A wealth of possibilities: ALTERNATIVES TO GROWTH

GREEN EUROPEAN FOUNDATION

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Introduction

Since the global financial crisis of 2007 - 2008, which morphed later into an economic, social and, increasingly, a democratic crisis, governments across Europe seem driven by a maniacal obsession for the 20th century's holy grail: growth. However, the long-awaited recovery has not materialised: even though the level of European GDP (Gross Domestic Product) reached its pre-crisis level in 2014, the employment rate, in spite of the educational attainment, is still dragging behind and the poverty rate has substantially risen. It is as if whenever growth materialises, it only benefits the happy few. This unambiguously testifies to the **inefficiency of the usual economic recipes in the current globalised and highly connected world.**

Actually, this episode highlights the fact that for decades, GDP in rich countries has not correlated anymore with not only jobs (of which quality has decreased) or poverty, but more broadly, well-being or life satisfaction. To date, economic growth has been driven by the availability of cheap energy – with detrimental effects in terms of climate change and harm to the environment. Although decoupling economic growth from environmental impacts seems attractive to the supporters of "green growth", the pace at which this is happening is much too slow to avoid catastrophic climate change by the year 2050 (Jackson 2012, p.81-82; Antal and Van Den Bergh 2014). Moreover, despite the economic, industrial and international trade slowdown, CO2 emissions passed the critical 400 ppm threshold in 2016.

Techno-optimists are confident that technology will save mankind and, more importantly it seems, our consumption and production patterns. Yet, **our societies face the latent issue of resource depletion, which may in fact hold back technological developments. Furthermore, Valero and Valero (2010) demonstrated that it is not possible to counter resource depletion even if new reserves are discovered: the problem would only be postponed. "Assuming that these discoveries double, most of the [resource] peaks would only displace our concern around 30 years". The energy return on investment is following a massively decreasing trend, meaning that energy production is an increasingly energy-consuming sector. (Murphy 2013) Yet, 8 - 10% of global energy consumption is already used for extractivist and energy production activities (de Buillebon and Bihouix 2010).**

Finally, one has to reckon that growth has declined since the 1970s and according to the OECD (2014) forecast, the slump should be prolonged until 2060 at least. **This all means that our energy constraints become more and more binding and that the economic model that it fuels does not deliver anymore on many fronts.**

This study, commissioned by the Greens in the European Parliament and the Green European Foundation, aimed at questioning current practices and policies in six fields structuring our economic model and at investigating alternative ways that are more adapted to the current challenges by being more socially inclusive and more appropriate on climate and environmental issues.

The six fields are:

1. **The labour markets.** We already know that moving towards a green economy can pay in terms of net creation of jobs, even though some sectors will encounter absolute job losses. How can we create decent jobs when growth is sluggish and the economic outlook remains lacklustre from this perspective, and when governments cannot afford to subsidise them massively?
2. The **fight against inequality.** In view of the economic recession and the huge number of people at risk of poverty, isn't it the time to examine the relevance of a basic income scheme and/or a job guarantee scheme?
3. **Tax collection and the provision of services of general interest, notably social safety nets.** Since Greens are concerned with not passing on a massive debt to future generations, we have to frame suitable ways, tools and institutions to consolidate public finances while avoiding the counterproductive austerity measures and structural reforms that have been promoted in recent years.
4. The **monetary and banking systems.** What could be the role and the functioning of the private banking sector in a post-growth economy? Considering that the interest rate feeds the need to accumulate further, it does not seem to be compatible with this new economic environment. If this is so, what is to become of pension funds and other institutional investors? Would the design of a complementary currency to the Euro (not only at the local but also at the Euro area level) be of any support to accompany an ecological and socially just transition of the economy?
5. **(International) trade.** We need to tackle the ecological footprint inequality – the level of inequality in the use of resources between countries in a con-

text of limitations on the planet's biocapacity and the accelerated growth in consumption. The issue of environmental debt, which has historical roots, and the environmental dimension of our consumption patterns are addressed here, notably against the climate framework set by the Paris Agreement and the 2015 UN Sustainable Goals.

This study is not meant to provide its readers with a toolkit or a textbook to reboot our economic model so that we can distance ourselves from the growth of the Gross Domestic Product mantra and engage a fair and green transformation of the economy. Instead, it **outlines priority sectors that need to be reframed in a genuinely sustainable mode. This urgency has been noted since as far back as in 1968, where Robert F. Kennedy - who strongly criticised the GDP model as the absolute reference in our societies - stated that, "Too much and for too long, we seem to have surrendered personal excellence and community value in the mere accumulation of material things."**

Philippe Lamberts,
Co-Chair of the Greens/EFA Group
December 2016

1. Job creation

Green economic growth is not an option. Thus, this first chapter addresses the possibility of developing job-creation policies that are compatible with the scarcity of natural resources and environmental sustainability in a post-growth society.

In a post-growth society, there are three main ways to create jobs. Two can be implemented immediately with positive results: **work-time reduction/work sharing policies;** and public **job-guarantee schemes** (presented in the following chapter). The third one can achieve results in the mid to long term via policies that favour the creation of **sustainable businesses** (for instance, through an ecological tax reform), where labour-intensive enterprises, in particular in the care sector, function with less environmental impacts.

Sound policies for job creation come from the relationship between economic productivity, technological improvements and expected costs of energy for production which, in turn, affect the mix of labour and capital productivity and therefore the rate of employment. While the effects of technological progress, greater mechanisation, increased labour productivity and job loss are well known, the **relationship between expected energy costs and economic output, in the context of diminishing natural resources – above all, cheap energy – is less well-known** (Kerschner 2014).

The expected diminishing natural resources, energy scarcity, and international climate change agreements can be seen as impeding further growth. However, if such changes in energy and resources availability - and therefore in their price - will indeed make the operating costs of machinery higher, this will, in turn, make labour relatively less expensive and thus more attractive. In other words, **substituting capital-intensive activities with labour-intensive ones will provide opportunities for job creation.** The number of total hours worked could rise if policies aimed at substituting capital with labour are preferred to policies aimed at increasing productivity.

Clearly, opting for adequate policies will facilitate job creation in Europe and will probably improve environmental quality, which would create a win-win situation in the absence of economic growth.

Short literature review

In “The Right to be Lazy”, Marx’s son-in-law Paul Lafargue rightly observed that the existence of workers potentially requiring employment was the best strategy for the survival of capitalism. In fact, it is only as a result of the exploitation of the labour force that this system can survive. For example, the enclosure of common land created a mass of people without resources who were forced to go into the factories to find a job. Historically, the word *salary* refers to the payment received by soldiers of the Roman Empire who were employed for warfare. As Marcellesi (2013) observes, the Spanish terminology for work is *trabajo* (*travail* in French), resembling the Latin word *trepalium*, which describes a torture instrument employed in Ancient Rome. Today, **one really radical solution to unemployment would be to offer citizens the possibility and the physical resources to self-determine and self-satisfy their own needs**, without the need to find a solution in the labour market where they are offered a *salary* in exchange for *travail*. However, the elimination of the labour market could only be an objective in the very long term; for the time being, small steps towards job creation and eliminating unemployment can serve as a viable solution.

Working less and differently

In a post-growth context, **the relevance of ‘work’ goes beyond what is generally considered as paid labour**. To this extent, Nørgård (2013) stresses the role of the *amateur* economy in which the weight of the professional sector (paid work, with high labour productivity associated with high resource consumption) is reduced in favour of the unpaid work sector. The author conceives an economy with more “hobby workers”, enjoying greater satisfaction and happiness, since work in the *amateur* economy is supposedly driven by affective motivations. In other words, some of the leisure time would be devoted to voluntary activities, and the separation between work and leisure time would be less clear-cut – also called “creative leisure time” (Cattaneo 2008, p.67).

Sorman and Giampietro (2013) argue that in a non-fossil-fuel-based economy, because of lower labour productivity, we will have to work more (in the paid-work sector); hence, issues referring to job sharing are pointless. “*The belief that with less resources, less energy, less capital, more people and many more problems to face it would be possible to fix the situation by reducing the work load of the work* *force*" should be further investigated, since so far, it is a highly disputed issue with no convincing evidence in either direction (p.92). However, this statement refers to the total number of working hours: reducing working hours per capita might not lead to fewer hours worked in society, at least until full employment is reached. Meanwhile, working hours can be reduced without affecting salaries simply by decreasing the capitalist's profit margin of companies and capital holders. Finally, it seems likely that **by having more free time within an *amateur* economy and being employed in meaningful activities, the quality of life might not be adversely affected by lower incomes** and there would be less impact on natural resources.

"By having more free time within an amateur economy and being employed in meaningful activities, the quality of life might not be adversely affected by lower incomes."

This is also the logic that Kallis (2013) follows in his defence of work-sharing and reduction: he focuses on the need for a radical shift in values, away from the trend that has commodified and monetised everything in life. For him, such a trend began with a shift in unpaid work towards the paid sector, which had negative consequences on social cohesion and quality of life. Instead, he calls **for more convivial activities contributing to well-being which, in the long term, might also support a shift in the value given to paid work**. He claims that: "*Under conceivable conditions, we might be equally happy with less work, less energy and less material affluence*". As Marcellesi (2013) observes, the substitution of capital with labour through a well-designed post-growth policy can generate a virtuous cycle with less unemployment, less energy consumption and a global reduction of productivity (which is understood here in mainstream terms as productivity channelled through the market).

Reducing working hours in Europe may, in the short term, absorb some unemployment and raise the overall quality of life. However, **environmental improvements will depend on complementary policies** and, since natural resources will become scarcer in the long run, there is a potential to create more jobs if society is able to manage with fewer working hours (Kallis et al. 2013). This is linked to energy-related issues such as peak-oil or energy restrictions due to climate change, as in an energy-restricted future, it is likely that we will have to work more hours, substituting energy-intensive capital with labour. Moreover, since the environmental effects of having more time for consumption remain unclear, policies should be applied that, "make material consumption more costly compared to convivial consumption" (Kallis et al. 2013, p. 1561).

Hayden (1999) observes that the reduction of work time can play a substantial role in an alternative ecological vision because it will help sustain the environment and ensure more employment and greater social justice, as well as a higher quality of life. In a report for the European Commission, based on macro- and microeconomic simulations of the effect of reduced working time on employment, Anxo (1998) shows that, "*a reduction of working time may, under certain conditions, have positive effects on employment*" (p.5).

The impact of sectoral shift and energy scarcity on job creation

Jackson (2012, p. 133-136) makes a very relevant point when he observes that constantly increasing labour productivity should not necessarily be accepted: *"Simply shifting the focus of economic activities from one sector to another has the potential to maintain or even increase employment, even without growth in economic output"*. On the contrary, **when labour productivity appears to grow, work sharing can be deployed in a no-growth economy to maintain employment at the same level**. Victor (2008), for instance, builds a quite conventional model of the Canadian economy and finds scenarios under which employment can be increased, poverty and greenhouse gas emissions reduced, and government debt effectively managed without economic growth. Both Jackson and Victor suggest that employment can be created in a non-growing, and therefore a more environmentally sustainable, economy**.**

Nässén and Larsson (2015) analyse time use and consumption patterns within Swedish households to estimate the effects of changes in income and the availability of leisure time. The results indicate that a 1% reduction in working time may cut energy use and greenhouse gas emissions by about 0.7% and 0.8%, respectively. In 2040, **a gradual reduction towards a 30-hour working week would result in a significantly slower demand for energy, which would also make it easier to reach climate targets**. Similarly, the effects of such a policy on job creation seem to be positive. Yet, they acknowledge two uncertainties. "There are two important uncertainties related to this finding. The first is to what extent a slower economic growth rate would affect technological development like energy efficiency improvements. The second is to what extent shorter work weeks result in work sharing and reduced unemployment."

"1% reduction in working time may cut energy use and greenhouse gas emissions by about 0.7% and 0.8%, respectively."

It must be acknowledged that after the oil crisis in the mid-1970s, such a substitution of capital by labour was not visible for three different reasons. First, the oil scarcity was politically generated by the lack of control the industrialised nations had on the cartel of oil-producing countries, while today, scarcity is definite and cannot be solved through negotiations with, or military interventions in, oil-producing countries. Secondly, the 1973 crisis was only short-term, so there was no time for a productive reconversion away from capital employment (capital endowments are fixed in the short-term). Nowadays, the peak-oil-driven scarcity is expected to be long-term, which allows time to disinvest from energy-consuming processes. Thirdly, the rationalisation of energy-intensive production processes towards energy efficiency has been taking place since the 1970s (measured in units of GDP per the amount of energy used). Back then, remarkable efficiency gains were easily achieved because they had never been reached before and, as a consequence, industries continued to operate with high capital endowments. But since then, **energy efficiency has become an imperative, which means that further improvements will not be easy to achieve, paving the way in the long-term for an eventual substitution of capital with labour**.

Constrained by the scarcity of fossil-fuelled energy on the one hand and climate regulations (or, worse, climate disasters) on the other, it seems very likely that within the new economy that would result**, many sectors might grow, while others would become obsolete, finally resulting in a more environmentally sustainable economy**. The main challenge will be to manage the geographical challenges related to cases such as those of towns or industrial districts that depend on undesired industries, doomed to shrink or disappear, and which employ large parts of the local population. Marcellesi (2013) presents the success story of the French commune of Loos-en-Gohelle, which managed its economic reconversion from the mining sector to more sustainable and green activities in the early 1980s. Hence, to maintain jobs, it is necessary to adopt future-oriented tools to anticipate such structural change and minimise the losses. Paradoxically, the higher the pressure from the economic crisis, the more likely it is for business re-orientation and innovation to take place.

The role of taxation and reduction of inequalities

Haberl et al. (2010) call for a fundamental reorientation of society and the economy, rather than simply the implementation of certain technical adjustments that would sound like a gospel for eco-efficiency and more green growth. The authors envision a **radical reorganisation of production and consumption models in favour of greater decentralisation and conviviality** (p.11). For them, too, greater efficiency and labour productivity are not good news, since they function as a driving force of economic growth, and not as a means to reduce the use of resources; thus, they call for an **ecological tax reform** (which will be illustrated in a later chapter).

In an increasingly globalised economy, any kind of local or regional policies that limit the freedom of capitalist markets risks being jeopardised by a shift of financial capitals to a place where legislation is less rigid. Defenders of neo-liberal globalisation claim that the present *laissez-faire* policies are inspired by Ricardo's theory when, in reality, this theory did not consider free movement of capital investments but only of products. Paradoxically, a strict application of Ricardo's theory would imply that free movement of capital investments is severely limited. In that sense, Attac's work towards **taxing financial transactions** would be a first step in that direction (although it will not be discussed in this paper).

Job-creation policies can have beneficial effects on reducing economic inequalities, which is another stringent issue in a Europe suffering an enduring crisis and slow growth. In contradiction to the neo-liberal metaphor of growth as a flood that lifts all boats, we have seen the wealthy capital holders acquiring significant benefits to the disadvantage of the working class. Piketty (2013) mainly addressed this issue, although he came to different policy conclusions. The issue of inequalities is very relevant to job creation, and will be addressed in greater detail in the following chapter, including job guarantees and basic and maximum income policies.

Creating sustainable business enterprises: one piece of the puzzle

Kallis and the Research and Degrowth collective propose a combination of ten policies for a post-growth society which could have direct benefits on job creation. These include work-sharing towards a 32-hour working week, maintaining salaries for all but the 10% with the highest income who would lose proportionally, to be complemented with an ecological tax reform. A second proposal is that of a basic and maximum income, with the basic set at 400 to 600 euros per month (as a current case study in the Spanish context shows) and the maximum limit in the range of 12,000 to 18,000 euros. Moreover, a green tax reform is proposed, shifting from taxing labour to taxing the extraction of natural resources, combined with a 90% tax rate for the highest earners and higher rates on capital earnings, inheritance and properties. This will be briefly discussed in the following chapter. Other proposals would be directed at environmental conservation by putting a halt to subsidising polluting activities, and by setting environmental limits such as resource caps.

One of their proposals, aimed at **supporting the alternative solidarity economy**, would be particularly relevant for the creation of new enterprises, and has been well documented in the case of Catalonia. It can be seen from the Catalan example that a decentralised sustainable economy is already in place, partly as a consequence of the economic crisis. Thus, the crisis becomes an essential opportunity to rethink new ways for economic relationships based on more communal economies, on establishing eco-communities (Cattaneo 2014) that aim at autonomy and self-production, on employing community and social currencies (Dittmer 2014), as well as on creating consumer and producer cooperatives that seek to shorten the distribution channel in the organic agriculture sector. Furthermore, as the Cooperative Integral Catalana exemplifies for the main part, it is possible to instigate an integrated network for consumption, health, housing and employment that uses legal means to bypass the system.

"The crisis becomes an essential opportunity to rethink new ways for economic relationships based on more communal economies, on establishing eco-communities (...) that aim at autonomy and self-production (...) as well as on creating consumer and producer cooperatives."

It should be noted that these ten **policies have to be put into practice simultaneously**. Equally, this chapter and the following ones that will specifically address more policies should also be considered jointly. Pueyo (2014, p. 3468) also proposes nine policies for a degrowth society which are principally based on biophysical limits. The combination of many policies at the same time is likely to have a positive effect towards a post-growth prosperous society that has achieved full employment and ecological sustainability.

How to get there: economic democracy

In general, a post-growth economy should resemble what Johanishova and Wolf (2012) describe as "**economic democracy**", a concept that advances the **right of citizens to participate in the economy, shifting their role from passive consumers to engaged and productive subjects** with access to a new typology of means of production. In this way, employment opportunities would shift from capitalist corporations to cooperatives; that is to say, social, individual and informal enterprises fomenting local economies.

Put differently but implying similar ideas, Christian Felber defines the Economy of the Common Good as an attempt to create an alternative economic system to both the planned and the capitalist economy, seeking implementation from the bottom up directed at individuals, enterprises or municipalities.
For Marcellesi (2013), the lesson learned from the sectorial shift that occurred in Loos-en-Gohelle relates to the social process that has driven the transition towards business sustainability. He highlights the importance of democratic citizenship and participation in decision-making which, in turn, is related to the options made available by the concept of economic democracy.

There is significant uncertainty in regards to the future, and opinions differ greatly from eco-modernist techno-optimists who, in line with the Greek comedy tradition, believe in a *Deus ex-machina* (literally, a god from the technological machine) who descends from the sky to rescue the situation for a happy ending, versus the position of prudent pessimism and technological scepticism (Costanza 1989) which is adopted by ecological economists in order to escape what might end up as a tragedy if it is not turned into a comedy. Since a specific answer cannot be given concerning the future outcome, **we can only acknowledge that we face a bifurcation where the global outcome will be the result of many different local outcomes, and prepare for successes as well as tragedies**. The policy-makers should therefore adopt a flexible role in devising policies that facilitate the creation of democratic processes and can, in parallel with technological innovation, foment social innovation which, in turn, will instigate the post-growth economy and its new institutions.

New structures are required to convince organisations to get together in order to implement and accompany such a transition. For instance, one challenge will be to set up collaborations between NGOs specialising in environmental issues and trade unions which naturally perceive the issue of work as most relevant for negotiations. It is clear that an alliance is desirable between environmental movements and labour movements, particularly in a post-growth economy.

"Policy-makers should therefore adopt a flexible role in devising policies that facilitate the creation of democratic processes and can, in parallel with technological innovation, foment social innovation."

Areas for further research

The main area for further research is a more in-depth study to **address the productivity trade-off between technological improvements and the rising cost of energy and**, on the other hand, **using labour versus capital in production**. It is also crucial to develop policies that are able to contribute to the substitution of capital with labour, anticipating an energy crisis, while providing employment and reducing the environmental impact. The relationship between labour productivity and capital productivity is of paramount importance here.

Regarding policies for reducing or **sharing work time**, it is important to apply a **model that studies the short-term versus the long-term effects on employment**. As Kallis et al. have observed, there are some uncertainties which could be addressed by modelling. Given that in the long-run, the higher cost of natural resources will be relevant to job creation, it would also be relevant to analyse if Hayden and Shandra's (2009) conclusion that increased working hours are positively related to the ecological footprint still holds true.

Research should also examine the net effect of the trade-off between increased labour productivity and the end of cheap energy with the consequent substitution of capital with labour. Jackson (2012) observes that **we simply do not know if we can earn enough money in a non-growing economy.** In a recent paper (Jackson and Victor 2015), they state that, contrary to Piketty's arguments, slow or zero growth can reduce and even eliminate social inequalities: the groundwork of macroeconomic modelling has thus been done, which will help to enhance the knowledge about (post-)growth, employment and emissions.

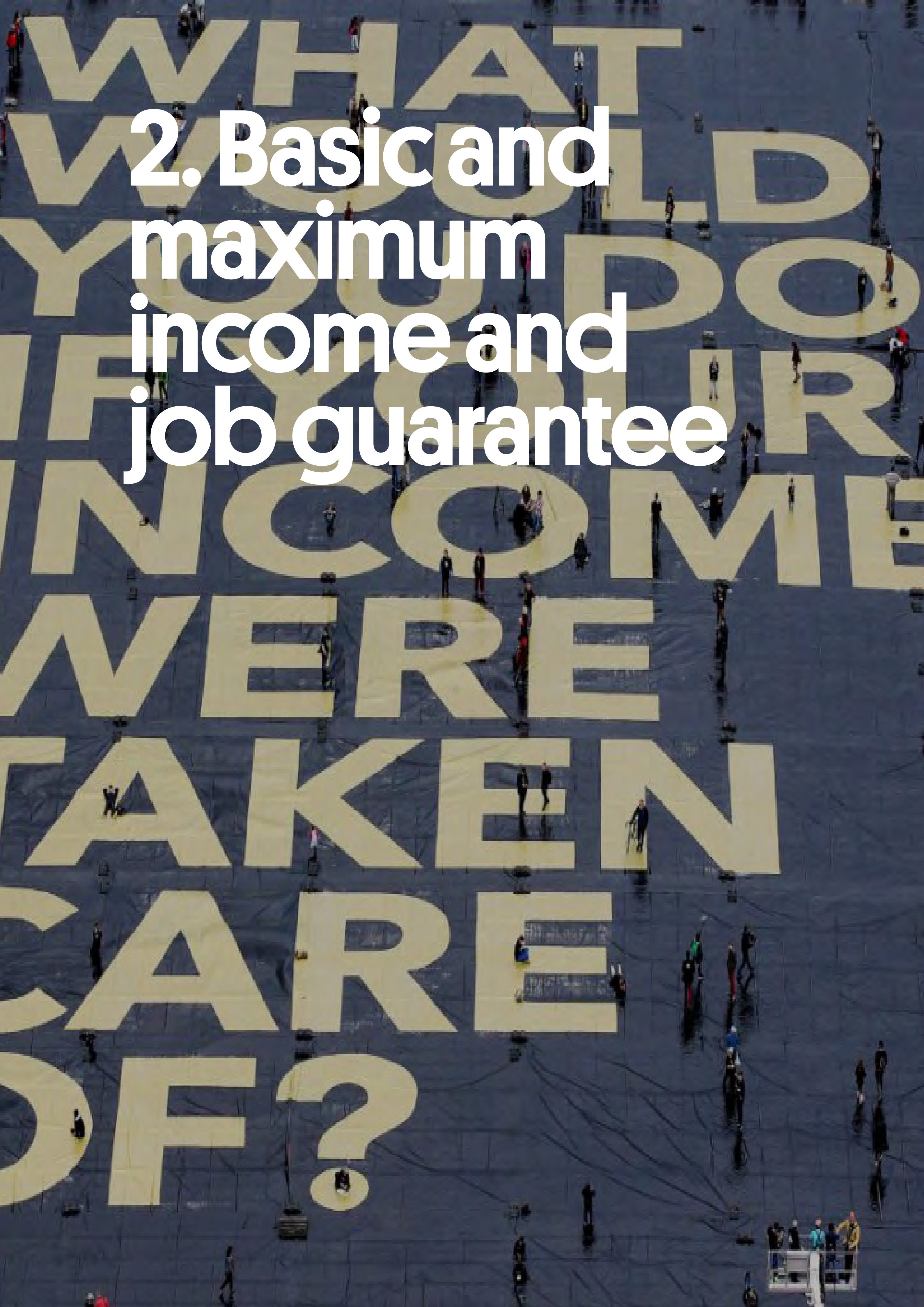
An economy comprising labour-intensive services implies that labour productivity would not grow continuously. Research is needed into the implications of this statement in the trade-off of policies that ferment employment in sectors that are labour-intensive and have a low substitutability for capital. This is, for example, the case in the care sector or, as Jackson calls it, the "Cinderella economy", made up of activities that constitute a society's care sector (D'Alisa and Demaria 2014), versus investments in research and development that are oriented to hi-tech, capital-intensive sectors (such as the development of large-scale renewable energy infrastructure). This trade-off, Jackson and Victor argue, would then face a more delicate political challenge: **how would a society**, where concentration of financial capital goes hand in hand with concentration of political power, **shift towards an economy based on care and labour-intensive activities, where capital investment is likely to be minor**?

This chapter gives an overview of three different income-related policies that are relevant from a post-growth perspective. The economic crisis and austerity policies within a neoliberal context have contributed to a system that has achieved growth at the sole benefit of the wealthy - as this Oxfam report indicates for the 2009 - 2014 period - while the burden of the crisis has been imposed on the poorer. **As the rate of economic growth has slowed in Europe, unemployment and social inequalities have increased**. The measures presented here are therefore mainly social ones.

There is, however, **also an important environmental aspect** to them. As partly explained in the previous chapter, the economic growth machine consumes a lot of energy and processes vast amounts of materials. As long as these resources remain cheap (oil in particular), economic growth could benefit everyone. Although this is not a straightforward relationship and the reality is much more complex, the rising costs of primary sources – such as oil or basic commodities – contributed to the 2007 - 2008 financial crisis. As Douthwaite (2012) shows in an analysis of how debt and finance were interconnected with oil markets, the crisis was not only a financial one.

Policy solutions of growing interest in post-growth-related literature are **unconditional basic income** (and its variants, such as negative income tax), **maximum income** and **job guarantee**.

2. Basic and maximum income and job guarantee



Short literature review

Unconditional basic income: the principles

If one of the objectives of post-growth is to move towards a more just and equitable society, public policies that aim at income redistribution deserve scrutiny. Basic income is a form of social redistribution of wealth that is currently receiving a lot of attention in the political discourse. The history of basic income dates back to the 16th century and has been linked to the **political aim of fighting poverty** ever since. The present economic situation, characterised by an enduring crisis and a slow recovery, is the reason for reviving the basic income debate.

Since 1986, the Basic Income Earth Network has been active in promoting a basic income, has organised biannual congresses and, since 2006, has published its own journal. There is currently a proposal suggesting the feasibility of basic income in Spain, while a major political party in Italy is defending the proposal for a citizenship income. A recent survey shows that 60% of French people and 72.3% in Catalonia are in favour of a basic income. Moreover, Finland, the city of Utrecht, and Calgary and Edmonton – two Canadian cities powered by the tar-sand economy – will start or have started experimenting with different models of basic income.

Van Parijs, one of the main proponents of basic income, has justified its applicability in philosophical terms (1991) as well as in political ecological terms (2009). He defines it as "**an income paid** (in cash, rather than in kind, and on a regular basis, rather than as a one-off endowment), **by a political community** – be it a nation state, a province or the European Union (Gener and Van Parijs 1992) – from taxation of land, natural resources or value added as well as from dividends within public-owned enterprises), **to all its members** (with variations on the inclusiveness of non-citizens, children, pensioners, inmates) **on an individual basis** (paid to each in a uniform way), **without means testing** (therefore irrespective of income, that would make the poor richer, but financed by taxation which would make the rich less well-off and helping those interested in remaining unemployed because of the conditional benefits they receive to escape the trap) or work requirement (therefore irrespective of work performance and willingness to work)" (van Parijs 2004, p.8-16).

According to Raventos (2005, p.8): "Basic income is an income paid by the state to each full member or accredited resident of a society, regardless of whether he or she wishes to engage in paid employment". It is based on a liberal notion of social justice and the state (Standing 2008) in which **each citizen is free to choose how to best allocate the income received**, rather than a paternalistic notion in which the state chooses to which public services to allocate its financial resources. For this reason, basic income is a policy that receives support from both liberal conservatives and social democrats.

Milton Friedman was a defender of a negative income tax, which was then to be assimilated into a basic income, the difference being that only those with an income below a certain threshold would have perceived it. This tax system can be considered as an efficient redistributive system with minimal state intervention and bureaucratic costs. Osterkamp (2013) estimates the bureaucratic cost of conditional cash transfer schemes at 9% while no such costs would be incurred by an unconditional basic income. Canadian Conservative MP Hugh Segal is also in favour of a basic income.

To summarise, the three core principles of a basic income are: social justice (understood as Rawl's "minmax" principle); the enhancement of individual autonomy; and the defence of individual liberty. The two operational characteristics of basic income are that it is unconditional, to simplify bureaucratic administration, and universal, given to the rich and the poor, along with a progressive tax system.

The challenges of basic income in a post-growth context

It is important to **analyse basic income in relation to a non-growing society and its long-term financial sustainability.** Since there is no real case study that provides long-term empirical evidence, the task is not easy and faces trade-offs of uncertain net effects with respect to social and environmental priorities.

In order to look at the economics of basic income, the labour market and material consumption perspective will be essential. Clearly, the **social effects of basic income on employment are positive**, since the bargaining power of workers would be stronger than now. In the absence of a stronger and more up-to-date European social model, workers in a precarious situation with no right to union affiliation would welcome the basic income since it would allow them to choose employment opportunities that really motivate them. This strengthened bargaining position would be valid for any employed worker. On the other hand, the **trade unions' bargaining position might be weaker** since some affiliated workers might have a stronger incentive to leave their jobs. To a certain extent, basic income would represent a sort of 'right to an indefinite strike' until employers were willing to improve working conditions, although the negotiating power would be held by each worker individually rather than collectively through their unions.

To summarise, basic income would protect workers rather than unions, which can be seen as a step forward compared to the current somewhat outdated social model, which is characterised by an increasingly low proportion of the working class able to participate in a dialogue with employers. **To what extent such an individualisation of workers' bargaining power with respect to a collective model will be beneficial to society** and the workers has yet to find unambiguous answers.

"The three core principles of a basic income are: social justice (understood as Rawl's "minmax" principle); the enhancement of individual autonomy; and the defence of individual liberty."

The pursuit of greater autonomy and more self-employment can foment individual freedom. That's why basic income is a policy proposal advocated equally by the left and the right. However**, if proper resource-saving policies are not in place, environmental degradation might also be exacerbated**. Basic income is a socially desirable policy which decreases the power of employers. Yet is does not necessarily contribute to reducing the domination of 'economicism' in our societies, nor to ensuring less material consumption or preserving more natural resources. It also does not automatically create more equal opportunities between citizens who would be entitled to basic income and those who would not be, such as immigrants. Van der Veen's and van Parijs' (1986) essay, entitled, 'A capitalist road to communism', is perhaps the best way to summarise what basic income does, as well as the contradictions existing between capitalism, communism and post-growth ideas.

According to Schachtschneider (2014), **one way out, at least regarding conservation of natural resources, is that basic income should be financed by an** ecological tax. This would become an imperative for any Green social policy. Thus, an ecological basic income should be financed in two ways: on the one hand, by taxing non-renewable resource extraction heavily; and, on the other hand, implementing reforms towards a much more progressive tax system to avoid the burden of such taxation falling too heavily on the poor. This aspect will be discussed further in the maximum income section below.

According to Andersson (2009 and 2012), basic income should not be used to hamper growth because it would not be socially sustainable. He identifies three elements that constitute the actual growth syndrome: the economic issue related to capitalist profit motive; the social issue related to competition for social status; and the political ecological/geopolitical issue related to international rivalry for securing access to diminishing natural resources. He observes that there is an implicit risk of basic income hampering any of these three. It would therefore be **necessary to complement basic income with other policies such as a reduction in working hours or the creation of a voluntary (or even compulsory) system of civil service**. The latter could be in line with a variation of the job guarantee proposal that will be presented later in this chapter.

In sum, the existence of a universal basic income might constitute an incentive for all beneficiaries to consume or to invest more which, in turn, would imply strengthening the consumerist society or boosting the economy through investment. Although socially and economically desirable, more consumerism and more intense economic activity might possibly consume natural resources and therefore prove ecologically detrimental. **It is only by looking at the way a basic income policy would be financed that the policy-maker can maintain some control on how to limit the exploitation of natural resources.** Using adequate ecological taxation, both on resource extraction and on materially intensive consumption, would be a central element of such a policy. Any proposal for a basic income should be explicitly referred to as an ecological basic income, with a clear reference to how it would be financed.

Job guarantee

Just as the central bank would act as a lender of last resort, **in a job guarantee scheme, the government would act as an 'employer of last resort'**. It would help to stabilise an unstable economy that, due to its capitalist structure, will always be characterised by some degree of unemployment. When a crisis occurs and unemployment rises, the state would intervene in the labour market, in a similar way to that used by a

"Basic income is a socially desirable policy (...)yet is does not necessarily contribute to reducing the domination of 'economicism' in our societies, nor to ensuring less material consumption or preserving more natural resources."

central bank when stabilising the volatility of financial markets, and would provide an economic buffer to the downturn by paying newly employed workers at least a minimum wage.

However, defenders of job guarantee argue that **this policy is not only valuable in economic terms**. According to Alcott (2013), employment becomes a political right rather than an economic matter as the stigma of unemployment is mainly a social one. Assuming that the problem of unemployment is a social rather than an income problem, together with the reduction of working time, the job guarantee **is one of several ways to achieve full employment.**

Unti (2014) proposes that a job guarantee **should deliver those public goods not provided by the private sector**, and states that the wages would have an estimated cost, in the case of the USA, of just 1% of GDP. Further, Godin (2012) proposes a policy to create green jobs, particularly in energy saving through insulation and electricity (which he defines as the "widget sector"). This idea would reduce the impact of climate change as well as overcoming social inequalities. By engaging in macroeconomic modelling, he compares business-as-usual with a green job guarantee scenario and shows that, in the latter, private unemployment falls drastically and employment increases in the widget sector but decreases in the energy-intensive sector. The implementation of an employment-of-last-resort programme would cost less than 6% of public spending (leading to a 0.4% increase in debt to GDP ratio). Both income and wealth would grow.

The **main challenge for job guarantee lies in the state's ability to respond, i.e. to create, provide and administer enough public jobs for all of the unemployed**. First, European states have more or less efficient but very different bureaucratic apparatus', which means that the success of a job guarantee scheme might vary from one country to another. Secondly, setting up a job guarantee scheme requires government expertise on which jobs are "useful". In other words, the government should be able to assess the advantages and risks of such jobs by checking for example whether they are providing services of public utility, even if there is no financial benefit which translates into a risk of being more expensive to run; or whether they are offering some products and services on the market, even if they risk not being properly valued by the market; or whether they are creating desirable environmental restoration, but at the risk of enhancing a system where the private costs of pollution and degradation are actually covered for by the public scheme. Finally, when economic recovery does occur, it seems likely that workers might choose to change jobs to the private sector. The job guarantee administrator should therefore take into account that the work undertaken via the job guarantee scheme during an economic downturn period might be left unfinished when the economy is back on track.

Comparing basic income and job guarantee

Basic income and job guarantee are two inequality-reducing policies that are likely to be considered as alternatives. A comparison between the two is worth examining, and the *Basic Income Journal* has dedicated a special issue to this debate.

> *"In a job guarantee scheme (...) when a crisis occurs and unemployment rises, the state would intervene in the labour market, in a similar way to that used by a central bank when stabilising the volatility of financial markets, and would provide an economic buffer to the downturn by paying newly employed workers at least a minimum wage."*

Although there are far fewer studies on the job guarantee scheme than on basic income, the concept is a credible alternative to basic income. Harvey (2013) criticises basic income as a second-best alternative to full employment and a just society, while Tcherneva (2013) argues that, "the very implementation of a universal and unconditional basic income guarantee in a modern monetary production economy would bring considerable instability at the macroeconomic level, uncertainty in basic goods provisioning, and unsustainability of the program itself" and, if the effect of basic income is to "decommodify" labour, the tax base which sustains this policy would also be hampered. Basically, Tcherneva argues that while basic income can be a destabilising policy at the macroeconomic level, a job guarantee would have the exact opposite effect by offering employment and income when economic downturns occur.

Harvey (2013) argues that a job guarantee is better suited than a basic income strategy because it is cheaper and more effective at reducing unemployment. However, he does not take into account that basic income can be financed not only by increasing public debt, but also by a more progressive taxation, which is explained further in the next section.

To summarise, the advantage of basic income is its easy applicability and current political desirability, whereas a job guarantee requires an efficient administrative apparatus, and resembles the politically unattractive Keynesian proposal to pay some workers to dig holes and others to fill in those holes. On the other hand, a job guarantee could be a stabilising factor for the economy while the social effects of a basic income seem less certain. **From a Green perspective, both proposals have uncertain environmental effects, making**

"The advantage of basic income is its easy applicability and current political desirability, whereas a job guarantee requires an efficient administrative apparatus (...) On the other hand, a job guarantee could be a stabilising factor for the economy while the social effects of a basic income seem less certain."

it necessary to only debate policies with explicit aims towards a green basic income or a green job guarantee.

Finally, rather than alternatives, **the two concepts should be considered as complementary policies**. If applying both simultaneously turns out to be too expensive for the public budget, green voluntary jobs schemes could be implemented alongside basic income. In this way, citizens might be employed for the common good by non-monetary means in order to alleviate the risk of a drift in basic income policy towards an overly individualist and economicist society.

Maximum income

Nobel prizewinning economists Kahnemann and Deaton (2010) show that **beyond the threshold of a yearly income of $75,000, no further improvements in people's happiness are perceived.** Following the working groups at the Barcelona Degrowth Conference, a proposal has been made to define an income ceiling. There are two main proposals. First, the suggestion is to **set the ceiling in proportion** to either the minimum wage – meaning that the maximum wage would not be more than five times the legal minimum wage – or to a proposed basic income. Secondly, a **progressive income tax** is considered, which would therefore include income from capital in the form of dividends or capital gains and is set at 90% – or even 100% – above a certain level (which could also be defined in proportion to the minimum yearly income).

Once the policy is in place, and in case the rich are interested in increasing their very high income yet again, a system of maximum income based on the value of the minimum has the advantage of obliging the minimum income to be increased accordingly to avoid social inequalities, at least in relative terms. In this way, at least the chasm between the richest and the poorest will always remain constant. **The proposal for a fixed ratio between the lowest and the highest income can also be applied at the microeconomic level**. It is already the case in enterprises such as the Spanish Mondragon cooperative, where a more just relationship has been developed among its employees by paying a maximum and minimum income with a differential of no more than six times.

From an environmental perspective, there are positive side effects of a maximum income, which somehow could compensate the potential drawbacks associated with basic income. A ceiling on income might provoke less incentive to work and produce in abundance, which would clearly reduce environmental pressure. It is true that a maximum income has been criticised for not offering the adequate incentives for innovation, but in the present environmental crisis, resource conservation should be prioritised over economic innovation.

Moreover, since a maximum income would affect the top 1 to 5% of the richest, it is likely that the majority of economic activities that would be hampered would be in the real estate industry or the financial sector. In fact, fewer innovations coming from these sectors might even be desirable. **Desirable innovations, such as in energy-saving technologies or sustainable practices, tend to emerge from small enterprises with an economic turnover well below the maximum income threshold,** which means that it is likely that maximum income policies will not affect them. However, an in-depth scrutiny of the economic sectors and the innovations that might be affected by a maximum income is recommended. The present arguments are only working hypotheses that need to be backed up by further research and some quantitative analysis.

The applicability of a maximum income should also be ensured at the European level to avoid investment being displaced to neighbouring countries. Thus, the **possibility of European tax harmonisation is a main issue for analysis, as is the effect of tax evasion and the political choice to control big tax evaders**. Therefore, a credible political alternative to facing corruption and tax evasion is needed at the European level.

Areas for further research

Since basic income has yet to be applied extensively, a lot of research still needs to be done. It might be worth **following closely the experiments** currently planned in Finland and the Netherlands. On the other hand, **simulations are required on different ways to finance basic income.** Unless a clear way to finance it is defined, the policy cannot be implemented without incurring public debt. The ideal combination of a more progressive tax system with an ecological tax reform should be studied so that the resulting policy is both socially just and ecologically sustainable.

Not much has been done yet regarding job guarantee schemes in Europe. Research is needed in the simulation for the EU, since the most relevant studies have been done in the US by Philip Harvey, or in Australia by the Centre of Full Employment and Equity. Surely, the main challenge for such a policy – which has yet to be applied – is to determine the capacity of the public administration to manage such a scheme. It seems likely that the small (such as small states or regions) and efficient public administrations will be more successful in the hypothetical implementation of a job guarantee scheme.

From the point of view of **income ceilings, quantitative research should address what effects this could have in terms of the displacement of productive activities** into other European areas (unless a coherent directive for income ceiling can be set at the EU level).

Finally, **research that is able to integrate at least two or three proposals should be advanced**. In particular, this includes modelling a very progressive tax system (with income ceiling) together with the implementation of a job guarantee or a basic income strategy.

3. Tax collection

In most countries, taxation of both citizens and private corporations is the primary source of state revenue. Other revenue sources for nation states include state-owned enterprises, printing money, interests, investments, and loans from banks and other institutions such as the World Bank and the International Monetary Fund. Therefore, a state's economic management should not be limited only to tax collection. However, although relevant, a broader treatment of public policies for state revenue from a post-growth perspective is beyond the scope of this study.

In the shift towards a post-growth economy, taxation will be very important as, in many cases, it can be considered as an alternative to tariffs, penalties or even subsidies. By taxing certain economic activities, governments can have some control over both desirable and undesirable industries.

In addition, since taxation is a key monetary resource for governments, it also helps to fund public services that are designed to redistribute wealth. As Piketty (2014) has recently shown in his best-selling book *Capital in the twenty-first century*, taxation of those with higher income is, and historically has been, the primary mechanism governments have at their disposal to address inequalities.

Taxation policies can be designed to encourage, limit or redistribute the profits of market activities toward a more just and fair society that exists within the biophysical capacity of its environment. Therefore, governments need to be aware of **six important limitations to current taxation schemes that encourage growth rather than environmental conservation and restoration**.

1. Even in democratic socialist countries, taxation is tailored toward a growth-based economy. Citizen and corporate taxes are primarily based on revenue, rather than material or energetic use. As such, **environmental impact is rarely addressed through taxation schemes**, although it should be encouraged further if not prioritised. The use and exploitation of natural resources should be limited, and taxation can be an effective mechanism in some circumstances. Herman Daly suggests taxing what is harmful to the environment, such as natural resource extraction, rather than what is beneficial, such as income from work. In addition, he suggests imposing taxation at the source, so that the cost of primary extraction is always reflected in every step of the production process.

2. In current systems, **wealth redistribution is only supported when it can further growth**. Liberal and Keynesian economic visions are opposed with respect to how they limit or favour higher incomes and wealth redistribution. Liberals argue that higher income encourages reinvestment, which can thereby increase employment and economic growth, leading to improvements in the lives of those on lower incomes through the "trickle-down" effect (Nugent 2006). The Keynesian vision justifies using taxation for direct wealth redistribution, arguing that this is crucial for driving consumption and therefore production and employment (Keynes 2006). Despite their differences, both the liberal and Keynesian perspectives view growth as the means by which to achieve gains in net wealth.

3. It is often assumed that market 'externalities' – the bad effects of industry – can simply be solved either by penalising bad market activity through a "Pigouvian Tax" (Pigou 1920) or, alternatively, by creating another 'market' to put a price on undesirable transactions (Coase 1960). For example, while carbon taxes function as a disincentive to carbon emissions, carbon trade schemes assume that once you create a property rights structure for carbon emissions, industries will limit emissions more efficiently without top-down regulations. However, as Kapp (1963) and Vatn (2007) have shown, all industries will inevitably try to shift their costs to society or the environment, and therefore **neither simply a taxation structure nor regulating property rights will be sufficient to limit market externalities**.

4. As Veblen (1899), one of the first institutional economists, argued, industrial growth is not only generated by rational choices and supply and demand (as classical economists might argue), or exploitation of the working class (as Marxists may argue), but is also due to changing social norms. One such social norm that emerged with a new industrial economy is what he called "conspicuous consumption", i.e. the drive for people to consume commodities simply because it sets them apart from others. This norm is self-perpetuating, causing more and more non-functional growth. Since taxes mainly penalise income rather than expenditure**, they miss an opportunity to make conspicuous consumption a disincentive**, which means driving consumers to spend lavishly on goods that display their wealth, further encouraging a culture that gives material (and materialistic) consumption a high value (Veblen 1899; Hirsch 1977).

5. Surplus monetary capital in the Global North, which taxation schemes then help to redistribute nationally, continues to be primarily generated and facilitated by unequal trade with the Global South (Hornborg 1998; Wallerstein 1974; Smith 2008), extractive industries (Hall and Klitgaard 2011; Smil 1994) and the exploitation of labour (Marx 1867). The costs of this are often not accounted for in redistribution mechanisms. We will further explore this dynamic in the sixth chapter focusing on **international inequality**.

6. Finally, **current existing taxation schemes are neither formulated through participatory institutions, nor do they take into account a complex and constantly changing economy.** Changes in tax schemes are designed by ruling parties and coalitions. These changes are then implemented by government employees. In some rare cases, proposed changes receive feedback from citizens through participatory focus groups or surveys. In most cases, taxation is only democratic inasmuch as those elected by the citizens will have the greatest role in implementing policy changes. However, the actual process of designing new taxation schemes remains a highly bureaucratic and technocratic process out of the public eye. This results in tax policies and exemptions which are often inaccessible and require expert knowledge to navigate. This means that they are not affordable for people with fewer resources; taxpayers can give very little feedback on new taxation methods (e.g. online forms); and taxation may not fully take into account local and specific needs and barriers. In effect, taxation schemes are often implemented for specific issues, and these policies will then have unforeseen results, leading to negative feedback loops that affect the wider economy.

One major worry for any government wanting to shift to an equitable post-growth economy is that sources of state revenue will decline, since taxes will be tied to undesirable industrial and consumer activity, which is designated to decrease. In the long term, a key challenge will be to maintain adequate sources of revenue to fund necessary state services such as pensions, health care and transport infrastructure.

To summarise, any taxation scheme designed to shift the economy to a post-growth system should take into account the following criteria. Tax systems must incorporate the types of labour and material and energy consumption. Second, they should take into account where the profits taxed come from, especially in relation to the Global South and extractive industries. Like employment, resource management and finances (see chapters 4 and 5), taxation should be participatory at the local level. Next, taxation schemes must evolve adequately and respond to changes in a dynamic world; and finally, taxation policies should have short-term and long-term plans to ensure adequate funding of the necessary state services.

Short literature review

Before discussing specific policies from the literature, it may be helpful to propose a **general framework for taxation policies** with cross-cutting themes that take into account the above-mentioned criteria. This framework applies to both taxation schemes and the creation of post-growth social safety nets.

First, it is important to stress that **policies should be accountable, transparent and, above all, democratic**. However, this should also require extending democratic decision-making beyond the 'citizen' and involving scientific, ethical and technical input. Several models can be used as inspiration for achieving this integration of science, democracy and policy: **post normal science**, which describes methods to make science more accessible to citizens and policy-makers and able to respond to high-risk, high-uncertainty situations (Funtowicz and Ravetz 2003); Latour's **politics of nature**, which seeks to break down distinctions between experts and citizens, facts and values, and nature and society (Latour 2009); and Bookchin's **communalism**, in which scientific and ecological expertise is integrated within direct democratic decision-making (Bookchin 2002).

Second, we envision these policies as occurring in successive phases. This will be necessary because, as governments' outlooks shift from pro-growth to post-growth schemes, many policies will need to be implemented to cushion the transition and, eventually, sustain social services financially. Therefore, it is necessary to distinguish between two general phases: short-term transition and long-term stabilisation. **In the short term**, government income will largely rely on ecologically damaging industry through **eco-taxation** (as further explained below). It will be necessary to invest revenue into publicly owned funds, not unlike Norway's Government Pension Fund Global. These funds can then be used to reinvest in sustainable alternatives and necessary infrastructure to shift to a post-growth economy.

In the long term, sources of this revenue will dry up and the government will not be able to rely on ecological tax reform to fund its social services. Indeed, the case of Norway is an example of this: now that oil prices are low, it is becoming extremely expensive for Norway to maintain its extraction rates, which has caused its sovereign fund to fall to a four-year low, indicating that such a fund has problems of its own and is, in the long run, unsustainable. Certain variables may limit the negative effects of such a situation.

First, government policy will need to **create infrastructure that allows for the proliferation of alternative forms of wealth**, such as community-based currencies, solidarity economies, neighbourhood-based services like autonomous clinics, childcare collectives and food cooperatives. This will make it increasingly possible for citizens to meet essential needs such as childcare, healthcare and local food production without relying primarily on state cash transfers. Second, within a post-growth economy, different types of economic activities will become profitable, allowing for new avenues for taxation. Third, the facilitation and legal support of community-based initiatives and the informal sector will mean an increase in small businesses and market transactions, enabling more people to support themselves. Fourth, since conspicuous consumption will be discouraged, there will be less need for financially intensive megaprojects, such as highways, shipping ports, military bases, power plants and airports.

In general, after the short-term phase, there would be less private *and* public expenditures: post-growth economics represents a 'third way' where market activity is diversified and citizens are given the tools to support themselves, even though their rights and livelihoods are guaranteed by a centralised governance structure. In a way, these first and second phases will entail an inflation of state facilities, which will then enable contraction, once the necessary safety nets are guaranteed. One example of how to do this is the Quebec **social economy** model, where semi-autonomous community clinics, cooperative day-care centres, collective kitchens, social centres and neighbourhood councils receive funding and legal support, reducing state expenses significantly, while encouraging a less centralised form of democratic governance (see Klein et al. 2013).

Finally, there will still be a need to balance the books and address public debt. First, we suggest that **debt can be divided into legitimate and illegitimate debt**. The current monetary system is debt-based: money is created only when debt is created, and the amount of debt in the world far outranks the money supply. Therefore, following Graeber, there will have to be debt that is not paid (Graeber 2014; see also strikedebt.org). While this is rarely acknowledged by governments today, it is already quite common practice. For example, only three of the 28 EU Member States have not breached the Stability and Growth Pact's rules on the required debt-to-GDP ratio (European Commission 2012). Nevertheless, this does not stop politicians from pointing to unpaid debt to justify their own various ideologies. Indeed, as we discuss in chapter 6, debt is often used to force poor countries to adopt neoliberal reforms.

"Post-growth economics represents a 'third way' where market activity is diversified and citizens are given the tools to support themselves, even though their rights and livelihoods are guaranteed by a centralised governance structure."

The issue of public debt, and the government's relationship to it, should also be considered. Within a post-growth economy, steps would need to be taken to "strike" illegitimate debt while, depending on the kind of monetary reform that is adopted (see chapter 5), it seems likely that governments would tend to have small legitimate debts, since fiscal budgets will be managed at local levels and there will be less need for large infrastructure. Again, the amount of debt will also vary in the short and long term, and change according to international circumstances. On the whole, public debt itself is not the problem, but the stability of a currency is. That is, debt payment should only occur insofar as it guarantees a secure economic environment, and not at the expense of the decent working and living conditions.

Taking this general framework into account, the literature can be divided into two main groups: *what* to tax, and *how* to tax. In the following section, those proposals will be highlighted that may be considered as high priority due to their effectiveness and innovation.

What to tax? Sources of tax revenue

One very interesting proposal in the relevant literature is **eco-taxation**. This could come in many different forms, but it also has the potential to have a very wide and positive impact. The taxation of material and energy use, both by industries and households, would require setting up governmental bodies charged with measuring consumption (see chapter 4). This **would require measuring embedded** or **virtual consumption**, or **ecological footprints** (Wackernagel and Rees 1996; Best et al. 2008; van den Bergh and Verbruggen 1999). Depending on the difficulty of measuring this activity, the taxation would need to be focused either on enterprises or on citizens. We suggest that, barring energy and water use, it is much easier to calculate material used by enterprises than by households.

One prominent variant to this proposal is ecological tax reform or **natural capital depletion tax** (Costanza et al. 1995; Bernow et al. 1998). This seeks to go beyond carbon tax policies and tax any kind of consumption of natural resources. Any taxation of natural capital would then be paired with incentives, such as credits for renewables, further encouraging the sustainable use of resources.

If such taxes were imposed in the Global North, and as far as an ecological tax is imposed on imported goods, it may also drive down extractive industries that prey on low-income citizens and countries in debt (see chapter 6). Free-trade liberalisation might be an impediment to this source of taxation and should be resisted. The poor often rely on cheap energy to survive, so taxation on natural resources might lead to energy poverty. Therefore, the taxation **should be paired with other poverty-reduction measures**, as discussed previously.

"Any taxation of natural capital would then be paired with incentives, such as credits for renewables, further encouraging the sustainable use of resources."

In addition, **natural capital consumption should be measured as accurately as possible** directly at the source or, where this is not possible because natural resources are extracted in a country where ecological taxation is not applied, it should be estimated by using data on embodied energy, water and other materials. These are available from research groups such as Ecoinvent.

Another proposal worth pursuing is **discriminatory** or **progressive taxation**. This involves limiting the taxation on low-income citizens, with taxation levels being increased according to income class, as is already practised in many European countries. Progressive taxes would also need to involve imposing tiered fees or resource use according to income, since, even in relatively wealthy European countries, low-income residents suffer from energy poverty and the high cost of utilities (Pye et al. 2015; Press Association 2015). In addition, as described in greater detail in the chapter on basic income, imposing a **maximum income** level may encourage redistribution and limit the possibility of reinvestment in other industries, thereby acting as a disincentive to economic growth (Alexander 2014, p. 146). **Partnered with a basic income scheme and ecological tax reform, this could help limit the economy's net environmental impact while ensuring well-being**. However, one limitation relates to the fact that many elites place their income in tax havens, such as in Switzerland and Luxembourg. To address this, Piketty (2013) has joined the call for an international organisation to regulate and limit maximum income in a globalised world. Such a policy may not apply to stocks owned and corporate wealth, and may actually incentivise their increased use. Finally, the super-rich will often invest in "patrimonial capital", such as houses, and may receive much of their wealth from inheritance. One way to address this would be to tax second and third houses as well as heavily **taxing inheritance**, as is already the case in many European countries.

Another possibility is to **tax expenditure** rather than income. As Veblen has demonstrated in the late 19th century, the drive to spend lavishly and show off wealth should be seen as a cultural norm that does not function with the same mechanisms as capitalism, which is driven by the exploitation of surplus labour, but nevertheless drives wasteful consumption and economic growth (1965). From an institutional economics perspective, this separate driver of economic growth would require its own specific policies and mechanisms, such as taxing expenditure on "conspicuous" goods. As with taxing multiple properties, the benefit of this would be to address positional consumption and economic growth in general. While value-added tax (VAT), or tax on purchases, does exist in many countries, this is often not tiered to spending on luxury goods, multiple houses or multiple cars.

Another policy that can help address positional consumption would be to **tax advertising** or, as the French city Grenoble has done, to ban it altogether from the streets and replace it with trees (Mulholland 2014).

How to tax? Alternative taxation methods

Another key proposal is to democratise taxation. While **participatory budgeting** has by now been well explored and has become an area of study in its own right (see chapter 4), **participatory taxation** is less widely known and researched, and we were unable to find any case studies regarding its implementation. Despite this, it may be a useful tool in decentralising and democratising governance, and can facilitate a more robust taxation system that can respond to local and unexpected changes (Irianto 2012).

One promising tool to achieve this is **e-taxation** (Kalikakis et al. 2008). When combined with a participatory governance framework, e-taxation has the potential to provide citizens with a holistic view of how public funds are used, facilitating feedback mechanisms from citizens, and allowing users to communicate with each other about taxation policies on a local and national level, further leading to more democratic and transparent taxation schemes. Such a system would reduce costs as it would allow citizens to provide feedback for more user-friendly taxation, thereby reducing tax evasion

"When combined with a participatory governance framework, e-taxation has the potential to provide citizens with a holistic view of how public funds are used, facilitating feedback mechanisms from citizens, and allowing users to communicate with each other about taxation policies on a local and national level."

and social discomfort around taxation while increasing awareness, education and participation in governance. Both proposals could conceivably be combined, and eventually integrated with participatory budgeting systems. In addition, there is potential for taxation to be integrated into alternative currencies, especially with the advent of digitally encrypted currencies (see chapter 5).

Areas for further research

Each of the proposals illustrated above would require extensive research. One key direction for research, however, would involve the **modelling of different tax schemes and how they may affect each other and be affected by external drivers**. This would allow a better understanding of how to integrate new and untested taxation methods in a complex, dynamic system.

Another area of research could be to **develop models and strategies for different phases of the shift to a post-growth economy**. While largely theoretical and circumstantial, identifying coherent strategies for taxation policies in the short and long term will be crucial for a rational and democratic approach to a post-growth economy.

In addition, participatory taxation methods still constitute a desideratum in this field of research, although it seems to be promising. **Participatory e-taxation platforms could be developed and experimented with, and more research is needed on how this may encourage or discourage citizens' participation**. More research is also needed on how to combine e-taxation and local, participatory taxation, and case studies of participatory taxation models, if they exist, would be beneficial.

4. Financing the social safety net

Those who challenge economic growth are often accused of encouraging discourse on austerity, during which the state seeks to cut spending on public assets and privatise them. However, a post-growth economy would look very different from that advocated by neoliberals as consumption and unsustainable activity would be minimised, probably resulting in the contraction of measurements of wealth such as GDP, while institutions that encourage well-being would be improved.

However, there is a concern that such a platform may, in itself, fail to guarantee an adequate social safety net. **Without economic growth, how can we finance social services?** This remains a key challenge for post-growth economic proposals.

In this chapter, we describe some of the social services necessary to guarantee well-being in a post-growth economy. In contrast to both Keynesian and free-market approaches, we suggest that the creation of social safety nets and welfare do not require economic growth. At the same time, we argue that a post-growth economy does not entail 'austerity', or loss of state accountability for its population. Rather, **a post-growth economy would diversify types of wealth, all of which can help support its society.** This would not necessarily mean less government, but fewer adherences to capital-driven state models such as Keynesian welfare systems. In contrast, we propose a more decentralised, diverse and democratic welfare regime. A post-growth economy would not entail decreasing government activity, but rather would require proliferating participative governance at all levels. Inevitably, this would also mean that, eventually, state institutions dependent on economic growth would shrink in favour of a 'third way' of wealth generation and redistribution that does not rely on capitalist relationships.

To better understand how the state and the market interact and the kind of social services that a post-growth economy would require, it is useful to briefly sketch how capital circulation works in most countries (Harvey 2006; Polanyi 1944). First, it is important to stress that it is a mistake to look at the state and the 'free market' as separate entities (e.g. von Hayek 1944). The state actually *enables* the efficient functioning of the market through maintaining infrastructure and the financial system, legal protection of privatised forms of wealth, and ensuring subsidies for certain market activity. In turn, the state relies on the market to guarantee a steady flow of capital circulation, allowing it to maintain its services. Polanyi's work shows that the **state and market cannot exist independently – they regulate each other** (Polanyi 1944). In fact, governments that have sought to limit state involvement to encourage economic growth have, in almost all cases, led to increased surveillance and militarisation of the police, as well as rampant corruption by state officials with connections to industry (Klein 2007).

Second, it is helpful to highlight how this actually occurs. **Capital accumulation is made possible through the extraction and transformation of environmental goods and services, as well as the exploitation of social surplus**. Social surplus is the difference between the capital that workers receive and what is generated through profit by a company, which is then reinvested elsewhere, saved or taxed. Thus, state services are the primary mode of redistribution of capital accumulation towards the public, rather than for private investment.

One key state service is **fixed capital**, meaning the infrastructure necessary to ensure efficient private economic activity and generation of surplus, such as streets, railways or the electricity grid. Another state service is the **consumption fund**, which is the infrastructure necessary for the working population to be able to continue being involved in the economy, such as public parks and housing. Finally, **social infrastructures** include things like schools, prisons and hospitals, all of which are necessary to guarantee the reproduction of the population, as well as the generation of social surplus – which, once again, is then collected by the state through taxes. While many of these services are often privatised, the state will nevertheless support contracted companies extensively through laws, subsidies and tax cuts. This is because private companies will often not voluntarily participate in the construction of public services since they require steady flows of capital, long-term planning, and are often unable to absorb considerable risks (Harvey 2006).

From this description of the economy and the way in which capital circulates between the private and public sectors, it should be clear that **private investors cannot function without the state and, likewise, the state cannot function without private investors** who are able to turn social surplus into capital. While the working population may struggle for more investment into social infrastructure, the consumption fund, and social surplus (e.g. through a reduction in working hours and a minimum wage), private investors may instead seek to lobby the state for more fixed capital, less taxes, formalising private property regimes for various goods and services (e.g. land grabbing of communal land, patents for GMOs), and the ability to exploit social surplus. Within capitalism, politics tend to revolve around the struggle between these two so-

> *"The key challenge is to identify how social safety nets can be re-framed to support the well-being of people when, in contrast to Keynesian social democratic models, governments will not be able to rely on growth to continue extending welfare."*

cial forces. Furthermore, many will often restrict their political action and lobbying to concerns about these economic processes and distribution of capital flows, a phenomenon Antonio Gramsci called "**economism**".

A growth-oriented government will be more likely to support social infrastructure *in order to* make the exploitation of workers and nature easier, which then allows private investors to generate wealth. This would include both social democratic governments which, following Keynesian theory, stress the well-being of the working class to better generate growth, and neoliberal governments, which stress the well-being of private investors so that they can generate more capital. In contrast, **a post-growth government will seek to invest in social infrastructure *and* attempt to minimise the exploitation of workers and nature, while limiting the ability of private industry to reinvest their capital with higher taxation**.

Therefore, the question is: how can a social safety net be organised in a way that, rather than focusing primarily on economic growth, is oriented towards flourishing within planetary limits? The key challenge is to identify how social safety nets can be re-framed to support the well-being of people when, in contrast to Keynesian social democratic models, governments will not be able to rely on growth to continue extending welfare.

Short literature review

In the previous chapter on taxation, we outlined a general framework that involves democratic principles, necessary short-term and long-term changes, and perspectives on government debt. Clearly, this framework also applies to the question of social safety nets. In general, it is important once again to highlight that **any post-growth economy will be diverse, decentralised, and will shift away from government-controlled or privatised forms of welfare** towards a 'third way' of collective wealth creation largely outside of the capitalist 'market', as it is understood today. While in the short term, social safety nets will have to be supported and run by the state, in the long term, the state will need to shift its role from *benevolent patriarch* to *facilitator*. Therefore, the initial funding required to support these social safety nets is substantial, but will eventually level out as types of social services diversify.

More specifically, there are some baseline needs that a post-growth safety net would have to meet. To be adequate, **it should include the support of care, labour and social reproduction**, such as housework and child care; and sufficient formal support, such as basic income, but also the encouragement of non-monetary activity, e.g. decriminalising informal labour, small-scale food production, 'volunteer' work and work-sharing, community-run clinics, and more. In this way, services are decentralised and shifted to the community level, while transparency and support on every scale are ensured, protection from and emergency response to natural disasters and humanitarian crises are guaranteed, and democratic participation in governance and management of these services are ensured.

It is important to point out that **this should not involve the stripping of state assets and responsibility**, as happens within neo-liberalism. As the guarantor of individual human rights and a reflection of common interests, the government apparatus will, in fact, retain its accountability towards the population. But in contrast to the highly centralised, inflexible, and often disempowering welfare state, a post-growth governance regime would require broad participation and diverse means of achieving social solidarity.

Decentralisation of governance

The first **key shift in governance is decentralisation**. The work of Elinor Ostrom, who spurred the growing interest of the "**commons**" in environmental research and policy, is essential in this regard. In her earlier work, she was interested in why neighbourhoods with small police forces tend to have less crime than neighbourhoods with over-funded large police forces. She found that in the former, police work closely with the community, who will then take on much of the work necessary to keep the streets safe. The latter neighbourhoods rely on spending and a large police force to maintain law and order, resulting in a weaker connection with the community and therefore less work done by the community itself to maintain peace (Ostrom and Whitaker 1973).

According to Ostrom, these findings indicated that the **excessive focus on centralised governance and large state institutions is actually counterproductive** as these governance strategies are less efficient and cost-effective than simply relying on the cooperation of communities (Ostrom 2010). This discovery led her to research how and why local communities, cooperating with the government, are successful in managing their available resources (Ostrom 1990). Her findings showed that, in contrast with prevailing knowledge, neither centralisation of governance nor privatisation are very good at ensuring the sustainable management of local resources. Decentralisation of governance and cooperation at multiple levels, which she called **polycentric governance**, is more sustainable, efficient and just. These findings also support the need for **bioregionalism**, which is a theory that argues that governance should rather be structured according to natural systems such as watersheds, river basins, fisheries, and geographic regions than according to political boundaries (McGinnis 1999).

Ostrom's work provides very strong evidence for the need to decentralise governance. But it is also easy to see how it can actually play into neoliberal policy. In fact, David Cameron's 'big society' is one example where the concept of the commons has actually been used to justify austerity and less funding for necessary resources in the hope that local communities will pick up governments' slack. The result has been the weakening, rather than the strengthening, of social safety nets (Caffentzis and Federici 2014). Unfortunately, Ostrom's research is easily co-opted because it did not explicitly identify the need to address the growth imperative when decentralising governance. It also assumed that simply getting all parties to come together around the table would result in more sustainable and just economic systems. **Without acknowledging the role of power, those with more institutional authority will tend to hijack, coerce and dominate conversations.**

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However, political alternatives to polycentricity have been developed to address these problems. **Communalism** – advocated by the social theorist and environmentalist Murray Bookchin – is a well-developed platform that describes how one could manage environmental, economic and social goods and services at a local, decentralised and democratic level. The mechanism for this would be the **municipal assembly**, which makes decisions in a directly democratic way through open discussion and the formation of committees to address specific issues relevant to the communities. This process is then scaled up through a **confederacy** whereby representatives of local assemblies come together to negotiate common interests. It can be said that the Zapatistas in Oaxaca, the Kurds in Rojava, and the Cooperativa Integral Catalana and, to some extent, Barcelona en Comú, all work according to this model.

Another platform that has been developed is that of **nested institutions**. Improving on the commons framework and polycentricity, researchers at the Ecological Economics Research Group at McGill University (www.ecoecokosoy.com), headed by Nicolas Kosoy, are developing a model that integrates the insights from commons theory while going beyond the limits of Ostrom's polycentricity, and have recently presented their model to the Icelandic government (Kolinjivadi et al. 2014). In this system, commons management would be integrated locally, nationally and globally, across types of organisations and according to different kinds of organisations, while local institutions are given institutional support to address power inequality.

A **combination of these approaches** could involve:

- Providing funding, legal protection, and autonomy to local assemblies;
- Establishing participatory groups for the purpose of managing and supervising local environments, such as watersheds and fisheries;
- Providing resources for local clinics, schools, and day-care centres, rather than mega-hospitals and large educational centres (Quebec has a useful model for this; Klein et al. 2013);
- Linking these groups nationally and internationally through confederations networks and conferences;
- Shifting the role of central governments from top-down management to facilitating cooperation, ensuring accountability and transparency, training communities in self-governance, and sponsoring community-involved research that helps inform local decision-making.

Support for the solidarity economy

One key possibility for improving social safety nets without giving in to the neoliberal discourse would be to **strengthen the solidarity economy**, which is defined as economic transactions and networks that seek to move away from the capitalist, unjust economy through collective control of surplus. While many may argue that state interference would minimise the ability of this economy to be autonomous and may lead to co-optation, it is also a fact that there are strong institutional barriers to making the solidarity economy more resilient. For example, depending on the country, legal definitions of cooperatives could be improved, community-based groups, non-profits and informal activity, such as by-donation community kitchens or social spaces, could be supported through tax cuts and the formalisation of rules (or, in some cases, informalisation) enabling them to operate.

In addition, while private for-profit corporations frequently have easy access to loans and investment from banks and entrepreneurs, this is often not the case for cooperatives, community groups and enterprises. A fund could be established that offers these groups low-interest loans and provides seed funding to start-up solidarity economy initiatives. **Taxation systems should be clarified and made easier for community groups, cooperatives and small businesses**. Legal regulations, for example on by-donation food and collecting and processing of food waste, should also be changed in favour of community groups. In addition, small-scale decentralised energy use, set up through cooperative systems, should be supported through subsidies and financial aid, helping to shift from a more wasteful centralised energy grid to one that is more decentralised and relies less on hydro-dams, large power plants or nuclear power (Schreuer and Weismeier-Sammer 2010).

Furthermore, **informal trade is often key to the survival of low-income communities**. In the Global South, informal trade usually has the ability to provide low-cost food, clean up urban waste and provide employment. In addition, since informal economies tend to work locally with shorter supply chains, they can be more eco-friendly and help to create alternatives to high-input and high-waste agriculture, food packaging, and waste-processing facilities. However, in the Global North, the informal sale of food, waste collection, smallholder farming, and home-made items often face **legal barriers** and can even be criminalised. In many cases, the argument is that such activity easily escapes taxation, is unhygienic and unsafe. However, there are times when strong lobbies from existing sectors with institutional power help to formalise rules that oust informal trade by using the above-mentioned arguments to curtail competition. In the case of the food industry, the criminalisation of street food, household food preparation and smallholder farmers has helped to institutionalise an industrial food monopoly that has a higher carbon footprint than any other industry (Grain 2015).

As an alternative, **informal trade should be decriminalised while its potentially negative characteristics can be limited** by providing training on hygiene and safety, increasing access to resources such as market stalls, and distributing safety and hygiene 'report cards' to informal traders that meet the necessary standards. Work safety, as well as human and labour rights must be guaranteed.

"Taxation systems should be clarified and made easier for community groups, cooperatives and small businesses."

Infrastructure

A post-growth society would still require certain infrastructure, like public transportation, efficient energy production and supply, and protection from natural disasters. Thus, it will need to either maintain or update existing infrastructure. Likewise, a re-evaluation of the infrastructure provided by the state would also be necessary. For their part, military expenses would need to be reviewed, especially as Europe already has less of a military presence partly due to its diplomatic expertise. **Assessments must be made on necessary, desirable and existing infrastructure, and how this is currently being financed.**

In general, large infrastructure projects are fraught with corruption, lavish spending, exceeded budgets and unsavoury deals with private companies that have poor track records (both nationally and internationally). Further, **infrastructure projects tend to be oriented toward economic growth**, often meant to support and attract industrial development. For example, many infrastructure projects in Europe can be considered as "large, useless, imposed megaprojects", planned largely for the purpose of stimulating growth, or conceived as schemes to spend state funding, privatise public assets or, as in the case of the French TGV system, to create luxury alternatives to unionised rail networks (*The Economist* 2014).

It should be stated that an infrastructure that supports social reproduction can often be better achieved on a smaller scale. Ivan Illich argued against hospitals and schools because they undermine thought and intellectual engagement, alternative health practices, and traditional forms of knowledge (Illich 1971; Illich 1976). In line with this critique, **a post-growth society would encourage democratic, convivial and cooperatively-based infrastructure projects which would likely be on a smaller scale**. Examples of such projects can be found in the book *Territories in Resistance* by Raúl Zibechi, which describes the healthcare, education and sanitation projects run by Latin American social movements such as the Zapatistas and the Movimento dos Trabalhadores Rurais Sem Terra (MST) (Zibechi 2012).

That is not to say that there should be no large infrastructure as there is clearly a need for this in many areas, such as flooding levies, water-management plans and social housing. But in each case, the **decision-making on larger infrastructure projects needs to take place at both local and national levels**, preventing the undemocratic imposition of these projects and poor integration into existing systems. In general, this means that infrastructure projects are likely to undergo careful consideration, last longer and cost less to maintain.

It is important to note that **not all infrastructure that encourages economic growth is inherently undesirable**. As stated above, the government is able to redistribute capital through investing in the built environment. This could either take the form of building infrastructure that facilitates industrial activity (roads, railroads, ports) or creating necessary services for the population. In a post-growth economy, the government would necessarily seek a balance between the former and the latter as they are not mutually exclusive. For instance, making housing more accessible for people with low incomes, especially single mothers, can help people access the necessary resources to find and train for employment, as well as find adequate housing near their jobs, thereby reducing time spent commuting. Improving public transport or encouraging transportation based on sharing economy principles (i.e. not Uber), will also support and diversify economic activity. The goal would not be to minimise the population's (re)productive capacities, but rather to disincentivise harmful economic activity.

In addition, **access to adequate public space would be necessary for a post-growth society**. If governance is to be decentralised, local community groups need access to space for gatherings and open areas to engage with citizens and hold meetings. In these public spaces, safe forms of protest and activism would be encouraged rather than criminalised. Moreover, social housing and street layouts could be designed so as to encourage a feeling of safety and participation by minimising the use of fences and gates, and arranging buildings and streets so that violence and theft can be readily witnessed by residents, something which Jane Jacobs has referred to as the "eyes on the street" effect (Jacobs 1961).

Other policy proposals

There are other policy proposals that are worth considering, too. First, alternative currencies will need institutional support from the state (see chapter 5). Second, depending on the kind of economic framework pursued, profits from extractive projects could be deposited into public investment funds, using the interest sustainably for public wealth. Finally, the institutionalisation of basic income and a reduction in working time (see chapter 2) does not mean that existing social safety nets can be withdrawn, but rather that these policies should be part of a **wider effort to increase the basic living standards of everyone**. In particular, this would require accessible resources for migrants and marginalised groups of the population who are currently systematically excluded from existing social benefits (Piven and Cloward 2012).

Areas for further research

More research is needed to **determine how governments can manage such a complex social security system.** For example, how can more social security be combined with additional economic services provided from the solidarity economy, while support for large economic actors is downscaled? Problems that will inevitably arise will be rent-seeking by powerful actors, meeting budgetary limits, and how to coordinate such a system alongside tax collection.

Clearly, **the accounting for social security structures will need to be modelled and researched**. Different state policies and their effect on economic activity will also have to be modelled. Specific needs and resources to encourage the growth of the solidarity economy, without co-optation by the state or supporting austerity policies, must be further investigated. It will be important to study existing success stories from governments that have shifted to more decentralised and cooperative-based social safety nets – Quebec is one important example here (Klein et al. 2013).

5. Monetary system and banking

Greece's treatment by the European Central Bank (ECB) during the summer of 2015 could be seen as a warning to those who wish to break away from the current economic-political system. The event could also be seen as the climax of a decade of financial turbulence and restructuring, both in Europe and internationally. All over the world, banks are being rescued while citizens are forced to pay for their high-risk practices.
What is at the root of this financial crisis? Social movements and leftist parties have pointed to austerity as a key driver of these events. The proliferation of the neo-liberal ideology has convinced politicians that the only way to achieve economic growth is to sell off public assets to private enterprises, and that, above all, banks must be protected and markets must be 'deregulated' from government intervention.

But is this all that is going on? **The role of the financial system, and how money itself works, has often taken a backseat to the criticism of neoliberalism**. In addition, the role of the banking system in driving the current environmental crisis is also often neglected.

Here, we discuss some of the problems within the current financial system, showing how it has played an important role in the ongoing crisis. We then point to some existing policy proposals to address these issues. In particular, we focus on community-based reform such as **local currencies**, and government-based reform such as **full-reserve banking**.

In much of mainstream economic discourse, **money is seen as a 'neutral' medium**, the only function of which is to determine prices, and as a more advanced form of barter that is able to function without state interference. However, the nature of money structures the way we interact and how our economy grows (Keynes 1937; Chick 1996). In addition, it is historically inaccurate to depict today's market economy as functioning outside of the state. The state has historically co-created and imposed - often through violent means - the 'free market', as well as existing monetary systems (Polanyi 1944; Graeber 2011). Without centralised systems of taxation, alternative forms of credit would quickly replace most national currencies.

Another common assumption is that banks simply lend money from their deposits. Actually, when banks grant a loan, they 'create' money which did not previously exist and which they did not own, leaving the deposits untouched. This was recently confirmed in a report by economists from the Bank of England, where it was acknowledged that "[r]ather than banks receiving deposits when households save and then lending them out, bank lending *creates* deposits" (McLeay et al. 2014, our emphasis). Banks do make some profit from allowing customers to deposit and withdraw money, but most of their profit is derived from creating money from nothing and then charging customers interest on paying it back. In most countries, governments require that banks must limit the ratio of credit created to money available in their vaults to 9:1 or 10:1 – this is called **fractional reserve banking**. In addition, governments set up central banking systems that banks may lend from to guarantee an adequate reserve. Similarly, the central bank creates money as it is lent out. This means that the limited amount of money available to governments is not the amount of money in circulation, but rather the sum they are willing to let banks create (Graeber 2014).

There are **six problems in this system**, which are highlighted in the section below, followed by a discussion on possible alternatives.

First, although interest-bearing loans, or **usury**, ensure high profits in the banking system, they can negatively impact society. Usury drives a situation that benefits the financial elite while overburdening low-income groups, who tend to pay more in absolute terms for the money they borrow (Berthoud and Kempson 1992; Kennedy 1995; Visser and McIntosh 1998) with unpayable debts. In addition, while the financial sector can, it is argued, contribute significantly to any society as it processes payments, extends credit, manages savings, and takes on risks, even mainstream economists are now contesting that this sector has outgrown its use and has started to shape the world according to its internal rules (Kay 2015).

Second, **debt is not a fact relating to the amount of money in circulation, but a social agreement**. Historically, complex systems of credit appeared in many civilisations and were often paired with ballooning financial sectors. In these societies, social and legal institutions were often put in place to limit profits from loans and interests, thereby attempting to avoid debt bubbles. For example, David Graeber describes how Buddhist temples' treasuries in Medieval China became "the world's first genuine forms of concentrated finance capital" (Graeber 2011, p. 265), hoarding all available metals such as copper, silver and gold and, as a result, causing a money supply crisis for the Chinese government. The government responded by forbidding Buddhist institutions to accumulate capital and by developing new institutions aimed at accumulating money. Conversely, Medieval Islamic culture was often quite approving of commerce and, unlike the currencies in other civilisations, credit systems used by merchants trading in the Indian Ocean operated totally independently from the state. And yet, trade was largely based on networks of trust, which also tended to enforce social institutions limiting usury or making money for money's sake (Graeber 2011, p. 282-283). The implication is that many contemporary debt crises should not be seen as objective facts relating to the amount of money in circulation, but rather as a socially-agreed-upon hierarchy of values, whereby the repayment of high-interest loans is considered more important than the continued well-being of an individual or an entire country's population, facilitated by the absence of social and legal institutions that penalise usury.

The third problem inherent in usury is that **interest as a whole may be one of the key drivers of unsustainable economic growth.** Frederick Soddy, a Nobel prize-winning chemist who shifted his career to work in economics, argued that economics should be based on physics, and therefore it should acknowledge the extent to which economic growth is dependent on energetic input. However, since banks create money through interest-bearing loans, the amount of credit in circulation is increasing exponentially while the physical stocks (fossil fuels) are static. Because economic growth remains strongly coupled to increased material and energetic throughput (Muradian and Giljum 2007; Weisz 2007; Wiedmann 2015), the exponential character of interest is seen as a primary driver of unsustainable economic growth (Daly 1986).

A fourth argument against usury was made by merchant-turned-economic-theorist Silvio Gesell. He argued that **interest actually inhibits economic activity (or the 'velocity' of money) and the creation of wealth by penalising transactions.** Like Aristotle (Aristotle 2000, 1:X), he believed that interest-bearing loans enable money to be an object in itself rather than an exchange medium (Keynes 2006). He also argued that interest rates could be replaced by a negative interest rate, imposed by the state (see below). Japan has recently adopted this policy with the aim of boosting economic growth. A variant of this policy has recently been proposed for the US Federal Reserve Bank (Mankiw 2009) and has even been considered seriously by major economists like Keynes (2006) and more recently at the European Central Bank (Cœuré 2014).

Fifth, it has been argued that the problems with usury are secondary to those associated with fractional reserve banking, wherein **money is created mainly through debt, and governments require that banks hold only a fraction of the money supply created through loans.** However, this mechanism leads to investors preferring to seek short-term profits over long-term value (Robertson 2012). Soddy has argued that this mechanism is also a key driver of unsustainable economic growth, since an economy that has more debt than available deposits will continue to expand, thereby undermining the economy's physical boundaries. Lowering the ratio of debt-to-money supply would have the advantage of avoiding the nationalisation of banks while mitigating inflation and deflation tied to debt and available money supply. This proposal has been supported by noted economists such as Milton Friedman, Irving Fisher and, more recently, John H. Cochrane and Paul Krugman. In the UK, a "positive money" movement has emerged, calling for an end to the ability of banks to create money (www.positivemoney.org).

Sixth, and due in part to the structure of the financial system described above, **debt is unequally divided between the Global North and South.** During the decolonisation era, most former colonies were saddled with extreme and unpayable debts by colonising countries (Wallerstein 1974). These debts continue today in the form of World Bank and International Monetary Fund loans, often keeping countries in continuous spirals of debt, limiting the ability to escape extractive-based economic activity (George et al. 1988; Acosta 2011). This dynamic can be observed both globally (e.g. between France and Haiti or Spain and Peru) and internally (e.g. between the North-Western EU and Spain, Italy, Greece and Ireland). In this way, the same unequal hierarchies that exist between low-income citizens and banks are duplicated on an international scale.

Taking into consideration the problems highlighted here, **it becomes evident how Europe's recent crises are at least partly rooted in the structure of the financial system**. It seems that, according to the ECB, it is more important for countries such as Greece to cut essential services to citizens and repay interest on loans than to cancel debts owed. Simultaneously, the ECB has responded to its debt crisis with "helicopter money", i.e. the creation of money to offset the ratio between debt available and money supply (Lewis 2015; Buiter 2003). Yet, this unequal relationship between core European countries and those on the periphery is no different to the debt crises faced by most countries in the Global South. (Prashad 2015). Much of these dynamics can be attributed to the development of neoliberalism through the increase in financialising, privatisation, and speculation on public assets (Harvey 2005). However, as Victoria Chick has argued, money is not "neutral" (Chick 1973; Chick 1996) and the structure of the financial system itself should be considered as an additional key driver of unsustainable economic activity and an impediment to a post-growth economy.

"Many contemporary debt crises should not be seen as objective facts relating to the amount of money in circulation, but rather as a socially-agreed-upon hierarchy of values, whereby the repayment of high-interest loans is considered more important than the continued well-being of an individual or an entire country's population."

As such, there are **several criteria to be considered when developing an alternative**, more than just the monetary system. Money should be used as a means of exchange between communities and people, rather than a means for profit in itself. In addition, the way in which fractional-reserve banking and interest rates help drive the unsustainable extraction of materials and energy should be addressed. Policies should help developing alternative livelihoods that do not rely on the over-exploitation of resources. The structure of the monetary system should ensure that everyone can participate in economic activity, rather than systematically marginalising low-income groups and countries in the Global South. A post-growth monetary system could also involve the establishment of decentralised and participatory currencies or new centralised currencies, which have the potential to address the unequal relationship between the power of citizens, banks and central banks. In other words, a post-growth monetary system would, quoting Dittmer (2013), meet the criteria of "community-building, alternative values, alternative livelihoods, and eco-localisation". In the following section, we explore some proposed policies that may take these criteria into account.

Community-based currencies

Community-based monetary reform can be defined as an initiative which may be supported in some form by the central government or state, but nevertheless **functions on and is intended for a small scale community** (be it a municipality, a cluster of SMEs, a group of citizens). In this way, these initiatives can often work alongside the existing centralised monetary system rather than replacing it, hence the name **complementary currencies** (Seyfang and Longhurst 2013). Below we discuss four types of community-based currencies that have been studied.

Currently, we distinguish in the world **four main types of community-based currencies. LETS** (local exchange trading systems or schemes), whereby all participants start with no deposits and value is created at the moment of transaction as a credit, facilitated by a centralised database and accounting system. In many cases, these systems were established in response to high local unemployment and failures in welfare systems. Secondly, **time-banking** is based on a person-to-person accounting of hours worked. The system often works together with civil society and mainstream institutions, helping locally underemployed people maintain access to crucial resources. Another system is that of a **community-based currency that is not convertible** to other currencies - HOURS in Ithaca, New York, being the most prominent example. Its benefit is that it is controlled centrally and therefore has encouraged wide business participation, particularly by stores selling 'alternative' products. **Convertible local currencies** (CLCs), such as the German Chiemgauer, BerkShare, and the Bristol and Brixton Pound, comprise a fourth system, and function in a similar way to HOURS but can be exchanged for the national currency.

"The way in which fractional-reserve banking and interest rates help drive the unsustainable extraction of materials and energy should be addressed. Policies should help developing alternative livelihoods that do not rely on the over-exploitation of resources (...) A post-growth monetary system could also involve the establishment of decentralised and participatory currencies or new centralised currencies, which have the potential to address the unequal relationship between the power of citizens, banks and central banks."

However, issues have arisen with most of these alternative currencies. First, research has shown that **there are barriers preventing vulnerable and already isolated populations from using them** (North 1996). Also, many currencies fail when those most actively involved leave the scheme (for instance, a founder of the currency that moves to another city, an economic actor that does not accept anymore the alternative currency...). In addition, for most currencies, **it is not clear if they necessarily reduce resource consumption** – some may even facilitate it. In the case of time-banking, it often tended to support community work that was not rewarded adequately due to the difficulty to put a price tag on its high social value; at the same time, the share of these non-tradable, social services in total employment or in GDP have risen over the last decades.

In addition, **those currencies that do well tend to be supported by a central authority,** often the local government (Seyfang and Longhurst 2013). Ironically, when they receive such support, it is possible that their more radical qualities are undermined (*ibid.*).

Dittmer, in his review of existing alternative community-based currencies, concludes that **there are no obvious successes – each currency has its own benefits and drawbacks.** He argues that alternative currencies can be divided into two categories: creating alternatives "behind society's back" and "appealing to elites". Quoting Marx and Engels (Marx 1963; Marx and Engels 1976, p. 515), he suggests that these tactics, while having some benefits, cannot be adequately scaled up to transform the whole economy. First of all, currencies have historically been created through state taxation systems and since they have not been able to change this system, they will be constantly undermined by state currency. Second, while they appear to provide 'coping mechanisms' when the mainstream monetary system fails local communities, they often have all-too-brief lifespans following times of crisis and cannot sustain their level of activity without losing some of their radical potential (Dittmer 2013).

Government-centered reform

At the beginning of this chapter, we emphasised that both interest-bearing loans and fractional reserve banking are commonly regarded as key limitations in the current banking system. Several options exist to address these problems. The first is simply to **regulate interest**, as is already in practice. Governments adjust maximum and minimum levels of interest in order to stabilise undesirable inflation or deflation. Most countries will also **set up a centralised government bank** that can provide loans to banks and other governments, which also helps regulate the money-to-debt ratio in the economy and can help to address sudden crashes. A third option is to **nationalise the banking system** as a whole, thereby allowing governments to have direct control over the money supply in the economy, deal with existing risky investments and debts, and to set safe levels of interest for banks.

While this is common practice in many countries, most economists, including Soddy and Daly, do not recommend this option. First, there is no guarantee that governmental control of banks would deal with the problems inherent in the monetary system, as described above. Second, it would violate the free-market consensus within economic discourse. In order to avoid nationalising the banks while addressing inflation and deflation, free-market enthusiasts have often proposed full-reserve banking, or **100% reserve banking**. Under this system**, banks would be required to have a ratio of 1:1 between credit loaned and money available in deposits**. In other words, every time a bank gives a loan, instead of creating that money *ex nihilo*, it would be required to already be in possession of this money.

This proposal has many benefits. From a standard economic perspective, it may mitigate inflation and deflation, as well as minimise the risks of predatory spending. **From an ecological economics perspective, however, it could have several more benefits: it would greatly limit speculative investments, enabling a balance between "abstinence and investment"** (Daly 2013, quoted in Dittmer 2015, p. 11). Under this system, interest rates would necessarily be less regulated and left to the market, since the money stock would not be equal to the risk of lending, requiring banks to set their own interest rates.

Farley et al. (2013) have also proposed '**directed credit policies', whereby government loans to banks are given on condition that they will be used for sustainable economic activity rather than speculative investments**, which would inevitably require high levels of government supervision of banks. In itself, such a policy does not require full-reserve banking, and is quite close to the nationalisation of banks, which full-reserve banking was originally destined to avoid (Dittmer 2015).

Another proposal, linked to full-reserve banking, is to **reduce debt levels, thereby hopefully weakening the growth imperative**. Within this plan, the government could 'buy' debt from banks by loaning them the money supply needed to achieve full reserves, although a difficulty here is that alternative secure assets would be necessary for both pension and insurance funds. A variant of this proposal is to eliminate citizens' private debt.

However, there are some key problems with the full-reserve banking proposal. As noted above, the policy was initially proposed by economists as a way of avoiding government control and the nationalisation of banks, and was meant to ensure the continuation of a free-market system. In contrast, the variations that Green economists have proposed require more government control in order to avoid the growth imperative, hence defeating the original purpose of the full-reserve banking system. However, most of these proposals lack explanations as to why this should be favoured over the nationalisation of banks.

The role of central and global banking organisations

When discussing government-centred reform, it is also crucial **to consider the role that central and global banking organisations have played in the current monetary crises.** The US Federal Reserve, for instance, has recently increased the interest rate on its loans from 0% to 0.25%, which is expected to have a significant effect on the global economy. While the ECB has been a key actor in the EU's fraught relationship with its 'peripheral' Member States, such as Greece and Ireland, the IMF and World Bank have played an important role in policing and transforming the global economy, imposing monetary regimes that punish those who are unable to pay back loans. Today, the Asian Development Bank is taking on a similar and increasing role, and in 2013, BRICS countries announced that they would create a New Development Bank that would rival the IMF, which was eventually created in 2014. While each of these institutions has different mandates, their intention has always been to function as global moneylenders, with powerful countries forming coalitions that enable them to determine the development paths of economically weaker nations. In effect, those institutions manifest the unequal power relationships between lenders and debtors on a global level.

Short of dissolving these organisations, **reforming them to better fit a post-growth economy must follow certain principles.** These should include a more democratic oversight of lending by weaker countries, less lending to illegitimate governments such as dictatorships, less funding for large and environmentally damaging infrastructure projects, strengthening rather than stripping state assets, and obviously fewer neoliberal-oriented structural adjustment packages. More positively, reforms could include providing funding for solidarity economy initiatives, smaller-scale energy projects, development and encouragement of ecological tax reform and alternative monetary systems (see chapters 4, 5 and 6). It could also include enforcing the overseeing of infrastructure projects and extraction, calling governments, construction firms, and industries to account, especially towards marginalised populations, and linking loans to sustainable, just and participatory processes. Here, the Bretton Woods Project offers alternative approaches and can be consulted for more detailed suggestions.

How can these institutions be reformed? In fact, reform is occurring constantly. At this year's Davos meeting, head of IMF, Christine Lagarde, and economist heavyweights Joseph Stiglitz and Erik Brynjolfsson all admitted that GDP is an inadequate way to assess economic activity. Although this probably does not mean that they also admit that infinite economic growth is impossible, nevertheless, the ECB invited steady-state economist and degrowth advocate Daniel O'Neill to present his research. As mentioned above, these institutions have, on multiple occasions, considered proposals such as full-reserve banking and negative interest rates. In 1969 and 1980, India went against the advice of Western countries and nationalised its largest commercial banks, hence proving that it is not impossible for a major economy to go against global banking institutions. The formation of the New Development Bank is itself a protest against the undemocratic nature of the IMF and World Bank. **These organisations will often release policy and research papers that acknowledge problems with structural adjustment and neoliberal reforms.** There are some opportunities to limit, challenge and reform the power of these organisations, both from the inside and externally.

That is not to say that these organisations do not continue to hold power, and that they would significantly impede the shift towards a post-growth economy. Both Icelandic and Argentinian debt defaults in 2008 and 2001 were followed up with large loans from the IMF, despite nationwide protests. The case of Greece is exemplary for a population that democratically resisted the violence of the global market system, but was eventually forced to give in. It seems that only the world's most powerful nations are able to refuse to pay back their debts or, alternatively, 'create' their own money. It is clear, however, that **government-centred monetary reform in any country, at the scale we are suggesting here, will require either facing the policies imposed by these organisations or attempting to reform them.** In the long term, a socially and environmentally just post-growth economy would require the entire financial sector to shrink, meaning that the purpose international banking institutions serve would be satisfied in non-monetary and democratic ways by other new institutions (see chapter 6 on international inequality for details of other potential institutions).

Digital and crypto-currencies

It is worthwhile mentioning two ideas that may be of interest for further research. First, the **concept of money that degenerates in value,** as proposed by Gesell, is promising. A combination of such a system, interest control, and full-reserve banking is worth exploring and modelling. Second, there is currently a revolution in virtual decentralised crypto-currencies, epitomised by the **bitcoin**. When a transaction is made between two bitcoin users, the programme they share creates an encrypted code that must be decrypted – a so-called blockchain. Other users may use their own computers to decrypt these blockchains which, in turn, will award them with bitcoins. Unfortunately, the currency began as an experiment and the creation of value relies on a programme that, in itself, is unsustainable (Angol 2015). However, it appears that the true innovation behind bitcoin is the blockchain. Essentially, it **enables an agreement to be made between different parties without the supervision of a third party.** In contrast, most currencies, even community currencies, rely on a central authority to determine if and when a legitimate exchange has happened, and what kind of exchange it was. With the blockchain, this transaction can be both anonymous and decentralised while keeping the infrastructure of the whole system intact and still enabling every transaction to be tracked in real time (Evans 2014). In other words, imagine if the money you used *was* the bank, in that it did your accounting, and your activity remained totally private, while total money stocks are tracked. Theoretically, this would address many of the hurdles associated with current forms of money.

"In the long term, a socially and environmentally just post-growth economy would require the entire financial sector to shrink, meaning that the purpose international banking institutions serve would be satisfied in non-monetary and democratic ways by other new institutions."

Promisingly, **several alternative crypto-currencies are emerging**. One example is the fair coin (faircoin.org) which allows users to trade in equitable and just goods and services. Another example is ethereum (ethereum.org) which is intended to provide a platform that encrypts any type of transaction, be it a loan or a promise to go and watch a film, called a "digital handshake". The benefit of such a system is that it allows users to make transparent agreements with each other without relying on external enforcement, very much like money but without the state's involvement.

There are other potential benefits to crypto-currencies, too. Gesell's stamping system, whereby money degenerates in value to avoid hoarding, could easily be experimented with and implemented. Crypto-currencies could also deal with many of the associated transaction costs inherent in community-based currencies, as mentioned above. In addition**, a decentralised monetary system may either improve or do away with the need for full-reserve banking, depending on how it is structured and implemented**. Finally, it would be quite simple to programme a user fee within a crypto-currency, acting as a negative interest rate as well as a participatory, electronic taxation system that encourages a shift away from a growth economy (see chapter 4).

China has recently announced that it will soon launch its own digital currencies. While this move is intended to increase state control and surveillance of spending, in the European context, a continental parallel currency to the euro may have the benefit of overriding some of the limitations of community-based currencies. If implemented like the fair coin and formalised across Europe, it would be possible to have a new 'solidarity currency' that can function as legal tender for fair businesses.

Effect of policies on society and the economy

It is difficult to know how these different policies will, when implemented, change people's daily lives. Furthermore, the way reformed monetary institutions interact will be contingent on and determined by complex systems that will need to be modelled and further investigated. However, a prognosis can be made of some aspects of the potential desired effects - and side effects - of these policies.

First, **the finance sector will shrink significantly.** While services like accounting, loans and managing credit accounts are necessary in all modern societies, a post-growth society is likely to witness a lowering of the importance of finance and its power in the economy. This will undoubtedly require strong regulatory mechanisms, as well as social institutions that make usury socially unacceptable. One outcome will be that both low-income people and politically weaker countries will be less affected by unequal interest rates and predatory lending, while getting greater support from their banks. In addition, these reforms will encourage the emergence of alternative monetary systems. One side effect that will need investigating is the proliferation of shadow currencies and exploitative informal sectors, such as organised crime, the corruption of officials, and tax evasion, by relying on alternative currencies. Criteria will be required as to what constitutes desirable and undesirable informal sectors, just or unjust community currencies, and positive or negative economic activity, and government policies will need to respond accordingly.

Second, **if monetary reform includes implementing negative interest rates or penalties on hoarding**, as proposed by Gesell, **economic activity will accelerate.** Small business, entrepreneurship and small-scale risk-taking will be encouraged, while obscene monetary wealth, inheritance and the monopolisation of capital assets will be discouraged. However, since this may also impede households trying to secure savings accounts, there will probably be a greater need for public safety nets. In some ways, such a 'post-growth economy' might witness an increase in market activity, although this market activity will be diverse, more democratic and not bound to monetary exchange or centralised financial institutions. This may not look like economic growth, as measured by GDP, but rather, these reforms might make it possible for different markets to grow and alternative forms of wealth to proliferate.

Areas for further research

To sum up, **virtual crypto-currencies and their role in a post-growth society should be researched further.** Researchers must be sure to align these alternative virtual currencies with the post-growth criteria outlined by Dittmer, such as “community-building, advancement of alternative values in economic exchange, facilitation of alternative livelihoods, and eco-localisation” (Dittmer 2013). He also calls for **research into how different alternative currencies reduce material consumption and whether these currencies can prevent assimilation into growth narratives by elites.**

With regard to the 100% full-reserve banking, negative interest and the nationalisation of banks, it is important to research their potential negative effects on other government-based services, such as pension funds. The nationalisation of banking would in itself require extensive research and modelling, as traditionally economists have shied away from researching this possibility as it contradicts free market principles. In particular, the question as to how it will affect interest rates needs to be investigated.

Finally, **more research is necessary to determine how alternative currencies, whether local, national or international, could avoid the proliferation of ‘shadow currencies’** that undermine the ability to control the interest rate notably in an economy, or taxing undesirable economic activity.

6. International inequality

In a globalised economy, all countries are now interdependent. As a result, **one country switching to a post-growth economy will cause repercussions beyond its national borders.** For example, if Europe were to limit its consumption, it would have serious effects on the livelihoods of workers around the world. When rich countries stop spending money on all the goods and services they import, to a certain extent, this will jeopardise the development of poor countries. How can governments seeking to shift to a post-growth economy deal with these unbalanced relationships? What kind of trade will be acceptable in a post-growth economy? And what kind of foreign relations are necessary to help other countries to find their own paths towards a more just economy?

To address these questions, first we will explain how the global economy and sustainability issues have been approached within the dominant development narrative. We will highlight some key problems within this narrative and suggest alternative frameworks for understanding the state of international inequality today. This will allow us to **outline what type of foreign policies could facilitate the shift to an international post-growth economic system**.

Sustainable development is seen as the key framework for switching to a more sustainable economic system. Within the new Sustainable Development Goals (SDGs) announced in 2015, it is hoped that this framework will guide countries towards achieving economic growth and addressing inequality, while ensuring a 'safe living space' for humanity. **The key assumption behind sustainable development is that the more developed an economy is, the greener it can be and can 'decouple' from environmental impact** (EJOLT 2015), while so-called underdeveloped countries are "too poor to be green" (Martinez-Alier 1995). Sustainable development means becoming richer so that environmental degradation can be addressed. To develop, countries must open up their economies to global trade, invite foreign capital to help with resource extraction, and build governmental institutions that can facilitate trade.

And yet, **this model of development is facing certain inconsistencies**. It seems counterintuitive that the answer to environmental destruction and global inequality is simply to increase trade, resource use, and to strengthen governments so that more resources can be consumed. Indeed, there are several key problems with the sustainable development narrative.

First, **this assessment in no way accounts for the relationships *between* countries:** for example, how military interventions by the West lead to instability, and how, in many cases, countries that are unable to develop have remained indebted to Western countries since the colonial era. As a result, these areas have witnessed the repeated collapse of their democratic institutions, even as their natural resources continue to be funnelled into wealthier parts of the world. Countries in the Global South and East are not afflicted by some kind of "resource curse" (Sachs and Warner 1995), but rather, their economies are politically bound to the Global North. This is due either to unequal trading relationships, or **unequal exchange** (Emmanuel 1972), **extractivism** (Gudynas 2010), and **dependency**, where poor nations provide the labour, resources and markets for rich nations, while being systematically prevented from achieving self-sufficiency (Amin 1976; Cardoso and Faletto 1979; Toye and Toye 2003).

Second, the idea of **sustainable development is itself problematic**. As Wolfgang Sachs pointed out over a decade ago, sustainable development should be seen as an oxymoron (Sachs 1999)**, since economic development is often directly opposed to the protection of nature and social equality**. According to Sachs, the concept of sustainable development, which can mean anything and everything, is designed to allow "business as usual" to continue.

The trend towards coining new terms that **do not challenge the current economic system** continues today. "Green economy" can also function as an oxymoron or even a tranquiliser (Arkonada and Santillana 2011), since its application can be equally widely interpreted while the root causes of the "dirty" economy remain unaddressed (Beck 2012). We can expect many more proposals for "climate smart agriculture" (GRAIN 2015), just as we are seeing the rise of "smart cities" (Hollands 2008; Vanolo 2013) and "eco-modernism" (Asafu-Adjaye et al. 2015). While politically neutral and catchy, these momentarily fashionable concepts fail to consider the drivers of social inequality and environmental crises, just as they frame the problem in hand as a purely technical one.

Third, even if sustainable development were to increase individual countries' abilities to invest in green technologies, a more global perspective puts this claim in a more problematic, even absurd, light. We now know that as economies develop they tend to increase their material and energetic throughput – otherwise known as social metabolism (Fischer-Kowalski and Haberl 1993**). "Dematerialisation" and "decoupling" are "geographical illusions" that ignore the way in which the environmental burdens of the rich are displaced on to poor countries** (Fischer-Kowalski and Amann 2001) which, instead of being called 'externalities', could be called cost-shifting successes. Here, corporations and rich countries take advantage of unequal power relations to shift the costs of pollution and poor labour practices on to the Global South (EJOLT 2015).

"'Dematerialisation' and 'decoupling' are 'geographical illusions' that ignore the way in which the environmental burdens of the rich are displaced on to poor countries."

As the escalating environmental crises around the world show, **development has been coupled with increased environmental degradation.** As such, the demand that every country should "develop" its economy to the same standards as those of the Global North is a conceptual absurdity, requiring an infinite supply of 'Earths' to extract resources from and dump waste on. With this in mind, Joan Martinez-Alier has proposed the "**too rich to be green**" (2003) concept as a conceptual antidote to the dream of dematerialisation via economic growth.

Fourth, the term sustainable development allows for the assumption that there is a global consensus that developing towards the standards of the Global North is desirable. It ignores the fact that economic activity involves multiple, conflicting and often competing values. In a world where monetary value and political hierarchy determine decision-making power, those who do not agree with the development narrative are rarely consulted, let alone involved, in political decisions. All too often, development projects force marginalised populations to engage in **environmental justice conflicts**, which can also be referred to as valuation conflicts, in which communities are fundamentally at odds with the sustainable development consensus.

Fifth, **this state of affairs is made possible by borders that are permeable to material and energetic flows, but impermeable to most humans**. Currently, refugees are streaming into Eastern Europe and crossing the Mediterranean in search of a better life. These borders are becoming increasingly difficult to cross. While countries in the West have been able to reap the rewards of uneven development, which involves military occupations, global extractivism, continuing colonial relations, and cost-shifting, they are also able to close the door to its outcomes, namely the increasing migration and dispossession of people. Achieving the SDGs might mean that the benefits of economic growth are distributed globally, but only selected groups of people can escape the destruction that it causes locally.

The reasons for international equality

As an alternative to the sustainable development narrative, several theories have emerged that can better explain environmental destruction and global inequality. Some of these have already been mentioned: uneven development, extractivism, developmentalism, and unequal exchange. While we cannot provide a coherent analysis and comparison of these different theories at this point, we would like to propose **three aspects that can help explain international inequality today.** First, it is important to understand how capital is created and circulates. In Marxist political economy, capital accumulation in one part of the world is predicated on the exploitation of land and labour in another. Marx introduced the **concept of "primitive accumulation" to argue that, in order to expand the market economy must appropriate resources that are not initially part of it**, hence the history of colonialism, first in peripheral areas (Scotland, Ireland, Catalonia), then in the "New World" (Marx 1930). David Harvey recently extended this concept, arguing that "accumulation by dispossession" is a central mechanism of capitalism. For high levels of profit to be maintained, investors and the elite must appropriate existing forms of wealth (Harvey 2004). This process is said to explain neoliberalism, in which public wealth is steadily being privatised (ibid.).

In Marxist political economy, surplus capital (and therefore monetary profit) is generated through the exploitation of workers' labour time (see chapter 4). From this perspective, theorists have shown that countries with a lower median wage tend to export more embodied labour time (in the form of work needed to extract and manufacture products) than they import (Emmanuel 1972; Amin 1976). This is in contrast to mainstream economics, where the statistics are unable to show that there are discrepancies between market prices (assumed to be determined simply through consumer demand) and the embodied labour that goes into production. However, while unequal distribution of capital is a key part of uneven development, there are several other important drivers.

A second key concept is **socio-economic metabolism**. As a rule, **when innovations in technology lead to more efficient use of resources, there is a consequent and often exponential increase in resource use**, which is called Jevons' paradox (Jevons 1865). Ecological economists point out that economic growth -and by extension, uneven development - are directly related to an economy's energetic and material throughput. In other words, countries that consume more resources, either within their borders or by outsourcing resource-use internationally, tend to be better off. In this way, the rise of China and India as economic forces must be contextualised within global economic relations, while their ever-increasing throughput should be seen as largely embedded by-products of increased consumption in the Global North. In this way, international inequality is largely determined by the mostly one-way flow of resources and production from economic peripheries to the centre.

Third, and perhaps most importantly, **these relationships are not only due to the exploitation of labour and socio-economic metabolism, but also to the social and cultural interpretations of value** (Hornborg 2014). This involves the imposition by one society of what is valuable, and what is not (e.g. mining for profits vs. the sacredness of a mountain; money vs. happiness; economic growth vs. sufficiency). The socially constructed nature of value can partly explain how capital became de-linked from labour during the neoliberal era (Brown 2015). Two additional by-products of the social construction of value that have already been mentioned are valuation conflicts and cost-shifting, which can only occur when there is an unequal distribution of power.

Going beyond Marxist value theory, the concept of **unequal ecological exchange** both acknowledges and integrates these diverse drivers of international inequality: besides the creation and circulation of capital, we must also consider the role of social metabolism and cultural determinants as to what is valuable.

Having outlined some of the key drivers of international inequality today, we can now briefly highlight some **criteria for the kind of trade that will be acceptable in a post-growth economy**, and policies going forward:

- **Labour**: If the North scales down its economic activity, this will have severe repercussions for global trade, causing mass unemployment around the world. This would need to be accounted for.
- **Social metabolism**: Clearly, one of the key ways in which the North can show solidarity with the South would be to reduce its social metabolism and veer away from its destructive economic path. We describe some of the ways that this can be achieved internally in the other chapters. Thus, since the Global North would no longer be the economic centre, material and energetic consumption will probably shift to other locations. Other countries must be given support to switch to less resource-and energy-intensive economies. Further, while improvements in efficiency are important, technological innovation must be paired with policies that limit social metabolism worldwide. Global trade will have to be adjusted to allow for the reduced consumption of resources. Lastly, there will be a need to model limits to extraction, where the optimal rates of resource extraction and consumption can be calculated according to social needs.
- **Values**: As part of its development strategy, the Global North has forced other countries to adopt the narrative of measuring economic growth, and hence 'success' as a country, by way of GDP. Instead, diverse values must proliferate and be acknowledged. As part of this, the Global North must facilitate increased democratic participation, which can help resolve conflicts globally. Another element of this would be to address the continuing unequal power relations between the Global North and South, as perpetuated by histories of colonialism and multilateral organisations such as the WTO and UN.

Short literature review

In the following section, we consider several policy proposals that may fit the above criteria. These include making space for alternative development narratives, reforming existing or creating new international trade organisations, addressing the legacy of colonialism and neoliberal reforms, and encouraging alternative forms of wealth creation on a global scale.

Alternative development narratives

While contraction of the Global North's economies will certainly result in mass unemployment in the South, there will also be some benefits. The endless extension of the commodity frontier, through soybean production in Brazil, palm oil in Indonesia, or the emerging timber plantation industry serving carbon offsets across Eastern Africa, results in displacement, loss of livelihood, and the stripping of available resources. Reducing international trade would give many countries the chance to pursue their own development path, rather than having to face a generation of scarcity.

Indeed, many communities engaging in **environmentalism of the poor** often call for different forms of development, fight to hold states and companies accountable, and struggle to maintain their own way of life. From these movements, several profound alternatives to sustainable development have emerged, such as **Sumak Kawsay**, **Buen Vivir** in South America, and **eco-swaraj** or **radical ecological democracy** in India. These cosmo-visions both challenge existing narratives as well as the economic growth consensus, and provide their own frameworks for achieving equality within the Global South. This requires moving away from an economic model whereby countries specialise in just a few international commodities, and moving towards diversifying conceptions of progress to include sufficiency, well-being, decentralised resource management, and a cooperative economy, among others.

"Reducing international trade would give many countries the chance to pursue their own development path, rather than having to face a generation of scarcity."

Rather than continuing to impose one single narrative around development violently enforcing the commodity-based economy on to the world, addressing international inequality should involve supporting these alternative visions, encouraging diversification of the global economy and democratisation. One challenge for these alternative development - or better, anti-development - proposals is **to develop mechanisms and criteria for deciding what kind of extractivism is both necessary and desirable. In** other words, it is impossible to have an economy without any kind of extractivism, hence models of the stocks, flows and limits to extraction will be extremely valuable in these governance frameworks, and should be able to take into account social, environmental and economic conditions (see, for example, Vela-Almeida et al. 2015).

"Addressing international inequality should involve supporting these alternative visions, encouraging diversification of the global economy and democratisation."

Moreover, **this global supply chain model of economic development needs to be supervised.** Within this framework, locally sourced goods and services tend to be integrated into the global economy in a fragmented, decentralised fashion, making it possible for large corporations to make enormous profits with little supervision and legal accountability. For example, lumber from illegal logging continues to make its way to the Global North, as does oil from areas in Syria under the control of ISIS. These products end up profiting large international corporations, but many countries - including those with strong governments, such as Brazil - are unable to stop them. The Global North has a responsibility to implement strong trade restrictions on 'dirty' goods and services, as well as to require corporate reporting on the source of profits.

International trade organisations

One key mechanism that can help to address international inequality, but which is often ignored, is the **establishment of international organisations that supervise and regulate trade.** The modern world's only experiment along these lines has come in the form of the World Trade Organisation, which has been considered a failure by both the international elite and global justice movements – albeit for different reasons.

Another experiment is less well known. In the aftermath of the Second World War, world leaders realised that there would be an immediate need to address famine and food poverty on a global scale. The Food and Agriculture Organisation (FAO), one of the first organisations created within the United Nations framework, was tasked with submitting a proposal that could address hunger worldwide. From the very beginning, its first director-general, Sir John Boyd Orr, believed that all people had a right to food, "even if it could not always be done at a profit" (Shaw 2007, p. 16). Within their report, staff at the FAO proposed a **World Food Board that would regulate global food trade and ensure sufficient food for all.** Within this proposal, food would be a constrained commodity as speculation on food would be regulated, and all countries would be guaranteed sufficient access to food for their population. The proposal was rejected by the USA, but not because it was technically unfeasible. Rather, the veto was ideological: according to Keynesian economic theory, all products were regarded as commodities and subject to speculation and investment.

A strong case needs to be made to **give essential goods special treatment by keeping them outside of the world commodities market** through a central regulatory body. Indeed, had such an organisation as the World Food Board been put in place, we might not be seeing the current escalation of land grabbing, powered by speculation on food prices, worldwide. The world food crisis during 2008 - 2009 might have been avoided, and small farmers would be more likely to be better protected from free trade agreements and incapacitating debt. Unlike the FAO today, such an organisation would need legal and binding power, as well as democratic oversight. It is worthwhile investigating further what such an international body could look like, and which goods would then be protected from full commodification – water and land could also be considered here.

"A strong case needs to be made to give essential goods special treatment by keeping them outside of the world commodities market through a central regulatory body (...) such an organisation would need legal and binding power, as well as democratic oversight."

National debt, structural adjustment and foreign direct investments

Many former colonies continue to pay debts to the then colonisers. When Togo sought independence from France, for example, it was forced to pay an annual debt which, in 1963, was close to 40% of the national budget (Koutonin 2014). Shortly after Sylvanus Olympio, who served as Prime Minister and elected President in 1958, decided that Togo should start printing its own currency, rather than relying on a French-imposed currency, he was assassinated (ibid.). Such developments did not only occur in Togo but also in other former French colonies in Africa. This led French President Jacques Chirac to state in 2008 that "[w]ithout Africa, France will slide down into the rank of a third [world] power" (Koutonin 2014).

Similarly, it was significant that Spain was able to cushion itself from the impact of the 2008 financial crisis as many of its companies have foreign direct investments (FDIs) in Latin America, a legacy from its colonial era (Mount 2014). When Latin American countries gained independence, they kept many of their debts to Spain and were often forced to take out loans from the United States, shifting their debt from one colonial country to another.

Very often, past debts are burdened with extremely high interest. In 1960, the external public debt of ex-colonies amounted to US$ 59 billion, with a unilateral interest rate of 14%. While deprived countries may initially take on debts to pay for economic development, new debts are often taken on simply to pay for the debts themselves (Guissé 2004). In addition, many of these countries became saddled with "**odious debt**"; that is, public debts acquired for illegitimate reasons, such as by a dictatorial government for the purpose of oppressing its population. In this case, creditors must be seen as actively participating in such oppression (Howse 2007). Partially driven by colonial-era and odious debt, back in the 1980s, many countries were forced to accept loans from the IMF and World Bank on the condition that they engage in "structural adjustment" programmes which, in many cases, involved the dismantling of the existing social safety nets and government services (Harvey 2005). Through these agreements, governments were also forced to 'open up' their economies by limiting the protection of national industries which, in turn, limited the ability of local industry to compete internationally, driving down prices and working conditions. In addition, countries were required to allow publicly owned companies and assets to be sold through FDIs.

A **shift in policy approaches vis-à-vis the Global South is paramount in addressing uneven development**. To do this, European countries must cancel remaining debts, both those dating back to colonial eras and odious debts that have incurred since. Blacklists must be drawn up concerning the provision of credit to authoritarian regimes, and banks that provide such credit must be penalised and investigated. Structural adjustment programmes need to be curbed and measures taken to protect countries' existing public assets from being privatised, while ensuring that working conditions maintain high standards. FDIs, while helpful in providing much-needed cash to ex-colonies, must be limited to fractional investments rather than being allowed to funnel profits out of deprived countries. National investment funds based on existing resources must be encouraged. Finally, new agreements like the TTIP will need to be reassessed (or abandoned) to ensure that local industries receive economic protection, the environmental regulation of industry is maintained by sovereign states, and worker rights are guaranteed.

From reparations to ecological debt

As a response to debt incurred by ex-colonies, many governments have come forward and **demanded that their former colonisers pay reparations for the harm they have inflicted**. For example, before British colonial rule, India's share of the world economy was 23%, while at the time of the country's independence it had sunk to 4% (Jakhar 2015), which is why leading Indian politicians have called for economic reparations from Great Britain (ibid.). Caribbean leaders have demanded an apology from the United Kingdom and asked for reparations and debt cancellation to pay for the harm inflicted by its slavery trade on its people (Morris 2014).

"European countries must cancel remaining debts, both those dating back to colonial eras and odious debts that have incurred since."

Over the decades, this argument has been extended on ecological grounds as rich countries have over-exploited the resources in the poor countries where they were situated, with little remuneration, and continue to offload the waste deriving from consumption on to those same poor countries. Thus, rich countries actually owe deprived countries an **ecological debt**, which can be calculated according to the profits from resource extraction and the costs of environmental pollution (Acción Ecologicá 1999).
This argument has been developed further to **include**

a "climate debt", whereby rich countries, whose economies largely drive climate change (even China, Brazil, and India's economies are mainly based on manufacturing goods to be consumed in the West) must pay the costs of addressing climate change, which will mainly affect deprived populations in the Global South. Climate debt has been claimed by over 50 countries, 49 of which are the world's poorest. In one 2015 study, co-authored by Thomas Piketty, it was shown that, depending on how responsibility is calculated, USA citizens would need to contribute from 36% - 57% of the carbon tax – taking into account historical, present and national inequalities in CO_2 (and equivalent) emissions. In contrast, Europeans would pay 12% - 21% (they now pay 62% of climate adaptation funds) and the Chinese would pay 6% - 15% (Chancel and Piketty 2015).

One proposal for a post-growth platform would be to **set up a committee within the European Parliament to investigate seriously the ecological and climate debt,** calculating to what extent Europe has profited from environmental degradation in the Global South and what the costs of this activity have been, and still are. This committee should engage with countries and organisations claiming ecological debt, and work toward possible solutions rather than ignoring them, as is currently the practice.

"Rich countries actually owe deprived countries an ecological debt, which can be calculated according to the profits from resource extraction and the costs of environmental pollution."

Encourage an international solidarity economy

The key principles of a solidarity economy are to simultaneously improve working conditions, reduce inequality and environmental impacts, and create cultures not defined by capitalistic relationships (see www.ripess.org). The movement for this alternative economy emerged as part of the alter-globalisation movement in the 1990s, closely following the wave of structural adjustment policies imposed by the IMF and World Bank (Hart et al. 2010). Since then, in its many forms, it has presented **viable alternatives to 'business as usual'.**

A more formalised version of the solidarity economy has appeared under the '**fair trade'** logo. While fair trade has the potential to transform trade relationships between rich Northern consumers and Southern workers, in many cases, it fails to live up to this potential, merely becoming another individualised, consumer-driven niche product that can often exclude workers from profits (Booth and Whetstone 2007). In all likelihood, these networks and initiatives would benefit greatly from government support in the form of low-interest loans, grants and the monitoring of labour conditions (Mare 2008).

In addition**,** European governments can boost solidarity economy networks by **supporting and researching best practice regarding alternative local currencies, helping cooperatives** by means of loans, providing legal, technical and financial resources to small farmers and worker-run factories, **supporting organisations advocating for worker's rights, and helping local communities to set up credit unions** and community banks.

Democratic resource management

Currently, **there is no international organisation that supervises and limits over-extraction while simultaneously trying to ensure that everyone can meet their basic needs**. The consequences of this institutional gap are grave. In the 2008 - 2009 food crisis, for example, food prices skyrocketed, leading to protests in 61 countries (Von Braun 2007). At the same time, food giants reported an enormous profit (Angus 2008). In those two years, (2008 and 2009) Royal Dutch Shell's oil extraction industry caused two oil spills in the Niger Delta, destroying the livelihoods of local fishing communities. Yet, this conflict was under-represented in the media until this year, when Shell agreed to settle with one village for a total of US$ 84 million. All this happened in the context of decades of conflict in the region due to Shell's activities, leading to the murder of Ken Saro-Wiwa, an environmental justice activist who led campaigns against Shell's extraction projects. Similar conflicts are taking place in Nicaragua where, under Nicaraguan law, local activists cannot bring Canadian mining companies to court for poisoning their land and bodies.

Obviously, the **global trade in resources is necessary to some extent**. But how can resource extraction and trade navigate competing interests: a corporation's desire for profit, a government's need to balance its budgets, and a community's ability to maintain their livelihood? Without any kind of supervising body that can be approached by the communities to hold governments and corporations accountable, profit and power will remain decisive. But what would such an organisation look like? How would it hold corporations accountable while, at the same time, taking account of local, differing needs and values?

The need for such a system to consider the complex, localised and changing systems that define social-environmental interactions is evident. In environmental science and ecological economics, the concept of **ecosystem services** has been developed to denote the resources which are provided by the environment and that society relies on. This may include water for agriculture, forests for wood and subsistence, or even sunlight for pleasure. The benefit of this framework is that local needs, social norms, cultural values, and maximum and minimum levels of extraction are all considered when creating a governmental structure to manage local resources.

This concept has been most **successfully applied to the UN initiative 'Reducing emissions from deforestation and forest degradation'** (REDD; and the updated proposal, REDD+) which aims to better manage forests in order to reduce net greenhouse gas emissions and mitigate climate change. REDD+ can be seen as a model for managing ecosystem services globally. Within this model, incentives can be awarded for protecting ecosystem services, in the form of 'Payments for Ecosystem Services'. As such, the REDD+ framework is arguably the only existing framework that is built to supervise the exploitation of a natural resource globally, and can therefore be seen as a model for future institutions. But rather than simply imposing regulations, it proposes to address climate change by putting a price on forest management. Thus, under the REDD+ framework, resource management is a matter of reintegrating resources within the market economy, then commodifying them.

The problem with such a model is twofold. First, **it assumes that monetary incentives ensure that local actors will seek to protect local resources.** However, **research shows that the opposite** often holds true as monetary incentives may lead people to adopting the attitude that a resource is substitutable, and thus disposable (Gneezy et al. 2011).

Second, it **assumes that bringing a de-commodified resource into the market through monetisation will avoid undesirable governmental regulation and bureaucracy,** and instead enable more efficient market regulation. Yet, as Arild Vatn has shown, commodification of a service may, on the one hand, actually result in a greater need for regulation to keep it enforced, and on the other hand, will likely result in cost-shifting and rent-seeking without adequate policies to stop them (Vatn 2007; Vatn and Bromley 1994). Hence, those critical of the REDD+ initiative argue that simply putting a price on forests will, primarily, create an even larger bureaucracy than it would avoid by imposing regulatory measures on deforestation. Secondly, it will lead to abuse of these incentives by those who already have access to financial resources and political power, while shifting the costs of the system to those who do not.

How might an **alternative resource management system to a REDD+ framework look?** To answer this, Vatn recalls Jürgen Habermas, the German political theorist, and suggests that the primary requirement for a more just system would be the creation of a fair and deliberative process whereby competing values and available information is assessed by different stakeholders. As such, any political decision regarding the use of a given environmental good or service requires the **acknowledgement that values may often be incommensurable**, and therefore attaching monetary value alone will be insufficient for making just policy decisions.

For Vatn, Ostrom and others, the only way to actually manage resources sustainably would be to **insert democratic deliberation into political decision-making.** Part of this process would be to limit corporations' rent-seeking and cost-shifting practices through taxation and regulatory bodies. In ecological economics, the **social multi-criteria valuation tool** has been developed to help researchers and policy-makers to identify various policy alternatives and to determine the trade-offs between them. However, this tool is time-intensive and will require more research to be better refined.

> *"Any political decision regarding the use of a given environmental good or service requires the acknowledgement that values may often be incommensurable, and therefore attaching monetary value alone will be insufficient for making just policy decisions."*

How can this framework be applied internationally? In chapter 4, we discussed how governments could initiate democratic decentralisation without undermining existing social services. We also suggested specific frameworks for managing local resources (Ostrom 1990; Vatn 2007; Yashiro et al. 2013; Bookchin 1982) through participatory means. Likewise, a post-growth economy would require autonomous and democratic institutions at an international level that are able to supervise, limit and negotiate extractive projects among all actors. At a local level, resource management institutions would involve participatory processes between the multiple stakeholders affected by, or using, a given ecosystem service. It is clear that such a framework still needs to be better developed – the main point is that substituting democratic governance with the monetisation of nature will inevitably backfire and undermine differing social values and local resource management structures. Sustainable resource management in the Global South cannot be left to market forces, but requires participatory and inclusive governance at multiple scales.
Practically, this could involve: **establishing and providing legal and financial resources to groups challenging environmental injustic**e, as well as individuals jailed for their activism; **helping governments to set up accountable, participatory methods** to track and manage local resources; **holding compa-**

nies based in Europe accountable for their implication in human rights violations and environmental degradation in other countries; setting up legal processes for these companies to be put on trial, involving the local communities affected; setting up an organisation that tracks where resources come from, how they are extracted, and how they affect local ecosystem services; providing resources to organisations that already do this, such as EJOLT (www.ejatlas.org) and MiningWatch (www.miningwatch.ca); and imposing restrictions and metrics on extraction processes, where they must prove that they have the consent of local groups if they wish to import their resources into Europe. A useful model is that developed by indigenous groups who stress that, for any industrial activity to take place on their land, there must be "free, prior and informed consent"; in other words, they must be adequately informed about the project in advance and their decision to allow it should involve their own legal and political structures.

A word on carbon trading

Many economists argue that to address rising greenhouse gas emissions, innovative tools must be developed to internalise the costs of carbon emissions in the economy. We have already discussed how carbon trading can be seen as an example of Coasian bargaining, in which social or environmental costs are turned into a commodity through privatisation and monetisation, which allows markets to trade and therefore internalise these costs (chapter 4). However, this approach sees some of the same problems recurring problems as that mentioned above, because **simply monetising an economic externality will not limit companies' rent-seeking and cost-shifting activities, and may even exacerbate them** (Vatn 2007). Others have argued that carbon credits can simply be seen as a handout to rich energy companies (Spash 2010) with very little scrutiny of how carbon emissions are counted (ibid.). It has also been suggested that carbon trading schemes, which have received plenty of support from energy companies, can be seen as a 'stalling' strategy before any actually effective measures can be put in place.

Some alternatives have been proposed, such as **carbon budgeting** (for example, SkyShares) and **carbon taxation**. We believe that **these alternatives are preferable to carbon trading** proposals in that they seek to address the uneven distribution of carbon emissions today, and acknowledge the urgent need to impose strict limits rather than create new markets to trade those limits. However, they cannot be perceived as silver bullets to climate change. They require a wider platform of policies, such as those described above, to be successful. There is also some potential for these alternatives to be integrated within national ecological tax reform policies (see chapter 3).

"Simply monetising an economic externality will not limit companies' rent-seeking and cost-shifting activities, and may even exacerbate them."

Areas for further research

More research is needed to **document and track existing environmental justice conflicts caused by extractive and industrial waste projects. I**n addition, modelling systems are required to determine the environmental and social limits for extraction projects. More initiative is needed from the Global North to **research and calculate ecological and climate debt to the South.** It will be necessary to model how international carbon taxation schemes may be integrated with national ecological tax reform policies.

While the REDD+ framework can be used as a model for future initiatives, **de-commodified alternatives to it must be researched and require government support**, which stresses democratic resource management over market solutions. Such research will further the effort to develop an institution that can help track and manage resources internationally.

The **social multi-criteria valuation tool requires more research** and governmental support, as it is a rigorous and democratic alternative to cost-benefit analyses.

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