data shows that the number of **organic farms is increasing while there is a consolidation of conventional agricultural holdings** in the EU-27. The same trend can be observed for working units in organic agriculture in comparison to non-organic labour force[83].

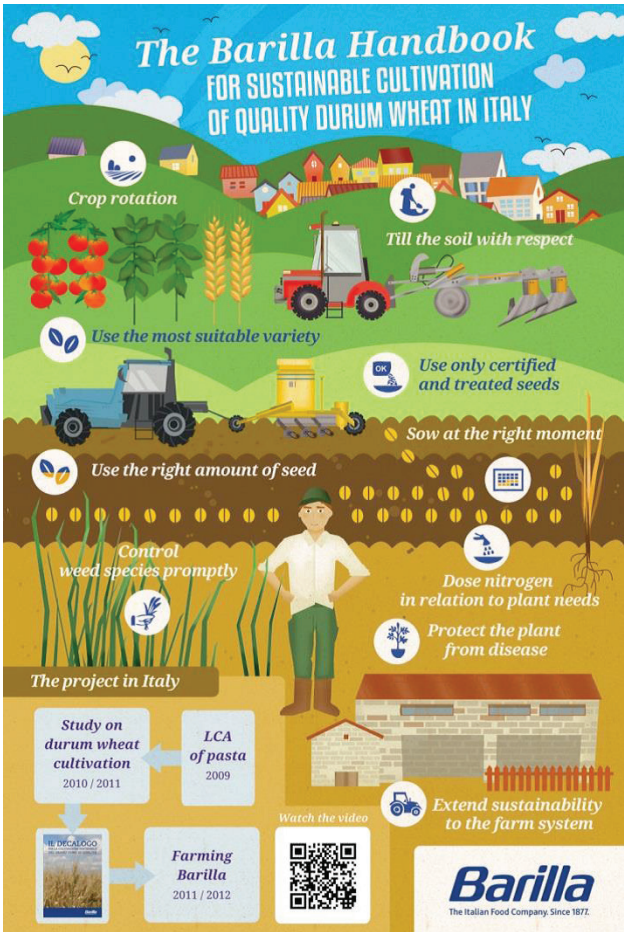
France[84] has started an innovative regulatory framework towards an integrated use of resources and nature-based solutions, to produce better from an environmental, economic and a social point of view. This approach is based on **agro-ecology** which builds upon the **natural synergies** between plants, animals, humans and their environment. Agro-ecology brings back to farming the 3 dimensions of sustainable development: to sustain agricultural production, preserve healthy environments and support viable food and farming communities. Agro-ecology also builds upon innovation, but in an inclusive manner through e.g. social innovation and different production methods and new business models. Agro-ecology is highly **knowledge-intensive**, based on techniques developed on the basis of farmers' knowledge and experimentation[85]. Agro-ecology is economically viable for those making the choice to transform their production methods to be

in charge of the process rather than dependent upon firms producing seeds and inputs[86]. It also contributes to fighting climate change and to improving nutrition. It deserves full attention in a debate about transforming the Common Agricultural Policy.

"**Precision farming**" is another innovative way to mitigate the current shortcomings of intensive farming. It uses technological innovation like GPS, satellites and software, to help farmers distribute a precise amount of inputs/pesticides/antibiotics/ water. Productivity is still the main objective but with more targeted inputs. It **nevertheless falls short** of building a more integrated farming system, which maintains a healthy soil ecosystem and a healthy work environment for farmers, who are less economically dependent on external inputs.

A Project for More Sustainable Cultivation Techniques for Durum Wheat based on Crop Rotation.

It achieves greenhouse gas emission and production costs reductions of up to 30% and yield increase of 20%[87]



Barilla Sustainable Durum Wheat Project
http://www.goodforyougoodfortheplanet.org/stories/

Urban Farming: More than Gardening in Your Backyard

Urban farming is increasing in all parts of Europe and even in large US cities. It has social, economic and environmental benefits. **Agricultural production in the urban neighbourhood** is no longer anecdotal: a case-study conducted in France concluded that it is possible to produce a significant yield on a small area cultivated mostly manually, and **to generate enough profit to ensure an adequate income** to someone with an agricultural status[88]. The development in urban areas of agricultural ecosystems aiming at being self-sufficient and sustainable is worth reflecting about in the context of transforming Europe's agriculture, not only to respond to producers and consumer's calls, but also because it provides local work. "**Community-supported agriculture**" (CSA) is a growing urban farming model in several Member States[89].

European citizens should all have the **right to quality food** produced with environmental, social and economic considerations in mind. There are plenty of successful examples of producing in a more sustainable way: food production that provides jobs, that is economically profitable, that supplies food that is healthy for people and nature.

Feed the World?

The European Union also needs to revisit its place in the **global economy**: with demographic growth mainly outside of Europe, does the EU need to feed the world? Is global price competitiveness for basic crops compatible with sustainable farm revenues in the EU? On the other hand, we encourage substantial investments in local food production in Asia, Africa and Latin America. **Strengthening developing countries domestic food production is recognised international policy**, confirmed in the SDGs. **What longer term EU export performance is compatible with this objective?** Today, the EU exports mainly processed food and has become a large importer of basic food crops, including from a wide range of developing partner countries. European food technologies and the quality and variety of processed food remain a strong asset for the European economy. Proper attention should secure this advantage in the face of more pesticide, antibiotic pressures on food quality: aiming for more nutritional quality in our products instead of seeking higher yields at the expense of lower nutritional value.

The latest data published in June 2016 announces a "***record value for the EU agri-food trade balance*** *in April 2016*[90] *of €1.5 billion in April 2016, compared to €1 billion in April 2015. For the past 12 months,*

EU agri-food exports reached a value of almost €129 billion, representing an increase of 2.8% compared to the same period one year ago". For April 2016, **pork** was the agri-food product that witnessed the **highest increase** in monthly export values. While this is good news in terms of trade balance, it should be seen in the broader context of pig-meat production in the EU: high concentration of livestock in big specialised farms, producing pressure on climate, soil and water because of gas emissions, high quantities of effluents/manure, and minimal employment effects.

Do a Fitness check of the Common Agricultural Policy[91]; reverse the trend to overspecialisation on single farm activity[92]; support integrated farming as a means to secure farm income in the face of world price fluctuation; privilege quality over quantity and seek to sustainably use renewable resources on land and at sea; develop more awareness for health related dietary attitudes by consumers and orient producers in the same direction; foster a more strategic use of Public Procurement rules[93] by the Member States, building on the Commission's work for Innovation (Horizon 2020 support for pre-commercial procurement and public procurement innovative solutions).

There are successful local examples of school food supply (canteens) integrated from farm to table, creating local and stable farming jobs through stable demand by the canteen, with the extra-costs of organic farming and workforce covered by savings generated from waste-management and adequate quantity in supply.

What Role for International Trade?

President Juncker stated recently «*Pour nous, Européens, le* ***commerce n'est pas seulement une affaire de répartir des avantages économiques****; c'est aussi une affaire de valeurs, une affaire de principes fondamentaux, qu'il faut défendre chez soi et ailleurs. Et nous n'hésitons pas à utiliser notre politique commerciale pour promouvoir le respect de normes internationales fondamentales: droits de l'homme, droits des travailleurs, protection de l'environnement, bonne gouvernance, ou bien encore une plus grande responsabilité en matière de chaînes d'approvisionnement mondiales*»[94].

This is indeed an important feature of trade policy but t**o help promoting growth in developing countries** and promote international standards abroad is only one side of the coin[95]. Fully integrating domestic EU policies when shaping trade policy is part of the equation: how do we integrate the economic, social or environmental impacts into the design of trade policy and how does trade fit into the circular economy, climate change mitigation and adaptation measures, preservation of biodiversity, Corporate Social Responsibility etc. Trade policy offers substantial opportunities to export sustainable products and services.

Sustainability concepts will have to be applied more thoroughly to the definition of trade policy. Trade driven growth and development strategies, successfully implemented in a number of small and medium-sized developing countries in the past, will come to limits when pursued by the major emerging economies for sheer lack of adequate global demand. More emphasis will have to be put to developing vibrant domestic demand, as in the developed markets of this planet. **This does not argue for closed markets at all**, but for the need to implement domestic policies fighting poverty and strengthening the domestic demand side in parallel with an open rules-based trade and investment regime. OECD work has convincingly demonstrated that few challenges pose greater obstacles to better economic performance than the rise in inequalities. There is a real risk of a vicious circle setting in, with individuals with fewer skills and poorer access to opportunities confined to operate in low productivity, precarious jobs and the informal economy. This reduces aggregate productivity, widens inequality and ultimately undermines policy efforts to increase productivity and growth. Combatting poverty effectively would therefore require more investment in **skills** and offering a supporting environment to all firms to develop, including in lagging regions. The EU itself is a good example of how a large market, combined with regional and social policies supporting the skill basis of its populations has created growth and overcome large inequalities among its Member States.

The present experience with large numbers of refugees seeking shelter and a better life in the EU is at the same time a strong reminder that the EU must develop a clearer interest for the economic and social development in its neighbourhood, based on peace, rule of law and democracy. **Trade has sought to play a role in this regard in the past by offering preferential market access, however with limited success**. Access alone has not brought the expected investment into more diversified economic activity in our partner countries, notably in Africa. The recent extension of free trade to developed economies is undermining trade's capability to start-up businesses in weaker developing countries by offering preferential market access. Focus on developing regional markets among developing countries as a springboard to competitiveness seems more necessary than ever. And **governance** issues come to the forefront as a major consideration for potential investors, domestic or foreign.

Footprint based analysis and awareness campaigns for consumers on environmental impact would also fall short of the attainment of sustainable policies, if social and economic **impacts are not equally assessed**. Reduction in the EU's imports is not automatically leading to developing countries gaining access to a larger share of the planet's limited resources. The recent fall in fossil fuel and many raw material prices is seriously hampering the growth perspective of a large number of developing countries. World Bank research[96] shows that less global demand leading to commodity price reductions has set back the catch-up of emerging nations with the incomes in developed nations by decades. Continued growth is and will remain the best cure for poverty, but this **growth must gradually change in quality**, moving towards more resource-efficiency and circular economy concepts, less dependent on commodities and stronger on adding value domestically. In line with the Paris Agreement on Climate Change, the progressive phasing out of fossil fuels in the perspective of 2050 will also have to be addressed from a trade perspective.

Trade policy must contribute to reducing global inequalities, creating qualitatively different growth bringing more inclusive social benefits while staying within the ecological limits of our planet. This may take the form of more sustainability certification schemes, fair trade labels.

Trade policy-makers may have to revisit the like-products mantra of the multilateral trading system[97].

The EU is one of the most important and active members of the World Trade Organisation (WTO) and plays a constructive role in devising innovative and forward looking common rules for global trade, including agriculture[98]. This is why the **Commission should initiate the discussion at the World Trade Organisation on sustainable trade**. This is more than negotiating tariff reduction for Environmental Goods. For years, trade negotiations have been led in parallel to other international negotiations, notably about climate change and sustainable development. With the Sustainable 2030 Agenda it is **time to look at trade policy in conjunction with other major international issues**. Members of the WTO must be consistent in the different international fora and the EU should fully engage.

Le Grand Bleu

Oceans have a separate Sustainable Development Goal, SDG 14, due to their very substantive importance for the livelihood of millions of people in developed and developing economies.

Marine fish production amounts to roughly 120 million tonnes with 80 million tonnes of catches and 40 million tonnes of farmed fish. 3 billion people depend on fish as source of their animal protein intake and 3 billion people depend on services from marine and coastal biodiversity. **Ocean ecosystems are essential for oxygen production** and a major sink for anthropogenic CO^2. And yet, the oceans of the planet which cover 2/3 of the global surface, are not in good shape. The majority of fish stocks of the planet are overfished; oceans still receive high levels of nutrients (nitrate and phosphorus) through river systems, substantial amounts of **plastic waste** and too many chemical risk substances.

Even the Baltic Sea, largely surrounded by EU Member States, contains high levels of heavy metals (making an annual "fish diet" a real health risk!) and is eutrophic, i.e. containing too much nitrates from agricultural activity on land, threatening the oxygen levels and the normal development of fish stocks. Globally, the **warming up of the oceans** due to climate change threatens the very existence of coral reefs, one of the major fish hatcheries and hotspot of biodiversity. Ocean **acidification** is another well documented phenomenon threatening the healthy states of the oceans.

Over the last fifty years, the problems facing the oceans have been better understood and relief measures taken at national and international level. These have partially reduced the pressures on the oceans, but the **major negative trends continue** unabated due to demographic pressures and economic exploitation.

Ocean Governance

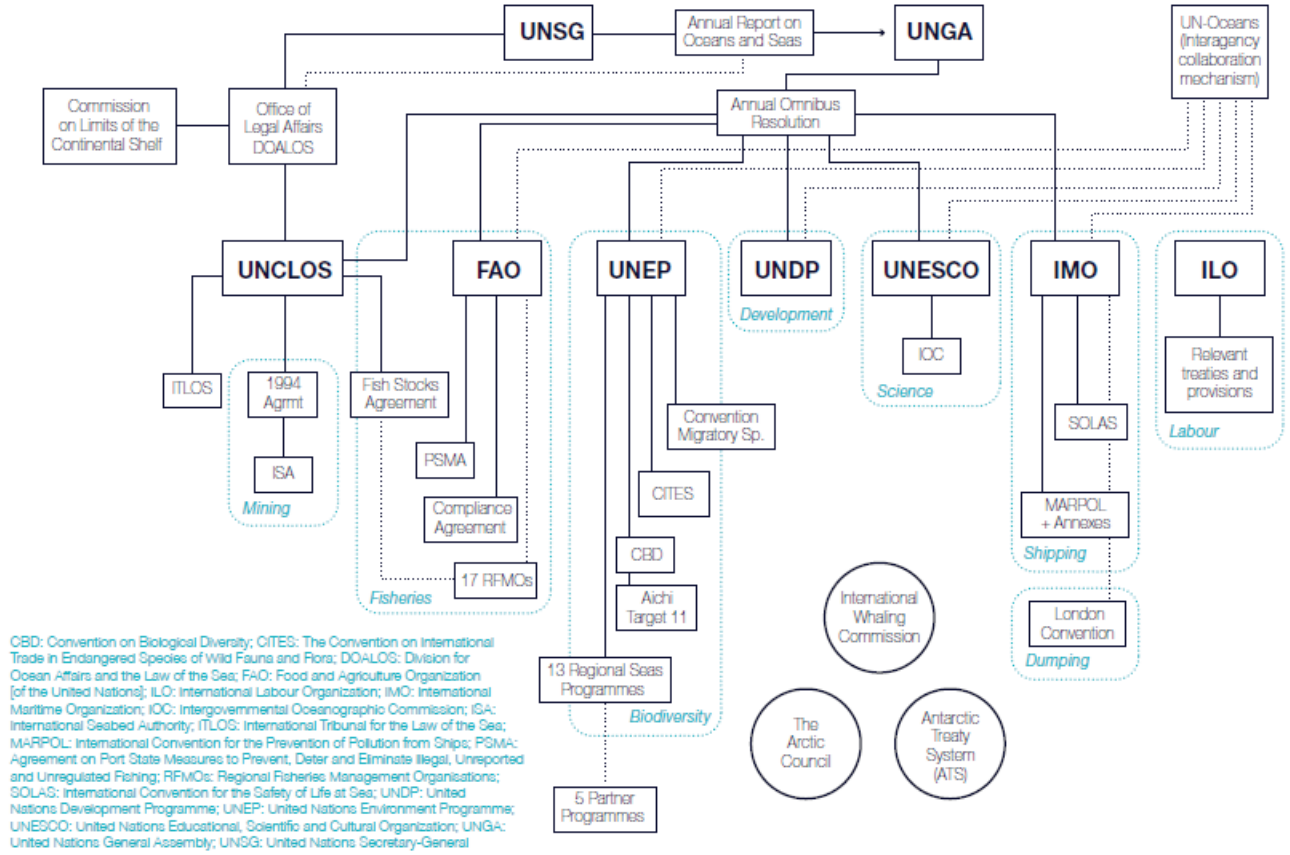
Ocean governance is as **fragmented and complex as** in the organigram below. Nations have claimed exclusive economic zones of 200 miles off their coastlines beyond their national sea territory (12 miles). The majority of the seas remains beyond national jurisdiction and has not yet been covered by international disciplines (except for fish management). Ocean governance is built on national legislation, including EU regulations for EU waters, a whole range of regional frameworks, both sectorial and comprehensive, and UNCLOS, the UN Convention on law of the Seas. This **fragmented governance is seen more and more critically by science**, which has developed an understanding of the oceans which requires an integrated ecosystem approach. Ocean ecosystems tend to be even larger than terrestrial ones and regularly going beyond national borders.

A supplementary requirement for **integrated management** stems from the fact that substantial **threats to the oceans arise from terrestrial**

activity (agriculture, industries, and urbanisation). Only few regional conventions reflect this necessity as well as the Barcelona Convention. Seas continue to suffer from lower ambition in the level of substantive protection compared to land. The Convention on Biodiversity (CBD) requires 18% of the territory of nations to be protected, against a target of 10% for the seas. And where Europe meets or exceeds its land target, it only meets a rough 50% of its unambitious marine target.

The European Maritime Day in May 2016 has furthermore highlighted serious problems with **lack of implementation of existing disciplines**. The national monitoring authorities are dreadfully underequipped and understaffed and many of the disciplines concerning activities at sea are not enforced. An estimated 10 billion euros worth of fish is Illegal, Unreported and Unregulated (IUU).

It's Complicated!



CBD: Convention on Biological Diversity; CITES: The Convention on International Trade in Endangered Species of Wild Fauna and Flora; DOALOS: Division for Ocean Affairs and the Law of the Sea; FAO: Food and Agriculture Organization [of the United Nations]; ILO: International Labour Organization; IMO: International Maritime Organization; IOC: Intergovernmental Oceanographic Commission; ISA: International Seabed Authority; ITLOS: International Tribunal for the Law of the Sea; MARPOL: International Convention for the Prevention of Pollution from Ships; PSMA: Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing; RFMOs: Regional Fisheries Management Organisations; SOLAS: International Convention for the Safety of Life at Sea; UNDP: United Nations Development Programme; UNEP: United Nations Environment Programme; UNESCO: United Nations Educational, Scientific and Cultural Organization; UNGA: United Nations General Assembly; UNSG: United Nations Secretary-General

Source: Takehiro Nakamura - Senior Programme Officer, International Waters, Division of GEF Coordination, UNEP

What is Needed?

Most assessments conclude that **holistic approaches are necessary** to yield the benefits of blue growth in the coming decades. Businesses have started to recognise that blue growth requires healthy oceans. This is most obvious for the **tourism** sector, which employs in the EU alone more than 2.2 million people compared to some 400 000 people employed in the fishing industry. **Urban settlements in coastal regions** also depend crucially on healthy oceans, limiting the effects of climate change, notably with regard to sea level rises.

It is necessary to manage coherently all human activity in order to ensure that their cumulative impact does not limit ocean ecosystems capability to provide all essential services for future generations.

This requires regulatory frameworks for the different maritime/blue economy sectors: activities related to resource extraction (fish, minerals), use of oceans for transport (shipping, pipelines, cables), energy generation (wind, wave, tidal), and wider services (recreation, health).

These frameworks will need to be underpinned by effective monitoring and enforcement policies, requiring substantial upgrades in technical and human resources.

Fishing

Despite more scientific evidence of stock depletion, **only few fish stocks have substantially been rebuilt** over the last decades. In the European Union, efforts to introduce Maximum Sustainable Yield concepts have regularly been pushed back in time. Scientific debates continue to rage over effective catches as a good indicator for availability of fish. Too often, catches are the result of better technology, indeed damaging fish stocks ever more. Test with **controlled sanctuaries** have shown rapid stock reconstitution and increases in sustainable catches in directly neighbouring fishing grounds. This seems to be one effective means of restoring variety and quantity of fish that can be sustainably harvested. **This concept could be developed through protected marine areas under the Convention on Biological Diversity (CBD)**. Controlling particularly damaging fishing practices like bottom trawl also would protect the seabed habitats and hence allow restoration of the marine biodiversity. Modern technology would make effective monitoring possible by imposing **GPS** devices on board of vessels and by having recourse to **satellite** surveillance imagery.

Better Land/Sea Integrated Management

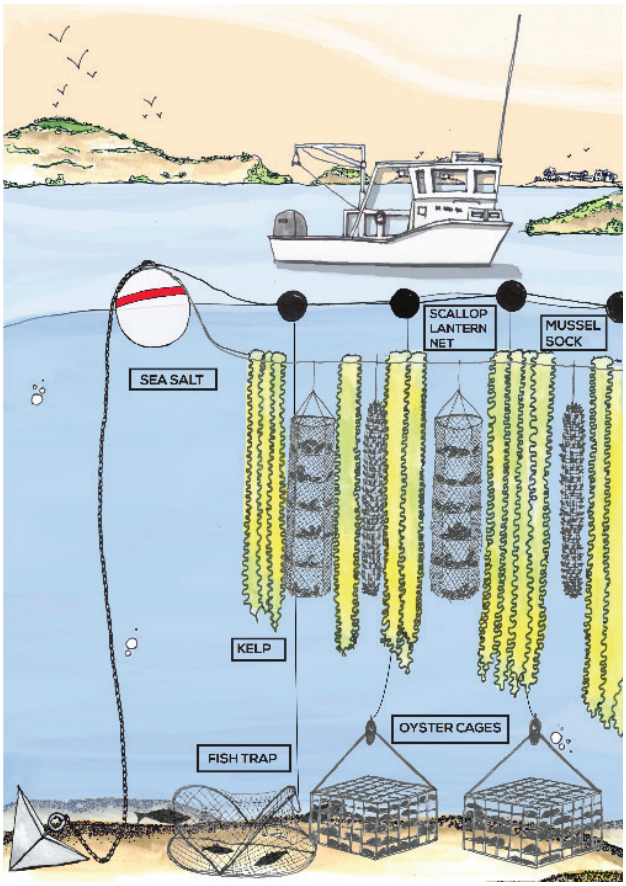
This would be essential for urban development, tourism, transport, energy production etc. Ships need on-land facilities for cleaner fuel and waste collection. Shipping routes need to be coordinated and ship design developed to prevent and/or reduce impact of accidents at sea. The same is needed for drilling platforms and energy production equipment, for wind, tidal or wave energy. As a general principle, **more polluter pays principle and better liability enforcement would be needed**. These activities will only safely develop and reach their full potential if coordinated reliable plans are developed providing clear areas for the respective activities. And the **coastal territories need to be associated**, because these services will have to be smoothly launched and integrated into the economic needs on land.

Better Emission Control From Land Based Activities

The Ellen Mac Arthur Foundation estimates that in 2050 there will be **more plastic waste than fish** in our oceans. Fossil fuel based energy production leads to warming and acidification of oceans with dramatic consequences for ocean biodiversity and its capability to contribute to feeding the planet. Destroying mangrove forests reduces dramatically the safety of coastal regions against spring tides and tsunamis. Continued

3D Farms are Designed to Address Three Major Challenges:

first, to bring to the table a delicious new seafood plate in this era of overfishing and food insecurity; second, to transform fishermen into restorative ocean farmers; and third, to build the foundation for a new blue-green economy that doesn't recreate the injustices of the old industrial economy



Source: http://greenwave.org/3d-ocean-farming/

surcharge of nitrate and phosphate reduces the oxygen levels in our seas and excacerbates algae growth (**eutrophication**), hampering the healthy development of fish stocks.

Integrated sustainable management of our oceans, aiming at harvesting marine services for generations to come, requires an integrated holistic approach, **covering all aspects of maritime activities, at sea and on land**. It requires extending the existing international framework to cover areas beyond national jurisdiction before deep sea activities have reached their potentially damaging levels. And it requires substantial strengthening of the implementation of this framework at global, national and regional levels.

And You, City-Zen?

"We were not meant to be inundated by cement, asphalt, glass and metal, and deprived of physical contact with nature" – *Laudato Si, Pope Francis*[99]

Historically, cities have been important centers for socio-economic development, innovation, cultural development and livability. Today, 75% of the European population[100] is living in an urban environment. At global level, 54% of the world population[101] is living in cities. Globally, cities are growing substantially faster and bigger than in Europe. Asian, African or Latin-American Megacities are dwarfing the largest European urbanizations.

Cities represent **hotspots for human activity**; they are the beating hearts of our world. This is where most people are living, commuting, working and/or having recreational activities Therefore, **urban areas are source of economic and social opportunity** (i.e. jobs, education, communication, innovation, consumption, culture) which explains their continued attraction, even for millions of poor people (favelas, shantytowns). Cities are **at the same time hotspots for social and environmental challenges**: security challenges, urban mobility, air quality, urban sprawl, noise, energy and water consumption and waste production. This explains why cities strive for more sustainable urban development and have often become frontrunners for new sustainability concepts. They are **innovation hubs**, pioneers, for most of the sustainability challenges.

A concrete example for innovative sustainable technologies, which has obtained the 2016 Sustainability Award by the German Economy Ministry, is the C3 Project: Carbon Concrete Composite[102]

By using carbon instead of steel netting, it allows to save up to 70% of cement. Considering that cement production emits 2.408 million tons of CO2, i.e. three times more than worldwide air transport, this is a substantial contribution to fighting climate change and responds to the construction sectors' need to reduce resource and energy use: particularly interesting for urban and infrastructure construction and repair.

Solutions are tested, shared and up scaled through city networks. **Peer-learning and knowledge sharing** of best practices are key and can be supported at EU level. In-house, DG REGIO develops through **URBACTIII**[103] specific networks to get cities together for such an exercise as does DG ENV through its European Green Capital Network. Eurocities[104], the Council of European Municipalities and Regions[105] (CEMR), C40[106] and the new Global Covenant of Mayors[107], to only name a few, are **examples of cities' own initiatives**. In the EU, we also have **several awards** which praise a particular or several concrete aspect(s) of a city (The European Capital of Innovation[108], RegioStar[109], European Mobility Week[110], Sustainable Urban Mobility Planning[111] (SUMP), European Green Capital[112] and Green Leaf[113]). These prizes are evaluating the participating cities on the basis of different indicators and benchmarking systems.

Keeping in mind that **there is not one comprehensive answer to the challenges** for the large variety of cities in Europe, it is nevertheless **useful to offer a coherent, mainstreamed set of basic indicators that could be used by all cities**. This is the objective of the **"Sustainable Cities Benchmark"**[114] developed following the 7th Environmental Action Programme[115] (7th EAP) describing "*a set of criteria to assess the environmental performance of cities, taking into account economic, social and territorial impacts*". It should allow cities, that so wish to better measure their own performance. Cities from small towns to the largest EU Cities have shown interest for this tool to support city-planning and grant access to a list of priority actions based on their individual needs-assessment.

An elected Mayor has to pay very concrete attention to creating economic opportunity while limiting the negative aspects of growth (employment, cost of housing, mobility, air pollution, energy consumption, waste and waste-water production, crime). **With strong governance and wide stakeholder participation, change is more readily accepted**. For example, Ljubljana (European Green Capital 2016) has given its city centre back to the citizens by reserving it exclusively to pedestrians with free services and facilities for disabled and/or elderly people. Despite early resistance, this is today widely accepted, because it has demonstrated economic, social and environmental benefits and made the City as a whole more vibrant.

How can we support this strive and offer a good life quality which attracts people? How to raise awareness, create and keep citizens' interest in local politics and bring them at the forefront of European politics? The UN dedicated one SDG to **Sustainable Cities and Communities** (SDG 11). In fact, cities are a geographical location where all the pressures become visible. For cities, as for nations, it remains important

A Sustainable City

Source: http://www.instituteforsustainability.co.uk/tcr.html

to not consider individual SDGs on their own, but to **take a holistic view and develop a comprehensive strategy**, covering all aspects of sustainable development on the basis of **a longer term strategy**. The **EU Urban Agenda**[116] adopted in Amsterdam in June 2016 reflects this logic, respects subsidiarity and puts the urban agenda among the priorities of the 2020 strategy for smart, sustainable and inclusive growth. It includes 12 Priority Themes and offers the possibility to cities to have easier access to funds for urban projects.

The **2014-2020 Cohesion Policy** will invest heavily in urban areas, **with EUR 15 billion directly managed by city authorities for sustainable urban development**. Beyond the role of cities to test innovative ideas, this focus on urban development will also play a key role in offering fuller participation to a wider stakeholder community and European citizens in view to develop root-based sustainable policies.

Develop the "Sustainable Cities Benchmark" tool further and linking it to the EU Urban Agenda and possible EU financial support (Cohesion policy, Horizon 2020); offering one entry point to cities would ease the search of the needed information and would allow the cities to have a complete overview of EU's attractive tools and funds.

Merge the existing awards into one big European Sustainability Prize rewarding different categories (businesses, NGOs, citizens' initiatives, governance) - it would create more interaction between the Commission services by working hand-in-hand on one project.

Karl Falkenberg is Senior Adviser for Sustainable Development to the President of the European Commission, Jean-Claude Juncker. Appointed in September 2015 to assess the implications of commitments of the Agenda 2030 within the Commission and on how to integrate sustainable development in EU policies, his mandate also entails to assess ways to integrate the development of blue growth strategy, the development of cross policy thinking on sustainable development, to bring fresh thinking to the way in which the Commission develops and implements sustainable development policy.

Notes

1. United Nations Department of Economic and Social Affairs - World Population Prospects: The 2015 Revision
2. http://www.un.org/sustainabledevelopment/sustainable-consumption-production/
3. https://sustainabledevelopment.un.org/post2015/transformingourworld
4. https://europa.eu/globalstrategy/sites/globalstrategy/files/about/eugs_review_web_4.pdf
5. http://ec.europa.eu/atwork/key-documents/index_en.htm
6. Liste des Points Prévus SEC(2016) 259 final
7. Ban Ki-Moon, the UN Secretary-General's remarks, to high-level thematic debate on "The State of the World Economy and Finance and its Impact on Development" in New York on 17 May 2012 http://www.un.org/sg/STATEMENTS/index.asp?nid=6057
8. the Pope Encyclical "*Laudato si*" http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html
9. Resolution adopted by the General Assembly on 25 September 2015- 70/1. Transforming our world: the 2030 Agenda for Sustainable Development http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
10. http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html - §49
11. "*When we first aggregated these datasets, we expected to see major changes but what surprised us was the timing. Almost all graphs show the same pattern. The most dramatic shifts have occurred since 1950. We can say that around 1950 was the start of the Great Acceleration*," said Professor Steffen, a researcher at the Australian National University and the Stockholm Resilience Centre http://www.igbp.net/news/pressreleases/pressreleases/planetarydashboardshowsgreataccelerationinhumanactivitysince1950.5.950c2fa1495db7081eb42.html
12. World Economic Outlook April 2016 "Too slow for too long" http://www.imf.org/external/pubs/ft/weo/2016/01/pdf/text.pdf
13. Human and nature dynamics (HANDY): Modeling inequality and use of resources in the collapse or sustainability of societies, Safa Motesharreia, Jorge Rivasb, Eugenia Kalnayc, Ecological Economics Volume 101, May 2014, Pages 90–102 http://www.sciencedirect.com/science/article/pii/S0921800914000615
14. European Commission report (DG EMPL) Employment and Social Developments in Europe 2015 (21/01/2016) Key Features page 17-38 http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7859&furtherPubs=yes
15. http://www.rp-online.de/politik/deutschland/mehr-hartz-iv-aufstocker-trotz-mindestlohn-aid-1.5954619
16. OECD (2015), In It Together: Why Less Inequality Benefits All, report pages 22-23 http://www.oecd.org/els/soc/OECD2015-In-It-Together-Chapter1-Overview-Inequality.pdf
17. OECD (2015) Economic Policy Reforms 2015 Going for Growth, report page 76 http://www.oecd.org/eco/growth/Going-for-Growth-2015-The-effect-of-pro-growth-structural-reforms-on-income-inequality.pdf
18. http://ec.europa.eu/environment/soil/iys2015/index_en.htm
19. http://www.eea.europa.eu/soer-2015/europe/air
20. Resolution adopted by the General Assembly on 25 September 2015- 70/1. Transforming our world: the 2030 Agenda for Sustainable Development http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E
21. IMF World Economic Outlook April 2016 page 18 http://www.imf.org/external/pubs/ft/weo/2016/01/pdf/c1.pdf
22. http://europa.eu/rapid/press-release_SPEECH-16-1922_en.htm
23. See the Guardian's article about Paul Verhaeghe's book "What About Me? The Struggle for Identity in a Market-Based Society", making connections between apparently distinct phenomena – market driven economy, social (de)cohesion, psycho-social and personality issues http://www.theguardian.com/commentisfree/2014/aug/05/neoliberalism-mental-health-rich-poverty-economy
24. "Toward Ecological Civilization Policy Document" adopted by China's State Council and Central Committee on 25 April 2015
25. http://siteresources.worldbank.org/INTEAPREGTOPENVIRONMENT/Resources/China_Cost_of_Pollution.pdf
26. IMF World economic outlook April 2016 foreword http://www.imf.org/external/pubs/ft/weo/2016/01/pdf/foreword.pdf
27. Read more about the EU Semester on page 12
28. European Semester thematic fiche Resource Efficiency (18 May 2016) http://ec.europa.eu/europe2020/pdf/themes/2016/resource_efficiency_201605.pdf
29. http://ec.europa.eu/environment/circular-economy/index_en.htm
30. Science without conscience is but the ruin of the soul
31. http://ec.europa.eu/growth/single-market/strategy/collaborative-economy/index_en.htm
32. *"Our Common Future"* by the UN World Commission on Environment and Development ("the Brundtland report") 1987 http://www.un-documents.net/our-common-future.pdf
33. President Juncker guidelines and statement in the European Parliament plenary session ahead of the vote on the College, 15 July 2014 and 22 October 2014 http://ec.europa.eu/priorities/sites/beta-political/files/juncker-political-guidelines_en.pdf
34. *Ibidem*
35. In July 2009 the Commission adopted the 2009 Review of the 2001 EU Sustainable Development Strategy http://ec.europa.eu/environment/eussd/

36. President Juncker's speech at the International Labour Organisation (ILO) 09 June 2016 http://europa.eu/rapid/press-release_SPEECH-16-2170_fr.htm
37. See Policy Paper Fondation Robert Schuman "the Future of Europe" European issues n°393 24 May 2016 http://www.robert-schuman.eu/en/doc/questions-d-europe/qe-393-en.pdf
38. Speech by President Jean-Claude Juncker at the Award Ceremony of the Charlemagne Prize to Pope Francis Vatican City, 6 May 2016 http://europa.eu/rapid/press-release_SPEECH-16-1681_fr.htm
39. http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2016-0224
40. http://www.un.org/sustainabledevelopment/blog/2016/03/un-statistical-commission-endorses-global-indicator-framework/
41. EEA, 2015, European environment — state and outlook 2015: Assessment of global megatrends, European Environment Agency, Copenhagen, page 16 http://www.eea.europa.eu/soer-2015/global/action-download-pdfhttp://www.eea.europa.eu/soer-2015/global/action-download-pdf
42. President Juncker statement in the European Parliament plenary session ahead of the vote on the College, 22 October 2014 http://ec.europa.eu/priorities/sites/beta-political/files/juncker-political-guidelines_en.pdf
43. See European Sustainable Development Network (ESDN), an informal network of public administrators and other experts dealing with sustainable development strategies in Europe http://www.sd-network.eu/
44. https://www.oecd.org/governance/observatory-public-sector-innovation/h2020/
45. http://ec.europa.eu/environment/emas/index_en.htm
46. Read more on natural capital accounting on page 18
47. Commission's memo released with the latest 2016 Semester Spring package http://europa.eu/rapid/press-release_MEMO-16-1727_en.htm
48. Annual Growth Survey 2016 - Strengthening the recovery and fostering convergence COM (2015) 690 final of 26 November 2015 - http://ec.europa.eu/europe2020/pdf/2016/ags2016_annual_growth_survey.pdf
49. http://ec.europa.eu/europe2020/pdf/2016/ags2016_structural_reform_support_programme.pdf
50. Council conclusions on education for sustainable development (19 November 2010) http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/educ/117855.pdf
51. See the work of the Sustainable Development Solutions Network and SDSNedu, a flagship initiative that provides high-quality, mass online education on sustainable development – including health, education, climate change, agriculture and other related fields – to offer a comprehensive core curriculum http://unsdsn.org/
52. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0095&from=EN
53. IMF World economic outlook April 2016 foreword http://www.imf.org/external/pubs/ft/weo/2016/01/pdf/foreword.pdf
54. https://ec.europa.eu/priorities/sites/beta-political/files/5-presidents-report_en.pdf page4
55. UNEP Inquiry "the financial system we need" http://web.unep.org/inquiry/publications
56. http://europa.eu/rapid/press-release_MEMO-16-160_en.htm
57. European Semester thematic fiche Resource Efficiency (18 May 2016) http://ec.europa.eu/europe2020/pdf/themes/2016/resource_efficiency_201605.pdf
58. http://www.fao.org/sustainability/en/
59. See the own initiative report MEP Andrieu 2015/2226(INI): How can the CAP improve job creation in rural areas? http://www.europarl.europa.eu/sides/getDoc.do?type=COMPARL&reference=PE-573.103&format=PDF&language=FR&secondRef=01
60. Eurobarometer October 2015 http://ec.europa.eu/agriculture/survey/index_en.htm
61. The mid-term review of the EU biodiversity strategy to 2020, COM (2015) 478 final of 02 October 2015 http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0478&from=EN
62. http://www.za.plainevalsevre.cnrs.fr/index.php/2016/05/12/journee-de-rencontre-entre-les-agriculteurs-apiculteurs-et-scientifiques-de-la-zone-atelier/ and http://www.lemonde.fr/biologie/article/2016/06/27/l-agronomie-grandeur-nature_4959034_1650740.html#2SiEreU9rssJ18YC.99
63. See e.g. opinion and recommendations of the International Federation of Gynecology and Obstetrics on reproductive health impacts of exposure to toxic environmental chemicals (2015): "*For example, the industrialized food systems a major contributor to the introduction of toxic chemicals—from pesticides to plastics—into the environment*" http://www.figo.org/sites/default/files/uploads/News/Final%20PDF_8462.pdf
64. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XG0708%2801%29&rid=14
65. http://ec.europa.eu/health/archive/ph_determinants/life_style/nutrition/documents/nutrition_wp_en.pdf
66. http://www.forumforagriculture.com/ on 22 March 2016, an initiative by the European Landowners' Organization (ELO) and Syngenta
67. http://ec.europa.eu/agriculture/cap-overview/2014_en.pdf page 8
68. Airbus project Airbees http://www.aisc-dd-greenees.fr/devl_dur/index.php?z=34 in France and in Germany http://www.airbus.com/newsevents/news-events-single/detail/aircraft-and-honey-bees-are-playing-a-key-role-in-monitoring-airbus-environmental-footprin/
69. EEA Report No 3/2016 Mapping and assessing the condition of Europe's ecosystems: progress and challenges http://www.eea.europa.eu/publications/mapping-europes-ecosystems European Commission Technical report – 2016 – 095 Mapping and Assessment of Ecosystems and their Services — Mapping and assessing the condition of Europe's ecosystems: progress and challenges — 3rd Report – Final, March 2016 http://ec.europa.eu/environment/integration/research/newsalert/pdf/ecosystem_services_biodiversity_IR11_en.pdf
70. EU Business @ Biodiversity Platform http://ec.europa.eu/environment/biodiversity/business/index_en.htm
71. N. Gallai et al. Economic valuation of the vulnerability of world agriculture confronted with pollinator decline. Ecol. Econ., 68 (2009), pp. 810–821
72. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) http://www.ipbes.net/article/press-release-pollinators-vital-our-food-supply-under-threat
73. http://www.wageningenur.nl/nl/nieuws/Flink-aandeel-opbrengst-appels-en-blauwe-bessen-te-danken-aan-wilde-bijen-.htm
74. http://www.ft.com/cms/s/2/d096f594-4be0-11e5-b558-8a9722977189.html#axzz46BqpHq1A
75. http://ec.europa.eu/environment/nature/ecosystems/docs/green_infrastructure_broc.pdf
76. http://www.unep.org/about/sgb/Portals/50153/UNEA/K1602727%20INF%205.pdf Thematic report Ministerial policy review session Second session of the United Nations Environment Assembly of the United Nations Environment Programme Nairobi, 23–27 May 2016

77. The Institute for European Environmental Policy "The Health and Social Benefits of Nature and Biodiversity Protection" Final Report 28 April 2016 (IEEP) http://ec.europa.eu/environment/nature/biodiversity/intro/docs/Health%20and%20Social%20Benefits%20of%20Nature%20-%20Final%20Report%20Main%20sent.pdf
78. http://ec.europa.eu/agriculture/cap-overview/2014_en.pdf page4, page 9, page 12
79. http://ec.europa.eu/agriculture/rica/pdf/EU_FEO_FADN_2012.pdf page 18
80. The 2030 Agenda, paragraph 28 https://sustainabledevelopment.un.org/post2015/transformingourworld
81. http://www.oecd-ilibrary.org/docserver/download/ea5b74c8-en.pdf?expires=1464599594&id=id&accname=guest&checksum=C2DB3AAD3ED80A18F51A561740299580
82. Commission Staff Working Document - Review of greening after one year 22 June 2016 SWD(2016) 218 final http://ec.europa.eu/agriculture/direct-support/pdf/2016-staff-working-document-greening_en.pdf http://www.birdlife.org/sites/default/files/attachments/conference_report_rdp.pdf
83. http://ec.europa.eu/agriculture/markets-and-prices/more-reports/pdf/organic-2013_en.pdf pages 9 and 17
84. http://agriculture.gouv.fr/les-fondements-de-lagro-ecologie
85. Report submitted in 2011 to the UN by the Special Rapporteur on the right to food, Olivier De Schutter http://www2.ohchr.org/english/issues/food/docs/A-HRC-16-49.pdf
86. http://agriculture.gouv.fr/lexperience-du-vingt-ans-sans-labour
87. Barilla Sustainable Durum Wheat Project http://www.goodforyougoodfortheplanet.org/stories/
88. http://www.fermedubec.com/inra/Permacultural%20Organic%20Market%20Gardening%20and%20Economic%20Performance_Final%20Report_Nov15_Bec%20Hellouin%20Farm_sylva_AgroParisTech.pdf
89. E.g. in Germany http://www.dw.com/en/organic-farming-helping-the-environment-thanks-to-the-community/a-19361971 and in Belgium http://www.chantdescailles.be/
90. The increase of EU agri-food exports to China was particularly significant with +29% over the last 12 months. This month's report focuses on pig meat, one of the EU agri-food flagship products accounting for around 5% of the total agri-food value. Since the Russian sanitary ban was implemented in 2014, pork formerly exported to Russia has been mainly reoriented towards certain Asian countries such as China and the Philippines, which were already growing destinations before 2014. Commission Daily News 20 June 2016 http://europa.eu/rapid/press-release_MEX-16-2260_en.htm
91. http://www.eeb.org/index.cfm?LinkServID=FF5BBC1A-5056-B741-DB7BDFBC06CB26FE
92. For details, see report of the International Panel of Experts on Sustainable Food (IPES-Food) 2016 "From uniformity to diversity: a paradigm shift from industrial agriculture to diversified agro-ecological systems" http://www.ipes-food.org/images/Reports/UniformityToDiversity_FullReport.pdf
93. Directive 2014/24/EU into force April 2016 http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8773
94. President Juncker's speech at the International Labour Organisation (ILO) 09 June 2016 http://europa.eu/rapid/press-release_SPEECH-16-2170_fr.htm
95. "Trade for all" Communication from the Commission October 2015 http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153846.pdf
96. http://pubdocs.worldbank.org/en/842861463605615468/Global-Economic-Prospects-June-2016-Divergences-and-risks.pdf
97. https://www.wto.org/english/tratop_e/envir_e/envt_rules_gatt_e.htm
98. http://ec.europa.eu/agriculture/cap-overview/2014_en.pdf page 15
99. http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html - §44
100. http://www.eea.europa.eu/themes/urban/intro
101. http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html
102. http://www.bauen-neu-denken.de/
103. http://urbact.eu/
104. http://www.eurocities.eu/eurocities/home
105. http://www.ccre.org/
106. http://www.c40.org/
107. http://www.compactofmayors.org/globalcovenantofmayors/
108. http://ec.europa.eu/research/innovation-union/index_en.cfm?section=icapital
109. http://ec.europa.eu/regional_policy/en/regio-stars-awards/
110. http://www.mobilityweek.eu/emw-award/
111. http://www.mobilityweek.eu/sump-award/
112. http://ec.europa.eu/environment/europeangreencapital/index.html
113. http://ec.europa.eu/environment/europeangreencapital/europeangreenleaf/index.html
114. http://www.sustainablecitiesbenchmark.eu/
115. 7th EAP: Objective 8 p.26
116. http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/