Philipp Schepelmann*

Towards a Green New Deal. Lessons after a lost decade

Abstract

In his essay, the author presents a stock-taking of the debate on Green Deals. The starting point of this personal assessment is a brief outline of the content and impact of a study in which the author and colleagues published a first outline of a "Green New Deal for Europe" as a political response to the 2008 financial crisis. 2008 had been a critical juncture for mainstream economics: however, from the perspective of policy-learning, the period after has been a lost decade. The European Green Deal as presented by the European Commission in 2019 can be perceived as a historic milestone and confirmation of a regime change in mainstream economic policy in which ecological considerations gain in importance. Yet, the Deal suffers from major deficits. In sum, the European Green Deal could be interpreted as an insufficient attempt to take advantage of the rapidly closing windows of opportunity for a peaceful transition towards sustainability. On the eve of a planetary crisis, the governance of economic transitions towards sustainability needs to be improved and accelerated. Reflecting on the 2009 study *A Green New Deal for Europe*, this essay attempts to draw a few lessons and frugal heuristics for the policy-design of Green Deals.

Keywords: Green Deal, economic recovery, green stimulus, critical juncture, policy-learning

Introduction

The financial and economic crisis of 2008 triggered several economic recovery packages of considerable sizes. The stimulus programmes of China, the USA and Japan alone added up to more than one trillion euros. Most packages had green elements, which induced a discussion of the new "greening" of economic stimulus programmes under the heading of the "Green New Deal". Against the background of the current debate about the European Green Deal, this article is a subjective reflection of the experience with the political concept of a Green New Deal. From the normative perspective of transformative science (Schneidewind, 2014), this essay will present a concluding outlook on risks and opportunities of a highly political concept.

As contribution to the intensifying political debate about green stimulus programmes in 2009 the Greens/European Free Alliance Group in the European Parliament (EFA) commissioned a study carried out by a research team at the Wuppertal Institute for Climate, Environment and Energy, one of the leading think tanks for transformative science and policy analysis in Germany (McGann, 2020). The study had been published in 2009 by the Green European Foundation (GEF) under the title "A Green New Deal for Europe. Towards green modernisation in the face of crisis" (Schepelmann et al., 2009). The study (which will hereinafter be

* *Philipp Schepelmann* (philipp.schepelmann@wupperinst.org), Wuppertal Institute for Climate, Environment and Energy, Germany

 DOI: 10.5771/2566-7742-2022-2-275

referred to as GEF study) outlined how a European Green New Deal could become the cornerstone of a political response addressing unemployment as well as the economic and ecological crisis. The message from the publisher is an expression of the broad normative agenda and the high expectations, which the European Green Foundation connected with the concept of the Green New Deal:

> *"The crisis rehabilitates state intervention. It calls for policies to stimulate demand, and hence for public investment, as well as determined policies aimed at creating employment opportunities. At the same time, the ecological crisis points to the scarcity of resources, the degradation of natural environments and the unsustainable Western ecological footprint." (Schepelmann et al., 2009, 3)*

The following chapter will outline the GEF study as normative reference and point of departure for a subjective assessment of main lessons learnt and a political outlook on the European Green Deal as an historic yet imperfect political programme.

1. Central messages of the GEF study

In 2009 the concept of a Green New Deal was still in the making. Discussions about the design of the green recovery measures were on-going. Their comparison had been difficult, because there had been no consensus about which measures were supposedly green. Deliberations on the green share of recovery programmes often focused on climate and energy issues, however, most Green Deals addressed more environmental themes than climate change. In general, the Green Deals of the 2008 financial crisis connected a broad combination of ecological measures with an expectation to generate economic growth and employment (e.g. UNEP, 2009; Barbier, 2010).

In 2009, the EU eco-industries generated a considerable turnover and employment with an excellent potential for further growth. A dedicated chapter of the GEF study on eco-industries presented evidence of an uneven distribution in the EU. The authors concluded that especially with a view to short term gains for employment and environmental quality stricter implementation of the environmental acquis communautaire and support for eco-industrial frontrunners could be a model for active diffusion of eco-innovation in all EU Member States. However, the GEF study acknowledged that support for eco-industries would not suffice for the Green New Deal, because even green economic growth would be harmful, if it merely contributed to unsustainable high levels of natural resource consumption: "Thus, a Green New Deal needs to be more than a technology platform for eco-industries. It has to be guided by a vision of how a green modernisation of industry should look like in the long run" (Schepelmann et al., 2009, 41). To this end, the authors concluded that a Green New Deal should fulfil three strategic functions; it should:

1. Break-up unsustainable structures
2. Build-up sustainable structures
3. Give the right mid-to long-term orientation

The authors proposed that a Green New Deal should meet these functions on

a. the strategy level

b. on the level of individual EU policies

c. on the programming level.

Strategies

On the strategic level, the authors observed "a lack of a guiding vision for a systemic adaptation of production and consumption patterns" (Schepelmann et al., 2009, 53). However, the authors identified in official EU deliberations elements suitable for such an overarching vision. For example, the authors refer to analysis of the EU statistical service, Eurostat, and the European Environment Agency, indicating a gap in energy and material productivity among EU Member States. The authors concluded that this productivity gap of up to a factor 8 (!) could become an element of a guiding vision for a Green New Deal. Support for frontrunners and a technological leapfrogging in regions with low resource productivity would enable the EU to harvest a double-dividend of decreased pressure on the environment (including CO_2 emissions) and increased competitiveness due to the reduction of production costs and reduced dependencies from resource imports. The authors recommended as a strategic goal of a Green New Deal for Europe to set course on a development path which could eventually increase employment, competitiveness and, at the same time, reduce pressure on the environment in Europe and abroad.

Policies

The GEF study elaborated how major EU policies could boost resource efficiency of EU industries and infrastructure by combining EU and national funds. In particular, the EU Cohesion Policy is a potent funding system already operating in the same order of magnitude as the green stimulus of European recovery programmes. The authors concluded that a combination of national recovery programmes with EU Cohesion funding could create the necessary financial leverage to improve resource productivity across the EU.

Programmes

Concerning the programming level, the authors proposed that a short-term Community support for a Green New Deal could be followed-up by more consolidated medium-term actions for identifying and integrating the necessary components of an appropriate policy mix. Such a policy mix could be generated by combining RTD, innovation and regional policies aiming at "triple-helix" constellations of industry, science and policymaking driving a self-sustained improvement of resource efficiency at regional level. As priority areas for such an improvement of regional production and consumption patterns the authors identify:

a. Transport policy

b. Energy policy

c. Resource policy

The GEF study outlined for each of these policy fields relevant challenges and opportunities for leveraging a Green Deal in the EU 27.

Impact

Retrospectively, the impact of the GEF study is difficult to assess. It had been welcomed by the Greens in the European Parliament and presented at a large press conference. The EFA Group discussed the study at the annual retreat of the parliamentary group which also the President of the European Commission and his staff attended. In general, the GEF study received widespread attention primarily among Brussels-based institutions. Nevertheless, after the elections in 2009 it seemed that the European parliamentarians lost interest in the subject. However, the study of the Wuppertal Institute had also raised the attention of social democrats in Germany and led to several follow-up activities on ecological industry policy (Schepelmann, 2010; Brüggemeier et al., 2012). In the context of the Green New Deal of the US Democrats several inquiries were addressed to the lead author of the study. However, in academic papers the GEF study had hardly been cited.

The GEF study and the concept of a Green New Deal would have remained one of many fruitless attempts to outline blueprints for an ecological modernisation of the European economy, if it had not re-emerged roughly ten years after in the EU and US. We therefore think it is justified to re-assess the GEF study and green stimulus programmes of that period and to ask what lessons can be drawn for the on-going academic and political debate.

2. The financial crisis as critical juncture of modern economic policies

Since the 1960's the radiation of public policies is described by using varieties of a "branching tree model" (Verba, 1971, 308) which was further developed in political science and sociology by adopting concepts of evolution from institutional economics and systems theory. This gave rise to the concept of critical junctures which has been applied to a large variety of issues. According to Capocia and Kelemen (2007, 342) the concept "has been evoked without a great deal of methodological or conceptual rigor", however, they identify distinct features of critical junctures such as a short period in time as well as a heightened probability of choices of political agents affecting the outcome of interest before and after its occurrence. According to Collier and Collier (1991, 29) a critical juncture is "a period of significant change, which typically occurs in distinct ways in different countries (…) to produce distinct legacies". We would like to propose the hypothesis that the

2008 financial crisis would deserve appreciation in literature as a critical juncture of modern economic policies, because it constitutes a distinct year of a regime change in economic policymaking that is qualitatively different from earlier periods. As we will show, the probability of political choice in favor of green state interventions substantially heightened after 2008.

As a response to the 2008 financial crisis, governments around the world turned to large-scale economic state interventions. In democratically governed economies state interventions require legitimation, because in contrast to private investments public spending of tax payers' money needs democratic legitimacy and support. Especially in countries with strong neo-liberal advocacy coalitions this led to major frictions. For example, in the US the interventionist turn of the late Bush administration and the early Obama administration gave rise to the right-wing tea party opposition.

The financial crisis of 2008 is a critical juncture in the evolution of modern economic policy, because it marks a turning point at which numerous governments around the world legitimised Keynesian economic policies with ecological arguments. In contrast to the New Deal of the Roosevelt administration of the 1930s, which had been legitimised solely by social and economic considerations (Lehndorff, 2021), the 2009 policies added ecological reasoning to state interventions. Under the heading "Green New Deal" (UNEP, 2009) and later "Green Growth" (OECD, 2009a; 2009b; 2011) or "inclusive green growth" (World Bank, 2012), ecological modernisation moved from its niche into the core of mainstream economic policy-making (Schepelmann et al., 2009; Barbier, 2010; Jacobs, 2012). Of course, there were conservative governments and international institutions lagging behind, but since 2009 the probability of introducing green interventions in economic stimulus programmes had been substantially heightened.

Mainstream science had difficulties of assessing this critical juncture. While Green New Deals around the world were still in the making, it had been challenging to analyse the events. Often, only preliminary information on governmental programmes had been available. Unclear references and varying methodologies led to different assessments (Deka Bank, 2009; HSBC, 2009; Höhne et al., 2009; Saha & Weizsäcker, 2009; Rickels et al., 2010). Nevertheless, even the weak analytical base allowed relevant insight and conclusions.

Absolute and relative sizes of the economic stimulus programmes

According to an early overview of HSBC (2009) the magnitude of the different economic stimulus packages varied considerably. By far the largest stimulus programme had been developed by the US government (ca. 750 billion €), followed by China (450 billion €) and Japan (375 billion €). The European Union could only mobilise 375 billion €, however, single EU Member States developed large programmes, which added up to a larger economic stimulus than the programme

of the union as a whole. For example, Germany and Italy developed their own national programmes with volumes of about 80 billion €.

Saha and Weizsäcker (2009) compared the size of stimulus programmes of the US, China and the EU in relation to their Gross Domestic Product. According to their comparison the US spent about twice as much as the EU, while the Chinese investments were eight times higher in comparison to their economic productivity. Deka Bank (2009) confirmed the relatively small proportion of the EU stimulus programmes. EU programmes had about twice the size of programmes in the Near East or Africa. However, their volume had been less than a third of the investments of governments in Asia or Oceania. The Nobel-price laureate Paul Krugman warned that the European programmes would not match the profound challenge of the financial crisis (Strobl, 2009).

The green shares of the stimulus programmes

The limited availability of data only allowed a rough estimate of the "green" shares of the governmental deals. Nevertheless, the assessments of that time, which were primarily founded on governmental information revealed surprising patterns. The different governmental policy packages varied considerably in absolute and relative size. There were large differences among the green shares of the overall stimulus programmes, starting from 1 % (Italy) up to 80 % (South Korea). In most EU Member States and the US the green share of the overall investments stayed below 20 % with the exception of France and the European Union. In contrast the Chinese government invested more than 40 % of their spending in the environment, while South Korea became the green champion by investing more than 80 % of their stimulus programme in supposedly green measures (HSBC, 2009).

These rough estimates of the size of green investments in the economic stimulus programmes after the financial crisis do not allow to draw general conclusions about the quality of environmental policies of the respective governments. Most of the research of that period only assess total quantities and put less emphasis on the quality of ecological modernisation in the context of national policies. Therefore, these early assessments do not consider the ambivalence or even the counter-productivity of measures in the overall construction of stimulus programmes. For example, the US stimulus package earmarked 21 billion € for the construction of roads. The Canadian government considered subsidies for the nuclear industry as a green investment. Another example for supposedly "green" investments had been the car scrapping scheme of the German government, which had been labelled as "environment bonus".

Against this background, E3G and WWF (2009) commissioned a qualitative assessment of green shares of stimulus programmes of the European Union, France, Germany, Italy, the UK and the USA. The authors proposed an effectiveness indicator for investments and policy measures, which had been a product of qualitative crite-

ria such as their potential to reduce CO_2-emissions. Green measures had a positive coefficient while counter-productive measures, such as road construction, would be negatively attributed. The coefficient-based assessment of policy measures resulted in positive and negative values. The added results were put in relation to the national GDP. According to this assessment the effectiveness of investments ranged from a net negative value of -0,4 % of GDP (Italy) to a net positive value of 0,4 % of GDP (USA) and 0,5 % of GDP (Germany) (E3G and WWF 2009, 3).

Target areas of the green investments

HSBC (2009) had allocated the green investments of the stimulus programmes to the sectors energy, energy efficiency, water and waste treatment. According to this allocation about 70 % (ca. 220 billion €) aimed at improving energy efficiency. Among these investments the improvement of rail transport infrastructure had the largest share. This was mainly due to the high Chinese investments in this area. E3G and WWF (2009) observed that the measures mainly aimed at increasing energy efficiency in housing and transport. With the exception of France, the US and South Korea most countries neglected important infrastructure investments for renewable energy, combined heat and power, smart grids as well as energy storage (HSBC, 2009). In contrast to the EU, China, the US and South Korea also invested considerably in water and waste management.

Economy and employment

Most studies on the economic stimulus programmes which were issued shortly after the financial crisis only considered superficial economic analysis. They did not take into account indirect macroeconomic effects of the investments, for example, cost reductions induced by increased resource efficiency or increased tax revenues. Also, assessments of the employment potential of the different stimulus programmes had been rather provisional. For example, only the gross employment effect of introducing renewable energies had been considered neglecting negative effects on employment in the traditional fossil-based energy production. Nevertheless, there had been various attempts to assess the employment potential of different stimulus programmes. These assessments varied as much as the sizes of programmes ranging from 80,000 to 100,000 up to 3.5 million additional jobs in the USA (Schepelmann et al., 2009).

First lessons of 2009

Despite of the preliminary nature and the resulting uncertainty of early assessments, the study published by the Green European Alliance in 2009 drew first, preliminary lessons from the first wave of Green Deals after the 2008 financial crisis (Schepelmann et al., 2009). The GEF study concluded that the volume of European green stimulus programmes had been comparatively small in relation to their US

and Chinese counterparts. In comparison with Asian programmes the European programmes had only small green shares, but it needs to be considered that the quality of the Asian programmes can still hardly be assessed. However, the evidence suggested that the relatively small green investment programmes in the EU raises questions about economic and political leadership in this area.

When the European Green Foundation published the 2009 study, discussions about the final size of programmes, measures or additional packages had been still ongoing. Many of the assessments cited in the GEF study refer to evidence of unclear origin. A major shortcoming had been the definition of green investment measures of the stimulus programmes. There had been no internationally recognised criteria for green economic policy and possible impacts had rarely been considered. In contrast to most studies and comments on the early Green New Deals which only related to climate and energy issues, most Green New Deals considered other environmental themes as well. For example, China, South Korea, and the US dedicated large shares of their stimulus programmes to water and waste management. Regarding the economically potent and competitive eco-industries of the European Union, the authors of the GEF study concluded, that beyond climate protection Green New Deals should not neglect perspectives for a circular economy and sustainable water management. Based on evidence presented in a dedicated chapter on eco-industries, the GEF study argued that in low-income countries as well as in emerging economies the demand for environmental infrastructure and services increased rapidly. The authors of the GEF study concluded that not only for economic reasons but also based on geo-political considerations, the EU had an interest in promoting clean air and soils, biological diversity, secure water supply, waste management and circular economies beyond its borders.

3. Stabilisation of the regime change in economic policy

We have argued that the 2008 financial crisis had been a critical juncture inducing a sustained regime change in mainstream economic policy in which the probability of agents' choices in favour of green state interventions had been substantially heightened. According to Collier and Collier (1991), critical junctures are periods of change which produce distinct legacies. An example of such a legacy is the Green Growth Strategy of the Organisation for Economic Cooperation and Development (OECD) of 2011. In the context of the strategy, the OECD analysed and compared national and regional policies and coordinated fora of communication and exchange. The OECD "Green Growth Indicators" (OECD, 2017) could further promote a common understanding of what is supposedly "green". More precision in definitions, delineations, objectives, and indicators would be a prerequisite for targeted research and evidence-based monitoring and reporting of a green transition of the OECD economies.

Another legacy of the 2008 financial crisis had been the focus on growth and employment also in the context of the environment and development discourse of the United Nations. While the Agenda 21 of the Earth Summit of 1992 had been much broader by putting more emphasis on the connections between environmental degradation, equality, justice, growth and development the 2012 Rio +20 summit had been dominated by the theme of a green economy. Even though this had been a constriction, it contributed to further promoting and stabilising the regime change towards greening mainstream economic policies. Recent policy developments which had been to a large extend evoked by a powerful environmental movement (Bloomfield & Steward, 2020) are the latest empirical expressions of the legacy of the 2008 critical juncture:

1. At the eve of the US electoral campaign in February 2019, the Democrats Alexandria Ocasio-Cortez and Edward Markey presented a Green New Deal policy package to the US senate which proposed substantive investments in the ecological modernisation of the US economy under the Biden administration, which, after a series of major setbacks, eventually found its way into the so-call "Inflation Reduction Act" of 2022
2. In December 2019, the newly appointed President of the European Commission Ursula von der Leyen presented the European Green Deal

The EU and US green deals have different political backgrounds and histories, however Bloomfield and Steward (2020) see "striking similarities in the novel policy architecture shared by the two Green Deal proposals". They are two prominent milestones on the development trajectory which started with the financial crisis 2008 introducing a change of economic policy regimes in which ecological modernisation has become at least on a declaratory level a cornerstone of modern economic policies. This historic regime change is also manifest in the scientific and societal discourse about post COVID economic stimulus programmes. Post pandemic economic policies will furthermore show how profound this regime change will become. It is likely that the already institutionalised EU and US green deals will positively influence post corona economic stimulus programmes and further promote the green transition of economic policies.

4. Lessons after a lost decade

Different contributions have underlined the relevance of scientific knowledge in policymaking (e.g. Litfin, 1994; Joerges et al., 1997; Radaelli, 1999; Andresen et al., 2000). The study of the role of knowledge in policymaking lead to the understanding of policy-learning as a process which can both improve the effectiveness of policies as well as induce changes of norms and objectives (Bandelow, 2003). However, for policy-learning, the period of implementation of the first wave of green deals has been to a large extent a lost decade. Despite the legacy of the financial crisis in the UN and OECD with an increased focus on green economic policies,

there are still insufficient comprehensive comparative cross-regional evaluations of past green deals which could guide future economic policies. The insufficiency of quantitative comparative research after the first wave of green deals succeeding the 2008 financial crisis gives an impression of the missed opportunities for an evidence-based development of state-driven green interventions into the economy. Retrospectively, this is probably one of the most bitter lessons of the past decade, while windows of opportunity for a sustainable transition of industrial economies are rapidly closing. Research and policy-learning risk to be outpaced by the Great Acceleration of multiple ecological crises in the Anthropocene (McNeill and Engelke, 2014; Steffen et al., 2015). Therefore, the on-going debate on the content and implementation of green deals should be complemented by a global discourse about how the governance of economic transitions towards sustainability can be improved and accelerated. Evidence on successful management of ecological modernisation must be secured on the short, medium and long term. However, despite the weak evidence-base we can attempt to draw a few lessons and frugal heuristics on green new deals which might already be useful in the political debate and decision-making (Schepelmann et al., 2009; Schepelmann & Fischedick, 2020):

Political functions of a green deal

A Green Deal should fulfil three strategic functions (Schepelmann et al., 2009); it should:

1. Break-up unsustainable structures
2. Build-up sustainable structures
3. Give the right mid- to long-term orientation

A Green Deal should meet these functions on

a. the strategy level
b. on the level of sectoral policies
c. on the programming level by a mix of horizontally and vertically integrated policies.

A green deal is not just a climate deal

A green deal and connected economic policies must follow a systemic approach. Even though priorities must be set, all risks of transgressing planetary boundaries must be considered. At least the Green Deals of the EU and the US have to a certain degree a comparable architecture (Bloomfield & Steward, 2020). In addition to climate mitigation and adaptation, also aspects of ecological agriculture, biodiversity and a circular economy are on the agenda. At least in the European Union there are also first elements of extended monitoring and reporting of economic policies. One of the first measures of Ursula von der Leyen after her appointment

as President of the European Commission had been the integration of UN Sustainable Development Goals in the so-called European Semester (Sabato & Mandelli, 2020; Koundouri, Devves & Plataniotis, 2021). After the 2008 financial crisis, the European Semester had been further developed as a powerful inter-governmental monitoring and steering mechanism. Extending the primarily economic reporting towards sustainability could be a point of departure for a targeted monitoring of the sustainable modernisation of the EU complemented by the Green Growth Indicators of the OECD.

Planetary policy-learning

Another lesson from past economic stimulus programmes is that green deals are a worldwide phenomenon in which the European Union has not necessarily a pole position. The large programmes in China, the US and South Korea might also inspire EU Member States and the Union as a whole. In her press statement at the occasion of the adoption of the European Green Deal Communication on December 11th 2019, the President of the European Commission declared:

> *"We do not have all the answers yet. Today is the start of a journey. But this is Europe's 'man on the moon' moment. The European Green Deal is very ambitious, but it will also be very careful in assessing the impact and every single step we are taking." (EC 2019)*

Experience has confirmed that indeed Europe does not have all the answers yet. We have learned that the evidence-base for informing such an endeavor is rather poor. Von der Leyen's comparison with the US Apollo mission was supposed to underline the dimension of political, economic and technological challenges. In contrast to the Apollo mission, concerns and challenges of Green Deals are not about the moon but about our own home planet. Therefore, the European Green Deal and similar policies in other regions of the world are planetary and should be treated as such. They need to consider global economic, ecological and social impacts and integrate internationally all stakeholders concerned in a global accelerated learning process. Acceleration of policy-learning needs to match the Great Acceleration of global environmental change. It would be desirable that not only monitoring mechanisms such as the European Semester or the OECD Green Growth Strategy would be further developed, but that also a policy-learning accelerator (POLLACC) would be institutionalised at global level to coordinate ambitions of like-minded countries and multilateral organisations.

Just transition

An example for international policy learning and improved transition management are just transition policies which early Green Deals hardly considered. The ongoing societal discourse about ecological modernisation has shown that a just transition of societies is of increasing importance. Especially populist and post truth tendencies in society and politics revealed that the stakes of the victims of "creative

destruction" of ecological modernisation in traditional industrial settings should be taken into account in the design of a Green Deal. For this purpose, participatory processes and mechanisms for establishing consensus among stakeholders can be helpful. An example for such a consensus orientation had been the establishment of the Commission for Growth Structural Change and Employment by the federal government in Germany. Under participation of a broad set of different stakeholders including industry, trade unions, policy-making and environmental citizens organisations, the German commission tabled in 2019 a proposal how coal mining in Germany could be phased out trading off diverging interests of climate policy, energy security, competitiveness, and employment. The European Commission's "Just Transition Mechanism" and the community funded exchange platform "Initiative for Coal Regions in Transition" (CRIT) is another example of a consensus-oriented transition policy and a potential venue for policy-learning.

Conceptual uncertainties

The EU as well as the US Green Deals are essentially green growth strategies, but even green growth contributes to further expansion of the economy. However, the growth of the economy is in combination with population growth the main driving force behind environmental destruction (Chertow, 2000). This conceptual inconsistency pushes against the limits of mainstream economic theory and political discourses in which two camps lead an academic debate about the feasibility of decoupling economic development from environmental pressure (Lenaerts, Tagliapietra & Wolff, 2022). While green growth proponents assume that such a decoupling is feasible, degrowth critics dismiss this option and argue for a scaling down of the economy and redistribution. Interdisciplinary concepts such as "Panarchy" (Gunderson and Holling, 2002) could be helpful for reconciling these fundamentally opposing views. Dynamic and patchy resilient systems allow both simultaneously, the development and growth of sustainable structures, on the one hand, and, on the other hand, "degrowth" and release of unsustainable structures. If at all possible, the fundamental ideological taboo of questioning the economic growth paradigm of industrial societies could only be overcome by intensifying international evidence-based cooperation and learning.

Reason and multilateralism

The COVID pandemic has once more confirmed that the world population is connected not only in economic terms but also physically. This insight could promote further political connectedness defying current setbacks and nationalistic tendencies. Scientific monitoring of the COVID pandemic, policy-learning and the development and distribution of vaccines had been to a large extent globally connected. Eventually, evidence-based policies and multilateral cooperation had been superior to ideological and nationalistic approaches.

In the face of an unprecedented physical crisis of humanity, reason and multilateralism is more important than ever. As we have shown for over a decade, economic policy is on a new trajectory which is characterised by taking global physical concerns into consideration. Known risks of global megatrends must be analyzed and further discussed. Diseases, digitisation, economic and population growth are conceivable risks to civilisation. The drivers of global risks are partly system immanent and from a human perspective it is understandable that necessary analysis and transitions are set off or delayed. However, only the open analysis of risks and accelerated reaction can reduce vulnerabilities of globalised societies and foster the resilience on which future generations will depend.

Outlook

We will conclude this article by summarising strengths and weaknesses of the European Green Deal complemented by an outlook on political risks and opportunities.

From an environmental policy perspective, the most important benefit of the European Green Deal is that it is in combination with the US Green New Deal a milestone stabilising the trajectory towards greening mainstream economic policies. In comparison with the policy priorities of her predecessors Barroso or Junker, Ursula von der Leyen's European Green Deal brings in a new quality of considering environmental concerns in EU policymaking. By making global environmental change a paramount priority and with its ambitious objectives enshrined in the first European Climate Law, the European Green Deal is an innovation in European policymaking with considerable disruptive potential. Especially the agricultural component of the European Green Deal, the so-called Farm to Fork strategy, is in direct conflict with traditional core beliefs of the conservative constituents of von der Leyen's party the German Christian Democrats and its European umbrella the European People's Party (EPP). Over 60 years they drove the Common Agricultural Policy towards industrialisation, economic concentration, and intensification with devastating impacts on small scale farming, biological diversity, public health, and animal rights. Some of the fiercest battles of political reform under the heading of the Green New Deal are about the game-changing potential of the EU's Farm to Fork Strategy (Schebesta and Candel, 2020). The strategy has considerable implications for the Common Agriculture Policy, as the EU policy with the largest budget, and it is not surprising that the European Court of Auditors observes that reforms are implemented only reluctantly (ECA, 2022). Not only in the framework of the Common Agriculture Policy, the European Green Deal conflicts with established core belief systems and powerful advocacy coalitions. This highlights a general dilemma of the increasing urgency of sustainability transitions driven by the Great Acceleration of global environmental change: The longer necessary transitions are delayed, the more radical and disruptive they will have to become. However, disruptiveness increases the likelihood of resistance and delay among stakeholders and

the general public. Thus, Green Deals and sustainability transitions are threatened by a vicious circle in which disruptiveness and delay are positively coupled.

Delay is not only caused by active resistance of adverse advocacy coalitions but also by cognitive limitations of dealing with the complexity of sustainability transitions. Their perception and deliberation push against the limits of functional differentiation and silo thinking in science, politics and society. These are reinforced by widespread misconceptions of global socio-economic trends (Rosling, Rosling & Rönnlund, 2018) and their ecological conditionality (Diamond, 2005). Since the establishment of the European Coal and Steel Community (ECSC) 70 years ago, the association of EU Member States had been fueled by natural resources. Functionalities of institutions and social practice of the European Union further manifested in the Common Agricultural Policy, the Common Fisheries Policies or Cohesion Policies, which had been designed for maximising exploitation of nature to enable economic growth. How likely is it that EU institutions and actors have the necessary cognitive resources, capacities and political intention that are needed to implement disruptive innovations towards sustainability? What will happen when Europeans begin to realise what climate neutrality in 2050 really means?

Experience with past green deals, the current debate, as well as the actual performance of meeting the ambitious objectives of the European Green Deal create the impression that a majority of ecologically untrained and unprepared decision-makers and institutions are exposed to a planetary crisis of maximum urgency, complexity, and uncertainty. However, their incompetence and ignorance are shared. Not only the European Union but all governments and international institutions around the world, such as multilateral banks, face the challenge that they are supposed to solve the problems to which their own unsustainable policies have contributed. Evidence suggests that their first attempts of designing transition strategies will be insufficient and inappropriate, especially when there are limited to promoting further economic growth. Failure and frustration with the European Green Deal and comparable strategies are foreseeable. This could provoke two sorts of reactions. On the one hand, there are coalitions advocating the return to business-as-usual, back to an "empty world" of unlimited exploitation of natural resources (Victor, 2022). Ongoing negotiations of the European Green Deal show that containment and rollback of sustainability transitions are already a tempting option for populist leaders and decision-makers on all levels of the multi-level governance system of the European Union. On the other hand, the only rational choice will be to accelerate policy-learning and mobilisation of the necessary cognitive resources to inform planning and decision-making of successful sustainability transitions. The corresponding architecture of the EU and US green deals provides an obvious occasion for initiating a global mutual learning process. However, as this article has shown, so far policymaking and science to a large extend missed the opportunity of learning from the past.

References

Andresen, S., Skodvin, T., Underdal, A. & Wettestad, J. (2000). *Science and Politics in International Environmental Regimes*, Manchester: Manchester University Press.

Bandelow, N. (2003). Lerntheoretische Ansätze in der Policy-Forschung. In *Politik als Lernprozess. Wissenszentrierte Ansätze in der Politikanalyse*. Wiesbaden: Springer.

Barbier, E. (2010). *A global green new deal: rethinking the economic recovery*. Cambridge; New York: Cambridge University Press.

Bloomfield, J. & Steward, F. (2020). The Politics of the Green New Deal, *The Political Quarterly*, 91(4), 770–779.

Brüggemeier, F.-J. et al. (2012) *Vom 'Blauen Himmel' zur Blue Economy: fünf Jahrzehnte ökologische Strukturpolitik*. Berlin: Friedrich-Ebert-Stiftung.

Capoccia, G. & Kelemen, R. D. (2007). The study of critical junctures: Theory, narrative, and counterfactuals in historical institutionalism. *World politics*, 59(3), 341–369.

Chertow, M.R. (2000). The IPAT Equation and Its Variants. *Journal of Industrial Ecology*, 4(4), 13–29.

Collier, R. & Collier, D. (1991). *Shaping the Political Arena.* Princeton: Princeton University Press.

Deka Bank (ed.) (2009). *Konjunkturpakete – weltweites Aufbäumen gegen die Abwärtsspirale*. Frankfurt a. M.: DekaBank (Volkswirtschaft Spezial). Retrieved from: http://www.dekabank.de/globaldownload/de/economics/vowi_spezial/VS_09-03-18_Konjunkturpakete.pdf.

Diamond, J.M. (2005). *Guns, germs, and steel: the fates of human societies*. New York: Norton.

E3G and WWF (eds.) (2009). *Economic/climate recovery scorecards. How Climate friendly are the economic recovery packages?* London: WWF, E3G. Retrieved from: https://wwfeu.awsassets.panda.org/downloads/economic_climate_recovery_score_cards_2009_03_31_23_22_td_with_logo.pdf.

ECA (2022). *Climate spending in the 2014–2020 EU budget – Not as high as reported*. 09/2022. Luxembourg: European Court of Auditors (ECA), 56.

EC (2019). Press remarks by President von der Leyen on the occasion of the adoption of the European Green Deal Communication. Retrieved from: https://ec.europa.eu/commission/presscorner/detail/en/speech_19_6749.

Gunderson, L.H. & Holling, C.S. (eds.) (2002). *Panarchy: understanding transformations in human and natural systems*. Washington, DC: Island Press.

Höhne, N. et al. (2009). *Economic/climate recovery scorecards. How climate friendly are the economic recovery packages?* Berlin. Retrieved from: https://www.germanwatch.org/de/2592 (last accessed: 08.06.2022).

HSBC (ed.) (2009). *A Climate for Recovery. The Colour of Stimulus Goes Green*. London: HSBC Global Research. Retrieved from: http://globaldashboard.org/wp-content/uploads/2009/HSBC_Green_New_Deal.pdf.

Jacobs, M. (2012). *Green Growth: Economic Theory and Political Discourse*, *GRI Working Papers*. 92. Grantham Research Institute on Climate Change and the Environment. Retrieved from: https://ideas.repec.org/p/lsg/lsgwps/wp92.html (last accessed: 07.07.2022).

Joerges, C., Ladeur, K.-H. & Vos, E. (eds.) (1997). *Integrating Scientific Expertise into Regulatory Decision-Making: National Traditions and European Innovations*, Baden-Baden: Nomos.

Koundouri, P., Devves, S. & Plataniotis, A. (2021). Alignment of the European Green Deal, the Sustainable Development Goals and the European Semester Process: Method and Application, *Theoretical Economics Letters*, 11(4), 743–770.

Lehndorff, S. (2021). Vom New Deal der 1930er zum Grünen Deal. *PROKLA, Zeitschrift für Kritische Sozialwissenschaft*, 51(202), 149–161.

Lenaerts, K., Tagliapietra, S. & Wolff, G.B. (2022). The Global Quest for Green Growth: An Economic Policy Perspective. *Sustainability*, 14(9), 5555.

Litfin, K. T. (1994). *Ozone Discourses. Science and Politics in Global Environmental Cooperation*, New York: Columbia University Press.

McGann, J. G. (2020). *2019 Global Go To Think Tank Index Report,* Philadelphie: University of Pennsylvania.

McNeill, J.R. & Engelke, P. (2014). *The great acceleration: an environmental history of the anthropocene since 1945*. Cambridge, Massachusetts: The Belknap Press of Harvard University Press.

OECD (2009a). *Economic Policy Reforms. Going for Growth*. Retrieved from: http://puck.sourceoecd.org/vl=3433967/cl=13/nw=1/rpsv/ij/oecdjournals/18132715/v2009n1/s1/p1l.

OECD (2009b). *Policy Responses to the Economic Crisis: Investing in Innovation for Long-Term Growth*. Retrieved from: http://www.oecd.org/dataoecd/59/45/42983414.pdf.

OECD (2017). *Green Growth Indicators 2017*. Paris: OECD (OECD Green Growth Studies). Retrieved from: https://doi.org/10.1787/9789264268586-en.

OECD (2011). *Towards green growth.* Paris: OECD.

Radelli, C. M. (1995). The role of knowledge in the Policy Process. In *Journal of European Public Policy* 2(2), 159–183.

Rickels, W. et al. (2010). Konjunktur für den Klimaschutz? Klima- und Wachstumswirkung weltweiter Konjunkturprogramme. *Aussenwirtschaft*, 65(2), 129–166.

Rosling, H., Rosling, O. & Rönnlund, A.R. (2018) *Factfulness: ten reasons we're wrong about the world--and why things are better than you think*. First edition. New York: Flatiron Books.

Sabato, S. & Mandelli, M. (2020). Integrating the Sustainable Development Goals into the European Semester: a governance conundrum for the von der Leyen Commission?. In Vanhercke, B. Spasova, S. & Fronteddu, B. (eds.) *Social policy in the European Union: state of play 2020*. Brussels: ETUI, 113–127.

Saha, D. & Weizsäcker, J. von (2009). *Estimating the size of the European stimulus packages for 2009 – An Update*. Brussels: Bruegel (Bruegel Policy Contributions, 2009/09).

Schebesta, H. & Candel, J.J.L. (2020). Game-changing potential of the EU's Farm to Fork Strategy. *Nature Food*, 1(10), 586–588.

Schepelmann, P. et al. (2009). *A green new deal for Europe. Towards green modernisation in the face of crisis*. Brüssel: Green European Foundation (Green new deal series, 1). Retrieved from: http://www.gef.eu/fileadmin/user_upload/GEF_GND_for_Europe_publication_web.pdf.

Schepelmann, P. (2010). *Mit der ökologischen Industriepolitik zum ökologischen Strukturwandel*. Bonn: Friedrich-Ebert-Stiftung. Retrieved from: http://library.fes.de/pdf-files/wiso/07451.pdf.

Schepelmann, P. & Fischedick, M. (2020). Green New Deal! Die ökologische Wende der Konjunkturpolitik, in A. Brink et al. (eds.). *Lehren aus Corona*. Nomos Verlagsgesellschaft mbH & Co. KG, 157–166.

Schneidewind, U. (2014). *Transformative Wissenschaft*. Marburg: Metropolis.

Steffen, W. et al. (2015). The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, 2(1), 81–98.

Strobl, T. (2009). Tadel vom Wirtschaftsnobelpreisträger: Europa ist in größter Gefahr. *FAZ.NET*. Retrieved from: https://www.faz.net/aktuell/feuilleton/tadel-vom-wirtschaftsnobelpreistraeger-europa-ist-in-groesster-gefahr-1923363.html (last accessed: 08.06. 2022).

UNEP (2009). *A Global Green New Deal*. Retrieved from: http://www.unep.org/greeneconomy/docs/GGND_Final%20Report.pdf.

Verba, S. (1971). Sequences and Development, in L. Binder et al (eds.) Crises and Seqences in Political Development.

Victor, P.A. (2022). *Herman Daly's economics for a full world: his life and ideas*. Abingdon, Oxon ; New York, NY: Routledge.

World Bank (2012). *Inclusive Green Growth: The Pathway to Sustainable Development*. Washington, DC: World Bank. Retrieved from: https://doi.org/10.1596/978-0-8213-9551-6.