

## **Agenda 2030 and the EU : observations about the alignment of the EU Green Deal and Recovery Packages in a perspective of global risk assessment.**

### **Introduction :**

The note about the planned EU Green Deal and Recovery Packages focusses on the alignment to the UN-Agenda 2030 and the climate-objectives of the Paris Agreement in a perspective of global risk assessment. A number of observations inform about the issues at stake and about the opportunities for a timely and effective implementation of the Agenda towards 2030.

The social issues and challenges inherent in the UN-Sustainable Development Goals are part of a Europe of and for its citizens - the EU Social Pillar and “A Just Transition” -.

In developing the observations reference is made to analytical work and to ongoing UN-work about the global Agenda. The role science could play in bringing about the “transformative change” in our societies and economies is part of the observations. The Covid-19-pandemic and the global tragedy of its ongoing impacts on citizens and on society globally underline the imperative need to address the systemic risks inherent in the major global environmental issues to society as a matter of great urgency.

The note informs about and addresses :

- I. “Agenda-2030 - the SDGs, the Paris Agreement Climate objectives and Finance for Sustainable Development” and “Global Risk”,
- II. “EU-Governance for Agenda 2030” (including “Policy Coherence for Sustainable Development”),
- III. “EU-Governance and Food Systems”,
- IV. “Global Cooperation”.

Annex with references.

In relation to these issues the following UN-analysis provides a relevant introduction (2010) :

UN World Economic and Social Survey 2010 : **Globalization at a cross-roads :**

“... A central concern of the new thinking will be the need for a focus on sustainable development—entailing an approach that would balance material

wealth improvements with protection of the natural environment and ensure social equity and justice—rather than a focus narrowly concentrated on economic growth and private wealth generation based on market incentives. Global solutions will be required for global problems and, given the interdependence of these problems, policy responses will need to be highly coherent at various levels if the international community is to achieve the multiple objectives associated with fair and sustainable global development. Because of the complexity of global challenges, pursuit of these solutions will not be easy: it will require a new kind of thinking and the striking of a new balance between decision-making processes at the national level and those at the global level.”

end of quote.

## **I. Agenda-2030 - the SDGs, the Paris Agreement Climate objectives and Finance for Sustainable Development -.**

“Governance and Regulation” continue to be the big unresolved issue : how do the UN member states act to implement their respective 2015-commitments to Agenda 2030. The case of the European Union and the EU Green Deal, EU-budget 2021-2027 and the financial measures to cope with the impacts of the ongoing Covid-19-pandemic will be addressed in terms of alignment to Agenda 2030.

The systemic risks inherent in the major global environmental issues and the ways in which these risks will be addressed by the EU and its member states, will need to be addressed in order to inform the policy responses and measures for the implementation of Agenda-2030 and about the potential for large-scale transformative change, focussed on the current unsustainable production- and consumption patterns (the latter informed by e.g. UNEP International Resource Panel and the final demand issues of “Food, Housing and Mobility”).

The concept of **“A Safe Operating Space for Humanity and the Planetary Boundaries”** provides a relevant framework for the implementation of Agenda 2030 with the required risk assessment : the EU-policy responses will demand adaptive policy making over time, based on an integrated assessment of the systemic risks and on the basis of its outcomes the opportunities for the timely and effective implementation of the Agenda-2030.

The pandemic and the global tragedy of its impacts on citizens and on society globally underline the imperative need to address the systemic risks as a matter of great urgency. The underlying causes of the pandemic relate to climate change impacts, biodiversity losses, deforestation... reinforce the need to act.

Science plays a major role in support of the responses to the current pandemic governments have been adopting in many cases : science would have a major role to play in informing governments about the policy responses and measures on a continuous basis - adaptive policies over time - given the nature, scope and consequences for society globally, inherent in the 9 “Planetary Boundaries”- issues developed under the concept of “A Safe Operating Space for Humanity” (2009, 2015) : further informed by :

**“How to achieve the SDGs within the Planetary Boundaries”** - Stockholm Resilience Centre and the Norwegian Business School, October 2018 :

“This is the world’s first study – to our knowledge – on how to optimally achieve all SDGs within all PBs through an integrated Global System Model. We find that a piecemeal approach to attaining the goals sets up trade-offs and conflict among goals. The pursuit of each and all SDGs is necessary, but not sufficient to succeed in the longer run, and potentially even counterproductive. A transformational approach to SDG achievement is needed. The elements of this transformation are presented in our scenario, but further analysis and modelling are needed to support the necessary changes worldwide.

It seems necessary to implement transformational and extraordinary policy changes, in order to achieve near full success of SDGs within PBs. These policies need to go well beyond the conventional policy toolbox.

**A call to action for policy makers** : How can the world achieve the Sustainable Development Goals within planetary boundaries? The following policy recommendations emerge from the project’s foresight analysis:

1. We call on world leaders, as a matter of urgency, to explore transformative change measures to increase the likelihood of meeting more SDGs by 2030 and to achieve global sustainability by 2050. Transformative change is needed to attain the SDGs because, on the current path, the world will only achieve 10 of the 17 Sustainable Development Goals by 2030. This happens at the expense of pushing 8 of the 9 planetary boundaries out of their safe zones – with the situation worsening to 2050 and beyond.

2. Transformative change is possible, through five strategies that seem to be powerful ways to reach most SDGs within most PBs. The five measures are:

- 1) accelerated renewable energy growth sufficient to halve carbon emissions every decade,

- 2) accelerated productivity in sustainable food chains,
- 3) new development models in the poor countries,
- 4) unprecedented inequality reduction, and
- 5) investment in education for all, gender equality, health, family planning.

The choice is the simplest way we have found to achieve all SDGs both social and environmental. They represent five “leverage points” to intervene in the globally inter-connected geo-bio-socio- economic system. Together, they are capable of shifting the global system onto a new path in the decades ahead.

3. There is no silver bullet. Attaining the SDGs within PBs will require an integrated mix of policy levers – as indicated by the five transformations we recommend above. The policy mix will include economic growth, technological advancements, policies in support of inclusion and social equity, and global partnerships for governance of planetary boundaries. We have calculated the scale required, but recommend further analysis of how to achieve implementation, and these need to be made on in-depth understanding of the global system and the dynamics of socio-economic-environmental transition...”,

end of quote.

In conjunction with the analysis referred to above the actual and potential consequences of climate change for society are informed by e.g. the analysis **“The Social Cost of Carbon”** (USA-government, 2013) : describing the consequences in a.o. terms of damages, defined in as GDP-losses, of which in the EU :

“Probability of a Discontinuity :

.... A large-scale discontinuity becomes possible when the temperature rises beyond some threshold value between 2 and 4°C. The probability that a discontinuity will occur beyond this threshold then increases by between 10 and 30 percent for every 1°C rise in temperature beyond the threshold. If a discontinuity occurs, the EU loses an additional 5 to 25 percent of its GDP (drawn from a triangular distribution with a mean of 15 percent) in addition to other damages, and other regions lose an amount determined by the regional scaling factor.”

end of quote.

A question here is what the assessment of the nature of the “Social Cost of Carbon” referred to above, would provide in terms of methodology, challenges and outcomes if and when conducted in 2020. The following analyses inform about a number of issues in relation to it, and to risk assessment and government-responses, also in response to the ongoing impacts of the pandemic Covid-19 :

The **”Green Swan 2 – Climate change and Covid-19: reflections on efficiency versus resilience”**, **Bank for International Settlements** informs about “Global Risks” inherent in the pandemic of the nature of Covid-19 - :

“... Box 1: The destruction of our natural habitat as a factor in pandemics -, with a “call for a new landscape of cooperation among players, including central banks”

“...The major issue is the cost of prevention to reduce these risks, and looking at the current loss of global welfare (see Graph 1), it now seems that is worth considering some form of insurance. More generally, the effects of global risks such as pandemics illustrate the trade-off between efficiency and resilience. Finally, the lessons should help us to engineer a recovery that mitigates, or at least will not aggravate, the risks of new climate-related Green Swans.

..... In order to realise a win-win scenario as a basis for the recovery, we will need to rethink (i) the adequate measurement of global risks; (ii) their proper pricing as negative externalities; and (iii) the resilience of our systems, institutions and modus operandi in avoiding Green Swans”.

end of quote.

**Natural capital and ecosystem services informing decisions: From promise to practice** - Anne D. Guerry et al, PNAS, June 16, 2015 :

“...The central challenge of the 21st century is to develop economic, social, and governance systems capable of ending poverty and achieving sustainable levels of population and consumption while securing the life-support systems underpinning current and future human well-being. Essential to meeting this challenge is the incorporation of natural capital and the ecosystem services it provides into decision-making. We explore progress and crucial gaps at this frontier, reflecting upon the 10 y since the Millennium Ecosystem Assessment. We focus on three key dimensions of progress and ongoing challenges: raising awareness of the interdependence of ecosystems and human well-being, advancing the fundamental interdisciplinary science of ecosystem services, and

implementing this science in decisions to restore natural capital and use it sustainably.”

end of quote.

**“The missing economic risks in assessments of climate change impacts - Policy insight, September 2019” :**

Summary

Economic assessments of the potential future risks of climate change have been omitting or grossly underestimating many of the most serious consequences for lives and livelihoods because these risks are difficult to quantify precisely and lie outside of human experience.

Political and business leaders need to understand the scale of these ‘missing risks’ because they could have drastic and potentially catastrophic impacts on citizens, communities and companies.

Scientists are growing in confidence about the evidence for the largest potential impacts of climate change and the rising probability that major thresholds in the Earth’s climate system will be breached as global mean surface temperature rises, particularly if warming exceeds 2°C above the pre-industrial level.”

end of quote.

**“Dasgupta Review - Independent Review of the Economics of Biodiversity”,** (Cambridge University), UK Treasury 4 2020 : Introduction Interim Report :

“Our economies, livelihoods and well-being all rely on Nature. We rely on Nature to provide us with food, water and shelter; to regulate our climate and control disease; to maintain nutrient cycles and oxygen production; and to provide us with spiritual fulfilment and opportunities for recreation, among many other examples. Put simply: without Nature, there would be no life.

Biodiversity plays an important role in the provision of many of the services we receive from Nature, known today as ecosystem services or nature’s contributions to people. Just as diversity within a portfolio of financial assets reduces risk and uncertainty, diversity within a portfolio of natural assets – biodiversity – directly and indirectly increases Nature’s resilience to shocks, reducing risks to the services on which we rely. Biodiversity is an essential characteristic of Nature. The economics of biodiversity is therefore the economics of Nature.”

end of quote.

The contributions “Nature-based Solutions” may provide in mitigating the global risks across a range of opportunities with the potential for large scale-transformative change, will be addressed in the context of a number of EU-proposals and imminent decisions about the EU budget and the Recovery packages, in particular the Future of the EU Common Agricultural Policy of which the planned budgets are close to 30 % of the overall planned EU budget.

## **II. “EU-governance for Agenda 2030”.**

EU-governance for Agenda 2030 is about the policies and measures to address both Risk Mitigation in the Public Interest and the timely and effective delivery of the Agenda 2030-outcomes. The pandemic and the global tragedy of its ongoing impacts on citizens and on society globally underline the imperative need to address the systemic risks as a matter of great urgency. The underlying causes of the pandemic relate to amongst others climate change impacts, biodiversity loss, deforestation, destruction of wildlife habitat, and addressing the causes of a pandemic of this nature should be an integral part of an “EU-risk mitigation-system in the public interest” to inform the decisions to be taken to implement the EU Green Deal and Recovery Packages aligned to Agenda 2030.

The issue of “governance” for the agenda described above can be observed from a number of angles, informing about the issues at stake and about ways to develop and operationalise “governance” :

The European Environment Agency observations and recommendations in **“Late lessons from early warnings: science, precaution, innovation: Chapter E Implications for science and governance”**: (pages 621- 684) (2013), are a.o. about :

“The Late lessons from early warnings case studies demonstrate the complexities of handling the interactions between the many actors and institutions involved — governments, policymakers, businesses, entrepreneurs, scientists, civil society representatives, citizens and the media.

The opportunities are manifold but can be boiled down to three main ones:  
1 to correct the prioritisation of economic and financial capital over social, human and natural capitals through the broader application of the policy principles of precaution, prevention and polluter–pays, and improved accounting systems across government and business”,

end of quote.

**“Policy Coherence for Sustainable Development”** would play a core role in :

- bringing about the necessary transformational changes in policy development and implementation at the EU-level and the imminent decision making about the EU-budget 2021-2027 under the Green Deal and the Recovery Packages

- serving as the basis for public accountability of (member state-)governments and the EU for putting into place the policies and measures for the global Agenda-2030 and for the delivery of the outcomes : “adaptive policy making” over time would ensure optimal “policy adjustment” over time aligned to both risk mitigation and to outcomes to be obtained towards 2030.

**Trends and developments in public finance** further inform the governance- and policy coherence-agendas, of relevance to the UN SDG-Addis Ababa Action Plan and the role public and private financial flows (are to) play in bringing about the outcomes towards 2030 and in the longer term-perspective of 2050 :

**The UNEP Inquiry into the Financial System** (> 2014) informs about the role the financial is to play in support of Agenda 2030. The 2019-analysis “Green Finance Database Measures, Technical Note” - UNEP Inquiry and Green Growth Knowledge Partnership (December 2019) - informs about “classifying the objectives of policy and regulatory measures issued by public authorities, including governments, central banks, financial regulators, and public financial institutions at COP 25 in Madrid this week” (2019), e.g. :

**“Reset:** Broad measures to align groups of institutions, or the financial system itself, with environmental outcomes and sustainable development objectives, for instance the development of national roadmaps for sustainable finance.”

end of quote.

With the role of public finance-actors at centre stage the following provides information about views, tools and developments of relevance to the debate and action about the EU Green Deal and Recovery Packages. Of particular interest are the observations in the debate with the managing director IMF : Montaigne and Bruegel Institutes, June 15, 2020 (“Globsec”), about “carbon pricing” :

**The Role of the IMF in the Post-COVID-19 Fiscal Stabilization and Recovery.**

Key Points

“... ‘We should use fiscal stimuli to create green jobs, move digitalization forward in an equitable way and ensure that we build shock resilient economies. Tax policies will also need to be changed. A price on carbon will also be needed



as well as how we tax the digital sector. The last tool we will have are tools for structural changes which ensure that the economies remain fair and create jobs. We need a greener, smarter world. ‘

.... Regarding carbon pricing, the IMF has come to the conclusion, supported by empirical evidence, that a carbon tax is the most efficient measure when it is used properly. That is, by using the income to aid people with lower incomes, there is public support. By distributing these incomes like this, it produces an incentive to move to lower carbon solutions. In Ireland they began quite low and by slowly increasing you can transition an economy. Now may be the time to use incentives to encourage European economies to adopt them. Right now, carbon is at 2\$ globally and needs to be at 75\$”,

end of quote.

“Payments for Eco-system services” - PES -, of which carbon pricing is the most prominent example - are part of the tools in **“environmental fiscal reform”**, and apply to other negative externalities : e.g. water risk pricing. Water risk-pricing is on the agenda of credit rating agencies in addition to climate risk, with the potential to be further extended across the range of “planetary boundaries”-risk issues. A core factor is the value “PES” may represent, both in function of “Environmental Fiscal Reform” and its role in addressing inequalities in society, and its potential to generate public revenues (e.g. OECD-work on carbon pricing).

For citizens the long term-savings and its future value - pensions and life insurance as part of social security systems in EU-member states - would be a major priority issue on the Green Deal-Recovery agenda and the “future of the European Social Pillar”, also given the very low interest rates these investments currently generate, and for some time to come. A successful transition to a “green economy” with the required “long term-green investments” would go some way to ensure the robustness and predictability of the future values of the citizens’ long term-savings as a core social issue to be addressed.

Overall, public policy and in particular the policy responses to Agenda 2030 and its effective implementation and the needed outcomes - as the steps towards public accountability of the EU and its member states -, may well be “co-defined” by central banks and the IMF, given the instability of the financial system globally and the nature and potential consequences of the planetary boundaries-risk issues for the financial system, compounded by “pandemic-risk”, as major challenges to be addressed and “confined”.

IMF working papers in 2014/15 about “local air pollution, health and co-benefits”, and “subsidies to energy production and consumption” inform about some global core issues still of major relevance now (with carbon pricing as an accounting tool in the methodology).

In addition to trends and developments in the public sector, the steadily ongoing initiatives in society - in many cases supported by science and focussed on delivery of sustainability outcomes under “regulatory uncertainty” - inform about methodologies and outcomes that are relevant for the policy responses briefly described above :

- Natural Capital accounting, building on the project “The Economics of Ecosystems and Biodiversity” - TEEB - (in turn based on the UN Millennium Ecosystems Assessment (2005)),
- Natural Capital Coalition and the Natural Capital Protocol Toolkit 2017 and Enterprise Risk Management (2018) (by the World Business Council for Sustainable Development),
- Sustainability Accounting Standards Board (USA, 2012) and its “materiality mapping”,

covering a range of accountability-issues of direct relevance to Agenda 2030, along with examples of initiatives of reporting and disclosure ( e.g. the “Carbon Disclosure Project” > 2000, Carbon Tracker / Planet Tracker).

Developments in the “digital age” with data, data analytics and the range of (potential) tools are to be considered and integrated in support of the timely and effective implementation of Agenda-2030.

### **III. Governance and the “Future EU Common Agricultural Policy” :**

Governance in relation to the “Future EU Common Agricultural Policy” and the planned budgets - addressed in the context of the current unsustainable production- and consumption patterns in the EU member states - would be informed by the (inherent) opportunities for large scale transformative change. The fact that “food systems” apply directly or indirectly to all SDGs and are a core issue in the perspective of risk mitigation in the public interest, underlines the relevance of “food systems” and its future to the debate and decision making, including “pandemic-risk reduction”.

The “Future of EU Common Agricultural Policy” would have the potential to bring about a range of “co-benefits” to society and to citizens (starting) in the

short- to medium terms, as well as the longer term-benefits of which climate mitigation. Food systems contribute to close to 40 % of global GHG-emissions and to a range of other direct and indirect impacts with negative externalities and have at the same time the potential for large scale-transformative change the Agenda-2030 requires.

Opportunities for action would be in relation to health systems and to the reduction of energy- and material use in food systems, the latter in particular in high(er) income-countries with their corresponding high environmental footprints (a.o. reflected in food losses and waste and the subsequent opportunity to reduce at scale towards 2030, as an SDG-agreed target).

### **A role for science :**

The decision making about the Future CAP and the planned budgets of close to 30 % of the overall EU budget would be an opportunity for the EU to call on science to inform the EU about the steps to be taken to address the solutions at scale “sustainable food systems” would provide to both the Agenda 2030 and to risk mitigation in the public interest. Scientific work focussed on food systems and on the Future EU CAP abounds and provides specific advice geared to both the desired outcomes and the knowledge, know-how and data about how to deliver the outcomes.

Risk mitigation in the public interest could e.g. be articulated in terms of “key public environmental performance indicators”, informed by the analysis of “Planetary Boundaries” in relation to food systems. Among the outcomes would be the contribution to risk mitigation inherent in pandemic of the nature of Covid-19, the EU and its member states are to make in the context of a governance-approach of this nature.

A role for science is reflected in a contribution of scientists : **“Action needed for the EU CAP to address sustainability challenges”** - People and Nature, 2020 : **Agriculture is the main driver of environmental degradation in Europe :**

Ten Action points :

1. Transform Direct Payments into payments for public goods
2. provide sufficient support for effective climate change mitigation.

3. provide sufficient support for effective instruments to maintain biodiversity and ecosystems
  4. promote innovative approaches to design and implement measures addressing the environmental challenges
  5. Enhance spatial planning and collaborative implementation of landscape-level measures
  6. Require MS to set S.M.A.R.T. targets in their strategic plans
  7. Revise the set of indicators (indicator framework, CBD IPCC...)
  8. Strengthen environmental monitoring and enforcement
  9. Identify and address global impacts of the CAP especially in the global South
  10. Improve governance of the CAP and its reform”,
- end of quote.

Observations of this nature also apply to health and health systems, of which the analysis of the World Health Organisation of nutrition and health and the incidence of both overconsumption (generally in high(er) income countries) and poverty-related malnutrition (generally in lower income countries) (2003) : more healthy lifestyles would have direct and long lasting benefits for citizens and for society, also in terms of public finance and of prevention in health systems.

The complexity and interdependencies of the two “agendas” in relation to both food-production and consumption, also relate to a range of global policy domains such as trade policy and multilateral environment agreements : the forthcoming Conferences of Parties of UNFCCC and the convention for Biological Diversity (CBD), and the UN Food Summit 2021.

At the same time, observations about policy areas of relevance to food systems and not (fully) considered in the EU decision making so far, have profound adverse implications for the capacity of the EU to achieve the needed outcomes. The relationship of Finance and Biodiversity, analysed in the OECD-report informs about “government support potentially harmful to biodiversity”, touching upon the broader issue of environmentally harmful subsidies and the priority the elimination of these subsidies would have under the planned Green Deal and Recovery Packages : “A Comprehensive Overview of Global Biodiversity Finance” - Final report, April, 2020, Prepared by the Organisation for Economic Cooperation and Development (OECD) :

“.....The report also provides an overview of government support potentially harmful to biodiversity, and offers recommendations for improving the assessment, tracking and reporting of biodiversity finance.

Meanwhile, governments spend approximately USD 500 billion per year in support that is potentially harmful to biodiversity i.e. five to six times more than total spending for biodiversity. The total volume of finance flows that are harmful to biodiversity (i.e. encompassing all public and private expenditure) is likely to be many times larger.”

end of quote.

The audit-report of the **European Court of Auditors** provides yet another angle to the landscape of issues of relevance to the EU-decision making : European Court of Auditors: Special Report (May 2020) :

“Biodiversity on farmland: CAP contribution has not halted the decline”,

end of quote.

The analysis “**Stranded Assets in Agriculture: Protecting Value from Environment-Related Risks**” - 2013 - informs about a number of issues relevant to (priority) public policy responses (today) :

“..... From a government perspective, stranded assets are a problem because they often arise from market failures and the materialisation of long-overlooked external costs and the associated poor regulation of the economy. Stranded assets can often carry with them implicit government insurance to ease ‘transition’ costs when things go wrong.....

- Risk and exposure to stranded assets is often compounded because of the problems of path dependency and short term decision- making biases -

From a macroeconomic perspective, stranded assets are a problem because if otherwise unsustainable assets are kept in production for too long they become a drag on productivity, economic growth, social welfare and the public purse. ....

The risks of stranded assets are therefore of interest to finance ministries and central banks concerned about **system-wide stability and economic performance.**”

end of quote.

Taken together, an integrated approach to the EU-decision making, integrating the major issues on the landscape briefly “painted” above, would have the potential to

make a major and effective contribution to the Agenda 2030 and to risk mitigation in the public interest - and in the interest of the EU -, with an “organised call on science”.

The numerous initiatives in society also inform about “what to do” : the US-based 2017 initiative [DrawDown.org](https://drawdown.org) and its ongoing work focus on actual and potential solutions to literally drawdown GHG-emissions, of which a large number relate to food systems on land and in the oceans. The Nature Conservancy and SouthPole (2017) inform about “natural climate mitigation pathways with co-benefits” in support of land use- and agriculture-related opportunities for climate mitigation and a range of other co-benefits, as a step towards long term-investment opportunities in “nature-based solutions”.

Food Waste and Losses : “reduction at scale” will be about avoided direct and indirect emissions and impacts inherent in food production and distribution, and consumption. The EU could adopt a 2030-target well beyond (average global) SDG-target of 50 % given the current levels of losses and waste (estimated at 88 million tonnes in 2016 in Europe), and apply digital age-solutions in support of it.

Together with promoting healthy lifestyles by an emphasis on healthy food related to prevention in health systems- building on the broad range of existing initiatives in society with potential at scale for positive outcomes over the next few years - the potential is there to mobilise the largest “stakeholder”-group of citizens as consumers, across the EU. Public procurement by institutions financed by public funds in health, education, and care for the elderly would also contribute to promote transformational change in food systems.

Potential for large-scale transformative change could also be addressed in non-food supply chains of which the apparel- and fashion industry : The “Global Market Report : Cotton” - International Institute for Sustainable Development and State of Sustainability Initiatives, June 2020 - informs about a.o. issues WTO-related “subsidies rules” and environmental - e.g. land use, water, pesticides and herbicides - and social issues.

#### **IV. Global Cooperation :**

Global cooperation is a chapter to be written as a further contribution. A number of observations are made to inform about the approach to be adopted for the purpose of a further contribution.

The opportunities for global cooperation are about enhancing the chances for success in implementing the Agenda 2030-agenda and the mobilisation of the

financial flows from public and private sources on the basis of the agreed 1992-principles of “common but differentiated responsibilities” among the UN-member states, and the concept of “A Just Transition” at the global scale.

The major contribution of a group of UN-member states the EU represents would be to reduce at scale - in function of the outcomes of risk mitigation in the public interest - the environmental footprints inherent in its current production- and consumption patterns -, as developed in the preceding chapters of the note.

The EU could build on its long term-experience of “Policy Coherence for Development” and its agenda issues of common EU-policies of Trade, Agriculture and Fisheries, as well as issues related to migration, to develop a system of “Policy Coherence for Sustainable Development” - an agreed SDG-concept - in support of “global cooperation” for the coming decades. Migration would be about environmental refugees and addressing its root causes, as a major issue on the agenda.

The expiration in 2020 of the long term-agreement of the EU with a large number of developing countries under the successive Lomé- and Cotonou-agreements would provide the opportunity to found a basis and framework for a new partnership agreement with Africa and the Small Island Developing Countries, all among the most vulnerable countries in terms of exposure to the major global environmental risks and among the countries having contributed the least to the causes of emissions and impacts related to these risks.

“Food Systems” are a core issue on the agenda , informed e.g. by the FAO-statement :

FAO statement, July 2, 2020, in : International Food Policy Research Institute (IFPRI) blog, guest post Maximo Torrero : **“Prepare food systems for a long-haul fight against COVID-19”** : - quoting the following paragraphs from the full text in the link - :

“With a devastating one-two punch, a supply shock followed by a demand shock, the COVID-19 pandemic has knocked out the world economy. The first blow was the Great Lockdown; the second, the worst recession since the Great Depression. No modern economy has experienced anything like this. As the spread of the novel coronavirus debilitates people’s ability to harvest and buy and sell food, food systems are under threat as never before.

A collapse in demand for food due to lack of income and disruptions to local food markets indicate important vulnerabilities, as shown in Figure 1, and could

prompt a global food crisis. Hunger and malnutrition were significant global problems even before the pandemic. More than 2 billion people didn't have regular access to safe, nutritious and sufficient food last year. Some 704 million of them went to sleep on an empty stomach; this included 135 million people who were on the edge of starvation.

At FAO, we estimate that a 5%-10% drop in GDP growth would mean an additional 38.2-80.3 million people in poor countries that rely on food imports falling into the hunger trap. At a global scale, this means the number of hungry people would jump by between 74 million and 120 million. The effects of COVID-19 are even more pronounced in Africa south of the Sahara and Small Island Developing States (SIDS). The virus shuttered tourism, leaving SIDS like Fiji, the Maldives, and Mauritius scrambling for economic survival. The World Bank expects to see a sharp 20% drop in global remittances.

Africa is bracing for the worst. The epic oil price crash has led to a global financial bust. For the continent's exporters, such as Nigeria, Chad, Libya, and Algeria, it has wiped out their principal source of revenue. A catastrophic locust outbreak in East Africa was—pre-pandemic—projected to force 25 million people in Ethiopia, Kenya, Somalia, Uganda, and Sudan to go hungry. A swarm covering one square kilometer contains 80 million insects and consumes more food in 24 hours than 35,000 people. Africa south of the Sahara faces its first recession in 25 years and is especially vulnerable to the impact of COVID-19.

Food systems, which directly employ over 1 billion people, are about to lose more than 451 million jobs or 35% of formal employment, according to an unpublished FAO/IFPRI estimate. The jobs most at risk are in food processing, services, and distribution, disproportionately affecting female workers.

The world is in a grueling 12-round fight against the coronavirus. In every round, there's a risk of another lockdown. But the above policy recommendations will prevent millions of people from facing outright starvation. They will make it easier for countries to bounce back from the recession and go the distance.

Maximo Torero is the Chief Economist and Assistant Director General for Economic and Social Development at the U.N. Food and Agriculture Organization in Rome.”

( <https://www.ifpri.org/blog/prepare-food-systems-long-haul-fight-against-covid-19#.XwAwKU5vFEg.email> ),  
end of quote.



Finally, the forthcoming conferences of Parties to the UN-FCCC and the convention on Biological Diversity (CBD) and the UN Food Summit, will also provide the opportunity to the EU and its member states to further contribute to and enhance global cooperation to achieve the objectives of Agenda 2030 globally.

**Gertjan Storm,**

ambassador of The Netherlands, retired,

advising not-for-profit initiatives for sustainability,

Brussels, July 2020.

#### **Annex :**

The analysis “**The Social Cost of Carbon**” (USA-government, 2013) informs a.o. about :

“Probability of a Discontinuity

In PAGE2002, the damages associated with a “discontinuity” (nonlinear extreme event) were modeled as an expected value. Specifically, a stochastic probability of a discontinuity was multiplied by the damages associated with a discontinuity to obtain an expected value, and this was added to the economic and non-economic impacts. That is, additional damages from an extreme event, such as extreme melting of the Greenland ice sheet, were multiplied by the probability of the event occurring and added to the damage estimate. In PAGE09, the probability of discontinuity is treated as a discrete event for each year in the model. The damages for each model run are estimated either with or without a discontinuity occurring, rather than as an expected value. A large-scale

discontinuity becomes possible when the temperature rises beyond some threshold value between 2 and 4°C. The probability that a discontinuity will occur beyond this threshold then increases by between 10 and 30 percent for every 1°C rise in temperature beyond the threshold. If a discontinuity occurs, the EU loses an additional 5 to 25 percent of its GDP (drawn from a triangular distribution with a mean of 15 percent) in addition to other damages, and other regions lose an amount determined by the regional scaling factor.”

(from the Executive Summary “Technical Support Document: - Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis - Under Executive Order 12866 - Interagency Working Group on Social Cost of Carbon, United States Government :

With participation by : Council of Economic Advisers, Council on Environmental Quality, Department of Agriculture, Department of Commerce, Department of Energy, Department of Transportation, Environmental Protection Agency, National Economic Council, Office of Management and Budget, Office of Science and Technology, Policy Department of the Treasury, May 2013”.

end of quote.

European Environment Agency : **“Late lessons from early warnings: science, precaution, innovation: Chapter E Implications for science and governance”**: (pages 621- 684) (2013) :

“672 In Conclusion

.....The Late lessons from early warnings case studies demonstrate the complexities of handling the interactions between the many actors and institutions involved — governments, policymakers, businesses, entrepreneurs, scientists, civil society representatives, citizens and the media. Each comes to the debate with different and often conflicting knowledge, perceptions, interests and priorities; balancing these numerous and often antagonistic positions should be seen as a prelude to making decisions on those innovations that have broad societal implications.

The opportunities are manifold but can be boiled down to three main ones:

1 to correct the prioritisation of economic and financial capital over social, human and natural capitals through the broader application of the policy principles of precaution, prevention and polluter–pays, and improved accounting systems

across government and business;

2 to broaden the nature of evidence and public engagement in choices about crucial innovation pathways by balancing scientific efforts more towards dealing with complex, systemic challenges and unknowns and complementing this knowledge with lay, local and traditional knowledge

3 to build greater adaptability and resilience in governance systems to deal with multiple systemic threats and surprises, through strengthening institutional structures and deploying information technologies in support of the concept of responsible information and dialogues. “

end of quote.

**IPBES Guest article (April 2020) :** IPBES Expert Guest Article by Professors Josef Settele, Sandra Díaz and Eduardo Brondizio<sup>1</sup> and Dr. Peter Daszak<sup>2</sup> on 27 April 2020

### **COVID-19 Stimulus Measures Must Save Lives, Protect Livelihoods, and Safeguard Nature to Reduce the Risk of Future Pandemics**

“There is a single species that is responsible for the COVID-19 pandemic - us. As with the climate and biodiversity crises, recent pandemics are a direct consequence of human activity – particularly our global financial and economic systems, based on a limited paradigm that prizes economic growth at any cost. We have a small window of opportunity, in overcoming the challenges of the current crisis, to avoid sowing the seeds of future ones.

..... Perhaps most importantly, we need transformative change – the kind highlighted last year in the IPBES Global Assessment Report (the one that found a million species of plants and animals are at risk of extinction in coming decades): fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values, promoting social and environmental responsibilities across all sectors. As daunting and costly as this may sound – it pales in comparison to the price we are already paying. “

end of quote.

**”Green Swan 2 – Climate change and Covid-19: reflections on efficiency versus resilience”**, Bank for International Settlements, Luiz Awazu Pereira da

Silva (April 2020) - Based on remarks at the OECD Chief Economist Talk Series, Paris, 23 April 2020 and a Research Webinar at the BIS, 13 May 2020 - :

“..... The damage caused by Black and Green Swans to societies and their economies have a lot in common. (i) They are unexpected by most agents, who look at the past as being a good proxy of the future; (ii) both feature non-linear propagation, caused by and triggering multiple destructive forces that feed-back on each other; (iii) their effects cascade into multiple sectors and countries simultaneously; and (iv) they are of a very large magnitude and intensity.

Another striking common feature is that they both entail large negative externalities at a global level. Hence, neither the private sector nor government can adequately “price” the associated risks in the costs of our goods and services. For instance, the macro- financial risk of global pandemics has previously been at best minimised if not ignored.

....

3. More (not less) global cooperation and coordination are needed

Due to the complexity of Green Swans, no single actor, whether national or global, will have a silver bullet for their solution.

First, more global coordination is needed to foster change in methodologies and mindsets to deal with this type of global risk. We need to put more effort into global cooperation to research and better understand climate risks, and to open up possible solutions.

Second, we already knew that, when dealing with climate-related risks, there are many agents with whom coordination is needed.

Should coordination be extended between global agencies that survey macro-financial stability and agencies that survey other public health vulnerabilities?

Box 1 : The destruction of our natural habitat as a factor in pandemics ,  
end of quote.

OECD 4 2020 : **“A Comprehensive Overview of Global Biodiversity Finance”**, Final report, April, 2020, Prepared by the Organisation for Economic Cooperation and Development (OECD) :

“.....Building on OECD’s 2019 report to the G7 Environment Ministers on “Biodiversity: Finance and the Business and Economic Case for Action”, which included a preliminary update on global biodiversity finance flows, this report aims to address this information gap by providing a more comprehensive overview and an aggregate estimate of global biodiversity finance. The report also provides an overview of government support potentially harmful to biodiversity, and offers recommendations for improving the assessment, tracking and reporting of biodiversity finance.

Based on currently available data, global biodiversity finance is estimated at USD 78 - 91 billion per year (2015-2017 average). ....

Meanwhile, governments spend approximately USD 500 billion per year in support that is potentially harmful to biodiversity i.e. five to six times more than total spending for biodiversity. The total volume of finance flows that are harmful to biodiversity (i.e. encompassing all public and private expenditure) is likely to be many times larger.

#### .... 2.3 Finance flows potentially harmful to biodiversity

17. Reforming policies that direct finance flows to activities that are harmful to biodiversity is also very important. Governments spend approximately USD 500 billion per year in support that is potentially harmful to biodiversity (OECD, 2019[2]), i.e. five to six times more than total spending for biodiversity. Other public expenditure, such as public procurement spending, may also support or incentivise activities harmful to biodiversity. Even if finance flows harmful to biodiversity were not redirected towards the conservation and sustainable use of biodiversity, scaling back government support and other public and private expenditure that harm biodiversity, would serve to reduce biodiversity finance needs in the long-term by reducing pressure on biodiversity. Biodiversity mainstreaming and resource mobilisation are therefore two interconnected and complementary agendas under the CBD.

18. Fossil fuel support is among the largest flows of public finance potentially harmful to biodiversity. Fossil fuel support can incentivise the use and production of fossil fuels, thereby contributing to climate change – the third largest direct driver of global biodiversity loss (Diaz et al., 2019[28]). In 2017, 76 predominantly OECD and G20 economies spent USD 340 billion in fossil fuel support. While fossil fuel support declined between 2013 and 2016, this progress has shown signs of slowing with fossil fuel support increasing by 5% in 2017 compared to 2016 (OECD/IEA, 2019[29]).

19. Government support to agriculture can also be harmful to biodiversity. Support based on prices and output levels tends to be the most environmentally harmful, as it encourages intensification of production, which entails higher levels of fertiliser and pesticide use. On the other hand, payments based on non-commodity criteria (e.g. the provision of trees and hedges), and payments for input use linked to environmental constraints, may be beneficial if they are designed to help reduce agricultural pressures on biodiversity (OECD, 2013[30]). While some countries have taken steps to decouple agriculture support from output and price levels, other countries have not yet begun to address the problem. In 2017, OECD countries alone provided USD 228 billion in support to farmers, of which USD 116 billion (i.e. 51%) is considered potentially most environmentally harmful compared to other types of support (OECD, 2013[30]). While the percentage of overall support to farmers identified as potentially most environmentally harmful has declined considerably since 1990, it has remained relatively constant over the past decade (Figure 2.2).

20. Government support to other sectors, such as fisheries and mining, may also be harmful to biodiversity. Fisheries support, for example, can be harmful if it creates incentives to fish beyond sustainable limits or in a way that negatively impacts threatened species and habitats. In 2017, the 27 OECD countries that report data to OECD's Fisheries Support Estimate database provided USD 700 million of direct support to individuals or companies in fisheries. About 40% of these transfers were directed at lowering the cost of inputs, e.g. through subsidies for vessel construction or modernisation, or through policies that lower the cost of fuel. OECD work has shown that such policies are among the most likely to provoke overfishing, overcapacity, and illegal, unreported and unregulated (IUU) fishing. Re-directing support away from policies that incentivise more intensive fishing, towards activities that improve the sustainability of fishing operations, could have significant benefits for the environment as well as for fishers' livelihoods (Martini and Innes, 2018[31]).

..... Potentially most environmentally harmful

Note: Support to agricultural producers considered potentially most environmentally harmful consists of market price support; payments based on commodity output, without imposing environmental constraints on farming practices; and payments based on variable input use, without imposing environmental constraints on farming practices. Support considered potentially least harmful (or beneficial) consists of payments based on area/animal numbers/receipts/income with environmental constraints, payments based on input use with environmental constraints, and payments based on non-commodity criteria.

”Other” refers to the remaining support that does not fit in either of these categories (i.e. miscellaneous). For explanation of the methodology, see Chapter 4 of the OECD (2013), Policy Instruments to Support Green Growth in Agriculture, OECD Green Growth Studies, OECD Publishing. <http://dx.doi.org/10.1787/9789264203525-en>

Source: OECD Secretariat calculations based on OECD (2019[32]) “Producer and Consumer Support Estimates”....”.

end of quote.

**“The missing economic risks in assessments of climate change impacts - Policy insight**, September 2019”, The Grantham Research Institute on Climate Change and the Environment, The Earth Institute, The Potsdam Institute for Climate Impact Research.

## Summary

Economic assessments of the potential future risks of climate change have been omitting or grossly underestimating many of the most serious consequences for lives and livelihoods because these risks are difficult to quantify precisely and lie outside of human experience.

Political and business leaders need to understand the scale of these ‘missing risks’ because they could have drastic and potentially catastrophic impacts on citizens, communities and companies.

Scientists are growing in confidence about the evidence for the largest potential impacts of climate change and the rising probability that major thresholds in the Earth’s climate system will be breached as global mean surface temperature rises, particularly if warming exceeds 2°C above the pre-industrial level.

These impacts include:

Destabilisation of ice sheets and glaciers and consequent sea level rise  
Stronger tropical cyclones

Extreme heat impacts

More frequent and intense floods and droughts

Disruptions to oceanic and atmospheric circulation

Destruction of biodiversity and collapse of ecosystems

- ° Many of these impacts will grow and occur concurrently across the world as global temperature climbs.
- ° Some of these impacts involve thresholds in the climate system beyond which major impacts accelerate, or become irreversible and unstoppable.
- ° When a threshold is breached, it might cause one or more other thresholds to be exceeded as well, leading to a cascade of impacts.
- ° Many of these impacts could exceed the capacity of human populations to adapt, and would significantly affect and disrupt the lives and livelihoods of hundreds of millions, if not billions, of people worldwide.
- ° These impacts would also undermine economic growth and development, exacerbate poverty and destabilise communities.
- ° Economic assessments fail to take account of the potential for large concurrent impacts across the world that would cause mass migration, displacement and conflict, with huge loss of life.
- ° Economic assessments that are expressed solely in terms of effects on output (e.g. gross domestic product), or that only extrapolate from past experience, or that use inappropriate discounting, do not provide a clear indication of the potential risks to lives and livelihoods.
- ° It is likely that there are additional risks that we are not yet anticipating simply because scientists have not yet detected their possibility, as we have entered a period of climate change that is unprecedented in human history.
- ° Some advances are being made in improving economic assessments of climate change impacts but much more progress is required if assessments are to offer reliable guidance for political and business leaders on the biggest risks.
- ° The lack of firm quantifications is not a reason to ignore these risks, and when the missing risks are taken into account, the case for strong and urgent action to reduce greenhouse gas emissions becomes even more compelling.

.....

### Breaching of thresholds and cascading effects

Adaptation will become even more critical if major climatic thresholds are reached, leading to unstoppable, irreversible or accelerating impacts. The exceedance of one threshold may trigger another. For instance, the loss of ice



from the Greenland ice sheet could trigger a critical threshold in the AMOC, together causing a rise in sea level and heat accumulation in the Southern Ocean, which would accelerate ice loss from the East Antarctic ice sheet.

Adaptation can be even more challenging because these impacts create cascading effects within human societies as well. For instance, drought may threaten water security, disrupt food supply chains and lead to internal migration that stresses existing social, economic and political conditions. This can incite conflict or cause an increase in international migration which, in turn, may fuel further disruptions to water and food security, natural resources, and social, economic and political conditions.

The occurrence of these types of cascading impacts has both regional and global consequences. The Syrian crisis and exodus, the disappearance of Lake Chad and accompanying disruption and conflict, and historic collapses of whole civilisations all provide cautionary examples of what happens when a series of complex, cascading risks are exacerbated by climate change.

The biggest risks from climate change, however, would result from impacts that are unprecedented in human history: sea level rise of several metres or major disruption to the monsoon rains and river flows in India. The capacity of human populations to adapt to impacts and disruptions on a scale of this kind is largely untested and uncertain.

## 5. Why the risks have been missed, omitted or unquantified

The biggest risks from climate change are associated with consequences that are unprecedented in human history and cannot simply be extrapolated from the recent past. As such they are uncertain and difficult for scientists to quantify in physical terms. Furthermore, the resulting consequences for lives and livelihoods can be difficult to determine because they involve assumptions about the resilience of populations, their capacity for adaptation and their ability to move in a crowded world. The cascading risks that can result from these impacts can be difficult to predict precisely and to capture in simulations using current models. These uncertainties mean that the impacts are difficult to represent in terms of costs and benefits and are therefore often ignored or omitted from economic models. In essence, they are assigned a probability of zero even though it is understood that to do so is incorrect.

Some of the physical processes that are not well understood, in terms of both occurrence and impact, and therefore are not adequately included in assessments are:

Ice sheet and ice shelf hydrology and dynamics

Severe storms and floods – including tornados, tropical cyclones and heavy rainfall events

Coastal erosion and its impact on infrastructure Cascading ecosystem losses

Feedback loops that accelerate climate change – including permafrost thaw and forest die-off

Extreme heatwaves, droughts and associated wildfires

Other processes that need to be better represented in models include:

The determinants of agricultural productivity and consumption demand

Health impacts of climate change and labour productivity effects

Responses to extreme events – such as food shocks and destruction of assets

Health impacts from extreme events – such as wildfires and disease outbreaks and their interactions with air pollution

Political responses – such as changes in trade policies that can affect food security and prices

Adaptation responses – such as agricultural breeding, urban planning and land-use management.”

end of quote.

**“Dasgupta Review - Independent Review of the Economics of Biodiversity”** (Cambridge University), UK Treasury 4 2020 : Introduction  
Interim Report :

“Our economies, livelihoods and well-being all rely on Nature. We rely on Nature to provide us with food, water and shelter; to regulate our climate and control disease; to maintain nutrient cycles and oxygen production; and to provide us with spiritual fulfilment and opportunities for recreation, among many other examples. Put simply: without Nature, there would be no life.

Biodiversity plays an important role in the provision of many of the services we receive from Nature, known today as ecosystem services or nature's contributions to people. Just as diversity within a portfolio of financial assets reduces risk and uncertainty, diversity within a portfolio of natural assets – biodiversity – directly and indirectly increases Nature's resilience to shocks, reducing risks to the services on which we rely. Biodiversity is an essential characteristic of Nature. The economics of biodiversity is therefore the economics of Nature.

But Nature's resilience is being severely eroded, with biodiversity declining faster than at any time in human history. In the past four decades, there has on average been a 60% decline in the populations of mammals, birds, fish, reptiles, and amphibians, mostly in the tropics. The estimated number of wild bee species worldwide has fallen from 6,700 in the 1950s to only 3,400 in the 2010s. It is thought that one million animal and plant species (approximately 25%) are threatened with extinction in most of the animal and plant groups that have been studied. Current extinction rates are around 100 to 1,000 times higher than average over the past several million years – and they are accelerating.

The majority of ecosystem services are also in decline, including those that regulate and maintain our life support systems. Many of these ecosystem services and the ecosystems that provide them are irreplaceable. Critical ecosystems like the Amazon, which has already lost 20% of its original extent, are reaching tipping points. In the case of the Amazon, there is a risk it will shift from rainforests into savannah. Changes in land and sea-use, over harvesting, climate change, invasive alien species, and pollution of air, water, and the soils, are significant drivers of biodiversity loss.

Biodiversity loss is also intimately related to climate change. Indeed, climate change may become the major driver of biodiversity loss in the coming decades. Land use change which entails biodiversity loss – in particular deforestation – is, and could continue to be, a significant contributor to climate change. Protecting and enhancing biodiversity will help us address climate change, by helping both to mitigate climate change by storing and sequestering carbon in ecosystems, and to adapt to the inevitable effects of unavoidable climate change. For example, coastal ecosystems mitigate the increasing risks from natural hazards like floods and storms.”

end of quote.

**Overview of analytical work in support of Food Systems :**

**The IUCN-analysis “Towards sustainable agriculture”** (2018) refers to part of the analytical work in support of food systems, up to summer 2018 : [https://www.iucn.org/sites/dev/files/content/documents/2018/iucn-eu\\_sustainable\\_agriculture\\_final.pdf](https://www.iucn.org/sites/dev/files/content/documents/2018/iucn-eu_sustainable_agriculture_final.pdf) . I contributed to the IUCN-paper at the request of IUCN.

Among the (additional) sources are :

**IPES FOOD “Towards a common food policy for the European Union : the policy reform and realignment that is required to build sustainable food systems in Europe”, (2, 2019)**

A call by scientists in : **“Action needed for the EU CAP to address sustainability challenges: Agriculture is the main driver of environmental degradation in Europe”, - People and Nature -, 2 2020,**

**The advice of the Dutch Council for the Environment and Infrastructure (RLI), May 2019, to the minister of Agriculture, Nature and Food Quality**

**European Court of Auditors: Special Report (May 2020) :  
“Biodiversity on farmland: CAP contribution has not halted the decline ...:**

Conclusions and recommendations

We examined the contribution of the CAP to maintaining and enhancing biodiversity and whether the agriculture target (3a) of the EU biodiversity strategy is likely to be reached. The target stipulates that there must be a measurable improvement in biodiversity. Overall, we found that this was not the case: neither the Commission’s evaluation nor our audit revealed any such improvement. In fact, the available data on farmland biodiversity in the EU unambiguously shows a decline in recent decades.

The agriculture target and actions in the EU biodiversity strategy are not measurable, making it difficult to assess performance. The Commission has not ensured that the design and implementation of the agricultural part of the biodiversity strategy to 2020 was satisfactorily coordinated with international commitments in this area. Genetic diversity in farm crops and animals is in continuing decline in the EU....

Recommendation 4 – Show the impact of CAP measures on farmland biodiversity :

The Commission should develop reliable farmland biodiversity indicators with

which to assess the positive and negative impacts of the CAP instruments, allowing it then to establish a baseline for the reformed CAP and contribute to developing more effective post-2020 CAP payment schemes and instruments, such as “enhanced conditionality”, eco-schemes and rural development measures. Timeframe: 2022...”

end of quote.

Oxford University - Smith School of Enterprise and the Environment - Ben Caldecott et al 2013:

**“Stranded Assets in Agriculture: Protecting Value from Environment-Related Risks” :**

“..... From a government perspective, stranded assets are a problem because they often arise from market failures and the materialisation of long-overlooked external costs and the associated poor regulation of the economy. Stranded assets can often carry with them implicit government insurance to ease ‘transition’ costs when things go wrong. This may take the form of the ‘temporary’ nationalisation of firms (as in the case of the recent bank bailouts), or the imposition of trade restrictions, subsidies or other direct support, for example ‘exceptional circumstances’ drought payments in the case of agriculture. Government support is also indirect through broader social programmes such as unemployment and health benefits and the re-skilling of the labour force through education and training. Many of the costs of stranded assets are therefore ultimately born by the state.

- Risk and exposure to stranded assets is often compounded because of the problems of path dependency and short term decision- making biases -

From a macroeconomic perspective, stranded assets are a problem because if otherwise unsustainable assets are kept in production for too long they become a drag on productivity, economic growth, social welfare and the public purse. However, if the gales of creative destruction are allowed to blow too fiercely, asset stranding can exacerbate the swings of the business cycle, with potentially costly and unpredictable political consequences. The risks of stranded assets are therefore of interest to finance ministries and central banks concerned about system-wide stability and economic performance.”

end of quote.

Compilation Gertjan Storm,

Brussels, July 2020.

