



Towards a social-ecological transition

Solidarity in the age
of environmental challenge

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Éloi Laurent and Philippe Pochet

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Introduction

The great transition, between knowledge and belief

How can we speed up the necessary transition of our economies and societies to a condition of sustainability – by which we mean the possibility of preserving human wellbeing through time subject to the constraints represented by ecological factors? First of all, by achieving clarity about the nature of the social changes that need to be introduced and by jettisoning, as a first step to this end, two mistaken representations of these changes.

The first of these two representations features a purely cerebral world in which scientists, increasingly convinced that they are on the right path, seek to convert citizens ignorant of the gravity of the ecological crises. Science alerts us to the facts and, while this is a significant step forward, it is not enough to mobilise determination and unleash our best energies. Scientific alerts that warn of the need for changed behaviour can actually be counter-productive if the demand is perceived by people as intellectual arrogance on the part of elites. Transition will not be achieved via obedience.

The second representation, at the antipodes of reason, features a social world animated by fear of disaster, the claim here being that human societies, subject to a reptilian reflex, accept change not as a result of conscious understanding but through a process of disaster-induced learning. Fear is thus regarded as a powerful driver of action; in reality it probably engenders paralysis more than it prompts action: the more we are told that

the end of the world is nigh, that catastrophe beckons, the more we are encouraged to behave irresponsibly. Transition will not be achieved through terror.

What we are left with are three certainties. First of all, the ecological transition is possible, as evidenced by innumerable positive and analogous transitions of the past that were invariably the fruit of protracted, uneven and imperfect processes: the abolition of slavery, for instance, or the recognition of women's rights (consider also the major structural transitions of human societies observed right across the globe in the form of demographic transitions or transitions to democracy). Secondly, the ecological transition will entail a change in behaviour and attitudes inspired by a *common positive narrative* – in the threefold sense of constructive, practical, and robust – and that, in terms of influence, will far exceed either pure reason or blind panic (no transition achieved through force will prove lasting). This transition, finally, will be gradual; it will need to take shape over time, growing out of painstakingly constructed and mutually reinforcing institutions (there can be no magic leap from one state of society to another).

The ecological transition must, in other words, if it is to become a social reality, incorporate a combination of both knowledge and belief. If the necessity of the transition is generated by ecological knowledge, its possibility will emerge from the social belief that alone instils the power to set democratic action in motion. It is necessary first to know, and then to believe – even, in some cases, to dream – in order to arrive, finally, at the stage of action.

This common positive narrative of the ecological transition cannot be constructed exclusively upon the imperative of economic efficiency (above all if improvement along this path promises no more than a return to rising GDP – aka 'green growth' – that will be bound to bring new forms of environmental damage and inequality in its wake). Any new narrative must be driven by the principle of social justice. The transition must be fair; it must offer stability, and it must promise protection.

Our primary aim in this short contribution is to tie the ecological transition firmly to the simultaneous demand for social progress. As we see it, such social progress must be erected upon the tripod of equality, employment and social protection. These are the three pillars of the edifice required to produce a social-ecological transition. Simply put, the social-ecological transition answers environmental change with social progress.

Part 1

Connecting inequality and environmental crises

First in line for our attention is the demand for equality, in other words, the effort to reduce social inequality. The currently prevalent models used to represent ecological understanding have in common a relative lack of attention to the social dimension. The Anthropocene theory, for instance, presents us with a human species that, on account of its overweening collective intelligence, set in motion a geological revolution, to the perverse effects of which the human species as a whole now finds itself subject. The ‘planetary boundaries’ approach puts forward, along similar lines, the notion of global thresholds (for example the two degrees of average planetary warming)¹ beyond which the environment – without any social distinction – would no longer be safe for human beings. Both representations, which undoubtedly have their uses, are flawed by the same shortcoming and point up the same need, namely, for an ecological analysis that is *socially differentiated*. Who is responsible for what with what consequences for whom? Such is the twofold *social-ecological* question that brings the change in natural systems into interplay with the dynamic of social systems – the essential point requiring emphasis here

1. In the most recent version of the ‘planetary boundaries’ indicator drawn up in early 2015, nine biosphere processes are taken into account and evaluated (climate change, stratospheric ozone depletion, nitrogen or phosphorus inputs to the biosphere, ocean acidification, soil use, etc.), see Steffen *et al. Science*, 16 January 2015.

being that human beings, in the face of environmental crisis, are equal neither in terms of their responsibility nor in terms of their vulnerability.

How, for example, are we to envisage the climate negotiations – an important but probably not decisive phase of which will take place at the COP21 gathering in Paris next December – without this social differentiation, both between countries and within countries, among the generations and within generations? In this respect, the latest IPCC assessment report, issued in 2014², does not beat about the bush: ‘Equity is an integral dimension of sustainable development’, it states, which, according to the authors, means that climate change and adaptation policies should have a ‘moral justification that draws upon ethical principles’, failing which it will be impossible to translate such policies into facts.

In this first chapter we consider the link between environmental crises and social reality; we examine, more specifically, the relationship between ecological crisis and the crisis of inequality that has gained momentum over the last thirty years throughout the developed, the emerging and the developing world.

The first dimension of the social-ecological approach to inequality may be described as *integrated* in the sense that it is aimed at showing that the environmental impact of the worsening of absolute forms of inequality (poverty, for example), as well as relative inequality (for example, income gap) is suffered, to a varying degree, by everyone (with the perimeter of the affected community being, however, subject to variation from the global to the local level). Thus, on the global level, the negative curve between poverty and destruction of biodiversity, empirically well documented, leads to a common impoverishment for humanity (the destruction of animal and plant species in the Amazon regions is damaging to the world). On the local level, the pollution of the water supply of a Chinese village because of the exorbitant power wielded, with the complicity of the local authorities, by a chemical works established close by affects all the inhabitants.

Social inequality indeed brings in its wake a host of harmful consequences now abundantly described in the academic literature³ but among these the harm to the immediate environment and the aggravation of the three planetary crises – climate change, destruction of biodiversity and degradation of ecosystems – are still too little studied (even though some international organisations⁴ or moral authorities⁵ have become aware of the stakes).

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2. IPCC, Sustainable development and equity, 2014. https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter4.pdf
 3. For a summary see Kate Pickett and Richard Wilkinson, *The Spirit Level. Why equality is better for everyone*, Bloomsbury Press, 2009; Joseph Stiglitz, *The price of inequality: how today's divided society endangers our future*, Norton & Company, 2012.
 4. See in particular UNCTAD, *Human development report 2011*, UNCTAD 2011.
 5. The papal encyclical *Laudato si* published in June 2015, set by its very title under the auspices of St Francis of Assisi (friend of the poor, author of the Canticle of Brother Sun, declared patron of the ecologists by Pope John Paul II in 1979) is a text that fully espouses the social-ecological approach.

Integrated social-ecology or how our planet is being polluted by inequality

How does social inequality cause further damage to the environment and exacerbate the ecological crisis? Five relevant transmission channels have been identified and are described below⁶.

The first transmission channel relates to the fact that inequality unnecessarily increases a demand for economic growth that is potentially harmful to the environment: the more a country's creation of wealth is concentrated in the hands of a small number, as has been the case in the last thirty years in most OECD countries – but also in China, the more the rest of the population will need to offset this concentration by excessive economic development that is potentially destructive from the environmental point of view.

The second transmission mechanism is seen in the way in which inequality increases the ecological irresponsibility of the richest. With the widening of the gap in income and power among inhabitants of the same country or between the populations of different countries, the incentive to externalise the costs inherent in capitalism is boosted, at both the national and the international level. When the gap between the rich and the poor increases, the distance between the 'polluters' and the 'payers' widens and it becomes easier for the rich – whether individuals or countries – to transfer to the poorer categories the environmental damage linked to economic activity. The inequality of income and power then acts as a disincentive to ecological responsibility or – which amounts to the same thing – as an accelerator of ecological irresponsibility. This tendency provides the justification of the so-called 'environmental justice' activists whose primary concern is the distribution of environmental good and evil on the national and international level. The distribution of water supply in Spain or in California subject to the constraint of a drought situation that has become structural provides a good illustration of this mechanism: the more the gap between the rich and poor widens, the more the rich are in a position to safeguard their own water supply, including for frivolously self-indulgent purposes (decorative vegetation unsuited to the semi-arid climate in California; water fun parks and tourist complexes in Spain), while transferring the cost of the drought to the less affluent (deprived localities in California where the inhabitants are faced with increasing water supply tariffs or small farmers driven to bankruptcy in Spain).

Inequality, by affecting individuals' health⁷, reduces the social-ecological resilience of societies, thereby weakening their collective capacity to adapt to ecological shocks the impact of which will be multiplied rather than cushioned by the social structures. The inverse relationship between degree of social inequality and life expectancy also means that the impact of a heatwave will be much greater in an unequal society because the excess mortality resulting from the heatwave will be exacerbated by the social inequalities. The situation is further compounded by the harmful effect of inequality on the constitution and use of the social capital (social networks and trust-based relationships) that, in the event of an ecological shock, is of decisive importance in limiting its immediate effects

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6. For a full description see Eloi Laurent, *Social-ecology: Exploring the missing link in sustainable development*, Working Paper 2015, OFCE, 2015. <http://www.ofce.sciences-po.fr/pdf/dtravail/WP2015-07.pdf>
 7. The works of Wilkinson and Marmott in the United Kingdom have clearly established this link (for examples, see <http://www.equalitytrust.org.uk/health>).

and dealing with its consequences once the initial danger has passed (the most socially isolated persons, especially if they are elderly, are the first victims of heatwaves).

According to a similar logic, inequality hinders the collective capacity for action geared to preserving natural resources by destroying trust-based relations among individuals and towards the common institutions and thereby precipitating the ‘tragedy of the commons’ which is not, in actual fact, an inevitable phenomenon. On the contrary, there exist everywhere in the world good institutions, founded on principles of justice and reciprocity, that enable national and local communities to preserve in the long term the natural resources that are essential for their human development. Elinor Ostrom has devoted a large number of studies, as well as her important pioneering book, to empirically demonstrating this hypothesis⁸.

Finally – the fifth and last transmission channel – inequality reduces the sensitivity of the least affluent to the environmental stakes and hence diminishes the possibility of socially compensating for the possible regressive effects of environmental policy. The French government’s abandonment of the carbon tax in the spring of 2010 in the context of the ‘great recession’ may be seen as an illustration of this mechanism.

Let us briefly develop here two examples, one theoretical and the other practical, that combine several of these transmission mechanisms.

In a study that created quite a stir in 2014⁹, Motesharrei et alia constructed a dynamic social-ecological model that to some extent recalls the scenarios devised by the team assembled around Dennis Meadows for the Club of Rome at the beginning of the 1970s, one difference being that social stratification plays a central role in this new initiative whereas, four decades ago, it was not a determining element used by the ‘limits to growth’ advocates. Synthetically, the new model shows how social inequality can play a key role when envisioning the possibility of a world environmental collapse.

The study examines the possibility of a collapse of civilisation using a new model labelled HANDY (Human and nature dynamics) that combines developments in ecosystems with social logics. Humans, in accordance with the model, are divided between ‘elites’ and ‘commons’ and their consumption of natural resources is differentiated depending on their economic and political power. The basic idea of the model is that the environmental collapse can happen not only because resources have been exhausted as a result of excess pressure on the environment’s capacity to bear the burden (an idea present in the work of the Meadows team) but also – and this is what is new in the analysis – on account of the economic stratification of society into elites (rich) and commons (poor). The gloomy conclusion reached by the authors is formulated as follows: the elites end up consuming so much that a famine ensues among the commoners, leading to overall collapse.

The study – which, of necessity, is schematic – shows also that this collapse on account of an apparently ineluctable inequality could be avoided by a reduction of levels of social inequality and a more equitable distribution of consumption of natural resources (the most efficacious consumption cannot on its own, under the model, prevent the collapse).

8. See Elinor Ostrom, *Gouvernance des biens communs – Pour une nouvelle approche des ressources naturelles*, De Boeck, 2010.

9. Safa Motesharrei, Jorge Rivas and Eugenia Kalnay, Human and nature dynamics (HANDY): Modeling inequality and use of resources in the collapse or sustainability of societies, *Ecological Economics*, Volume 101, May 2014.

In practice, and to return to the matter of the 2015 climate change negotiations, it can be shown that the powerful social inequalities in the United States will impact negatively on the solidity of the climate agreement likely to be concluded in Paris at COP21. To this end, we start out from a well-established fact: the United States has, since the 1980s, been gradually withdrawing from the world environmental scene, gradually transferring its leadership role to the European Union, whether in relation to the regulation of chemical substances, to negotiations on the preservation of biodiversity or, precisely, to climate negotiations¹⁰; and there exists, what is more, a connection between the increase in social inequality and the decline in American environmental policy since the 1970s when the United States occupied the position – including in the eyes of the European countries – of a model on the world scene.

Now the elaboration of ambitious environmental policies requires a broad consensus that transcends party boundaries, and this consensus becomes impossible in the presence of two phenomena that have been growing ever stronger since the early 1980s, the first of these being the growth in social inequality and the second political polarisation¹¹. Never, over a whole century, has two-party cooperation been so weak in the United States; and this situation paralyses Congress, making it quite impossible in practice to adopt environmental policies. In the case of the United States it is thus possible to observe an absolutely proven link between level of inequality, political polarisation and quality of environmental policies. When, back in the 1960s, environmental demands were high on the agenda, the simultaneously low level of both inequality and political polarisation enabled Congress and the Nixon Administration to meet these demands by setting up a to date unequalled arsenal of provisions (Clean Air Act, creation of the Environmental Protection Agency, Clean Water Act, etc.). As from the end of the 1970s, on the contrary, the rise in inequality and the increased political polarisation have been blocking the adoption of ambitious texts adapted to the new ecological stakes, beginning with climate change.

This situation of democratic dysfunction caused by inequality forced President Obama to resort to the executive and regulatory power to devise mitigation policies for the coming decades; this is an uncertain approach insofar as the federal states are legally empowered to contest it, making it subject in the last resort to the approval of the Supreme Court. But this situation of democratic dysfunction, in which the crisis of social inequality plays an important role, has an effect also on the global scale; it will be very difficult for the treaty adopted in Paris to have the – already quite relative – legal solidity of the Kyoto Protocol because the American Senate, which came under Republican control in 2014, has already made known its hostility to any binding commitment. As such, the Paris negotiations, subject to the effect exerted by inequality in the United States, will therefore probably engender at best an ‘accord’ (and not a Protocol or a Treaty) that will lack binding legal force¹².

10. In this area the United States did not return to the negotiating table until the autumn of 2014 following the announcement of a bilateral agreement negotiated in secret with the Chinese government.

11. Nolan McCarty, Keith T. Poole and Howard Rosenthal, *Polarized America: The dance of ideology and unequal riches*, MIT Press, 2008.

12. The US Government is seeking to convince its negotiating partners that there exist legal means of circumventing the opposition of Congress while committing the United States to climate goals, but this remains to be demonstrated. However this may be, there can be no denying the strong legal uncertainty created by the American political situation insofar as any commitments made by the executive are potentially subject to appeal before the Supreme Court.

Differential social-ecology: confronting a new generation of inequalities

Once the principle of integrated social ecology has been established, it is appropriate to recognise that environmental crises, fuelled as we have seen by inequality, themselves engender further inequality insofar as those hardest hit by them, on the international as on the intra-national level, are the most vulnerable sections of the population: this is the *differential* dimension of social ecology. Observed from this standpoint, the emergence of environmental inequality becomes apparent; in other words, we see social inequality in terms both of exposure to environmental damage and of access to the environmental resources and amenities that affect individuals' wellbeing.

In other words, the important and proven – since Hippocrates – role played by environmental factors in the health and wellbeing of individuals and groups poses a question that is simultaneously ethical and political, namely that of the socially differentiated exposure and vulnerability of human beings to these factors. To show in what ways these forms of environmental inequality can be unfair, we need a definition that makes our conception of justice quite explicit. Here we choose, in the wake of other authors¹³, to define them with reference to the capabilities and human development theory developed by the philosopher and economist Amartya Sen¹⁴.

An environmental inequality, which may be the mere empirical observation of a disparity (the observation, for example, that in the Paris Region the air is of variable quality), translates into a social injustice at the point where the wellbeing and the capabilities of a given population are disproportionately affected by their environmental conditions of existence, even if this situation is the result of a choice. The expression 'environmental conditions of existence' denotes, negatively, exposure to unpleasant or polluting environmental conditions and risks and, positively, access to amenities and natural resources. The specific characteristics of the population in question may be defined according to different criteria, e.g. social, demographic, territorial, etc. Environmental justice therefore aims to identify, measure, and correct the environmental inequalities that translate into social injustice. It presupposes the adoption of an effective arsenal of public policies that must include a sizeable and appropriately targeted research capacity. It is thus possible to distinguish three forms of environmental inequality¹⁵.

Let us rapidly review these different forms of social inequality. The first of them refers to inequalities of exposure and access: this category denotes the unequal distribution of quality of environment among individuals and groups. The 'quality' in question may be negative (exposure to harmful environmental impacts) or positive (access to environmental amenities such as green open spaces, landscapes, but also water or energy). Included in this category of inequalities are social vulnerability to natural risks, the risk of cumulative effect of social and environmental inequalities, and the risk of time-lagged social consequences of environmental inequalities (such

13. For an in-depth justification of this choice, see David Schlosberg, *Defining environmental justice: theories, movements, and nature*, Oxford University Press, 2007.

14. See, among other works, Amartya Sen, *The idea of justice*, London, 2010.

15. See, on this point, Éloi Laurent, *Le bel avenir de l'Etat Providence*, Les liens qui libèrent, 2014, and Eloi Laurent, *La social-écologie: une perspective théorique et empirique*, *Revue française des affaires sociales*, n° 1-2, 2015.

as the effect on education or long-term income of prenatal or perinatal exposure to atmospheric pollution).

The second type comprises distributional inequalities of environmental policies. Here we are speaking about the unequal effect of environmental policies depending on social category, in particular the unequal distribution of the effects of taxation or regulatory policies among individuals and groups, depending on their place on the income scale and their position in terms of social standing. The differential impact of carbon taxes, which are also taxes on energy, depending on the level of income or place of residence, would be one type of example of this category of environmental inequality.

Finally, inequality in participation in public policymaking. This refers to unequal access to the definition of environmental policies depending on social and political status, even though such policies in part determine the environmental conditions of individuals and groups. One well-known example of this type of environmental inequality is the absence of consultation of local populations concerning the choice of sites where toxic waste is buried (for example the burial of nuclear waste in Amerindian reserves in the United States)¹⁶.

Here too we will take two concrete examples of these environmental inequalities. A study based on American data has recently established that inequality of exposure to pollution is in the United States greater than income inequalities – which are already tremendous: a Gini coefficient¹⁷ of 0.76 has been recorded for environmental inequality as against 0.47 for social inequalities¹⁸.

Another US study stresses the role played by structural environmental inequalities, but also by the lack of social capital in certain urban communities exposed to social-ecological catastrophes such as heatwaves. Thus, ethnic minorities are faced with greater exposure to risks linked to the heat island effect resulting from an excess of heat-reflecting surfaces, such as asphalt and concrete, and the lack of trees in their neighbourhood¹⁹.

The situation we have described in this section is thus the following: the contemporary inequality crisis fuels ecological crises which in turn exacerbate existing forms of social inequality. It is important, as such, to reduce social inequalities in order to stem the ecological crises and to seek to limit the environmental inequalities so as to curb the harmful social impact of ecological crisis. It is important, in other words, to find ways of ensuring a just transition: we have good environmental reason to reduce our social inequalities and good social reason to mitigate our ecological crises. This need to articulate the two facets of the crisis makes itself felt particularly on the employment front.

16. For a panorama of environmental inequalities in France see Eloi Laurent, *La social-écologie : une perspective théorique et empirique*, *Revue française des affaires sociales*, n° 1-2, 2015.

17. This indicator measures the concentration of resources, for example monetary income, in a given population: 0 corresponds to perfect equality (everyone possesses the same quantity) and 1 corresponds to absolute inequality (one person owns all resources).

18. James K. Boyce, Klara Zwickl and Michael Ash, *Three Measures of Environmental Inequality*, Institute for New Economic Thinking Working Group on the Political Economy of Distribution Working Paper No. 4, INET, 2014.

19. Bill M. Jesdale, Rachel Morello-Frosch and Lara Cushing, *The Racial/Ethnic Distribution of Heat Risk-Related Land Cover in Relation to Residential Segregation*, *Environmental Health Perspectives*, vol. 120 n° 7, 2013.

Transition in action

Proposal 1

Invest in human development through dynamic redistribution

The idea is to reduce social inequalities by taxing dividends and high earnings so as to invest in human development, i.e. public health and education systems. This would mean, in Europe, to restore levels of taxation on dividends and high earnings observed before the period of unbridled tax competition initiated at the beginning of the 1990s, as a result of which states and, in their wake, local authorities, have forfeited significant potential revenue.

This strategy of human development by dynamic redistribution requires European cooperation but can already be implemented by the state and even on the local level, in large cities, as shown by the example of New York City where the mayor has proposed financing universal nursery education by a tax on financial income (the power of attraction of global cities is so great that world investors are in no position to circumvent them).

Proposal 2

Acknowledge and reduce environmental inequalities

The idea here is to create a horizontal and regionalised institution that will form a bridge between health institutions and environmental and urbanistic policies, the first mission of which will be to establish the state of the art regarding environmental inequalities in France, then in Europe. This centre for analysis and prevention of environmental inequalities would bring together existing skills and expertise in the area of environmental justice so as to place these at the service of citizens and local or regional authorities with which appropriate links must be established as a matter of priority.

The idea would be, in France initially, to forge and consolidate a specific locus that would at the same time form an institutional link allowing collation of different epidemiological studies showing the health effects of environmental factors, as well as of studies on environmental justice that demonstrate the links between environmental and social inequalities.

Proposal 3

Place climate justice at the centre of COP21


It is essential to place at the centre of the COP21 negotiations in December 2015 the question of climate justice between and within countries and to link this issue to the question of health. The fight against climate change must not be envisaged by negotiators exclusively as an opportunity for economic development but, above all, as a lever to reduce inequalities in human development between and within countries.

The case of China shows how the need to reduce CO₂ emissions can become a means of limiting coal consumption and hence of reducing also the harmful effects of fine particles on the health of the Chinese, effects that are very unevenly distributed within the population. The same applies to the limitation of road traffic in France, for this would represent simultaneously a health gain and a reduction of CO₂ emissions. This twofold dividend in terms of both climate and health must be the central focus of states' contributions to reducing world CO₂ emissions.

The notion of climate justice must, in particular, replace the 'green growth' slogan – which, in reality, has rather little mobilising potential in a world riven with inequalities – in order to stress the equality potential of the fight against climate change at the national and international level.

Part 2

Employment in the climate transition

A large, stylized globe of the Earth is the central focus. Silhouettes of various people in different poses are walking along the top edge of the globe, as if it were a path. The silhouettes include a person running, a person holding an umbrella, a person carrying a bag, and several others in various walking or jumping poses. The globe is rendered in shades of gray, with the continents clearly visible.

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To develop a new employment narrative in the framework of climate change is no simple matter and will inevitably entail tensions. Thinking about the relationship between climate change and employment creation/destruction actually gives rise to two very different types of analytical framework, depending on the way the question of climate change is analysed. The two approaches are not monolithic. While there exist sometimes significant variations within each of the narratives, the two are, nonetheless, fundamentally different. Even so they could, as we shall see, turn out to be more complementary than antagonistic.

According to the first approach, the reduction of greenhouse gas emissions will take place gradually as a result of the adoption of appropriate technologies. Within this framework, it is therefore a question of ensuring a transition, in particular in terms of clean energy, that, while undoubtedly affecting our way of life and modes of consumption, will do so in a relatively marginal manner. Changes in production methods would be stronger in some sectors than others (relocation of some energy-intensive industries, relative increase in transport costs leading to a repositioning of the value chain, short circuits, extensive agriculture, etc.). This first approach develops the idea of a ‘greening’ of the economy and the development of green jobs. It asks questions about the new skills and qualifications that will be required (for example, for housing insulation) and the means of developing them. What we are speaking of here may be described as the emergence of a form of ‘green – and neo-Keynesian – capitalism’.

In terms of jobs, this first approach does not really move far from the normal development scenario of a market economy, albeit one that grants an important role to the State which is made responsible for promoting the emergence of new sectors and jobs by means of subsidies, investment, standards and targets. Some sectors will emerge; others will disappear. It is necessary to provide incentives for skill development and to supply appropriate forms of training. Hives of potential new jobs do exist, but these require activation. Regarded from this standpoint, the transition will not be traumatic for the labour market; indeed, many of the new jobs created would be of a better quality than the old ones.

The second approach is based on the postulate that it will be impossible to sufficiently reduce greenhouse gas emissions without embarking on more or less radical changes in our modes of production and consumption. This means at the same time calling into question the rules of a perfect market where prices are the sole relevant indicators. This approach indeed calls into question the idea of growth without end and its creed is, as a result, that of ‘prosperity without growth’²⁰. The challenge is to delineate this form of prosperity and the jobs that go with it.

In employment terms, this approach entails a rather radical critique of work. Employment viewed in terms of a 40-hour-a-week private-sector job up to the age of 65 or 67 is no longer the implicit reference model. A reduction of working time, the quality of work, and work as a chosen/voluntary/cooperative form of activity become central features and concerns. This approach is concerned less with quantifying the numbers of jobs that might potentially be created (Gadrey²¹ being an exception) than with changing the nature of the jobs and altering the conception and experience of work (see Dominique Méda²², for example).

We are speaking here, accordingly, of a more radical approach that is aimed at redefining a growthless form of prosperity – at least in the traditional understanding of growth which fails to take account of negative externalities – and that at the same time seeks to achieve a more participatory democracy and broad-based involvement of citizens. While the two approaches differ greatly from one another, both suffer from a similar flaw in that neither has so far sufficiently developed the question of what kind of collective actors will be able to make such a transition come true.

This chapter is divided into three parts. While the first and third parts develop the two approaches outlined above, the second will focus on the positions of the actors and more particularly the trade unions. In conclusion, we will return to the two approaches in order to show that, were they to be viewed and enacted in a differentiated and phased timespan, they could prove complementary rather than antagonistic.

‘Greening’ growth and employment

This first approach is the one ostensibly favoured – albeit with differing emphases – by the large international institutions (European Commission, OECD, IMF, World

20. Tim Jackson, *Prosperity without growth? The transition to a sustainable economy*, Sustainable Development Commission, 2009.

21. Jean Gadrey, *Adieu à la croissance*, Les petits matins, 2010.

22. Dominique Méda, *La mystique de la croissance, comment s’en libérer*, Flammarion, 2013.

Bank, ILO). Such bodies promote these scenarios either alone or in cooperation with one another while yet exhibiting what are frequently slight differences in definition or emphasis. Thus a recent European Commission document states: ‘A model for green growth – leading to a low-carbon, climate-resilient and resource-efficient economy – is used to depict a structural economic change which is mainly driven by scarcity of resources, technological change and innovation, new markets, and changes in industrial and consumer demand patterns’²³.

In descriptions like this, the prospect of green growth is held to open up new markets driven by new forms of demand. There is potential for job creation in the management of water, waste, measurement of air quality, biodiversity, new forms of tourism, etc. Little reference is made, accordingly, to any form of major upheaval, turning point or radical shift in economic paradigm; instead, we are encouraged to regard the developments described as the normal evolution of an economy.

It is important to point out that the outer perimeter of what is deemed to constitute the green economy is also subject to debate. The reasoning here may be conducted in terms either of sector or occupation, or in macroeconomic terms, or in terms of industry or sector.

Some attempts to harmonise and agree on definitions are currently underway²⁴. A set of guidelines adopted by the 19th conference of labour statisticians in 2013 in Geneva divides the environmental sector into two main parts:

- environmental protection activities aimed at the prevention, reduction or elimination of pollution and other forms of biotope degradation;
- resource management activities aimed at maintaining the stock of natural resources.

Forecasts in terms of numbers differ considerably depending on the approach chosen. For France, according to a first approach based on company activities, the estimate is of 450,000 jobs in eco-activities and 450,000 in peripheral activities. If, by contrast, the second approach in terms of occupation is used, there could be 140,000 professionals in ‘green occupations’ (essentially waste treatment and water and energy distribution) and 3,700,000 in ‘greening occupations’, i.e. those which are not environmental in terms of direct purpose but which incorporate ‘skill blocks to take the environmental dimension into account in a significant and quantifiable manner (architect, gardener, heat insulation, logistics, or leisure specialists)’²⁵. Not only do the figures differ here; the very nature of green jobs is uncertain – for example, is a job in the nuclear power sector to be regarded as a green job?

With regard to the employment impacts of climate change the latest IPCC report is hardly very explicit²⁶. It notes that the effects of climate change on jobs and means of subsistence are rarely evident or direct (it being necessary to take into account also the

23. European Commission, Green Employment Initiative: Tapping into the job creation potential of the green economy, COM (2014) 446 final, 2 July 2014.

24. For a review of the recent literature see Alex Bowen and Karlygash Kuralbayeva, *Looking for green jobs: the impact of green growth on employment*, Policy Brief, Grantham Research Institute on climate change and Environment and Global Green Growth Institute, 2015.

25. Commissariat général au développement durable, *Comprendre l’emploi dans l’économie verte par l’analyse des métiers*, n°188, 2014.

26. ETUI, *Climate change: implications for employment. Key findings from the intergovernmental panel on climate change fifth assessment report*, ETUI, 2014.

infrastructures that support the economy as a whole). The effects will vary greatly between regions and between sectors, with the most vulnerable sectors including energy, water, agriculture, tourism and transport. The struggle to mitigate climate change will also create jobs in areas such as energy conservation, renewable energies, nuclear power, and forest management. In the absence of alternatives, migration will frequently be the only way of ‘adapting’ to climate change.

To sum up, the degree of confidence in the report’s conclusions hardly seems to be overwhelming and the considerations put forward leave wide margins of uncertainty.

Hepburn and Bowen²⁷, finally, have argued that the greening of society is likely to foster job creation in idea- and knowledge-linked sectors. But how is it possible to place such sectors in a category of their own in the context of a general trend towards more knowledge and understanding that goes hand in hand with globalisation (specialisation in high value added products/services) or ICTs?

Recent research is aimed at assessing the numbers of jobs that could be created in a circular economy thereby opening up new prospects in terms of analysis of potential jobs²⁸. Here too the analyses differ depending on the base scenarios, ranging between 31,000 and 517,000 jobs in the United Kingdom, for example.

However the calculations are performed, green employment remains, in this scenario, relatively marginal as a proportion of total employment, even if it is rising fast. The most important factor is that it does reflect the areas in which new jobs will be likely to be clustered, thus giving some idea of the possibilities of a positive transition in terms of *quantity* of employment created. But what about the *quality* of these jobs?

Lip-service is frequently paid to the idea that work in ‘green’ sectors ought to be decent or high-quality work, a notion actually enshrined in the ILO definition of a green job as ‘any decent job that contributes to preserving or restoring the quality of the environment’. Here we have a strong node in the link between the environmental and the social – in the notion of sustainable development – dimensions. Yet this approach has not been incorporated into the standardised definition of green jobs so that the question of whether existing or future green jobs are necessarily ‘decent’ remains very much a matter for investigation.

Traditionally, jobs in construction or transport have been relatively well paid with decent working conditions and a properly functioning social dialogue. Yet these are currently the two sectors in Europe where there is increasing talk of social and wage dumping, where waged or salaried jobs frequently turn into bogus self-employment, where letterbox companies are created by western European companies in the countries of central and eastern Europe as a means of acquiring cheap labour in the west. The least that can be said is that these are sectors in which a blatant erosion of the quality of work has already taken place.

A noticeable feature of the renewable energy sector is that it is frequently composed of smaller firms (wind energy, for example) than those of the traditional energy generation sectors and, for this reason, trade union presence is scarcer – in Germany,

27. Cameron Hepburn and Alex Bowen, ‘Prosperity with growth: Economic growth, climate change and environmental limits’ in Roger Fouquet (ed.), *Handbook of energy and climate change*, Edward Elgar, 2013.

28. Julian Morgan and Peter Mitchell, *Employment and the circular economy, Job creation in a more resource efficient Britain*, London, 2015.

indeed, IG Metall has embarked on an active campaign to unionise this sector. In an ILO²⁹ report, meanwhile, it is explicitly stated that this sector creates decent work in Spain and in Germany and that skill levels are higher than the national average.

And so there is also a problem of measurement. Are green jobs to be measured in relation to the rest of the economy? Or in relation to those that will be lost in other sectors. That this is an important point in the trade union debate will be seen in the following section in relation to the Polish miners.

In terms of decent work, the case of waste recycling can serve as a counter example. While the situation admittedly differs in different countries, sub-sectors, companies, and forms of organisation (public, semi-public or private), it is apparent that in some countries it leaves a great deal to be desired³⁰. The national and European-level trade unions would clearly like to adopt a more proactive attitude but are not always present in these decentralised workplaces. What is certain is that working conditions in these sectors have not undergone spontaneous improvement since they received the 'green job' label.

The link between green job and decent work cannot therefore be taken for granted. Positive steps need to be taken to draw attention to and improve the quality of these jobs. Viewed from this angle, the debate must be analysed and used as an opportunity to renew the whole issue of quality jobs in general via the specific example of green jobs. This window of opportunity has arisen in a climate where discussion is focused on the quantity of employment because of the crisis and unemployment.

Mobilise social actors in the cause of climate change

At this point we turn to consider the position of trade unions because, still at the present time, these are the most important social actors in terms of membership numbers and capacity to influence political agendas. In the debates on the ecological transition their role is, generally speaking, completely ignored. The trade unions come out broadly in favour of a greening of the economy, although here and there some questions are being raised about growth and productivity at any price.

The trade union confederations assembled in a worldwide organisation – the International Trade Union Confederation (ITUC) – have developed a vigorous discourse on climate change and employment, notably with their slogan 'no jobs on a dead planet'. They are active and vociferous participants in every COP. The ITUC is one voice in the coalition of discourse that sees the possibility of a change of paradigm – away from capitalism – in favour of the fight against climate change. All over the world numerous trade unions, acting alone or in alliances, have published manifestos, analyses or positions (<https://globalclimatejobs.wordpress.com/publications-and-resources>). On energy questions some trade unions are developing a radical approach (see the energy democracy network which now unites 44 trade unions at world level including the Italian CGIL trade union confederation and the European public service federation EPSU, the latter having been the originator and main promoter of the 'Right to Water'

29. ILO, *Sustainable development, decent work and green jobs*, Report V, International Labour Conference, 102nd session, ILO, 2013.

30. See detailed ETUI report 'Waste and recycling: workers at risk', *Hesamag* n°9, 2014.

European citizens' initiative, a campaign to guarantee water as a common right that gathered almost two million signatures).

At the European level, the European Trade Union Confederation (ETUC) contributes to this global discourse on a just transition but, unlike the international trade unions, is in the position of negotiating at European level specific measures that will directly affect employment. The European trade unions are present also in around one thousand European works councils. At the sectoral level the different European trade union federations negotiate joint texts in different types of social dialogue forum³¹. While there are differences in terms of commitment (the Scandinavians, the British TUC and CCOO in Spain or the Belgian trade unions having adopted the most outspoken stance³²), the environmental challenges are now incorporated into the national cross-sectoral trade union agendas, with the exception of some eastern European countries which include Poland and the Czech Republic. The research conducted, under ETUC auspices, by Syndex *et al.* (2007)³³ was one of the first European studies on the links between climate change and job creation and the conclusion reached – on the basis of sectoral studies – is that growth in jobs will be moderate. The research findings also include a warning relating to new sectors in which, in spite of their apparent attractiveness, jobs may well turn out to be less stable and less well-paid. The greatest merit of this study is to have launched the development of a trade union debate on the climate question and its employment stakes.

When considering the transition, it is also essential to take into account the spatial and sectoral distribution of job losses. The most mediatised case in this respect relates to the coal industry in Poland. Even after a significant drop over the last 20 years, there are still more than 100,000 miners in Poland, most of them working in Silesia on wages of about 1200 euros a month. A large proportion of Polish electricity is produced from coal and lignite and by 2030 60% is still likely to be produced from coal (diversification towards nuclear and renewable energies)³⁴. In this particular case the costs of the transition are concentrated in a specific geographical area, in return for benefits distributed over the country as a whole. It is also for this reason that the trade unions are keen to set the question of transition within a framework of solidarity and are developing the notion of a 'just transition' based on five components, the arguments for which are summarised in the box below.

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- 31. For a review of the social partners' positions, see Andrea Broughton, *Greening the European economy, responses and initiatives by Member States and social partners*, Eurofound, 2009; Eurofound, *Industrial relations and sustainability: the role of social partners in the transition towards a green economy*, Eurofound, 2011.
 - 32. For the French case see Bernard Saincy, *L'invention (difficile) de l'environnement comme revendication syndicale*, *Ecologie et politique*, n°50, 2015.
 - 33. Syndex, Istas, Wuppertal Institute, *Changement climatique et emploi, Impact sur l'emploi du changement climatique et des mesures de réduction des émissions CO₂ dans l'Union européenne à 25 à l'horizon 2030*, ETUC, 2007.
 - 34. Syndex, *Les dérèglements climatiques, les nouvelles politiques industrielles et les sortie de crise*, étude pour la CES, Emcef et EMF, 2009.

Five components of a just transition

Participation/social dialogue

The magnitude of the changes required to achieve an 80-95% reduction of greenhouse gas emissions by 2050 calls for strong commitment and involvement of all stakeholders in European society. Social dialogue, collective bargaining and participation are basic values and tools that underpin and can help to reconcile the promotion of social cohesion, the quality of employment, the creation of jobs, and greater innovation and competitiveness of European economies.

Job creation and preservation

From an ETUC standpoint, the quality as well as the quantity of jobs is crucial – jobs must, at the least, be in compliance with the ILO standards on decent work. An investment programme is required to create jobs in the short term in Europe and to green the economy by ensuring long-term competitiveness through promotion of the transformation and decarbonisation of energy and transport infrastructures, as well as energy independence (see ETUC investment plant).

Ensuring the greening of training, education and skills

Active strategies conducted by governments in the fields of education, training and skills are fundamental in the transition to an economy with low-carbon emissions (see also below).

Respect of labour rights and human rights

Democratic decision-making processes and respect of human and labour rights are essential for ensuring the equitable representation of the rights of workers and communities. There is a need, in particular, to strengthen workers' rights to information, consultation and participation on questions concerning sustainable development. On this point, the British TUC has shown itself the most innovative by creating the position of workplace environment delegate³⁵.

Social protection

The public authorities must also provide a security net by means of active labour market policies, robust social protection and support measures. A European restructuring framework must include support mechanisms for workers who are victims of economic change (restructuring).

The European social partners (BusinessEurope and ETUC) decided in their 2011-2014 work programme to analyse the impacts of the greening of the economy on training and skills and to update their 2002 framework action accordingly. This endeavour gave rise to a report intended to fuel their thinking for the future³⁶. One of the principal conclusions reached was that few new green occupations require completely new skills, and CEDEFOP, the body responsible for training issues at European level, concluded similarly³⁷. As such, the need is to further develop existing skills by building upon forms of initial vocational training. Some occupations will, however, be affected more than others, notably green agriculture which will require tailor-made training programmes. There will, on the other hand, be some redistribution among sectors and there is currently a lack of skills for specific occupations in which demand is increasing (a point that is made similarly in other studies on the subject). Moreover, in the view of the ETUC the most important conclusion to be drawn from the recent study is to emphasise, twelve years on, the validity of the action framework adopted in 2002.

35. TUC, *The Union effect, greening the workplace*, Economic Report Series, TUC, 2014.

36. ICF GHK, *Skills needs in greening economies*, ETUC, BusinessEurope, CEEP, UEAPME, Final Report, 31 January, Brussels, 2014.

37. CEDEFOP, ILO, *Skills for green jobs*, Luxembourg, 2010.

Generally speaking, on reading the ETUC resolutions, it is a question more of a greening of the trade unions' traditional agenda. As stated in the draft manifesto for its 2015 Congress in Paris: 'Europe must take steps to ensure a just transition towards a sustainable green economy, one that will create quality jobs and promote green skills. It must give priority to investment policies that will foster sustainable infrastructures and industrial regeneration, innovation, R&D, low-carbon technologies and energy efficiency.'

Beyond the debates on a just transition, which are at the heart of the trade union agenda and have served as a bridge with other social movements (such as the Spring alliance with the NGO social platform organisations and those of the European Environmental Bureau (see <http://springalliance.eu>), two additional aspects may constitute new bridges in the future: the question of common goods and that of social and environmental inequalities, see part 1).

The debate becomes more difficult in relation to sectors that, in all likelihood, will be subject to a major direct (the automobile industry, mining) or indirect (chemicals, energy) impact than for those that can be expected to benefit such as construction or collective transport. It is interesting to note that the European public services trade union federation EPSU appears to be showing the greatest interest in the exploration of alternative indicators and the overall issue of growth. The link between public services and the ecological transition is rather direct and it provides a new angle of attack from which to defend public services. It is no coincidence that EPSU was the linchpin of the campaign for water to be recognised as a common good.

Another aspect subject to relatively little analysis so far is that of the possible role of the trade unions as a factor in reducing inequality. Indeed, the majority of commentators – especially in the paradigm change version – stress the importance of equality. A recent IMF³⁸ publication confirmed that trade unions have a strong impact on the reduction of wage inequalities without judging this to be either a good or a bad thing. In the creation of a new narrative, at any rate, it is an extremely important point that may well form a subject of consensus among disparate or in other respects divergent forces.

Changing the paradigm

The more radical of the two approaches insists on the paradigm change. Fundamentally, this is the principle distinction between the approach discussed earlier and this second one. 'A shift towards a green economy implies a drastic change in the prevailing development paradigm which requires, in turn, broad social support. Contrary to previous "revolutions", the policy responses, this time, cannot be purely technological or economic in nature. (...) This change of paradigm implies that, while environmental risks are to be curbed, social equity and human well-being must be enhanced³⁹.'

As a starting point for this second approach, we will stress a point made by Dominique Méda⁴⁰, namely, that 'the link between growth and wealth, growth and

38. Era Dabla-Norris *et al.*, *Causes and consequences of income inequality: a global perspective*, IMF, 2015.

39. ILO, *Promoting safety and health in a green economy*, 2012, p. 3

40. Dominique Méda, *La mystique de la croissance, comment s'en libérer*, Flammarion, 2013.

progress, growth and wellbeing, has not been demonstrated'. What is more, the growth that produced a kind of social cushioning effect is increasingly becoming a factor of increasing inequality. Whereas in the 1960s and 1970s the fruits of growth were distributed in a relatively equitable manner, they are now being appropriated by an increasingly small fraction of the population (the 10% of wealthy and 1% of super-wealthy). On the basis of a 'winner-takes-all' logic, this trend contributes to widening inequalities. The major achievement of the approach taken by the political journalist Hervé Kempf⁴¹ is that it reveals the tensions and the conflicts and above all the determination of the richest not to change a model that benefits their interests to the point where they marshal their strength to call into question the very foundations of climate science⁴². Such an approach serves to stress the way in which, with the emergence of a new narrative, the supporters of the old system and those who control the levers of power have the ability to substantially undermine the route to the future. The closer we come to a paradigm shift, the stronger will be the expression and manifestation of tension and controversy.

In this approach, indicators take on increasing importance⁴³. Macroeconomic measurements (GDP, productivity) 'become meaningless when a development model is devised based on "living well", on the quality and sustainability of products and services. Priority then needs to be given to quite different sorts of criteria as a means of guiding actors, whether public or private, who require multiple qualitative criteria that will allow them to make choices between different dimensions of quality and the "good life"⁴⁴. There is a need, accordingly, to jettison the myth of productivity as something inherently positive. After all, more productivity in nurseries, schools or hospitals frequently means less quality in terms of both the work performed and the services provided. There is a threshold or a trade-off between increasing productivity and improving quality, particularly in services.

Concerning job creation, it is equally important to develop certain sectors around quality products and services as it is to achieve a reduction of working time (without loss of pay). According to Coutrot and Gadrey⁴⁵ in 20 years, in the absence of quantitative growth and using major innovations geared to quality rather than productivity, it would be possible to create more than four million jobs.

This forecast is based, according to these authors, on the following overall scenario:

- 'clean' and modern local agriculture, forests: +150,000 jobs;
- renewable energy, heat insulation, energy saving, recycling, partial relocation: +700,000 to one million jobs;
- 'good life' services associated with rights: early childhood, elderly or handicapped persons, care, social, education, environment: +1.5 million 'decent' jobs;
- a reduction of working time to 32 hours: +1 million jobs.

41. Hervé Kempf, *Comment les riches détruisent la planète*, Seuil, 2014.

42. Naomi Klein, *Tout peut changer, capitalisme et changement climatique*, Actes Sud, 2015; Naomi Oreskes and Erik M. Conway, *Les marchands de doutes*, Editions Le Pommier, 2010.

43. Isabelle Cassiers and Géraldine Thiry, *Du PIB aux nouveaux indicateurs de prospérité : les enjeux d'un tournant historique*, in Isabelle Cassiers et al., *Redéfinir la prospérité*, édition de l'aube, 2011; Eloi Laurent and Jacques Le Cacheux, *Un nouveau monde économique*, Odile Jacob, 2015.

44. Thomas Coutrot and Jean Gadrey, *La croissance verte en question*, Policy brief 3/2012, ETUI, 2012.

45. *Op. cit.* p. 5.

It is important here to stress the reduction of working time, a topic that seemed to have completely disappeared from the agendas at least since the crisis and which is now very slowly coming back into the debate, including in the trade unions (see document for the Paris ETUC Congress).

Improvement in the quality of agriculture which will become more labour-intensive and less intensive in terms of chemical adjuvants, will lead to higher prices, on the one hand, and a drop in productivity on the other. This will entail a reduction in expenditure in other areas so as to accord value to healthier food, so that the question of equality thus arises here once again. As higher relative prices would be unaffordable for the poorer categories of citizen, there will be a need for redistribution. The question of employment is thus closely tied up with the matter of inequality and redistribution; Wilkinson and Pickett's book on the links between equality and quality of life is emblematic of this approach⁴⁶.

Yet this approach cannot provide the key in terms of consumption. There is a strong link between inequality and ostentatious and emulative consumption. Just as under the first approach not every green job is necessarily decent, not every change in consumption will necessarily be sustainable. It would be difficult to guarantee that a strengthening of the purchasing power of the weakest will not be channelled into types of consumption other than those advocated as being of quality? As has been well shown by Jean De Munck⁴⁷, consumption is as much a facet of alienation as it is of freedom and autonomy. If it is regarded in terms of alienation alone, the risk is that one will fail to do justice to the complexity of the subject. Within this framework, the potential offered by a circular economy, an economy based on use rather than ownership or development of the 'makers', offers interesting prospects in terms of consumption and wellbeing. Yet the likely impacts on employment have never been calculated, at least to our knowledge.

As has been pointed out by Gouin and Roturier⁴⁸, the effects of a transition are in no way automatic, for they depend on the actors (States, companies, workers, etc.). 'Management of the transition from one model to another entails three prerequisites: the implementation of a real industrial policy; the securing of job paths; and a social dialogue that finds expression at the level of the workplace, sector and geographical location.'

Here we begin to touch upon one of the most significant limitations in all the work that has been done on green growth and green jobs. With the exception of obvious aspects such as growth of clean energy or reduction of individual motor vehicles, there is no vision of the aims being pursued (for example, what level of growth would be desirable?), or of the actors involved (what precisely should be the role of the State? what instruments would it have at its disposal? what would be the role of financial markets? of industry federations? of trade unions? etc.)

46. Richard Wilkinson and Kate Pickett, *The Spirit Level. Why Equality is Better for Everyone*, Bloomsbury Press, 2009.

47. Jean De Munck, *Les critiques du consumérisme*, in Isabelle Cassiers et al., *Redéfinir la prospérité*, édition de l'aube, 2011.

48. Philippe Gouin and Patrick Roturier, Des « emplois verts » à l'impact sur l'emploi d'une économie soutenable, *Ecologie et politique*, n° 50, 2015.

Insofar as the nature of the change is not specified, the impacts in terms of jobs can appear relatively marginal in comparison with the effects of globalisation or new technologies.

The problem of the approach in terms of paradigm shift is in fact symmetrical with the approach in terms of green jobs. The one sets out rather clearly the challenges and the consequences entailed in managing to limit the increase in average temperature to below two degrees; the other outlines an alternative society and redefines work but little or nothing is said about the actual *modus operandi* of this new economy that would constitute such a radical break. Few thinkers or commentators approach the question from the standpoint of social protection and its financing, apart from proposing the adoption of a universal allowance, etc. (see following chapter).

If the two approaches to the transition appear mutually contradictory, making it difficult to conceive of a common narrative when they are compared within the dimension of simultaneity, it might be that they could prove potentially complementary if regarded in terms of the phased introduction of a sequence of stages of change and development.

The goal of a transition is complex by nature and bears upon mechanisms of societal change that are inherently slow and contradictory, at least in an early phase. The need is to persuade and convince a multitude of actors with divergent interests. This is why an approach in terms of green jobs, appropriate new forms of training and the possibility of an 'easy' and positive transition entails the advantage of dealing with developments, including behavioural changes, that are more acceptable for a large number of actors. This will entail reactivating the role of the State as guarantor of continuity but also as being responsible for the financing and planning of the various stages of the transition.

The more radical position, however legitimate it may be and also probably fair in terms of its analysis of the challenges and limits of an approach that places too much faith in technological solutions, does not lead to the emergence of widespread behavioural changes of direct relevance to the challenges described here. It could indeed even block such changes by setting the stakes so high (an end to capitalism, 'degrowth', frugality) that it would prove utterly unable to marshal the strength and volume of social forces necessary to achieve the goal. The outcome would be a limited set of individual forms of behaviour or small collectives that would opt for a life in accordance with their principles. While undoubtedly exemplary and/or a source of inspiration for others, such an outcome will lack the extent and the force required to generate the wide-scale reductions and mitigation of damage.

In a sequential approach, once the impetus has been set in motion, and as the limits of the green economy become increasingly visible, a deeper change could become more likely.

As we have indicated, a development along these lines is currently taking place, albeit in a manner not devoid of contradiction, within the trade union sphere of influence, where a process of reflection in terms of just transition and green quality jobs finally leads some thinkers and activists to conclusions that are tantamount to a questioning of growth and productivity gains at any price.

Where the trade unions are concerned, the need is to experiment with a new narrative of social-ecological transition in which alliances will no longer resemble those of the past centred essentially on pay and working conditions. The trade union struggles

of the last thirty years have, for the most part, ended up in defeat, in a variety of different guises and non-linear patterns, admittedly, but the general direction is nonetheless so very clear that a repetition of strategies that have failed in the past is highly unlikely to produce an unprecedented and miraculous success. The social-ecological transition provides a new arena for action that, while giving rise to new discourses on the one hand, displays a broad continuity of concerns on the other (quality of work, public service, for example). It is in keeping, what is more, with demands for a relocation of production (short circuits, locally produced goods). Carbon costs can become an argument in the case of relocation of production to distance sites, and similar considerations apply in the struggle against the TTIP free trade agreement with the United States. For the time being, the International Trade Union Confederation has advanced further along this road – at least at the level of discourse – than has the ETUC. But in Europe too the situation is, in our opinion, ripe for a break with old habits and a new departure.

In no transition is it possible to hope that all will proceed in a succession of consistent and rational steps. What it is important to analyse is the general direction; then, at a certain moment, a shift will take place⁴⁹. It is the failings and shortcomings of the current narrative that will gradually lead to its replacement by a more viable alternative, and an awareness of the nature of such a process will generate an approach to transition that is not of the ‘command and control’ variety but is more in the nature of a polyarch, a process of trial and error, experimentation and, finally, the shift to a new position.

This question ties in, quite obviously, with that of inequality, as we have stressed in the introduction; but it ties in also with the need for the freedom of the individual to undergo a shift so as to incorporate the achievement of a collective impact. For a long time smoking served as a symbol for the behavioural imposition on others of the externalities of one’s freedom, in this case in the form of passive cancers. In the space of just a few years the narrative in this case has been reversed and the possible externalities have led to the stigmatisation and setting of limits on a practice previously regarded as a freedom. The same argument can be developed in relation to the concept of speeding in the driver’s seat; and applied equally in the realm of urban planning: Brussels in the 1960s was an example of destruction of the urban fabric to make way for cars; in the 1990s the inhabitants and public authorities pushed for changes that, while frequently minor, invariably represented a move in the same direction, a square here and a widening of the pavement there, a pedestrianised street, and so forth. Then, in 2015, it was decided, without any strong opposition, to create the second largest pedestrianised area in Europe. In the space of forty years the uncontested paradigm of a city (of freedom) for the motor car has given way to the notion of a city (of conviviality) for its inhabitants.

In the employment sphere, accordingly, it is a question, during a first phase, of marshalling the positive effects of green jobs in a manner that will, during a subsequent stage, enable a more radical evolution to be set in motion in the two-pronged direction of the environment and of social justice, to gather momentum and to reach full maturity when it becomes accepted by a broad majority of the working population.

49. Peter Hall, *Policy Paradigms, Social Learning and the State: The Case of Economic Policy-Making in Britain*, *Comparative Politics*, vol. 25, n°3, 1993; Thomas S. Kuhn, *The Structure of Scientific Revolutions*, University of Chicago Press, 1962.

Transition in action**Proposal 4****Build the social-ecological consensus**

A dialogue among the different social actors can be created by the establishment, on the one hand, of 'consensus tables' (convergence on points where there is agreement) and, on the other hand, in more conflict-ridden areas, of 'debate and confrontation tables' for the purpose of keeping the discussion open. The goal is to develop and achieve common platforms while continuing to acknowledge that, in other cases, approaches remain divergent, an example being between the short- and the medium-term scenarios in relation to the restructuring of industries with heavy greenhouse gas emissions. One instance of an initiative that seems to embody such an approach at European level might be the Spring Alliance.

Proposal 5**Rethink working time**

It is important to resume the debate on the reduction of paid working time on a collective and individual basis from a life-cycle angle. Social preferences in relation to working time differ and solutions must be both flexible and formally enshrined (in terms of collective rights). This would mean that individual choices could be made within a set of menus (different possibilities) that would, at the same time, guarantee diversity and protection. This whole reflection on working time will need to be conducted within a broader framework of reflection about what is produced and consumed.

Proposal 6**Develop rights for a fair transition**


Labour markets have evolved considerably and the effects of climate change will serve to strengthen already existing trends. The general aim here is to allow individuals to go along with different elements of transition in accordance with their wishes and to be insured against such elements insofar as they are imposed. At the European level a modestly endowed fund has been set up to support workers in the event of restructuring linked to globalisation; this fund could, with adequate financing, serve to support transitions linked to climate change.

Proposal 7**Measure the quality of jobs**

The aim here is to anticipate the new phase of globalisation linked to climate change and the effects of a digital economy by reflecting on jobs in a more locally circumscribed context and considering the forms of collaborative employment that might potentially be developed. The issue of job quality should be at the centre of the debate using, for example, the recognised indicator that has been devised by the European Trade Union Institute.

Part 3

Building social-ecological protection



The history of transitions brings to light the role played by institutions as drivers for achieving acceptance of social change. Institutions are the dynamic driving forces of all human transition because their very purpose is to facilitate social cooperation over time. What we are in the habit of referring to as ‘industrial revolutions’ were also – and perhaps principally – ‘institutional revolutions’, from the enshrining of stable property rights in the 19th century, through the introduction of employment contracts and social protection in the 20th, to the redefinition of property rights in the current era of social networks and an economy based on sharing. Empirical studies certainly confirm that, over and above geography or trade, institutions are the main drivers of human development and social change. We thus find ourselves face to face with an institutional problem: what institutions do we need to make a success of the ecological transition?

The central ideas put forward in this last chapter are, firstly, that social protection, and more broadly social policy, must henceforth incorporate ecological risks and concerns and, secondly, that the resulting ‘social-ecological protection’ constitutes one of the institutions on which the ecological transition might be based. Insofar as our wish is to base the ecological transition on social progress, it is important to recognise that social protection is a prerequisite to this end for, without the means of collectively protecting and sustainably insuring work, health, and well-being in the broad sense, social advances will remain ephemeral mirages.

The ecological extension of the welfare state

How can we set in motion the transformation of our welfare state, devised in the 19th century to overcome the conflict between labour and capital, into a social-ecological state fit for purpose in the 21st century, one conceived, in other words, to reconcile the social question and the environmental challenge?⁵⁰

The first step is to recognise that the social insurance systems – developed first of all in Europe and then in the United States and today in half of the two hundred or so nations on the planet – represent a major asset in tackling the ecological crises of the current century. To put it simply, the welfare state can serve as an instrument for guaranteeing social-ecological progress just as it has, for more than a century, been guaranteeing social progress and by taking its inspiration from the same procedure, namely, the mutualisation of the risk in order to reduce its impact. An essential prerequisite to this end, however, is to recognise these new risks.

The welfare state, founded in the 1880s in the unified Germany, was built up on the idea that human beings are entitled to receive protection against the hazards of nature and life in society. The ‘social security’ – currently guaranteed to less than 30% of the world’s population – is a considerable extension of the ‘civil security’ that Hobbes entrusted to ‘Leviathan’ in the mid-1600s. Does not the next stage consist in moving on from social security to social-ecological security by recognising that the nature of human wellbeing and social risk underwent a change at the end of the 20th century? Given our knowledge and awareness of the worsening incidence of ecological crisis, environmental conditions will inevitably play an ever increasing role in human wellbeing. Environmental crisis, in other words, is becoming subject less to a rationale of uncertainty and increasingly to a rationale of risk, a state of affairs which calls for insurance. The recent report from the commission set up by the journal *The Lancet*⁵¹ is quite clear on this point: climate change represents an unprecedented challenge for the health systems of the planet.

From the standpoint of institutional philosophy, the thread leading from social protection to social-ecological protection is the idea of a right in the face of a risk, with the risk in question and requiring coverage having changed its nature. Two different routes can be taken to grasp what is happening: the situation can be approached from the standpoint of social risk or from that of individual wellbeing.

If the first approach is selected (while remaining faithful to the notion of welfare state), it is evident that the social risk today includes a major environmental dimension (i.e. the risk of floods, heatwaves, storms, etc.). Citizens are entitled to expect of the public authorities that they develop and put in place the requisite means of protection. The alternative approach refers implicitly to the name of social protection current in the English-speaking countries, the ‘Welfare State’, a term encapsulating the notion of a state responsible for the provision of human welfare. From this standpoint, one considers not the risk facing the individual but the sources of his wellbeing (as well as of his ill-being). And so the social responsibilities of the State relate to aspects of income,

50. The ideas and proposals put forward here have been further developed in the book by Eloi Laurent, *Le bel avenir de l'Etat Providence*, Les Liens qui Libèrent, 2014.

51. Nick Watts *et al.*, Health and climate change: policy responses to protect public health, *The Lancet*, 22 June 2015.

family life, and health. Under the social-ecological approach, it is recognised that the wellbeing of an individual or a group is in part determined by environmental conditions. It is legitimate, as such, for social policy to include the environmental dimension so as to engender the appropriate social-ecological policies, to be implemented at differing levels of governance.

Thus, whereas ‘social policy’ appeared as a concept and discipline for study in 1958 in the writings of Richard Titmuss⁵², in 1962 it was extended, by Titmuss’s much less well-known co-author François Lafitte⁵³, to include the environmental question. It was Lafitte who conceptualised social-ecological policy by defining social policy as policy relating to the immediate environment. Thus considered, social policy covered not only the social conditions of life (family, work, leisure) but access to environmental amenities, control of urban pollution, and the whole set of environmental factors likely to influence individuals’ health and wellbeing. Social policy became, with Lafitte, the policy of ‘social space’ and thereby encompassed the environmental stakes. Thus viewed, there is no fundamental difference between social and environmental policy: both are aimed at correcting the shortcomings of the market economy – in situations of imperfect information, incomplete markets, externalities, etc. – which fully justify public intervention.

Towards a social-ecological state

What might the role of a social-ecological state be? In terms of form, it would be no different from that fulfilled by the welfare state through its functions of allocation, redistribution and stabilisation of public finances, but these same functions would be applied to the environmental stakes. To make this point clearer, let us consider the function of stabilisation. In its traditional meaning, this consists of governments’ bringing into play the ‘automatic stabilisers’ (starting with income tax and unemployment insurance) required to cushion an economic shock and to prevent a recession from degenerating into a depression. The social-ecological stabilisation function is aimed at enabling individuals to deal with ecological shocks by preserving their wellbeing, just as social protection is aimed at enabling them to preserve their wellbeing regardless of economic cycles. For example, after the floods that hit several Australian states at the beginning of 2012, the Australian Government Disaster Recovery Payment indemnified the population on a one-off payment basis. In the Philippines, via a similar procedure, a public guarantee internal to the social security system has been developed to allow residents to cope with natural disasters; according to this arrangement, victims are awarded ‘disaster loans’ or emergency financial assistance at preferential rates. At the world level too, efforts are being made, in the context of the climate negotiations, to put in place a so-called ‘losses and damages’ mechanism; this arrangement has been demanded by the poorest countries from the most developed nations in the framework of the climate negotiations and is akin to the social-ecological stabilisation function. The introduction of this mechanism could represent one concrete step forward at the COP21 in Paris.

52. Richard Morris Titmuss, *Essays on ‘The Welfare State’*, London, Allen and Unwin, 1958.

53. François Lafitte, *Social Policy in a Free Society*, Kynoch Press, 1962.

Let us consider in some detail, finally, three specific questions pertaining to the social-ecological protection advocated here: its goals and indicators, its expenditure, and its financing.

The development of a social-ecological approach requires prior identification and analysis of the associated and sometimes inextricably linked character of the social and the environmental stakes: there is a need to recognise the ecological stakes within the social questions, as well as to reveal the social stakes of the ecological questions. Implementation of a social-ecological policy requires active awareness of the interplay of social stakes and environmental challenges so as to enable progress in both of these dimensions simultaneously, either because progress in one leads to progress in the other (as in the case of housing insulation, where environmental progress brings social progress in its wake), or because the outcome of social-ecological policy is the achievement of parallel progress in one field and also in the other. Yet there are numerous cases in which to envisage and devise a social-ecological policy is to recognise the need for arbitration between the social question and the environmental question as a prerequisite for finding appropriate solutions (here we have the example of carbon taxation which, if one is not careful, can entail harmful social consequences). This approach can be formalised using a social-ecological matrix. Social-ecological protection must therefore see its main goal as being to reconcile the social rationale and the environmental rationale and, to this end, it must have at its disposal a set of synergy indicators geared to avoiding the dilemma of conflicting stakes in the pursuit of social and environmental wellbeing.

The question of environmental health lies at the core of these indicators. In the case of the major French cities, two-way traffic movements (from the outskirts and surrounding areas to the city centre) give rise, at one and the same time, to economic wellbeing in the form of employment and the income associated with it and to environmental pollution in twofold local (fine particles) and global (CO₂) form. In such a case, the economic and social indicators very clearly appear to run counter to the environmental goal.

The synergy indicators that allow this situation of dilemma to be resolved combine the exposure of populations to pollution and the impacts on health. The traffic restriction and differential taxation measures designed to reduce pollution levels have to be evaluated on the basis of their economic costs and their health benefits but not necessarily in monetary terms alone but according to a multi-pronged methodology allowing plenty of room for considerations of justice. A similarly reasoned approach may be applied to the dilemma represented by the Chinese or Indian conurbations – replacing traffic pollution by coal pollution and drawing attention to the numerous health benefits, both local and global, to be derived from the gradual abandonment of this fossil fuel.

In the case of France, the climate risk issue furnishes a concrete illustration of how the social-ecological indicators could be put to practical use, for we already have available two types of data that can throw light on the social impact of heatwaves. One data set consists of an evaluation, conducted on the municipal scale, of exposure to climate risk depending on intensity of risk and numbers of people exposed (data collected by the General Commissariat for sustainable development); the other is a map produced by the *Observatoire des territoires*, also at the municipal level, showing the number and share in the population of persons aged over 65 and living alone. The

dramatic experience of the 2003 heatwave showed us that victims were, in 90% of cases, people aged over 65 and that social isolation is an aggravating risk factor of death. The overlap between the two maps thus supplies us with a social-ecological indicator of climate vulnerability and brings to light the potentially problematic situation of the regions of Brittany, Ile de France and Nord.

These considerations lead us to emphasise the capital role of local government in what must be a *polycentric transition* where different levels of government embark on policy actions simultaneously according to a rationale that is horizontal rather than vertical.

On the question of the expenditure that would be required by social-ecological protection along these lines, it is important to come back to the principle of the allocation function of public finance in order to understand that taking account of the ecological stakes in social protection is above all a way of revealing the hidden social costs of ecological crises – respiratory disease, strokes, etc. – in order to reduce them. Numerous reports indeed stress the beneficial effect of environmental regulations on health and wellbeing (such as the Clean Air Act in the United States or the Montreal Protocol on the ozone layer at the world level). Expenditure on social-ecological protection follows a logic similar to that of energy saving: future spending is money that will not have to be spent.

Finally there arises the question of how the social-ecological expenditure will be financed. This question underlies the need for a transition of taxation systems. Where the tax bases of today are overwhelmingly income and labour, the predominant tax base must tomorrow become pollution. That a transition along such lines is perfectly possible and effective according to economic, social and ecological criteria is attested by the experience of the Nordic countries.

To sum up, therefore, the goal of the social-ecological protection described in this chapter is to abandon efforts to induce guilt feelings in individuals regarded as simultaneously victims and perpetrators of the environmental inequalities that in turn inflict such a heavy social burden upon them; and to move, instead, in the direction of genuinely collective forms of protection. The essence of the Welfare State, invented at the end of the 19th century, was precisely that it sought to replace individual lack of forethought by collective solidarity.

Transition in action

Proposal 8

Build and equip the social-ecological state

The need is to develop the instruments for social ecology accounting, risk and insurance that will equip the welfare state in the face of environmental crises just as social policy was empirically equipped in the immediate post-World War II period in Europe and in the rest of the world to mutualise, prevent and ultimately reduce the major social risks.

The social-ecological state must, among other things, be able to base its efforts on studies that detail as accurately as possible the social consequences of climate change, or the degradation of ecosystems and destruction of the biodiversity, on different time horizons. It is not essential that such studies should have recourse to monetary calculations; they must show the social cost of the absence of an ambitious environmental policy (in the case of France, with regard to quality of air for example). The social cost of ecological crises must be made visible in order to reveal the misguided allocation of resources to which the current economic systems lead.

Proposal 9

Embark on the third tax revolution

Tax systems must be reformed to penalise the excessive use of natural resources, starting with fossil fuels. Here it is a question of embarking on a third tax revolution, after the taxation of income at the beginning of the 20th century and of consumption in the 1950s. The introduction of a carbon price on the national and world level is the priority of this tax reform agenda but the reform needs to be framed within a much broader reform of the social taxation system.

This would be in no sense a punitive measure (unless of course any and every tax reform measure is automatically regarded as a punishment). The instrument of taxation is above all an incentive: the example of the development of the diesel stock in France shows how powerful this incentive effect can be (clearly indicating in this particular case what should *not* have been done. The environment tax arrangements found in some parts of the world, particularly the Nordic countries (Denmark and Sweden for example), have proved their effectiveness and must be extended to cover all the natural resources essential to life.

Proposal 10

Develop local social-ecological indicators and policies

It is essential to develop and disseminate within statistical systems and policy-making bodies in France and the European Union a set of geographically-based social-ecological indicators that throw light on possible instances of arbitration between social and ecological progress with the aim of turning these effects into positive synergies.

A reform of this kind is of particular relevance in the energy, transport, housing and construction sectors. In order to become fully pertinent, the indicators must be devised as applicable to, and used on, the local level, in cities and in regions; they require, in particular, a rethinking of how urban policies are conceived so as to invent the social-ecological city and bring this new human community alive (numerous examples of new conception along these lines are to be found in the world, for example, the city transport policy in Curitiba in Brazil; numerous examples of how not to proceed exist also, like the city of Atlanta in the United States).

Conclusion

Protection rather than castigation

The way to speed up the ecological transition is to conceive of it as a social-ecological transition, and the facts and ideas that we have set out here are intended in a resolutely practical sense as an effort to base the ecological transition firmly upon social progress.

We have established the link between inequality and the ecological and social crises, as well as the need to tackle the two concurrently; we have considered what this could mean in employment terms but also in terms of an articulated and phased dynamic; we have examined the all too frequently concealed roles of collective actors and particularly the trade unions; we have looked, finally, at the possibilities offered by social protection conceived anew as a way of tackling these challenges.

Thus considered, our thinking distances itself from a moralising or accusatory stance that consists in condemning mankind in general or human societies globally for the insults and outrages that they have perpetrated on the natural world. Our endeavour, rather, is to find ways of enabling human beings to gain a sense of social involvement in and ownership of the ecological transition and to protect the most vulnerable from the worst consequences of environmental crises. The goal of the social-ecological transition is not to 'save the planet' or to 'save the climate' but to protect the wellbeing of those among us who are most sensitive to the dangers and most exposed to the threats, their position being something like that of ecological sentries.

Symptoms affecting the health of children are advanced indicators of the health consequences of the ecological crises that will affect us all sooner or later; the fate of the poorest in the aftermath of ecological shocks like the New Orleans floods in 2005 supplies us with information about what awaits us all if we do not take steps to mitigate disasters and if we fail to build some forms of collective protection to shield ourselves from them; the life-threatening risk incurred by isolated elderly people during

heatwaves informs us of the extent to which social ties matter in our social-ecological world.

Seen from this perspective, the transition that has to be forged is one that leads on from the conservation of Nature, typical of the 19th century, to the protection of human beings now in the 21st century. This imperative of protection can engender a positive new and shared narrative centred on justice and social progress, a common positive narrative into which our Ten Proposals represent an attempt to breathe life.

Ten Proposals for a social-ecological transition

- 1. Invest in human development through dynamic redistribution**
- 2. Acknowledge and reduce environmental inequalities**
- 3. Place climate justice at the centre of COP21**
- 4. Build the social-ecological consensus**
- 5. Re-think working time**
- 6. Develop rights for the transition**
- 7. Measure the quality of new jobs**
- 8. Build and equip the social-ecological state**
- 9. Embark on the third tax revolution**
- 10. Develop local social-ecological indicators and policies**