Comparative empirical studies of the structural challenges towards making global production and consumption patterns compatible with environmental limits suggest that rich countries would need to ‘degrow’. To shed light on the potential role of the state in such a planned downscaling process the paper compares state roles in a capitalist economy (oriented at monetary growth or exchange value) and a postgrowth economy (oriented at bio-physical parameters such as matter and energy throughput or use values). First, contributions to materialist state and regulation theories are applied to analyse the state’s roles in a capitalist growth economy: above all as rule of law, welfare state, environmental state and in relation to state spatiality. To these roles correspond economic policies to intermediate corporate interests, social policies to de- and recommodify labour power and environmental policies to produce ‘green growth’. Second, the paper argues that state roles would need to change to bring forth environmental sustainability and social equality in a postgrowth context. State economic, social and environmental policies would be oriented at the provision of ‘sustainable welfare’, specifically the provision of sufficient need satisfiers for all people now and in future. It is generally argued that robust states would be necessary to steer a mixed economy that functions within environmental limits and serve as primus inter pares in a governance network comprising above all global and local levels. Finally, the paper discusses state ‘eco-social’ policies such as wealth sharing, minimum and maximum incomes as well as carbon rationing that can facilitate the transformation from a growth to a postgrowth economy.

Introduction

Recent comparative empirical studies of the link between economic growth, carbon emissions and ecological footprints suggest that current Western production and consumption patterns as well as material welfare standards are incompatible with environmental limits and IPCC climate targets and are not generalisable to the rest of the planet (O’Neill 2015; Fritz and Koch 2016). If non-linear and irreversible changes that may have fundamental consequences for humans and other species were to be avoided (Rockström et al. 2009), the economy, corresponding production and consumption norms as well as welfare standards can no longer be considered in
monetary terms only, that is, under abstraction from associated matter and energy throughputs. In the absence of evidence for absolute decoupling of economic growth, material resource input and carbon emissions – and to allow for ‘catch-up’ development in poor countries – rich countries would instead need to ‘degrow’ to bring their environmental performances in line with ecological thresholds (Asara et al. 2015) and to reach UN climate targets (IPCC 2014).

This paper addresses glass ceilings of the environmental state in the context of capitalist growth. It compares state roles in an economy largely oriented at monetary growth or exchange value and a postgrowth economy, which is primarily oriented at physical parameters such as matter and energy throughput or use values. First, materialist state and regulation theories are applied to the analysis of state roles in a capitalist growth economy: above all as rule of law, welfare state, environmental state and in relation to state spatiality. To these roles correspond economic policies to intermediate corporate interests, social policies to de- and recommodify labour power and environmental policies to produce ‘green growth’. Second, the paper discusses the general lines of state involvement to achieve environmental sustainability and social equality in a postgrowth context. It argues that in these circumstances state economic, social and environmental policies would need to be oriented at the provision of ‘sustainable welfare’, specifically the provision of sufficient need satisfiers for all people now and in future. The paper also reviews state ‘eco-social’ policies such as wealth sharing, minimum and maximum incomes and carbon rationing, which may facilitate the transition from a growth to a postgrowth economy, as well as some of the structural challenges that any political attempt to initiate such change would be up against with. The conclusion summarises the comparison of the state’s role in growth and postgrowth economies highlighting respective limits to the environmental state.
The state and the provision of sustainability in a growth context

This section discusses three key roles of the state in a capitalist growth context (Table 1). First, it addresses general features of the relation between capitalist growth and the state; secondly, it considers the different spatial levels or scales on which states may be active in regulating capitalist growth; thirdly, it refers to state social and environmental policies as well as to the links between welfare and environmental states.

Table 1: State roles in a capitalist growth economy

<table>
<thead>
<tr>
<th>Economic development: Monetary growth (exchange value orientation)</th>
<th>State spatiality / spatial target</th>
<th>Economic, social and environmental policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule of law: Guarantees private property, principle of equivalence, legal security of economic subjects</td>
<td>Delicate structure subject to de- and rescaling processes</td>
<td>Macro-economic management / intermediation of corporatist processes</td>
</tr>
<tr>
<td>Welfare state: Legitimises social inequality and maintains a minimum of social inclusion</td>
<td>New multi-scalar structures of state organisation, political authority and regulation keep emerging</td>
<td>Social policies de- and recommodify labour power and manage inequality</td>
</tr>
<tr>
<td>Environmental state: Addresses problems of externalisation of environmental costs</td>
<td>National and European levels most important after WW II</td>
<td>Environmental policies facilitate the achievement of ‘green growth’ via, e.g., (carbon) taxation or (carbon) markets</td>
</tr>
</tbody>
</table>

Capitalist growth and the state

In capitalism processes of production and wealth creation are structurally separated from the political processes of exercising coercive power and administrative control. The Marxian tradition, in particular, has linked the autonomous existence of the state to the structural prerequisites of an economy based on the circulation of commodities. In order to exchange goods, individuals must ‘recognize one another reciprocally as proprietors’ (Marx 1973: 243). This includes a ‘juridicial moment’ since exchange relations are only possible as long as the
acting individuals are not prevented from entering them, for example, by feudal rule. Appropriating commodities through the use of force is equally not a legal or legitimate course of action. The respect of the principle of equivalence in exchange relations, hence, depends on a formally independent institution that guarantees the legal and economic independence of the owners of commodities: their equality, legal security and protection. In the case of an advanced division of labour, this guarantee cannot be ensured in accordance with common law but must be institutionalised in an independent third party that, above all, monopolises the legitimate use of physical force (Weber 1991: 78): the modern state. From this follows the first general role of the state in capitalist development: under the rule of law, it guarantees private property, the principle of equivalence, and the legal security of the economic subjects.

Exchange relations, however, are not reduced to the swap of use values. They also reproduce social relationships that involve power asymmetries and inequalities. The latter originate in different societal domains and take the form of class, race, religion, linguistic or gender characteristics. In a social structure based on a dynamic plurality of exploitative and exclusionary relationships, the state is the main location for the political regulation of conflicts and for the maintenance of social order (Offe 1984). Since, without state regulation, such a society would disintegrate, the second general role of the state is the maintenance of a minimum of social cohesion and, at the same time, the legitimisation of remaining inequalities.

In its third role in the provision of capitalist growth, the state has an indispensable capability of temporarily harmonising conflicting group interests and creating consensus (Gallas et al. 2011). The state appears here as an autonomous political sphere, where social classes and groups represent their interests in indirect and mediated ways. As political parties and interest groups raise variable issues such as religion, age, and the environment, these interests and issues
are sometimes in the focus of government action, only to be superseded by others at later points in time. State policies cannot be reduced to the strategic interests of single actors, but rather develop as a result of the heterogeneity and changing dynamic of social forces that influence state institutions. The nature of the composition of social forces able to influence state policies in particular historical configurations cannot be defined in general theoretical terms, but must be explored empirically. Once such a coalition of relatively powerful actors is formed and has managed to influence the general direction of state policies, it takes the character of a relatively homogenous social phenomenon and appears to ‘act’ as if it were a single actor: the more socially coherent the coalition of forces that influences the state, the lesser the contradictions across its policies (Poulantzas 1978). Hence, the state is an object of agency of the socio-political coalition that creates and recreates it, and, at the same time, a powerful actor, whose policies shape a range of societal fields. It is, to borrow Bourdieu’s terms, structured and structuring at once. The corollary for debates around the (limits of the) environmental state is that the ways and the extent to which states address environmental issues rather than others including welfare policies cannot be ‘deduced’ theoretically but must be explored in comparative empirical research. This includes the degree to which environmental goals can be pursued without questioning the overall growth orientation.

*State spatiality*

The historical development of markets and capital tends to dissolve previously isolated communities and to regroup their inhabitants according to new spatio-temporal structures. In the 19th and 20th centuries, these largely followed the borders of the developing nation-states. Towards the end of the 20th century, however, this form of state territoriality began to be faced
with Europeanisation and internationalisation but also with localisation processes that undermined this spatial arrangement. As a consequence, scholars ceased to assume a static concurrence of nation and state and began to view state spatiality in more dynamic ways. The spatial dimension of state regulation turned out not to be a fixed object but a delicate structure that is permanently subject to rescaling processes in the course of which new, multi-scalar structures of state organisation, political authority and socio-economic regulation emerge (Brenner 2004; Kazepov 2010). State institutions are foremost in what Brenner (2004: 453) calls ‘spatial targeting’: attempts to ‘enhance territorially specific locational assets, to accelerate the circulation of capital, to reproduce the labour force, to address place-specific socio-economic problems and/or to maintain territorial cohesion’. Similarly, the notion of ‘spatio-temporal fixes’ has been developed to reflect the fact that particular accumulation regimes correspond with particular scales of regulation or spatial boundaries (national, transnational, local), in which structural coherence is sought (Harvey 2003). Spatio-temporal fixes are associated with policy frameworks that target specific jurisdictions, places and scales as focal points for state regulation in particular periods of time. How state strategies at European and national levels, for example, are linked to each other cannot be clarified in general theoretical terms but must be explored empirically.

The Fordist growth model with its focus on the national level came under pressure not only through various processes of deregulation and re-regulation but also through corresponding rescaling processes that led to ongoing shifts in the sites, scales, and modalities of the delivery of state activities. In what Jessop summarises as ‘Schumpeterian workfare post-national regime’, it is the increased importance of scales of intervention and regulation other than at the national level that moves into focus. New forms of statehood correspond to increasingly open economies, for
which the creation of systemic or structural competitiveness is the overall goal. The result is a tendency towards the watering-down of the national state apparatus whose tasks are reorganised on ‘sub-national, national, supranational, and translocal levels.’ (Jessop 2002: 206) At the same time, foreign agents and institutions become more significant as sources of domestic policy ideas, policy design, and implementation. To the extent to which the increasingly transnational processes of accumulation of capital require forms of regulation that extend beyond the borders and the capacities of individual states, governments – somewhat in compensation for the loss of scope for intervention at national level – attempt to create or strengthen international regulatory systems of which the EU is especially important (Halvorsen and Hvinden 2016). Far from being made redundant by the emergent international and European order, national governments belong to its key architects.

*Shaping employment and welfare*

The state shapes employment and welfare in different ways and various domains. In some countries the state is the largest single employer offering a great deal of job security. As indirect employer, e.g. in the infrastructure, education, and health sectors, the strategic priorities and spending decisions of governments tend to be behind the services provided by private actors; as guarantor of (minimum) employment rights and procedural regulator in collective bargaining; in intermediating (neo)-corporatist processes and macro-economic management the state facilitates the political exchange between management and labour at different (local, national, European) levels. This can take ‘harder’ forms of government regulation and/or ‘softer’ forms of governance based on the diffusion of good practice and ‘steering’. As welfare state the state defines the extent to which labour power is ‘decommodified’ (Esping-Andersen 1990) and provides institutional
protection of workers from total dependence for survival on employers. Welfare regimes take different forms and vary, above all, in terms of the particular division of labour of private and public provision (Arts and Gelissen 2002). Relatively generous welfare regimes with a corresponding high extent of ‘decommodification’ tend to strengthen the position of workers and facilitate the set up and maintenance of institutionally coordinated industrial relations, while less generous regimes often coincide with weakly coordinated and more ‘individualised’ industrial relations systems. However, recent developments indicate trends towards recommodification and workfare including in countries shaped by the social-democratic welfare regime such as in Sweden (Koch 2016). The forms and conditions that frame the relations between the state and individual welfare recipients are likewise subject to change and include top-down government approaches and more recent governance models, in which the state is primus inter pares in wider networks of public, semi-public an private actors.

The environmental state and its relation to the welfare state

Duit et al. (2016: 5) define the environmental state as a ‘set of institutions and practices dedicated to the management of the environment and societal-environmental interactions’ including environmental ministries and agencies, environmental legislation (for example concerning air, water and waste management) and associated bodies, dedicated budgets and environmental finance and tax provisions as well as scientific advisory councils and research organisations. Historically, Meadowcroft (in Gough et al. 2008: 331) points out that it was in the last third of the 20th century that advanced states began to ‘build up highly complex systems of environmental rule’ so that ‘it makes sense today to refer to the emergence of an environmental state …much as we talk about the historical development of the welfare state.’ However, Meadowcroft (in Gough
et al. 2008: 331) also stresses that the environmental state takes on somewhat different forms in different national contexts. This is partly due to the fact that the environmental state has been ‘layered on top of well-established economic variants (“forms of capitalism”), political-institutional set-ups, and welfare-state types’. Though there are certain parallels between the historical developments of welfare and environmental states, institutional, political and economic contexts as well as the composition of carrying and opposing social groupings and associated ideational constellations differ significantly (Gough 2016).

Esping-Andersen’s welfare regime approach has nevertheless inspired debates on the environmental state (Gough et al. 2008; Koch and Fritz 2014) and, in response to the environmental crisis, between ‘green growth’ and ‘no-growth’ approaches (Khan and Clark 2016). According to Dryzek et al. (2003; Gough et al. 2008), social-democratic welfare states are better placed to manage the intersection of social and environmental policies than more liberal market economies and welfare regimes. One reason Dryzek mentions is the discourse on ‘ecological modernisation’, which he regards as especially widespread in the Nordic countries: the idea that environmental policies can be good for business, and that ‘green growth’ presupposes the governance capacities of coordinated markets. Rather than trusting in the invisible hand of the market, social-democratic welfare regimes would generally make a ‘conscious and coordinated effort’ and regard ‘economic and ecological values as mutually reinforcing’ (Gough et al. 2008: 334-5). The ‘contemporary result’ would be the ‘mainstreaming of both environmental and equality concerns’ (Gough et al. 2008: 330). Similarly, Meadowcroft (2005; Gough et al. 2008) argues that there is a range of linkages between social and environmental policies which together have the potential of bringing about sustainable development. Though there are good theoretical reasons to assume that social-democratic welfare
regimes provide a better institutional basis for the introduction and development of the environmental dimension of the state than conservative and, especially, liberal welfare regimes, all mentioned authors consider the possibility of competition, clashes and conflicts between the welfare and environmental dimensions of the state.

The claim that social-democratic welfare regimes, which are least unequal in socio-economic terms, would also perform best in ecological and climate terms (Gough et al. 2008) and gradually turn into ‘eco-social states’ could not be verified in comparative empirical research (Koch and Fritz 2014). Representatives of the social-democratic, conservative and liberal welfare regimes are instead to be found among relatively well, medium and poorly performing environmental states. There is, hence, no quasi automatic development of the environmental state on top of already existing welfare institutions. Rather than welfare regimes the level of economic development measured in GDP per capita turned out to be most responsible for countries’ ecological (under-)performance. Such recent comparative empirical results largely confirm previous studies that fundamentally question ‘green growth’ policy options (Victor 2008; Jackson 2009; Fritz and Koch 2014) – the idea that economic growth can be organised in both socially equitable and ecologically sustainable ways. In fact, if welfare goals are to be combined with ecological sustainability, let alone generalised to all inhabitants of the globe, it is indeed ‘difficult to see how the top-priority of economic growth in policy-making can continue’ (Bäckstrand and Kronsell 2015: 51).
The state in the provision of sustainable welfare in a postgrowth context

Ecological economists fundamentally question both the synergy hypothesis of the welfare and environmental dimension of the state and the ‘green growth’ policy option that follows from it. Instead, material welfare standards and the environmental performance of a country are primarily regarded as a reflection of its development in economic terms measured by GDP growth per capita. Hence, while ‘green growth’ and ‘ecological modernisation’ discourses claim that the pursuit of economic growth can be made compatible with environmental limits by building on existing (welfare) institutions, ‘no-growth’ theories and ecological economics view economic growth itself as the problem. Accordingly, GDP growth would need to be deprioritised in policy making across the advanced capitalist world – that is, irrespective of welfare affiliation – in order to allow for efficient environmental policy making to achieve sustainability. This section discusses the general lines of a sustainability transition to a postgrowth economy and associated processes of state rescaling. It also addresses potential state ‘eco-social’ policies in the rich countries and some of the main structural challenges in such a transition.

Table 2: State roles in (a transition to) a postgrowth economy

<table>
<thead>
<tr>
<th>Economic development: (Increasingly) seen as biophysical process (use value orientation)</th>
<th>Spatial target</th>
<th>Economic and eco-social policies: Needs orientation through redistribution of time, wealth/income and pollution rights</th>
</tr>
</thead>
<tbody>
<tr>
<td>States ensure that production and consumption do not exceed environmental limits</td>
<td>Global and local levels</td>
<td>Macro-economic management of mixed and steady-state economy ensures provision of sufficient need satisfiers for everybody now and in future</td>
</tr>
<tr>
<td>Define limits for economic and social inequality</td>
<td>Global: Identification of thresholds for matter and energy throughput</td>
<td>State eco-social policies include wealth sharing, minimum and maximum incomes, carbon and other environmental quota and consumption-oriented policies</td>
</tr>
<tr>
<td>Guarantee coexistence and steer governance of state, collective, communal and private property forms</td>
<td>These delineate the leeway within which national and local economies can evolve</td>
<td></td>
</tr>
</tbody>
</table>
A global postgrowth economy

The probably most significant shift from a growth to a postgrowth economy is that from a monetary growth or exchange value orientation to an understanding and steering of the economy in bio-physical or use value terms (Tables 1 and 2). Herman Daly’s ‘steady-state economy’ (Daly 1972) is the most cited vision of a non-growing economic system that functions within ecological boundaries. It is a model of an economy that does not grow in the sense that it keeps the level of ‘throughput’ – the ‘extraction of raw materials from nature and their return to nature as waste’ (Farley 2013: 49) – as low as possible. This goal does not necessarily imply to abandon growth in all sectors of the economy but an overall de-prioritisation of economic growth in policymaking. It is further assumed that in a steady-state economy continued technological advances in combination with shorter working hours will facilitate the maintenance of relatively high living standards with relative low resource consumption and carbon emissions (Jackson and Victor 2011; Mont 2016).

The original concept of a steady-state economy was not developed at the global level. Yet environmental threats such as climate change are global issues, because for the atmosphere it does not matter from which part of the globe greenhouse gases are emitted. Similarly, the ecological footprint and the associated matter and energy throughput of the whole planet would need to shrink if the world’s production and consumption norms were to respect ecological limits. However, due to massive differences in economic development and unprecedented socio-economic inequality (Piketty 2014) such a re-embedding of global production and consumption patterns would imply different challenges for different regions and nations. Given the fact that already the ‘developing’ countries assembled in Fritz and Koch’s second poorest cluster (Fritz
and Koch 2016) work and live, so to speak, beyond their ecological means and the extremely short time period in which action would be necessary to mitigate climate change (IPCC 2014), it is for the time being difficult to see how welfare provision in an ecologically sustainable economy can mean much more than the satisfaction of basic human needs (see Koch et al. 2017 and below). This would also have repercussions for the spatial targets that states are primarily active on. Setting up a global steady-state economy would mean to go beyond the national scale, on which post-war institutional welfare and environmental arrangements were agreed, and encompass the entire globe (Büchs and Koch 2017: Chapter 7). As a corollary, the spatial target of the state would change from the national towards global but also local levels. In global governance networks, where states would play key roles, thresholds for matter and energy throughput would need to be defined in accordance with natural science expertise. These limits would delineate the leeway within which national and local economies can evolve. This would in all likelihood mean a lesser role and a stricter regulation of market forces than currently. Such a ‘steering state’ would be primus inter pares in a mixed economy and governance network of state, collective, communal and private actors.

This downscaling of regulatory power from national welfare and environmental institutions to local levels is addressed by several contributors to steady-state economics, social enterprises and cooperatives. These authors highlight the need to replace the current global production and trade systems with economies based on cooperative principles and oriented towards local production and consumption cycles (Dietz and O’Neill 2013). Some local and voluntary grassroots initiatives have proven to be quite efficient in environmental terms even though they often face difficulties in sustaining themselves over time (Howell 2012). Soper (2016) expects the chances of achieving long-term success to increase where (local) governments and governance networks support voluntary and civic bottom-up initiatives. According research on
how elements of the ‘good life’ are conceived locally has the potential of contributing towards creating a common vision of a social order where individual lifestyles of personal fulfilment and enjoyment are complemented by environmentally sound and socially just production and consumption methods.

In relation to the national level, Buch-Hansen (2014) has argued for an institutional perspective within postgrowth research, since present institutional diversity is likely to affect national degrowth trajectories and the concrete shapes of national steady-state economies and according state apparatuses. Just as contemporary capitalist societies are diverse, so would steady-state economies take many different forms in different countries. Theorists of institutional change (Mahoney and Thelen 2010) argue that change rarely takes the form of an abrupt and clear-cut break with the past. More often change is gradual so that the institutional principles and practices of existing institutional arrangements would be preserved in some form and synthesised with general steady-state principles. This does not exclude the possibility of institutional learning processes form ‘best-practice’ countries. Comparative research into wellbeing and prosperity of existing countries relative to GDP/capita (Fritz and Koch 2014) suggests that there are better than average performing countries in each part of the world (for example, Switzerland for Europe, Costa Rica and Uruguay for Latin America) that could be singled out for future in-depth institutional analysis.

Sustainable welfare

Not only nations’ social inclusion, wellbeing and democracy scores largely increase with their GDP per capita but also their ecological footprints and carbon emissions (O’Neill 2015; Fritz and Koch 2016). In the emerging ‘sustainable welfare’ approach (Koch and Mont 2016) the current financial, economic and political crisis and the corresponding adjustments and recalibrations in
welfare state institutions, with which much contemporary welfare literature is concerned, are regarded as impetus to also considering environmental concerns. What Langhelle (1999) calls the ‘sustainability proviso’ means a widened scope and changed pattern of welfare provision and, particularly, of any distributive principle applied. This includes the receptiveness for transnational and transgenerational phenomena such as climate change. In addition, the distributive principles underlying existing welfare systems would need to be extended to include those affected in other countries and in the future (Brandstedt and Emmelin 2016). Not only the citizens of a given (welfare) state but also non-citizens would need to be taken into account when providing welfare under the sustainability proviso, even if temporally and geographically distant people are not actually governed by a specific nation state. Neither should actual welfare provisions undermine the welfare of future generations.

In addition to universalisability and intertemporality, the satisfaction of human needs is central to the concept of sustainable welfare and postgrowth research (Koch and Buch-Hansen 2016). The central welfare concern is not the unlimited provision with material riches of the ‘happy few’ in Western societies but the satisfaction of basic needs for all humans now and in the future. Needs differ from wants and preferences in that they are non-negotiable and universalisable and that failure to satisfy these produces serious harm (Gough 2015). Hence needs do not vary over time and across cultures but according to the ways in which a specific culture at a particular point in time attempts to satisfy them. Critical thresholds for the universal provision of human needs (and wants) or for a ‘minimally decent life’ are to be constantly (re-)defined in light of the advances of scientific and practical knowledge. This includes the degree to which more than basic human needs can be provided on a finite planet. While we cannot exactly identify the exact kind and amount of need satisfiers that future peoples will require, all
economic systems would need to be assessed according to their ability to produce enough appropriate need satisfiers. The dimensions and outreach of this concept are reflected in the corresponding ‘policy auditing’ (Gough 2015) approach, according to which existing economic, social and environmental policies as well as material welfare standards would need to be reviewed under the aspect of their generalisability. Beyond basic human needs, material welfare would be regarded as secondary to environmental sustainability. Production and consumption patterns would need to be organised in ways that the global matter and energy throughput and the associated biophysical flows do not exceed levels identified by the natural sciences. Accordingly, economic growth as a policy goal would need to be deprioritised relative to the satisfaction of human needs within ecological limits.

State economic and eco-social policies in the rich countries
A global re-embedding of economy and society into environmental limits would imply a critical review and probably a contraction of Western production and consumption patterns. Accordingly, the focus of the state’s macro-economic management would shift from the provision of monetary growth towards ensuring that production and consumption processes do not exceed critical thresholds for matter and energy throughput. Or, in Marxian terms, global capitalism would need to be ‘overcome’ in the sense that the dominance of monetary growth or exchange value over bi-physical or use value parameters would be reversed. Hence, most of the following state policy initiatives have the potential of becoming ‘real utopias’ in the sense of E.O. Wright (2010). The state’s welfare role would be modified towards the provision of sufficient need satisfiers for everybody now and in future. In its steering role it would need to ensure their redistribution in ways that bio-physical limits are respected as much as possible. Corresponding
to the diversity of contemporary varieties of capitalism, local and national postgrowth economies would take many different forms as would the sustainable welfare institutions through which the satisfaction of the aforementioned human needs would be facilitated. Given lock-in effects and institutional path dependency it is very likely that various institutional principles and practices underpinning existing arrangements of welfare and environmental states would be preserved in some form and recalibrated in a plurality of creative ways, as they are synthesised with postgrowth economy and sustainable welfare principles. In other words, the institutions of local steady-state economies and their corresponding sustainable welfare systems would vary across space and to some degree resemble currently existing economic and welfare institutions.

Daly suggests that the redistribution of economic resources is a crucial necessity, if a steady-state economy is to constitute a viable way of organising economic life. Another key function of the state in a postgrowth economy is then the definition of limits for economic and social inequality in much narrower terms than in the current capitalist growth economy. To this end states may ensure the implementation of some kind of ‘distributist institutions’ (Koch and Buch-Hansen 2016) which would steer a range of ‘eco-social policies’ in the transition towards ecological and social sustainability. Generally, these would need to address the ‘double injustice’ (Walker 2012) that the poorest household groups who are least responsible for environmental damages such as climate change are in the worst position to cope and to afford mitigation and adaption (Büchs et al. 2011). For example, ecological investment into retrofitting houses has only a chance of being acceptable to the electorate if it is accompanied by countervailing social policies (Gough 2011) that, for example, assist homeowners in affording ecologically useful measures. More generally, through targeted policies, states can help bring about a redistribution of work, wealth, and pollution rights and it can stimulate alternative ways of consumption.
In a recent comparative overview of state-induced working time reduction policies, which were frequent in OECD countries prior to the 1990s, Mont (2016) highlights that these were especially successful in improving the work/life balance, while their effect in the generation of employment was weaker. However, she also stresses that none of these policies were devised to meet the triple goal of increased employment, wellbeing and a simultaneous reduction in environmental impacts. It is encouraging that models are being developed that indicate that economic stability can be combined with a decrease in environmental damages, without GDP growth and a rise in unemployment (Victor 2008; Malmaeus 2011). These models indicate that achieving this triple goal requires a combination of measures, including an ecological tax reform, basic income as a measure to counter the adverse effects of growing productivity and labour replacements. With respect to an ecological tax reform, postgrowthers argue that according state initiatives would imply a shift in the tax burden from taxes on labour to taxes on activities causing environmental damage, high-carbon luxuries, as well as on profits and rents. In addition, Daly (2013), among others, proposes maximum limits on income and wealth and minimum limits on income to limit the range of inequality and conspicuous consumption. Here, it seems worthwhile to reassess previous models of profit sharing such as the Meidner plan in Sweden from an eco-social perspective. Daly also suggests the introduction of pollution allowances and tradable rights, for example for carbon emissions. However, the effectiveness of real-existing market-based instruments appears questionable, since the reduction of carbon emissions is intended to be the by-product of the search for new investment opportunities for finance capital in particular (Koch 2012). Finally, on top of tax incentives, states can encourage certain ways of consumption (for example, vegetarian diets, local holidays, use of public transport and cycling) and complicate others (for example meat consumption, holidaying in distant locations, car and plane use). Such state engagement may be facilitated by a growing dissatisfaction of the public.
with the consumerist lifestyle. According to Soper (2016), people are increasingly disenchanted with the consumer culture because of its negative side-effects such as time scarcity, high levels of stress, traffic congestion and due to the increasing displacement of other pleasures of life and well-being through the shopping mall culture.

*Structural obstacles to postgrowth transitions*

It goes without saying that reaching a global agreement on a postgrowth economy that includes a sustainable welfare component will be far from easy. There are many structural obstacles for such a transition most of which concern the power resources and material interests of those social groups and multi-national organisations that benefit from the status quo. In the remainder of this paper, I refer to issues of governance of the different regulatory scales, and, in relation to building sustainable welfare and environmental states, to fiscal and size issues. Re-embedding the world economy into ecological limits would presuppose a new scalar division of labour, particularly between the global and local scales. Despite some progress in terms of reaching global agreements on carbon emissions, major steps towards setting up a global environmental governance network would need to be undertaken. The existence of such a governance structure for global sustainability goals and, specifically, carbon emissions including the Conference of the Parties summits can be interpreted as a confirmation that global answers need to be sought for ‘wicked’ environmental issues such as climate change. It is worthwhile remembering that Rio 1992 and the United Framework Convention on Climate Change included the ‘precautionary principle’, the ‘polluter pays’ principle as well as the principle on ‘common but differentiated responsibilities’ between developed and developing countries (Gough 2013). The suggestion by ‘Earth System Governance’ researchers to upgrade the UN Environment Programme to a UN specialised agency for environmental protection along the lines of the World Health Organisation
is to be welcomed as a further step in setting up an environmental governance network. Also the proposal to replace the UN Commission on Sustainable Development by a new mechanism that stands much higher in the international institutional hierarchy – a ‘high level UN Sustainable Development Council directly under the UN General Assembly’ (Biermann et al. 2012: 1306) – appears to be a step in the right direction. However, whether, as these authors suggest, the primary members of this council should be the G20 countries is debatable. In this case many of the countries that are historically responsible for the bulk of the problem would be given the largest amount of power to deal with it – at the expense of those countries that suffer the most and have the least possibilities to cope. It is worthwhile noting, that it was the G77 group of countries, to which the ‘Earth Governance’ theorists do not want to give primary member status in a UN Sustainable Development Council, which has tabled, in relation to climate change and the individual level, the farthest-going proposal based on per-capita pollution allowances (Koch 2012: 188).

A new architecture of taxation would be necessary to finance a postgrowth economy and associated sustainable welfare system. This would need to be globally coordinated and wealth-related (rather than income-related). However, Bailey (2015: 795) convincingly argues that the revenue surplus resulting from such a reform may well not compensate for the tax losses that the rich states would be exposed to in the absence of GDP growth. In fact, reduced ‘levels of (taxable) economic activity’ threatens the ‘public sector funding base of welfare states’ and impedes ‘the state’s traditional mechanisms of ”crisis management”’. Hence, if traditional and national growth-tax-expenditure models are no longer viable, democratic policy-auditing practices would need to delineate how welfare and environmental states may be recalibrated – and in all likelihood downscaled – to meet human needs within environmental limits. Since existing welfare states are significant contributors to climate change and – via the same
mechanisms that limit social inequality – ensure that a sizeable percentage of the population partakes in environmentally harmful consumption practices smaller welfare states may be acceptable as long as there are embedded in an economic system which provides relatively egalitarian outcomes and costs related to inequality, (unhealthy) work-life balances and environmental deterioration. Society would need to find democratic ways to make according policy auditing and state downscaling legitimate.

Conclusion

This paper has dealt with glass ceilings of the environmental state in the context of capitalist growth through a comparison of state roles and scales in an economy oriented at monetary growth and a postgrowth economy oriented at bio-physical parameters, particularly the matter and energy throughput. While in the former economy the main spatial target of the state is the national level, in the latter it is the global and local levels. In the former model, the ‘growth paradigm’ delineates the limits for state action in economic, social and environmental domains to a significant extent. Environmental policies are feasible as long as these do not undermine the overall growth orientation. Hence, state action is largely reduced to the facilitation of producing ‘green growth’. In a postgrowth economy, by contrast, the policy priority to achieve economic growth is replaced by the goal of re-embedding production and consumption patterns into ecological limits. In these circumstances, state economic, social and environmental policies would be oriented at the provision of ‘sustainable welfare’, specifically the provision of sufficient need satisfiers for all people now and in future. While state capacity to act in the environmental domain (the ‘environmental state’) would increase significantly if the growth proviso was replaced by a sustainability proviso, state power would be used to build transnational networks
and to act as primus inter pares together with various private, semi-private and non-profit actors to ensure the respect of ecological limits in production and consumption patterns.

The paper has reviewed a selection of ‘eco-social’ policy proposals such as wealth sharing, minimum and maximum incomes and carbon rationing, which states could initiate to facilitate the transition from a growth to a postgrowth economy, and to some of the structural challenges that such initiatives would be up against with. This discussion confirmed the hypothesis that the limits to the environmental state are to a huge extent defined by the kind of economy within which state action takes place. If the ‘environmental state’ is defined in line with ecological modernisation approaches, its limits would be reached at the moment where the pursuit of ecological goals contradicts the overall growth orientation of state action. Or, in other words, these limits would follow the extent to which environmental performance can be decoupled from GDP growth. Yet if the growth priority were given up, the ‘limits’ of the environmental state would be much wider as it would be free to prioritise environmental issues over economic ones. However, the materialist state theory perspective taken in this paper suggests that states are not only at the receiving end of ‘economic forces’. State apparatuses can also be used and play an active part in transforming a given economic context. The discussion of eco-social policies, which have the potential of serving as ‘real utopias’ to overcome the hegemony of the growth paradigm, has highlighted this ‘structuring’ dimension of state action and seems to resonate with older definitions of the ‘green’ state according to which ‘a deep and lasting resolution to ecological problems can … only be anticipated in a post-capitalist economy and post-liberal democratic state’ (Eckersley 2004: 81).
References


