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**Research Report**

## New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Synthesis Report Part I

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# NEW DYNAMICS FOR EUROPE: REAPING THE BENEFITS OF SOCIO-ECOLOGICAL TRANSITION

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**Synthesis** (<http://Synthesis-Report-Part-I.foreurope.eu>)

**Synthesis – Executive Summary** (<http://Synthesis-Summary.foreurope.eu>)

**Model and Area Chapters** (<http://Synthesis-Report-Part-II.foreurope.eu>)

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# NEW DYNAMICS FOR EUROPE: REAPING THE BENEFITS OF SOCIO-ECOLOGICAL TRANSITION

Karl Aiginger

## PREFACE

The WWFforEurope research project proposes a comprehensive strategy to set Europe on a dynamic path to a socio-ecological transition. This report is based on more than *160 new research papers*<sup>1</sup>, produced by 34 research groups cooperating in the project, but also on existing literature. The papers, as well as their integration into this synthesis report, have been discussed at various high-level conferences and refereed by members of a policy board, a scientific board and other leading researchers in Europe and the U.S. The project started in April 2012 and will conclude with the presentation and dissemination of this report.

The proposed strategy is medium to long-term in nature; solving short-run problems in specific countries may require some policy instruments not covered, but even then should nevertheless take this longer view into account. WWFforEurope respects different starting positions and heterogeneous preferences, and also acknowledges the high degree of uncertainty deriving from new challenges and disruptive technological innovations. The strategy cannot serve as a blueprint for solving all current and future problems or for exploiting all new opportunities, but it initially aims to develop guiding principles, then drivers of change and, last but not least, facilitators of strategy implementation which, combined, should support transition under very different real-world circumstances.

The report contains two parts; the first one is an overarching synthesis, the second<sup>2</sup> one reports on the results of different models and presents research findings in the five areas which were inputs for the synthesis.

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<sup>1</sup> Research and policy papers initiated by this project are *in blue (and italics)* and available at [www.foreurope.eu/publications](http://www.foreurope.eu/publications).

<sup>2</sup> Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters, WWFforEurope Synthesis Report, Final Version, Vienna, Brussels, 2016 (download from <http://Synthesis-Report-Part-II.foreurope.eu>).

# EXECUTIVE SUMMARY

## Europe 2016: facing unprecedented challenges

### A success model under stress

The European project is a long-run success story. Up to the 1990s, Europe thrived and experienced rising prosperity, as well as a catching up process with technology frontiers, while simultaneously extending its welfare model. The integration process, starting with six Member States, led to a single market of 28 countries. It culminated in the creation of a currency union for 330 million Europeans. The political integration of former communist countries and their economic catching-up with Western Europe were achieved at an unprecedented historical pace.

European integration has never been a smooth process. Stress during the process was referred to under the lemma of "eurosclerosis" and entailed competitive devaluations. The Lisbon Strategy was never fully implemented. Disappointment was counter-balanced by "Europe 2020", which intended to address structural problems and give the Member States more leeway to adapt the strategy to their specific situations. The financial crisis quickly spread from the US to Europe, highlighting unresolved governance issues and neglected public sector reforms. These also prevented adequate responses to new problems and opportunities arising from globalisation, technological change, demography, the environment and most recently the refugee crisis.

Consequently, Europe today faces unprecedented social, economic and environmental challenges.

Internal dynamics and structural renewal are faltering. Innovation is disappointing, and consumption is sluggish due to stagnant real wages, high taxes on labour and large income differences. Private investment is low due to deleveraging efforts, uncertainty and pessimism about the European future. The public sector is big while aimed at past priorities. Regulation is complex and public investment is restricted by debt. Reforms that could kindle new dynamics are meeting resistance in many countries where reform-opposing old elites and vested interests remain strong.

Unemployment has risen from 7% to 10% since 2008 and declined only marginally in 2015. The employment rate is still lower at the end of 2015 than at the start of the crisis. Youth unemployment remains at an intolerable level of 20%, leading to the disillusionment of the young people with the European project. Poverty rates are rising and new social risks cannot be mitigated without reforms since tax rates and

the share of revenues used for pensions and other social expenditures are already very high in most Member States. A heavy tax burden dampens employment.

Disequilibria across countries and regions are far too deep for an economic or political union and even more so for an area with a common currency. Per capita income differs by 14:1 between the ten richest and the ten poorest regions, differences in unemployment, export potential, governance and trust are persistent.

R&D spending has stagnated at 2% of GDP since 2000, far below the target rate of 3% called for in first the Lisbon Strategy, then the Europe 2020 Strategy.

Europe has so far successfully defended its comprehensive system of health, pension and unemployment insurance. To not undermine competitiveness, the expensive system has to be adapted to new challenges.

Europe used to be the world leader in environmental policies. Energy intensity and per capita CO<sub>2</sub> emissions are far lower than in the US. However, Europe appears unable to exploit its frontrunner position in green technologies and emissions are by far not falling fast enough to be in line with the decarbonisation goals of the Paris Conference 2015.

## The need for a new strategy based on a shared vision

The long-lasting repercussions of the financial crisis, political turmoil in neighbouring countries, including mass immigration from war-torn countries in the east and the south, and the handling of the Greek crisis have raised calls for action in opposing directions: either for a re-nationalisation of policies or for a more prominent role of European institutions.

Diversity and differences in opinions between "Northern" and "Southern Europe", but also the old members and the new ones, are widening. Several reforms are not accepted by all members and therefore restricted to a subset of countries (e.g. Schengen and the Currency Union). In some countries, an important part of the electorate favours exiting from the EU or provinces want to become independent.

The call for "ever closer integration" seems to have lost its glory.

In this context, existing decision-making processes no longer seem appropriate for a Union with 28 members (and further countries applying for membership). Some important changes in European governance have already been initiated, stabilising institutions have been founded, and a European Fund for Strategic Investment has been created. The role of the European Parliament and the impact of elections on the choice of the Commission have been strengthened. Still more has to be done.

Faced with new challenges it is vital to again convince Member States that main problems can be better solved together. Reforms have to be guided by a comprehensive vision as to where Europe should be heading, a vision that is inspiring for European citizens – a new, reinvigorated European story.



## Vision for Europe: a dynamic, open region of high wellbeing

Europe has always been strongest when it has had a common and broadly accepted guiding idea, be it peace, trade liberalisation, the common market project, Social Europe or the common currency. Such “Grands Projets” help to put problems, conflicts and obstacles into perspective; they can unify even diverse groups, generate new ideas and experiments.

Now, as Europe’s long-run success story is facing fundamental challenges and the peace project seems to be losing its inspirational power, it is time to reconsider the model and to formulate a new vision.

### The new benchmark: wellbeing

As the overarching benchmark for European performance we propose high wellbeing in a sustainable environment. This involves a definite change in the overall benchmark of success: from GDP and GDP growth to high and increasing wellbeing.

The vision for Europe 2050 could then read as follows:

*By 2050, Europe will be a region with high social and environmental standards guaranteeing its citizens a high level of wellbeing. It will be a dynamic, open and pluralistic economic area. Unemployment will be low, inclusion high and income differences limited. Emissions and resource use will have declined absolutely to a level compatible with environmental resilience, biodiversity protection and mitigated climate change. Energy, transport and housing infrastructure will be decarbonised. Europe will learn from other regions and offer its improved model to neighbouring regions and the world at large.*

### Three strategic goals

The notion of “wellbeing” calls for the simultaneous accomplishment of three strategic goals: economic dynamics, social inclusiveness and environmental sustainability.

- Economic dynamics include what is usually called income dynamics. It implies that an ever-increasing number of people benefit from the attainment of a broad set of economic achievements. An equally important component of dynamics is structural change and mobility (as opposed to the petrification of existing or inherited structures).
- Social inclusiveness implies that unemployment as well as income differences are low. Social, religious and ethnic conflicts are addressed. Life chances, education and capabilities are distributed more equitably; spreads in income and wealth are based on merit, limited to levels determined by democratically-based political decisions.
- Environmental sustainability demands that the planetary boundaries be respected. Technological, behavioural and institutional changes lead to an absolute reduction of emissions and resource use, to a level of safeguarding the resilience

of key economic systems. This gives poorer countries scope for economic development and poverty reduction and allows the next generation to make choices.

Defining “wellbeing” as the overarching benchmark of performance for Europe substitutes the prevailing dominant concept of GDP and GDP growth. It is in line with the “beyond-GDP” approach, as underpinned by the broad economic literature. It is made operational in the WWWforEurope strategy by defining the three strategic goals of economic dynamics, social inclusiveness and environmental sustainability. The goals are measurable by the “Better Life” indicators of the OECD and the EU.

Finally, cross-cutting principles such as gender or inter-generational equity and openness have to be kept in mind when shaping the strategy and defining the drivers of change.

## The strategy for a socio-ecological transition in Europe

The WWWforEurope strategy is based on the vision, the new benchmark of success and the three strategic goals. It furthermore

- defines *three guiding reform principles*,
- is based on *seven drivers* of change essential for socio-ecological transition,
- carves out *facilitators of reform*, i.e. new processes and actors supporting the transition.

## Three guiding reform principles

The success of the strategy is dependent on three guiding principles.

### Principle 1: Simultaneity between goals

The principle of simultaneity demands that the three goals – economic dynamics, social inclusiveness and environmental sustainability – be pursued in a systemic and comprehensive approach and not by striving to achieve the goals separately. The principle of simultaneity represents a demanding but also promising renunciation of the “silo approach”, which addresses problems in isolation, resulting in high costs and low effectiveness.

The three goals interrelate in a way that could lead to negative tradeoffs as well as positive synergies. WWWforEurope screened existing models and developed new ones in order to investigate the interrelation between the three policy goals. The result of the majority of models is that the possibility of negative tradeoffs between the goals cannot be excluded. However, several model simulations highlight how tradeoffs between the goals can be averted (e.g. if energy taxes are combined with lower taxes on labour and a specific compensation of low incomes) and how double or triple dividends can be achieved (e.g. by using a part of the energy taxes for environmental innovations). If emissions are taxed without reducing taxes on labour, employment as well as incomes will suffer and income spreads will rise.

Tradeoffs between environmental goals and economic dynamics are lower than expected; they can be further mitigated if taxes on emissions are used to boost and redirect innovation. WWWforEurope concludes that a carefully designed strategy simultaneously addressing the three goals provides space for triple dividends. Isolated strategies for the three goals or strategies using a few instruments only will yield suboptimal solutions.

### Principle 2: High-road ambition

At a strategic crossroads, the choice is often between two alternatives: either opting for a cost-driven strategy by doing the same as before but at lower costs, or adopting a quality-driven strategy, aiming for a new path based on innovation and skill upgrading. We refer to the first option as a “low-road strategy” and to the second as a “high-road strategy”.

WWWforEurope strongly postulates that Europe has to adopt a high-road strategy. On this road, economic dynamics is supported by structural change, improving skills and boosting innovation. Ambitious social and environmental standards support high and rising wellbeing.

Only a high-road strategy provides the chance to develop an authentic, distinct model built on Europe's own preferences. This model can then be evolved further, being used internally as a coordination tool and externally as defining characteristics of the European model. If high-income countries pursue a low-cost approach, emerging economies can always retaliate. This would also cut incomes and undermine social and environmental goals in the richer countries, thus reducing wellbeing.

### Principle 3: Two-stage implementation

A new strategy for Europe has to lead to a new trajectory but must also address existing disequilibria and imbalances. Transition therefore necessitates a two-stage strategy.

#### Stage 1: Consolidation and reprogramming

In the first stage – the next ten to twenty years – policies will still have to focus on preventing new crises and solving inherited disequilibria (unemployment, debt, inequality). This is the ideal point of time to start rebuilding the infrastructure, so as to prepare for decarbonisation. Massive policy efforts and investment are required to redirect technologies and build a low-carbon infrastructure. These efforts will impact positively on economic dynamics and employment. And it is a good time to decrease unemployment by skill upgrading as well as to reduce inequality.

Thus, economic growth at this stage is the consequence of aiming to reduce unemployment, debt and inequality. Investment needed for decarbonisation and consumption enabled by the increases of lower incomes serves double or triple purposes. But this first stage should by no means be the continuation of established

policies. Solving inherited problems has to be combined with massive investment in order to prepare for the second stage. We therefore label stage one as "consolidation and reprogramming" with a strong emphasis on the latter.

## Stage 2: Socio-ecological transition

Long-term forecasts for industrialised countries predict lower growth rates declining even further along the time horizon. This may follow from the catching-up of emerging economies, limits of the planet, decreasing marginal utility of higher incomes or secular stagnation tendencies. Therefore, in the second stage, the highest priority has to be given to achieving higher levels of wellbeing (employment, housing, health) based on – in a historical perspective – low growth rates. We call this second stage "socio-ecological transition".

Preconditions for this are a reduced gap between high and low incomes, a lower public debt and a stable financial sector serving the needs of the real economy. These changes, as well as the decoupling of employment and emissions from output, have to be started by implementing new incentives, regulation and behavioural change as soon as possible in the first stage. Countries can switch to stage two earlier if preconditions are given.

## The seven drivers of change

### Innovation: boosting its power and redirecting its focus

Innovation is the crucial link which mitigates negative tradeoffs between the three goals and provides the simultaneity of economic dynamics, social inclusiveness and environmental sustainability. Boosting innovation is also vital to a high-road strategy since it reduces the dependence of firms and economies on low costs. In the first stage of the strategy, the European knowledge base and the incentives for innovation and innovative performance have to be improved, so as to close the technology gap between Europe and the technology frontier.

Today, the focus of innovative activity is primarily on saving labour. Rising labour productivity creates potential for income increases, but also generates the necessity for high GDP growth rates: they have to be as high as the increase in labour productivity in order to stabilise employment. This is neither a future-oriented nor a socially inclusive and environmentally sustainable strategy. The game changer we propose is to *redirect* innovations towards energy and resource saving.

### WWWforEurope proposes:

- Industrial and innovation policy can no longer be isolated, but must be systemic policies. Redirecting innovation requires the simultaneous and consistent use of different instruments, such as carbon pricing or taxation, regulation, R&D subsidies, refocusing public procurement and reducing taxes on labour.

- The conditions for young innovative, fast-growing firms in Europe should be improved, e.g. by creating a pan-European venture capital market and ensuring a stream of qualified researchers and graduates.
- Breakthrough scientific research should be fostered by making university funding more competitive and by adopting the tenure track model and flat hierarchies based on merit.
- Social and environmental innovations should gain relative importance to those improving labour productivity.

### Dynamics: reducing inequality and uncertainty and fostering investment

Economic dynamics in Europe have dwindled due to both supply and demand factors.

On the demand side, private sector investment is low, due to the underutilisation of existing capacities, pessimistic expectations about the future dynamics of Europe and high taxes, administrative burden and red tape. Long decision-making processes, a reluctance to use innovations for a new infrastructure and the lack of funds for small, young and fast-growing firms increase the European investment gap.

Infrastructure investment could be bolstered by new financing vehicles, from a private-public partnership to the European Fund of Strategic Investment. Investing in a new, energy-efficient infrastructure and decarbonisation – ranging from housing and offices to transport and energy grids – could reduce unemployment and enable an absolute reduction in energy and resources in the second stage.

Private consumption will increase if income spreads are reduced, thus leading to higher consumption, specifically of low-income earners. At the same time, consumption structure should change towards less material and energy-intensive products.

Imbalances, country-level crises and a lack of confidence and trust will keep demand below its potential and unemployment persistently high. Social innovations should be supported and a change in the consumption structure towards higher durability and lower energy and resource input has to be incentivised.

To summarise, demand will increase as a consequence of the investment needed for decarbonisation and as a result of the changes in the income distribution and the consumption pattern. This helps to reduce unemployment and debt and enables transition.

### WWFforEurope proposes:

- Private investment will recover if uncertainty about the future of Europe and administrative burdens decrease. Credits for small and young firms have to be provided, including new instruments of finance.
- New types of public and private partnerships and the EFSI can boost investment. A shift from physical to intangible investment and to projects promoting social innovations and enabling decarbonisation is called for. This reduces un-

employment, poverty and public debt now, and enables absolute reductions in emissions tomorrow.

- Keeping real wages in line with productivity growth will have a stabilising effect on consumption. The same holds for a reduced income spread initiated by re-forming education or by re-inforcing the redistributive function of taxes and transfers.

### Welfare: from ex post protection to social investment

Europe has the most comprehensive welfare systems of all major regions. Nevertheless, most Member States have not been able to prevent unemployment and inequality from rising in the past two decades. Besides, new challenges have come up: the ageing of populations leads to higher dependency ratios and new social risks are created by the break-up of traditional family structures and career paths. Lifestyle changes are reducing traditional family-based as well as public social safety nets. Increasing national and also international mobility calls into question work-based benefits.

Globalisation generally raises income and productivity levels; however, it constitutes a challenge to the welfare system: on the one hand, it constrains social policy due to higher levels of competition; on the other hand, as a by-product of structural change, it creates losers in labour-intensive and low-skilled sectors. Demand for skilled workers is rising faster than the corresponding labour supply. In contrast low-skilled workers are confronted with very high unemployment rates in their labour market segments and do not find a job after dismissals. These vulnerable groups require assistance in the areas of retraining, searching for new employment and incentives for re-employment.

The game changer is to shift the welfare systems from *ex post protection* after a problem has occurred to *ex ante investment* in capabilities.

### WWForEurope proposes:

- Adapting the welfare system to new challenges and switching from a focus on social protection to the social investment approach. Ex ante training or activation should become more important relative to ex post financing of unemployment.
- Education, and particularly early education, is essential to creating equal opportunity as well as limiting income spreads later in life. Lowering taxes on labour and specifically on low-paid labour will increase chances of employment and re-employment.
- Migrants should be integrated into the labour market quickly by appreciating their qualifications without excessive red tape. Migrants and their offspring should be given full and effective access to schools, the apprenticeship and training systems. Integrating a qualified and flexible group into the workforce will boost dynamics, reduce public spending and mitigate political conflicts.

### Employment: upgrading skills and symmetric flexibility

Lower unemployment is an essential pillar of a social inclusion strategy and therefore a major objective of WWWforEurope. In contrast to presumptions in other analyses we expect that over the next ten to twenty years the problem of unemployment and insufficient demand, specifically in the case of low-skilled jobs, will be more important than a labour shortage due to ageing. Mobilising untapped reserves from unemployment, from early retirement and from involuntary part-time work, will provide a rising quantitative labour supply at least until 2030.

The main labour-market problem will be a significant mismatch between the qualifications demanded and the skills supplied. There is high unemployment for low-skilled employees (aggravated by the influx of refugees), while some firms cannot expand due to shortages of skilled employees. This prevents Europe from tapping the power of innovation and from reducing private or public debt. In the very long run, labour supply might indeed decrease, but if economic growth levels off as expected, this will not be a problem if the skill structure has adapted, increasing the share of high-skilled employees.

Unemployment can be decreased by a voluntary reduction of working time, primarily for those with long working hours and higher wages. A general reduction of working time may lead to greater poverty among low-skilled workers and contradict upward mobility ambitions. Given that the reduction would primarily be without compensation by higher hourly wages, it could lead to a dual labour market as well as downward spirals of lower consumption and lower investment. However, overtime compensation and preferential tax treatment for overtime should be cancelled and voluntary reductions should be enabled.

Work-sharing options should be offered. They are a way to decouple growth and employment, to prevent burnouts, and to increase leisure and wellbeing. Moreover, productivity increases might be translated into fewer working hours and more employment instead of general wage increases. In any case, decreasing working time should not result in working poor or greater old-age poverty. This is even more important since the ability of public budgets to upgrade low wages or pensions is limited under low growth.

Increasing flexibility is a welfare-improving goal in both stages. It is a core message of WWWforEurope that flexibility has to be symmetric: firms should have more leverage to adapt working hours to short-run demand. Employees should have a guaranteed right to adjust working time to individual preferences and life cycle needs. The rights of employers as well as employees should be negotiated in collective agreements or contracts at the firm level.

Reductions in taxes on labour will lower unemployment in the first stage and make production more labour-intensive and less energy-intensive in both stages. In the second stage – to some extent dependent on trends in output, labour productivity and labour supply – a decoupling of employment from growth becomes increasingly important.

### WWWforEurope proposes:

- Reduce taxes on labour, so as to lower the pressure on firms to increase labour productivity.
- Upgrade skills in general and improve the matching of qualifications supplied and demanded by fostering apprenticeship, training and lifelong education.
- Promote symmetric flexibility that allows firms to adapt production to demand and at the same time allows employees to adjust working hours to preferences and work-life balance. Promote this right as well as choices between wage increases and working time reductions in labour agreements.
- Integrate migrants into preschool education, schools and training, and respect their qualification attained at home.
- Cancel overtime compensation or preferential tax treatment and do not block preferences for shortening working time or work sharing.
- Introduce preferential treatment of part-timers when applying or returning to full-time jobs and offer them training opportunities.

### Resources: decoupling energy from output

Absolute reductions in the use of energy and material resources are necessary in order to slow down climate change and respect other planetary boundaries. In a strategy simultaneously aiming at economic dynamics and social inclusion, this is a very ambitious goal. A deep decarbonisation of production and consumption is required in order to mitigate climate change, as is acknowledged in long-run scenarios and as a result of Paris 2015.

WWWforEurope research shows that, in most European countries, domestic resource use has stagnated or even declined since the early 1970s, while economic growth has continued, albeit at a lower rate.

Global CO<sub>2</sub> emissions as well as emissions embodied in imports, however, have risen significantly in the past. In recent years, they tend to increase at a lower rate than GDP. For 2014, the IEA for the first time reported a stabilisation of global energy-related greenhouse gas emissions in a year of a fast-growing global economy. Still, despite some encouraging signs, there is no evidence of an absolute global decoupling of the scope needed to limit climate change.

As the very first step of a more ambitious decarbonisation strategy the distorting subsidies for fossil fuels should be phased out. This reduction in subsidies can generate multiple dividends. It reduces path dependency and lock-in positions favouring old technologies. The elimination of subsidies for fossil energy also improves the cost competitiveness of the new (low-carbon) technologies and – as a side effect – also reduces public deficits and debt, thus creating budgetary leeway to reduce overall taxation or to increase future-oriented expenditures.



### WWForEurope proposes:

- Eliminate the current subsidies for fossil energy quickly in a period of low energy prices.
- Improve incentives for energy efficiency for renewable energy and innovation in technologies promoting decarbonisation.
- Set up more ambitious standards for housing, offices and transport and raise them continuously, since investment today will determine emissions and resource use tomorrow.
- Ensure that the prices of fossil energy and CO<sub>2</sub> emissions continuously rise in order to signal the long-run trend of decarbonisation as well as to prevent rebound effects. Declines in the price of oil, gas and coal should be smoothed by higher taxation, so as to prevent wrong decisions of consumers.
- Price incentives have to be combined with regulation, procurement policy and behavioural changes. Innovation policy has to foster environmental innovations.
- Set up funds for energy and resource efficiency in emerging economies. Obligate multinational firms to use best technology in all subsidiaries and provide indicators for all plants in international trade and investment agreements.

### Public sector: an all-important game changer

With an expenditure-to-GDP ratio of 48%, almost one half of the output of Europe's economies is re-allocated through the public sector. This implies a huge potential latent in the public sector to contribute to a socio-ecological transition by changing expenditure and revenue structures. Its importance is further increased by its impact via legislation, regulation and other non-monetary activities.

Changing the *tax structure* is probably the most effective and comprehensive game changer we propose. Currently, high taxes on labour contribute to low employment and the tax systems do little to boost environmental transitions.

First, labour is heavily taxed. Taxes (including social contributions) even burden low incomes considerably. Secondly, energy is taxed moderately and its share in tax revenues has even declined on average in EU Member States since 2000. Thirdly, though equal opportunity is important for wellbeing as well as economic efficiency, inheritance taxes and wealth-based taxes are decreasing or being abolished. This is particularly a problem when interest rates are low, since in this case life-time income depends even more on starting positions. Fourthly, although financial transactions tend to destabilise the real sector, especially if the bulk of transactions is speculative, the financial sector is under-taxed and no financial transaction tax has been introduced. If all these structural deficits of tax systems were corrected, wellbeing would increase significantly.

### WWWforEurope proposes:

- WWWforEurope worked out a back-of-the-envelope proposal for how the tax burden on labour could be halved from currently 20% of GDP in Europe to 10% within a revenue-neutral tax shift.
- The labour tax cut could be compensated by the following measures (in % of GDP):
  - moderate taxes (tax increases) on property, inheritance, financial transactions of 2.5%,
  - doubling environmental taxes, so as to raise revenues by 2.4%,
  - introducing a carbon tax of € 100 per ton of CO<sub>2</sub> raising 2%,
  - increasing tax compliance, so as to result in additional revenues of 1.6%,
  - reducing tax exemptions for fossil energy, increasing taxes on alcohol and tobacco yielding 1.5%.
- The resulting substantial tax shift would increase employment, reduce emissions and tobacco or alcohol-related diseases. It will increase the equality of opportunity and lower the impact of inherited wealth.

This back-of-the-envelope calculation illustrates the extent to which the public sector can be a game changer by changing the tax structure. Going for an ambitious change in the tax structure is a rewarding policy reform, because it supports all three goals of the strategy, thereby unambiguously increasing wellbeing. Some of the compensating measures, such as pricing of carbon emissions, would be easier if international commitments e.g. following the Paris agreement could be reached.

A more moderate approach which could be implemented in the short run with less international cooperation. In this version, taxes on labour are reduced by one third. Both proposals are revenue-neutral on the tax side. If future repair costs (environmental or health-related costs) can be reduced, the tax shift could also lead to a reduction in public expenditures and thus create room for reducing the high tax ratios in Europe.

Meta analyses using parameters from different model simulations carried out in this project indicate that the ambitious tax shift would increase employment by approximately 5% in the short run (2020) and 10% in the long run (2050). Emissions of greenhouse gases would be reduced by 65% in the long run. These calculations model the shift between labour taxes and environmental ones, and assume that other countries will not increase taxes on emissions. Under these extreme conditions a marginally negative effect on European GDP growth (between 0.2% and 0.3% p.a.) may occur. If the other countries increase taxes at least to some extent, the European GDP will also rise as compared to the no-change scenario. Triple dividends would also occur even more if environmental taxes were levied to a larger extent on consumption instead of production.

On the *expenditure side*, the public sector finances a large share of the public infrastructure and has a heavy impact on private infrastructure via legislation or regulation. Investment in infrastructure has to adapt to reflect environmental and social goals. The infrastructure provided today determines the potential for future decarbonisation.

Subsidies should be shifted away from securing low prices for fossil-based energy to supporting activities with positive dynamic externalities (e.g. R&D subsidies). The potential role of public procurement should be intensified by effectively accounting for environmental and social criteria.

Expenditure structures should also be shifted at the EU level. The lion's share of EU expenditures consists of transfers preserving existing structures rather than contributing to a socio-ecological transition. This is particularly true for the largest share of agricultural subsidies and for cohesion policy. The upcoming midterm review of the Multiannual Financial Framework is an excellent opportunity to increase the impact of the EU budget for transition.

### **Financial sector: re-committing to the real sector and aligning to the needs of society**

Once again, problems primarily originating in the financial sector have destabilised the real economy and led to the recent financial crisis. An essential precondition for the socio-ecological transition of Europe is a healthy and resilient financial sector supporting the real economy.

Financial sector reforms should have three main goals:

- (1) preventing negative spillovers from the financial sector to the real economy,
- (2) incentivising the financial sector to effectively strengthen the real economy,
- (3) motivating and enabling investors and funds to include the needs of society into portfolio selection, e.g. being able to select funds investing in social cohesion, poverty reduction and the transition towards a low-carbon economy.

#### **WWWforEurope proposes:**

- The Banking Union should be completed by establishing a common deposit guarantee scheme.
- Smart regulation with fewer details and broader goals should stabilise the financial sector.
- A financial transaction tax should be implemented, so as to reduce speculation and also to lower taxes on the real economy.
- Venture capital and crowd funding for innovative firms should be promoted.
- Investment that benefits society and the economy should be boosted by better information about the social and environmental impact of the portfolio.

### **Facilitators of reforms: new processes and actors**

Europe does not lack strategies, but often their delivery. Based on evidence from past reforms and new research, we propose processes, an institutional design and taking new actors on board as to increase the probability of success.

### Overcoming reform resistance by inclusion, fairness, and (partial) compensation

Given the three goals of the strategy with their potential tradeoffs, the reforms will be more successful if they do not aim for the maximal attainment of one of the goals if this hinders the attainment of the others. Striving for acceptable solutions to all stakeholders can mitigate the risk of losing the support of certain segments of society, the electorate, or strong pressure groups which would otherwise be able to block reforms. Broad consultation processes, open discussions of feasible options and outcomes as well as early communication of reform strategies are conducive for success. Deliberations should include civil society and encourage local bottom-up processes. Technical solutions alone will not be sufficient, behavioural change is also required, and therefore opinion leaders, schools as well as the media have to be invited to support socio-ecological transition.

The perceived fairness of reforms, and in particular the fairness of the decision-making process, trust in government and in other actors involved, are essential. Short-run and partial but not full compensation of reform losers should ensure support for the changes needed.

### Pursuing a pluralistic and polycentric approach

The heterogeneity of the countries, regions and cities in Europe is significant, as is uncertainty about long-term trends, technology and possible solutions. A decentralised approach with regions, cities and Member States as actors in the reform process, each searching for the best solution, has definite advantages in terms of mutual learning, enhancing innovation and for achieving equitable and environmentally sustainable outcomes. Given the existing heterogeneity of Europe, the strategy can turn this heterogeneity into an advantage by means of a pluralistic approach.

### Establishing a joint ownership

Some problems, however, such as climate change, income inequality and insecurity, can only be solved at the European or even the global level. In order to promote the strategy at the European level, we propose a "European Declaration of Transition towards Sustainability" jointly issued by the European Parliament, the European Commission and the European Council. This declaration should stipulate the joint achievement of all three goals of transition and stress the need for simultaneity. A new "Vice President for Sustainability" of the European Commission should coordinate the process and be the personalised "anchor" of the envisaged transition. Member States should develop annual sustainability programmes based on regional and local initiatives.

### Bringing business, civil society and social partners on board

Europe has a strong and successful business sector and the institution of social partnerships. A continuous dialogue between governments and stakeholders – with

differences between Nordic, Southern, Continental European countries and new members – is partially responsible for the past success of European integration. This should be used and enhanced to improve the European model. Innovation policy could be based on this dialogue as well as used to strengthen it. A new industrial policy has to incorporate societal needs and place a high emphasis on energy and resource efficiency. A systemic industrial and innovation policy becomes more effective by including innovative start-ups and finance in the dialogue.

### **Integrating bottom-up-initiatives and new actors in order to change behaviour**

History shows that transition requires new actors. Our research highlights that non-profit activities originating in civil society are able to yield new institutional arrangements that often lead to better socio-ecological performance than those developed within the traditional market-government dichotomy. These new institutional arrangements could also be considered laboratories for a more sustainable way to produce and consume.

Civil society, NGOs and representatives of new firms, youth and alternative organisations in general are all important to changing behaviour. Education, universities and minority representatives play a major role in transition. This might lead to unconventional solutions, new business models and non-market employment.

New modes of behaviour provide a culture favourable to change. Concepts of a circular economy – focusing on recycling, reuse and the re-manufacturing of resources – and models of collaborative consumption (“sharing instead of buying”) have been recognised as important tools for promoting sustainability and decoupling economic dynamics from resource consumption.

### **Evaluating stocks and flows: the functionality approach**

Wellbeing is the ability to fulfil certain needs, such as mobility, living in a comfortable home, being well nourished, communication etc. Such functionalities can be generated by a combination of stocks (infrastructure) and flows (current expenditures). Initially providing a high quality infrastructure later reduces current expenditures, e.g. for energy and other natural resources. Each functionality can be provided at a high level if systems are planned ex ante with the goal of long-term minimisation of energy and resources, specifically carbon-intensive ones. Future-oriented planning of cities, urban areas and megacities, has the same effect of providing higher wellbeing with fewer resources.

### **Monitoring progress through consistent concepts and indicators**

Despite all the well-known criticisms, GDP (and its growth) is still the dominant measure of the performance of an economy. We propose substituting it by taking high and rising wellbeing as the overarching benchmark of success. This is made operational in defining three strategic goals (economic dynamics, social inclusion and

## The European road to wellbeing



### 3. FACILITATING REFORMS

- Overcoming reform resistance
- Pluralistic and policentric
- Participation of stakeholders, civil society & NGOs
- Bottom-up initiatives, new actors
- Monitoring progress

### 2. DRIVERS OF CHANGE

- Redirecting innovation
- New dynamics
- Reforming welfare
- Skills and symmetric flexibility
- Decoupling energy
- Smarter public sector
- Reforming finance

### 1. FOLLOWING THREE GUIDING PRINCIPLES

- Simultaneity between goals
- High road ambition
- Two-stage strategy

Source: WWForEurope Synthesis Report, Vienna, Brussels, 2016.

environmental sustainability), making use of the Better Life Indicators of the OECD or EU. Monitoring the success of the transition strategy is necessary at the European level as well as for the Member States. If the indicators are not available quickly, proxies have to be used or indicators have to be “nowcasted” (as is common today for components of GDP), since economic policy has to be based on recent evidence. We also propose measuring competitiveness not as “cost competitiveness” implicitly calling for low wages and soft standards. High-road competitiveness is the ability of a region to achieve its goals. In the proposed strategy this implies to promote wellbeing based on innovation and skills and defined by the three strategic goals of economic dynamics, social inclusiveness and environmental sustainability.

Monitoring the progress of the strategy by applying consistent concepts and predefined indicators is a major precondition for long-run success.

**KEY INFO**

- ▶ The long-run success story of the European Union faces major internal and external challenges, some of them intensified by the financial crisis.
- ▶ Heterogeneity is increasing and imbalances between Member States exist. The goal of an “ever closer Union” is no longer accepted and a shared vision of the future is lacking. Misperceptions about policy goals are blocking deep reforms.
- ▶ Europe has the strength and the ability to build a socio-economic model with distinct advantages, but seems reluctant to do so.
- ▶ A profound and coherent long-term strategy for Europe – based on a vision and guiding reform principles – is required.

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# 1. EUROPE 2016: STARTING POSITION

**The Lisbon Strategy did not and the Europe 2020 Strategy probably will not achieve their defined goals. New challenges call for reforms in governance and strategy.**

## 1.1 Motivation of the project: Europe requires change

Until the 1990s Europe was thriving and experiencing rising prosperity extending and deepening its welfare model.<sup>1</sup> The European Union looked ready for further enlargement and ventured the introduction of a common currency, despite not all the preconditions for this being met or consistently monitored. The fact that European integration has not been smooth is evidenced in the discussions on so-called “eurosclerosis”, competitive devaluations and disappointment with the Lisbon Strategy. The Europe 2020 Strategy was intended to correct structural problems and revitalise the European project by envisioning a new smart, sustainable and inclusive growth path.

Today, Europe faces unprecedented social, economic and environmental challenges. Internal growth dynamics are low, unemployment and income disparity have increased, and new social risks are arising. Climate change continues unabated, demographic change has not been strategically addressed and Europe lacks a common response to the refugee problem. A key member, Great Britain, is currently threatening to leave the Union. Secular stagnation tendencies could hit Europe relatively hard, and pessimism about jobs for Europe’s youth and the future of “our grandchildren” is mounting. Some of the challenges are more specific to Europe (unemployment, lack of consumer and investor demand), while others, such as income disparity, climate change, tax compliance and the stability of the financial sector, require global solutions (Eichengreen, 2015).

<sup>1</sup> We use the terms Europe and European Union interchangeably, since we believe that European integration is increasingly dominating the development of Europe, and the EU with its 28 Member States and its special arrangements with all other European countries is the dominant force shaping Europe economically and politically.

When data refer to the euro area, it is defined in this way; otherwise they relate to the 28 Member States as of 2015.



At the same time, existing European governance and decision-making processes no longer seem appropriate for a Union with 28 members (and around ten further countries applying for membership or close relations). Internal European diversity is increasing and power shifts are occurring at the global level. The long-lasting repercussions of the financial crisis, political turmoil in neighbouring countries – including mass migration from war-torn countries to the south and the east – and the handling of the Greek crisis have raised calls for both a re-nationalisation of policies and a more prominent role of European institutions (Aiginger, 2013A).

Decision making and conflict solving have improved in recent years in response to acute problems. Europe has economic strengths and can build on a socio-economic model with distinct advantages relative to other parts of the world. However, given the scale of the problems at the level of specific challenges and policy making, there is an urgent need for a consistent, longer-term European strategy.

## 1.2 The success story has been challenged from within and beyond

### A success model in a difficult stage

Despite the substantial current economic and political problems Europe faces today, it is important to recall that European integration and the European Union have, by and large, been successful as evidenced by the growing number of Member States and by the queue of countries wishing to join or cooperate more closely in the future. A common market has been created; subsidies and non-tariff barriers have been abolished. Europe (defined as the EU28) has become the region with the highest share in global output. The negotiating position of Europe has become much stronger relative to the US, Russia and China than even any large European country could ever have achieved on its own. Within its current borders, the European Union has safeguarded peace on a continent formerly characterised by recurrent and disruptive wars.

- The European project has developed from a coal and steel union with six members – set up to prevent future political conflicts about these key resources needed for wars – to a free-trade area, and then to an economic union. Nowadays, it has essentially become a common single market with some aspects of a political union.
- One major achievement of the EU is its success in cutting national subsidies and state aid. It opened up former highly regulated monopolistic markets (postal service, telecoms and electricity).
- Economic integration has culminated in a common currency for 330 million people, to which 59 countries and territories around the world have pegged their currencies.
- Political integration and the economic catching-up of the former communist countries have been achieved at an unprecedented pace.

European integration has become broader and deeper than most analysts expected. It has never been smooth, being characterised by trial and error.

New challenges arise as a result of increasing heterogeneity, new technologies, globalisation, global warming and political instability in the neighbourhood.

- The European Union has not only been able to prevent military conflicts within its borders. By means of its pre-accession processes, it supports solving or mitigating conflicts, fighting corruption and introducing the rule of law in prospective new Member States. Its role in transforming "most of Europe from a continent of war to a continent of peace" was acknowledged by the Nobel Peace Prize in 2012.

However, the complexity of the integration process cannot be underestimated. The current European Union, with its 28 members, has 24 "official and working languages", which indicate the substantially different historical and cultural backgrounds of its population (Tichy, 2015A). The institutions steering this integration process have developed in many steps, without guidance from a long-term strategy. The integration process has inevitably relied on a trial-and-error process.

Although the goal of an "ever closer Union" was already expressed in the Treaty of Rome, the breadth and depth of integration have been greater than citizens expected. This has led to counter-movements and centrifugal tendencies, within Member States as well as in the Union. All across the European Union, there are political parties promoting the exit of their respective countries from the European Union. Some regions within Member States seek political independence, while at the same time wishing to remain members of the EU. There is strong opposition to a transfer union, especially among wealthier Member States, which is partly at odds with the political will to limit negative spillovers from countries facing specific challenges. New Member States attach less importance to mitigating social risks and are sceptical of both the "Continental" and the "Scandinavian" type of welfare system (Szanyi, 2013). It will therefore be a major task to again convince the European population of the "European story" and to kindle broad support for a new strategy.

### Disequilibria and persistently low dynamics

Europe successfully managed to create high-quality employment in a thriving economic environment until the 1990s and has increased the employment rate by promoting part-time jobs in the following decades. Structural change necessitated by globalisation, an unwillingness to reform the public sector and an unwillingness to prevent bubbles in non-tradeables, has created a conundrum of economic problems in the years preceding the financial crisis. A rapidly expanding and deregulated financial sector striving for high returns has introduced new high-risk financial products. An excess of savings relative to investment has made this system even more prone to risks; it has increased economic volatility and encouraged debt-based growth with repercussions in the labour and real estate markets (Ederer and Reschenhofer, 2013).

The recent financial crisis – with many of its root causes originating in the US – quickly spread to Europe and intensified existing problems (Breuss, 2015). European institutions and regulations have apparently been unable to successfully manage and overcome the crisis (De Grauwe, 2013). Low growth dynamics and high unemployment are more persistent in Europe than in other regions.

**In the aftermath of the financial crisis, Europe is suffering from low growth, persistent unemployment, high public deficits and pessimism about the future.**

Europe is suffering from low private-sector demand leading to an underutilisation of labour as well as physical capacities. Consumption is subdued due to the fact that real wages are hardly rising (particularly those of low-income groups). Investment is sluggish due to pessimism about future growth, political and economic uncertainty, high taxes and administrative burden. Corporate debt has been regarded more critically since the financial crisis and firms are trying to deleverage. Credit restrictions exist due to more stringent risk criteria, especially in crisis regions in southern Europe and for small and young firms. When export surpluses stagnate and public deficits are reduced, sluggish private investment and consumption limit aggregate demand.

Today, Europe has an unemployment rate of around 10%, up from 7% in 2008. Unemployment declined marginally in 2015 but is still at a level much higher than before the crisis and higher than in other regions of the world. The employment rate, which had risen sharply before the financial crisis, mainly due to increasing part-time employment, has again declined and was lower in 2015 than in 2008. Especially if youth unemployment remains at today's high level of 20%, young people will permanently lose confidence in the European model.

Deficits were cut after the financial crisis, but public debt is still high and above the limits of the Fiscal Pact in many Member States. Differences in debt levels and deficits among Member States are large. On average, euro area countries pay a higher interest rate for a lower level of public debt than Japan or the US.<sup>2</sup>

Disequilibria between countries and regions are far too great for an economic or political union and even more so for an area with a common currency, as demonstrated by the turmoil in the euro area up to 2012. Differences in per capita income are 14:1 between the ten richest and the ten poorest regions.<sup>3</sup>

## Structural strengths and deficits

Europe's performance definitely looks better when trade data are used and when analyses concentrate on manufacturing. In recent years, Europe has improved its industrial structure and enjoyed trade surpluses in the most sophisticated sectors. Its share in global trade is relatively stable, and the share of manufacturing in GDP has declined less than, for example, in the US. The introduction of the euro has by and large been a success; it is used in ever more countries (as a currency or for pegging) and has the same value relative to the US dollar as when it was introduced (*Aiginger et al.*, 2015).

Additionally, EU exports are the strongest component of aggregate demand. Europe, as a whole, has a surplus in its current account that is even higher than at the start of the crisis. However, there are Member States with large and persistent surpluses and others with large current account deficits.

<sup>2</sup> For more information on design, failure and fixes of the new challenges see De Grauwe (2013, 2015).

<sup>3</sup> The relation is still 6:1 based on purchasing power parity. For an in-depth analysis of the competitiveness of regions see *Aiginger et al.* (2013B) and *Aiginger and Firgo* (2015A).

Europe enjoys an export surplus; its market share in global trade has declined less than that of the US, but it is not catching up in the areas of innovation and higher education.

Although Europe invests comparatively heavily in early education, vocational training and active labour market policy compared to other regions, this investment nevertheless appears to be insufficient with regard to the necessity created by structural change and persistent differences in education according to gender, parental and ethnical background. Europe does not sufficiently enhance its capabilities in R&D and higher education – two of the most important drivers of growth and welfare. Schools and labour market policy do not provide the skills needed by firms, as highlighted by the high unemployment rates of unskilled workers and large numbers of firms reporting an inability to fill jobs (mismatch). The target of increasing R&D spending to 3% of GDP has not been reached, with expenditures stagnating at about 2% since 2000. Europe has too few top universities and leads in few technological fields.

Europe's half-way position between the productivity frontier of the US economy on the one hand, and the catching up of the developing countries on the other, is a challenge. Structural change in Europe is too slow, as is the upgrading of capabilities needed in frontier economies. Each year, newly industrialised countries gain market shares and take over positions Europe previously held as the supplier of medium and medium-to-high-tech products.

## Endangered lead in social and environmental performance

Europe has so far successfully defended its social model by means of comprehensive healthcare, pensions and unemployment insurance. Life expectancy is increasing and European countries rank among those with the highest life expectancy worldwide. Government expenditures and taxes relative to GDP are higher than in other developed regions. Income differences are smaller and taxes and social expenditures tend to redistribute from high to low income groups. However, poverty, though still lower than in the US, is today higher than at the start of the crisis and poverty rates are increasing, in contrast with the EU 2020 goals (Pitlik, 2016). Thus, the expensive system has to be adapted to new challenges while not undermining competitiveness.

Europe used to be the global leader in the area of environmental policies. Energy intensity is 30% lower than in the US, and CO<sub>2</sub> emissions per capita are just 40%.<sup>4</sup> The share of renewable energy is rising, as is the share of organic food. Nevertheless, emissions are rising and are far off the track defined by the European Energy Roadmap 2050, which demands an emissions reduction of 80% to 95% by 2050 (United Nations, 2015; European Commission, 2011). Environmental regulatory control is often weak and the regulatory authorities seem to be hostages of lobbying by firms and governments. Despite its frontrunner position in "green" technologies,

<sup>4</sup> Energy intensity in total primary energy supply per GDP (where GDP is in US\$) is 0.11 in Europe and 0.15 in the US. CO<sub>2</sub> intensity (defined as CO<sub>2</sub> in tons per capita) is 6.57 in Europe and 16.18 in the US (International Energy Agency, 2015).

Europe is not adapting its successful social model to deal with new challenges and is reluctant to lead in green technologies and decarbonisation.

Europe is reluctant to use this first-mover advantage to extend its technological lead and firmly establish itself as an "environmental" technology leader.

## Changes in values and cooperation with neighbours

Differences in opinion and values lead to reform resistance and several reforms have not been approved by all Member States, thus complicating decision making and governance.

Europe's share in global output has declined from 28% (2000) to 21% (2015).<sup>5</sup> The neighbouring countries, whether to the east (Russia, other former Soviet Union countries and the Black Sea area) or to the south (northern Africa), tend to be growing much faster. Europe, however, has no visible, consistent and common strategy for finding a new role in the globalising world by cooperating with its neighbours. High levels of political instability in the adjacent regions are a problem which currently overshadows the growth potential of these markets. The past, however, has shown that dynamics recover in catch-up regions open for trade and investment whenever political turmoil declines.

A number of European values are increasingly being called into question. The call for an "ever closer Union" seems to have lost its appeal. Communities and nations no longer have a clear vision of where to go. Differences in opinions between the "North" and the "South", but also the old members and the new ones, are widening. Strong, established parties in the political centre representing large and diverse parts of society no longer dominate democratic processes and elections (Follesdal and Hix, 2006). The European concept of a social market model in which differences in income are limited, and in which government plays a pivotal role in providing public goods, setting rules and regulating markets, is being questioned politically and as a result of globalisation (Tichy, 2015A). Decision-making and governance are complicated by the heterogeneity of preferences and circumstances (Heinemann and Grigoriadis, 2013). Two-tier strategies in subsets of countries enable changes with which not all members currently can or wish to agree, however, they also complicate decision making and governance.

In this environment, Europe stands out as a successful model experiencing a difficult stage ("... our European Union is not in a good state"; Juncker, 2015). It is reluctant to build on its own strengths. Targets are often set ambitiously and not monitored, leading to a credibility problem and hesitation to pursue new goals. The public sector is large but does not invest adequately in the future. In comparison to frontier countries, the majority of European countries are in a relatively weak position in terms of productivity, innovation, entrepreneurship and higher education.

Urgent changes are needed for at least six reasons:

- Low dynamics are preventing the reduction of unemployment and underemployment as well as the repayment of public debt.
- Unemployment is high and increasing for less-skilled workers, while a shortage of highly qualified workers is limiting economic dynamics.

<sup>5</sup> Source: OECD (gross domestic product, volume, at 2005 PPP, USD). The share of China has risen, from 8% to 20%, while that of the US has declined, from 27% to 22%.

- Youth unemployment is leading to the disillusionment of young people with the European project.
- Increasing income differences and the re-emergence of poverty are leading to rising support for political movements rejecting European values and integration.
- Europe is currently not contributing its fair share to limiting climate change; this is not only a moral issue but economically disadvantageous, given that Europe is losing its first-mover advantage, its technological lead and considerable export potential in renewable energies, electric cars and emission-curbing technologies.
- The financial sector is still prone to creating bubbles and instability for the real economy. Speculative transactions are not being taxed and regulation is sometimes too complex, while not including offshores and shadow banking.

This chapter concludes that there is an urgent need for policy changes, that there is a need for an inspiring yet feasible vision for Europe, and that the goals and strategies for the continent have to be derived from this vision.

### 1.3 “Business as usual” forecasts omit important problems

**Long-term forecasts predict lower growth for Europe and sharply declining global market shares, based on low growth in the labour force and a failure to catch up in terms of technology in most models.**

Long-term forecasts up to 2050 differ in details and methodology, but share some common features:<sup>6</sup>

- Global economic growth (measured in GDP, usually in constant US dollars) is predicted to lie between 3% and 4%. Per capita growth is between 2% and 3% per year.
- Forecasts are lower for industrialised countries (US, Japan and Europe) and even lower for the euro area (especially for Germany due to its declining working-age population). Forecasts for the US are around 2%, for the EU27 about 1.7% (with differences between Member States due to population trends). China, India, and Africa are predicted to grow at more than 5% p.a., with the highest rates for India (6%).
- Compared to past growth rates, global economic growth is predicted to be about the same as in the past, albeit this is not the case for individual countries. Growth in the US and Europe will be lower than in the past 50 years.
- Europe’s share of global GDP will decline from its top position of 26% in 2010 to 13% in 2050. Europe will fall behind the new leader China, but also (slightly) relative to the US. The share of industrialised countries will decline from about one half of global GDP today in the direction of one third.

<sup>6</sup> See *Bauer* (2015); overview of forecasts by *Fouré et al.* (2012); *Ward* (2011); *OECD* (2012); *Lancefield et al.* (2011); *Wilson et al.* (2011); *European Commission* (2015A); *Duval and Maisonneuve* (2010).

Three tendencies lie at the heart of these predictions:

Firstly, countries with low per capita income tend to grow faster; this convergence mechanism is the strongest and most robust prediction of growth models, although more recent literature stresses the dependence of the speed of convergence on certain regional and institutional parameters.<sup>7</sup>

Second, countries with an expanding labour supply or an increased ability to make use of their labour supply, and those with inward migration, grow faster (in terms of GDP, and often also in terms of per capita GDP).

Third, technological progress – the third determinant of GDP growth – is assumed to be similar to the past for industrialised countries. In some scenarios it is modelled to be influenced by policy variables (education, R&D, democracy and the ratio between savings and investment). In all models, emerging economies have a higher productivity growth rate (due to technology diffusion) than industrialised countries.

**Table 1: Long-term forecasts for growth and shares of global GDP**

	GDP growth <sup>1</sup>		GDP/capita growth <sup>1</sup>		Share in world GDP <sup>2</sup>		
	2010/2025	2025/2050	2010/2025	2025/2050	2010 <sup>3</sup>	2025	2050
EU27	1.7	1.7	1.6	1.7	26.0	18.3	13.1
USA	2.0	2.0	1.5	1.6	24.6	18.2	13.9
Japan	1.3	1.0	1.5	1.3	8.3	5.4	3.2
China	6.6	4.0	6.4	4.1	10.2	17.1	19.5
Russia	4.4	3.1	4.7	3.5	2.5	3.1	2.8
Brazil	3.9	3.4	3.4	3.2	2.8	3.0	3.0
India	7.0	5.8	6.2	5.4	2.7	6.2	11.5
Other countries					22.9	28.6	33.0
Total World	3.4	3.2	2.5	2.6	100.0	100.0	100.0

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016 based on: <sup>1</sup> Forecasts from Fouré et al. (2012), OECD (2012), Wilson and Purushothaman (2003), Lancefield et al. (2011) (average) at constant US\$. – <sup>2</sup> Forecasts from Fouré et al. (2012), OECD (2012), Wilson and Purushothaman (2003), Lancefield et al. (2011) (average) at PPS. – <sup>3</sup> Forecasts from Fouré et al. (2012) and Wilson and Purushothaman (2003) (average) at PPS.

**Persistently high unemployment rates, income inequality and climate change have not been addressed.**

These forecasts are based on mainstream growth theory (with convergence in per capita income), on trends in labour supply (based primarily on demographic trends) and finally on exogenous technological progress. However, they omit important

<sup>7</sup> See literature on "conditional" convergence or "convergence clubs" (Barro, 1997; Temple, 1999).

variables that are at the heart of WWWforEurope; specifically, they abstract from social and environmental questions and the institutional framework.

- Predictions of unemployment are either absent or unemployment is assumed to revert to historical averages. This follows from technical assumptions (return to equilibrium) and the convergence mechanism underlined by theories declaring unemployment as a cyclical phenomenon irrelevant in the very long run.
- Income distribution is not addressed in any of the predictions, and gender gaps are also not reported.
- Migration is assumed to moderately increase up until 2040 and then decline. This is predicted irrespective of strong growth in terms of population in regions bordering Europe (specifically North Africa) and – without migration – declining working-age populations in Europe.

The forecasts also neglect the implied cumulative increase in output and its impact on resources and emissions. If the global economy grows at 4% p.a., in 2050 output will be five times higher than in 2010. If growth in industrialised countries is 2% p.a., output will still approximately more than double by 2050. There is no discussion on how this could be aligned to emission targets, water supply or land use. Environmental aspects, and the respective policy response scenarios, are seldom incorporated into forecasts.<sup>8</sup> Available forecasts are largely "business-as-usual predictions" based on past experience and assume no policy change. Technical progress is forecast to evolve as in the past, meaning that it is mainly considered to be labour saving. Labour supply depends on population forecasts, derived from birth rates and life expectancy and only marginally from migration or shifts in retirement ages.

The forecasts do not model changes in the distribution of income and wealth, nor do they model their impact on growth and stability. They do not use sub-models incorporating environmental and, notably, climate challenges or spillovers from the financial sector to the real economy.<sup>9</sup> New and extended models are called for, and the research in the WWWforEurope project on models is summarised in *Kratena* (2016) and *van den Bergh* (2016).

Summarising, the currently available long-run predictions for economic growth extending to the middle of the century tend to be conservative, based on business-as-usual assumptions, and abstracted from new risks, behaviours and options. Important changes in European governance have been initiated, stabilising institutions have been founded and a European investment fund has been created. However, the future will not resemble the past.

<sup>8</sup> Ward (2011) includes rising environmental costs and the OECD forecast (2012) assumes a carbon tax leading to a halving of global emissions.

<sup>9</sup> A 4% growth rate implies an output 34 times higher in 2100, and 2% p.a. one that is six times higher (compared to 2010).



## 1.4 Calling established policy stances into question

**Policy strategies in Europe are based on seven misperceptions. They are preventing the development of a coherent and successful new strategy for Europe.**

Many existing policy recommendations proposed by international organisations, think tanks and research groups for how to restart growth in Europe exhibit severe shortcomings with respect to their effectiveness and their potential to address new challenges and opportunities. They are not built on a vision of where Europe or industrialised countries should try to head. We list seven common perceptions (be they assumptions or conclusions) that, in our assessment, are not compatible with a new successful strategy for Europe.

### Misperception #1: Growth will return and solve the unemployment problem

Many policy statements implicitly assume that the financial crisis has finally been overcome and economic growth will become strong enough to reduce unemployment to “normal” levels.

Four arguments exist as to why growth rates similar to the past are very unlikely: Firstly, historical evidence shows that a return to past rates of growth and unemployment may take a very long time after financial and economic crises (Reinhart and Rogoff, 2009). Secondly, literature on secular stagnation refers to several reasons for lower long-run growth, whether they be related to saturation of demand or lack of new radical innovations, particularly in industrialised countries (Teulings and Baldwin, 2014). Thirdly, history shows that periods of economic growth higher than 1.5% p.a. are exceptions (*Tichy, 2015A*). Fourthly, planetary limits are already stressed at the current output level (*Fischer-Kowalski and Wiedenhofer, 2014*), and radical changes in technology, policy and behaviour will have to occur if growth of industrialised countries similar to that in the past is to be compatible with environmental goals and limit global warming to less than two degrees.

### Misperception #2: The priority of cutting public deficits quickly and at any price

Many policy analyses stress that public deficits are high, as is public debt. It is asserted that a precondition for returning to growth would be to eliminate current deficits quickly and reduce debt-to-GDP ratios. Some stipulate that this should be done at any price and for all countries, if necessary, by across-the-board cuts of expenditures.

The success of consolidation strategies is known to be highly dependent on their priorities, timing and on economic dynamics in adjacent regions. Public support for fundamental reforms in general, and consolidation programmes in particular, depends on perceived fairness, communication, trust in government and embeddedness in a long-run vision (*Pitlik et al., 2014*).

WWFforEurope contends that reduction of long-run debt is indeed an important goal, particularly if long-run growth prospects are limited. The danger of a possible rise in interest rates and a new crisis (requiring further fiscal and monetary stimuli and thus budgetary leeway) cannot be excluded.

### Misperception #3: A lack of public funds prevents financing European goals

The midterm evaluation of the EU 2020 Strategy clearly reveals that many policy goals (e.g. that of increasing R&D; [Aiginger, 2014A](#)) will not be reached. Other analyses show that the aspired switch to renewable energies is limited by insufficient investment in European grids, and that strategies to cut youth unemployment are being put on hold. Many analyses ascribe low public investment or insufficient R&D expenditures to a general lack of public funds.

Considering the following facts, it becomes obvious that a shift in priorities may well free up public funds to finance future-oriented policies:

- Europe currently grants large subsidies for fossil-based energy; in many countries they are even higher than for renewables (International Energy Agency, 2012). In general, but even more so in times of low oil prices, subsidies for coal, petrol and diesel could be curbed (Gurría, 2013).
- Europe spends the largest single part of the EU budget subsidising large agricultural units ("first pillar"), with a prioritisation of conventional instead of organic agriculture ("second pillar"; [Bonfiglio et al., 2014](#)).
- The expenditures for the 28 separate military regimes are higher than those of Russia and China combined.<sup>10</sup> These uncoordinated military systems are inadequate for meeting new challenges within and outside the Union, whether it be border protection, pre-empting conflicts, supervision of migration or the provision of humanitarian aid.

### Misperception #4: A lack of private funds prevents economic recovery

Private investment has been sluggish ever since the outbreak of the financial crisis and has not recovered to its usual level. Contrary to mainstream perceptions, the reason for this is not a general credit and liquidity squeeze on firms but low demand for loans ([Geels, 2013](#)). Profits have recovered; wage income shares are, if anything, lower than in the past, loans are cheap (even if conditions have been tightened). Firms are using their profits to rebuy their own assets or deleverage. The total non-financial business sector has given up its usual net debtor position and is now a net creditor. The main reasons for sluggish investment are pessimism about the dynamics of markets, low medium-term growth expectations and the fear of risks spilling over from the financial sector or from political turmoils ([Tichy, 2015B](#)).

Neither counterproductive subsidies nor inefficient expenditures nor investment in a decarbonisation of the economies have been addressed in the Annual Growth Reports of the European Commission, and the priorities in line with Europe 2020 are assigned a low priority relative to fiscal balances.

<sup>10</sup> SIPRI Military Expenditure Database (Stockholm International Peace Research Institute).

### Misperception #5: Priority for increasing labour productivity

Even where recovery has finally begun to take place, the increase in labour productivity has been lower than in past cyclical upturns. Therefore, labour productivity has been assigned a high priority in many policy recommendations.

Increased productivity is indeed an important goal since it allows goods and welfare to be provided with lower inputs and greater choices. However, what is important is overall productivity and not the productivity of labour. Total productivity can be boosted by increasing energy, material and capital productivity instead of labour productivity. Historically, labour productivity has increased faster than energy and resource productivity, leading to a close correlation between output dynamics and emissions, and a need for economic growth to exceed a certain threshold in order to reduce unemployment.

Particularly in a scenario where growth will be subdued in industrialised countries – and if this cannot be changed by policy or is not warranted due to environmental reasons – an increase in labour productivity will tend to reduce employment and make unemployment persistent. Increasing resource productivity instead provides major scope for cost reductions (the share of materials plus energy input in sales is higher than the share of wages) and limits emissions. As a side effect, it may also increase labour productivity, but less so than if increasing labour productivity were the top-priority objective (*Meyer and Sommer, 2014; Rengs et al., 2015*).

### Misperception #6: Growth is restricted by labour shortage due to ageing

The European workforce is ageing and the share of young people is decreasing. This leads to the general assumption that Europe is doomed to suffer an impending labour shortage.

Actually, it is very unlikely that there will be a quantitative shortage, at least in the period up to 2030. Unemployment today is around 10% and underemployment adds approximately 5% to labour reserve capacities. There are a number of additional sources of labour supply which could be tapped if needed (*Marth, 2015; Leoni, 2015; Altzinger et al., 2015; Crespo Cuaresma et al., 2015A*):

- part-time workers who would like to work longer; young people in marginal jobs,
- older people who today are forced into early retirement after losing a job,
- raising the retirement age in general due to rapidly rising life expectancy (and retirement age of women in those countries where it is still lower than the retirement age of men),
- intra-European migration or migration from neighbour countries (including refugees).

Our finding that Europe does not face a quantitative labour shortage should not be used to distract from the important mismatch problem in European labour markets. Very often the supply and demand of qualifications and experience do not match up

(skill gap; see section 4.4). This is a qualitative problem that requires other policies than a quantitative problem.

### Misperception #7: Cutting labour costs, environmental targets and welfare spending will restart growth

Europe has higher costs for social expenditure and environmental standards, as well as a lower spread between high and low incomes, than its competitors. Calls for moderate wages and no "gold plating" in terms of social and environmental targets are ubiquitous. There are no signs that cost competitiveness has generally been lost in Europe; Europe enjoys a substantial export surplus. There are some countries with high absolute labour costs and an overregulated and inflexible labour market and, at the same time, large export deficits and slow growth. But labour costs can be compensated by higher productivity; "unit labour costs" are an adequate benchmark for cost competitiveness. And several leading European countries combine high labour costs with high levels of productivity and high social and environmental rankings (*Ederer and Reschenhofer*, 2014). Economic analyses by Porter (1991) and Stern (2007) emphasise the beneficial consequences of sophisticated consumers

## Box 1: Standard remedies will not suffice to restart growth or improving wellbeing

Misperceptions tend to lead to flawed policy conclusions or at least policy conclusions that are not radical enough to propel the necessary transition. Enumerating the misperceptions in this chapter does not mean that there exist no analyses or policy proposals that adequately adapt them. And our call for deep change in European governance does not ignore the fact that some important changes have already been initiated.

However, current modifications will not suffice to restart growth, and will be even less effective at achieving higher welfare levels based on given production levels or low growth. The OECD's New Approaches to Economic Challenges (NAEC) project clearly has a long-run perspective similar to *WWWforEurope*, calling, inter alia, for less inequality and for zero net emissions of CO<sub>2</sub> in the second half of this century. The European Commission's Energy Roadmap 2050 calls for a reduction of CO<sub>2</sub>

emissions from 80% to 95% by 2050 (European Commission, 2011). And the Paris Summit (United Nations, 2015) in December 2015 showed that the necessity of decarbonisation is now accepted by governments worldwide.

These long-run strategies are currently not reflected in real policy. They are also not reflected in OECD country reports or in the Commission's Annual Growth Report (published to give policy guidelines for the next year), nor are they reflected in the Commission's Country-specific Recommendations in the European Semester. The re-launch of the guidelines for the European Semester as of late 2015 puts a greater emphasis on social indicators, but not on environmental ones. Implicitly, mainstream economic policy contends that other goals are more important than the transition to a new growth path and this contention is built on the above-mentioned misperceptions.

and of a first-mover advantage (leading to lower cost and higher export potential) if climate change is combated early.

## 1.5 The further outline of the report

Chapter 2 proposes a vision as to where Europe should go. This vision defines the criterion of wellbeing as the overarching indicator of success. The triple goals for operationalising wellbeing are economic dynamics, social inclusion and environmental sustainability.

Chapter 3 presents three guiding principles for achieving these three goals:

- The three strategic goals and the instruments applied to achieve wellbeing have to be developed simultaneously. Separately pursued goals (in so-called silo strategies) induce high costs and low probabilities of success.
- Europe has to adopt a high-road strategy based on innovation and qualifications. It has to forfeit the enticement of low costs and social and environmental standards, as well as other elements of a low-road strategy.
- Europe needs a two-stage strategy. In the first stage, unemployment, income spreads and public debt have to be reduced and massive investment into decarbonisation must be started. In the second stage, employment as well as emissions have to be increasingly decoupled from output (double decoupling). This requires new incentives, radical and changes early in stage one, which is therefore termed "Consolidation and Reprogramming".

Chapter 4 presents seven drivers of change which could enable the transition of Europe: (i) boosting and redirecting innovations, (ii) restarting dynamics, (iii) reforming welfare, (iv) increasing skills and symmetric flexibility, (v) decoupling resource use from output, (vi) a smarter public sector and (vii) reforming the financial sector.

Chapter 5 addresses reform facilitators. These are political and cultural decision-making processes that should make reforms possible this time, in contrast to failure of the Lisbon and the disappointment with the EU 2020 Strategy. It addresses resistance to reform and recommends using bottom-up processes that make heterogeneity and pluralism an advantage. Business and social partners have to be brought on board and democratic support has to drive the transition.

Chapter 6 sums up the most important elements of the strategy.

Part II of this synthesis report provides a comprehensive overview of model results developed in WWWforEurope with a specific focus on how double and triple dividends between the goals can be attained (*Kratena*, 2016), as well as the research results clustered in the five project areas (welfare system, low-carbon economy, innovation and industrial policy, new governance structures on the European level and the role of regions in transition).

**KEY INFO**

- ▶ WWWforEurope proposes switching to high wellbeing as the new benchmark of success, substituting GDP and GDP growth.
- ▶ Wellbeing is operationalised by three strategic goals: economic dynamics, social inclusiveness and environmental sustainability.
- ▶ Economic dynamics implies that more people profit from a broader set of economic achievements, based on more choices and capabilities. Economic structures as well as individual positions change in an open society.
- ▶ Social inclusiveness implies lower unemployment, lower income spreads and the absence of poverty, religious and ethnic conflicts.
- ▶ Environmental sustainability demands respecting planetary boundaries and reducing absolute emissions and resource use.

[Next chapter ▶▶](#)

## 2. WHERE EUROPE SHOULD BE HEADING

Europe's crisis-ridden history led to the desire for a common peace project after World War II.

### 2.1 A vision for Europe in 2050

Europe has always been strongest when it has had a common, broadly accepted guiding idea, whether it be peace, trade liberalisation, the common market project or the common currency. Such "Grands Projets" help to put problems, conflicts and obstacles into perspective, namely as short-term noise on a trajectory towards a peaceful Europe and a better life. The early phases of industrialisation, the two world wars and the inter-war conflicts and recession led to a deeply rooted desire for social inclusion and the participation of all groups in democratic processes. Unemployment and poverty were understood to be root causes of conflicts and wars. In 1944, Lord Beveridge designed a vision for a post-war society and economy in Europe in which economic policy aiming at full employment was embedded in a free market economy (as opposed to the planned wartime economy). Social models developed differently within Europe to a certain extent, but the internal differences were less significant than those to the US model (which historically stresses individual success in a sparsely populated country), or the state-dominated Asian model. Each European country has developed its own relatively path-dependent model without too many ideas developed jointly at the European level. However, common features are a high priority for social and environment protection in almost all European countries, with some reservations on the part of the former socialist members (*Chen et al.*, 2014; *Schweickert et al.*, 2013).

At this time, however, this long-run success story is facing non-negligible short and medium-term challenges and the peace project no longer inspires the younger generation. It is time to reconsider the model and formulate a new vision.

In what follows, we try to define such a long-run vision for Europe 2050 – first on a general level, then pursuing the three strategic goals implied by the vision and seeking tentative operational consequences.

## The vision for wellbeing in Europe in 2050

By 2050, Europe will be a region with high social and environmental standards that guarantee its citizens a high level of wellbeing. It will be a dynamic, open and pluralistic economic area. Unemployment will be low, inclusion high and income differences limited. Emissions and resource use will have absolutely declined to a level compatible with environmental resilience, biodiversity protection and mitigating climate change. Energy, transport and housing infrastructure will be decarbonised. Europe will learn from other regions and offer its improved model to neighbouring regions and the world at large.

Thus, the project defines “wellbeing” as the overarching benchmark of performance for Europe. This is in line with the “beyond-GDP” approach, as underpinned by the broad economic literature. It is made operational by defining three strategic goals which are made measurable by the OECD’s Better Life Indicators.<sup>11</sup> This approach implies a definite shift away from the dominant focus on GDP or GDP per capita and its growth as benchmarks of the performance and progress of a society.

The benchmark of wellbeing calls for the simultaneous accomplishment of the strategic goals: economic dynamics, social inclusiveness and environmental sustainability.

- Economic dynamics in this context means that an ever-increasing number of people profit from the attainment of a broad set of economic achievements. Choices and capabilities are widening. Economic structures and individual positions will change in response to needs, preferences and chances. People are aware that achieving individual welfare and life satisfaction goals is dependent on societal wellbeing (*Tichy, 2013, 2015C*).
- Social inclusiveness implies that unemployment and social, religious and ethnic divisions are low; life chances, education and capabilities will be distributed more equitably and spreads in income and wealth based on merit and limited to levels determined by democratically-based political decisions (*Huber et al., 2013; Altzinger et al., 2015*).
- Environmental sustainability demands that the limits of the planet be respected and maintained through technological, social and behavioural changes as well as institutional advances. Absolute emissions and resource use need to be significantly reduced so as to allow poorer countries scope for economic development and poverty reduction, and for future generations to make their own choices (*Antal et al., 2012*).

<sup>11</sup> [http://ec.europa.eu/environment/beyond\\_gdp/index\\_en.html](http://ec.europa.eu/environment/beyond_gdp/index_en.html) and Rehn, 2010.

Wellbeing is made operational by defining three strategic goals.

**Figure 1: The benchmark of performance and the three strategic goals of wellbeing**



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

**Different starting positions may lead to different priorities.**

In this Europe 2050, incomes will grow slowly, though faster in countries and regions with lower per capita income and among individuals with lower incomes. Working time will mainly be reduced on an individual and self-determined level, but with a general downward trend. More money and time will be spent on education, social goals, leisure and cultural activities and satisfaction levels will increase.

Differences across countries in terms of per capita income and other measures of welfare will be reduced, as will unequal opportunities due to birth, inheritance and gender. This will be achieved without abandoning the ethical value of pluralism and differences due to merit (*Gerold and Nocker, 2015; Dohse and Gold, 2014*). Countries and regions will have different priorities concerning social, economic and environmental goals, but follow a common European trajectory. Adapting the strategy to country-specific preferences and locational factors does not preclude learning and convergence in terms of lifestyles with other European countries and neighbours.

The public sector is efficient and organised more on the European than the national level, at least with respect to taxes and investment in the European project. It will support the transition of Europe to the new strategy, relying on best practices from different institutional settings (*Sachs, 2013*). Choices and capabilities based on individual preferences will increase. Those seeking employment will generally be employed, with particular incentives to be mobile, flexible and open to re-training. Social risks will be covered by society, but the priority of the social system will be to use social investment to empower individuals to prevent social risks in the first place (*Leoni, 2015; Asatryan et al., 2014A*).



Economic volatility will be limited due to a resilient finance system and by means of a proactive and countercyclical economic policy. Europe is embarking on a high-road strategy and competitiveness is defined as the ability of a country or region to deliver "beyond-GDP" goals (Aiginger *et al.*, 2013A; Aiginger and Firgo, 2015B). This high-road path is based on research, innovation and education. Europe will be an open society based on rule of law and respect for European values.

Defining wellbeing as the overarching measure of societal success instead of GDP is in line with the approach that GDP growth is less a goal than an instrument. This approach is called "agrowth concept" (van den Bergh, 2011; van den Bergh and Kallis, 2012; van den Bergh, 2015). It suggests that, instead of going for growth as a goal, economic policy should focus (more directly) on welfare-increasing objectives like employment, distribution and climate change. And the policy can be open, independently of which rate of GDP growth this implies. It also helps to overcome the discussion between the pro-growth and the zero or degrowth camp.

In a nutshell, this vision calls for six distinctive characteristics of Europe 2050:

- dynamics and structural change based on innovation and skills, measured by "beyond-GDP" goals,
- a lower spread of incomes and lower unemployment as well as improved options to select lifestyles,
- a leadership for Europe in environmental technology, energy efficiency and renewables,
- lower taxes on labour, higher taxes on environmental damage and property and a shift of expenditures to future priorities leading to a "smart" public sector,
- a stable financial sector, smartly regulated and stabilised by limits on speculation,
- openness, profiting from globalisation and heterogeneity, cooperation with neighbours.

Given the horizon for the transformation needed and the uncertainty about long-run developments, these ambitious goals will often be reached by trial, error and learning. In the next chapter we introduce three principles which should be applied in this search process. The direction of change is defined by the vision, while the instruments and rate of change can be different among Member States and dependent on circumstances. Yet the guiding principles of the strategy and the three strategic goals have to be pursued by all Member States.

The World Bank (2012) has described Europe as a convergence machine – mainly because of its success in rapidly integrating central and eastern European countries after their transition from the socialist system – and as a lifestyle superpower because of its ability to include other than purely material goals in its socio-economic system. WWForEurope envisages Europe as becoming a "superpower of wellbeing", where wellbeing includes all three goals.

## 2.2 Three goals providing wellbeing

The success of Europe 2050 will therefore be assessed on the basis of the level and change of “wellbeing”. This performance measure substitutes the focus on GDP, GDP per capita or the growth of either of these. Adopting this approach, three strategic goals are simultaneously relevant to wellbeing: economic dynamics, social inclusiveness and environmental sustainability. Each of these goals can be broken down into important objectives. Additionally, each of the three goals is subject to a sustainability condition, paying attention to the question whether stocks are in equilibrium or overused.<sup>12</sup>

Finally, there are some cross-sectional principles that, at the general level, seem to be undisputed in the European discussion, but should be kept in mind when designing the strategy and the instruments for change.

In this chapter we briefly discuss the three goals, their objectives and their sustainability conditions.

### Economic dynamics

**Economic dynamics include income dynamics, but equally structural change, mobility and choices in consumption and lifestyles.**

The term economic dynamics includes what is usually called income dynamics. Equally important components of dynamics are structural change and mobility (as opposed to the petrification of existing or inherited structures). If production, consumption and public expenditures are continuously adapted to reflect new needs or new market potentials, preferences and priorities, the performance of an economy will improve and individual wellbeing will rise, along with wider choices in consumption and lifestyles. Mobility within society and regions, as well as diversity and openness to other societies increases economic performance and wellbeing (*Crespo Cuaresma et al.*, 2015B).

Rising incomes will have to remain an important objective; first, because incomes are valued as such (particularly by individuals with below-average incomes), but also because they are positively interrelated with other objectives (employment, poverty reduction, debt repayment and options). Closing the European “investment gap” should be done with a high priority on investment for a new infrastructure enabling the decarbonisation of the European economy. This leads to higher demand and income, enabling the socio-ecological transition.

The importance of high and rising incomes will, however, decrease, at least for rich countries. The reasons for this are the decreasing marginal utility of income, on the demand side, and the increasing negative environmental side effects of production, on the supply side (*van den Bergh and Antal*, 2014). However, even if the preference for increases in incomes declines, growth might still be either an instrument for

<sup>12</sup> “Stocks” are cumulated values of flows (sometimes after netting inflows and outflows). Thus public debt is a stock, created by past deficits (flows) minus repayment. The stock of buildings is the sum of new buildings in each year (minus the houses demolished). For sustainability conditions in general see *Weiss and Unterlass* (2015).

Table 2: WWWforEurope strategy

Performance measure	WELLBEING		
Three main goals	Economic dynamics	Social inclusiveness	Environmental sustainability
<b>OBJECTIVES</b>	<ul style="list-style-type: none"> <li>■ Structural change</li> <li>■ Mobility (personal, regional)</li> <li>■ Rising disposable income</li> <li>■ Openness, diversity</li> <li>■ Choices of consumption and life styles</li> </ul>	<ul style="list-style-type: none"> <li>■ Employment</li> <li>■ Coverage of social risks</li> <li>■ Fair income distribution</li> <li>■ Work–life balance, health</li> <li>■ Equality of opportunity</li> <li>■ Absence of violence and discrimination</li> </ul>	<ul style="list-style-type: none"> <li>■ Limited emissions (CO<sub>2</sub>, NO<sub>x</sub>), waste</li> <li>■ Biodiversity</li> <li>■ Reduced resource and land use</li> <li>■ Increasing share of renewables</li> </ul>
<b>STRATEGIES</b>	<ul style="list-style-type: none"> <li>■ High road competitiveness</li> <li>■ European governance</li> <li>■ Innovation, skills</li> <li>■ Learning, smart public sector</li> </ul>	<ul style="list-style-type: none"> <li>■ Social investment</li> <li>■ Reforming welfare systems</li> <li>■ Decoupling employment from growth</li> <li>■ Symmetric flexibility</li> </ul>	<ul style="list-style-type: none"> <li>■ Redirecting innovation, circularity</li> <li>■ Decoupling emissions from growth</li> <li>■ Functionality approach, sector strategies</li> </ul>
<b>SUSTAINABILITY CONDITION</b>	<ul style="list-style-type: none"> <li>■ Debt sustainability</li> <li>■ Financial resilience</li> <li>■ Balanced external accounts</li> </ul>	<ul style="list-style-type: none"> <li>■ Non polarisation</li> <li>■ Political stability (external, internal)</li> </ul>	<ul style="list-style-type: none"> <li>■ Non decreasing stocks of natural resources</li> <li>■ Choices for the next generation</li> <li>■ Precautionary principle</li> </ul>
Cross-sectional issues: Gender ..... Inter-generational equity ..... Openness ..... Pluralism ..... Democracy			

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

achieving other objectives or the consequence of investing into decarbonisation or of reducing inequality.

Innovation and skills are important drivers that enable structural change (*Lechthaler and Mileva, 2013; Molana and Montagna, 2015*) and profiting from the gains of such changed structures, while at the same time increasing income dynamics and providing the means and options to choose. Good governance and a "smart" public sector can contribute positively to economic objectives, but a large public sector can also hamper dynamics or structural change (*Licht et al., 2014*).

Incomes per capita and income growth have to be assessed differently according to whether or not they are debt-financed and whether the existing debts are

"sustainable", factoring in interest rates, economic growth and the composition of debts. Connected with this, large and persistent deficits in external balances (current accounts) are also not regarded as sustainable (*Aiginger et al.*, 2013A).

Another sustainability condition is the stability and resilience of the financial system so that perceived dynamics are not only due to speculation-related booms.

## Social inclusiveness

**Generating high employment, mitigating social risks and limiting the spread of income and wealth are prerequisites for social inclusiveness. A switch from social protection towards social investment is essential.**

The second strategic goal for WWForEurope's vision of wellbeing is social inclusiveness. This includes objectives such as high employment, the coverage of social risks by society, and limits to the spreads of both income and wealth. Recent developments have augmented the importance of social inclusiveness in Europe: unemployment is close to two-digit levels, youth unemployment is even considerably higher, polarisation and income differences have increased. In addition to issues of fairness and adequacy, rising inequality is also assessed as negative in terms of its impact on economic dynamics (OECD, 2015A).

High coverage of social risks and the objective of equal opportunity independent of family background, incomes and gender are characteristic of the European model. Improving work-life balance by providing more choices for the mix of work, leisure and family responsibilities has become more relevant in recent years. At the same time, new social risks are also emerging. From a wider perspective, internal and external security, high levels of public health and the absence of violence and discrimination can also be seen as objectives in reaching the goal of social inclusiveness (*Leoni*, 2015).

A main strategy for raising social inclusiveness is to switch from social protection to social investment, thereby increasing the capabilities of people. Employability and adequate responses to the need for flexibility are at the core of social inclusiveness (Hemerijck, 2012; *Leoni*, 2015).

The sustainability dimension of this goal can be assessed by looking at polarisation and political and social stability. A social policy that cannot prevent social unrest, that allows the polarisation of societies (e.g. between young and old, newcomers and incumbents), and that cannot prevent political turmoil and substantial electoral successes of populist and destabilising political groups is not sustainable.

## Environmental sustainability

**Environmental sustainability demands respecting planetary boundaries accompanied by reduced emissions, waste and resource use.**

In recent decades, parts of the environmental system have become increasingly distressed. This had also negative impacts on the economic system and individual wellbeing. The third main goal of WWForEurope is therefore environmental sustainability.

Historically, the term sustainability has been developed first and foremost in relation to environmental goals. It is defined by WCED (1987; also known as

Brundtland Report<sup>13</sup>) as the non-deterioration of the stocks of resources (at least of non-renewables). This definition was then extended to preventing degradation of the environmental system. This is now the one goal for which strategies at the global level are considered most important. Respecting planetary boundaries and preventing global warming have to be worldwide goals.<sup>14</sup>

The objective to improve environmental sustainability includes limiting emissions and resource use. In the last few decades, emissions contributing to climate change have received the most attention. The list of emissions to be curbed is long, and waste as well as the use of water and land has to be reduced. Increasing energy efficiency and shifting energy sources from fossil fuels to renewables by means of carbon pricing and regulation all are important objectives, as are respecting biodiversity and the limits of the planet (for an overview of indicators see *Kettner et al.*, 2012).

## Cross-cutting issues

Gender issues are a very important element of the three strategic goals and therefore also of all strategy lines. Differences between men and women in education are diminishing but there are still many differences regarding choices of specific schools, curricula and professions. Gender pay gaps persist and are large in some countries, partly due to gender differences in jobs chosen or attained, in part even for identical jobs. Achieving more gender equality is not only required by fundamental human rights, it would also yield economic, social and environmental dividends (*Plantenga*, 2014, 2015; *Leoni and Eppel*, 2013).

Inter-generational equality is another cross-sectional issue. Today, youth unemployment is endangering chances for young people; in the future, lower growth and insider advantages might further diminish their opportunities (*Schneebaum et al.*, 2014; *Crespo Cuaresma et al.*, 2013; *Hammer et al.*, 2014).

A transition strategy cannot work without openness for new ideas. We live in a world of great uncertainty and strategies with a long-time horizon have to cope with even more unknowns. Moreover, the strategy should not be developed by experts alone, but must also be firmly based on democratic support. Chapter 5 will propose strategies for the change in mindset required for this.

**Gender equality, inter-generational equality, openness for new ideas and heterogeneity of preferences are cross-cutting issues related to all three main goals.**

<sup>13</sup> "Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs."

<sup>14</sup> Another dimension of the concept of sustainability is intergenerational fairness. Each generation should be obliged to not diminish the choices of future generations.

## 2.3 Monitoring wellbeing by indicators and “nowcasting”

### Better Life Indicators as the best candidate for monitoring

The transition towards “wellbeing” has to be monitored with consistent indicators comparable across all Member States.

The transition to the WWWforEurope vision of “wellbeing” will be a long, non-linear process, time and again interrupted by unanticipated problems that might shift policy priorities. To stay on course and adapt accordingly, the strategy will have to be monitored using consistent indicators that are comparable across countries.

Given the complexity and uncertainty of the new strategy, WWWforEurope proposes further developing and referring to existing monitoring approaches. One such indicator set with a deeper analytical basis has been provided by the Stiglitz – Sen – Fitoussi Commission (Stiglitz et al., 2009), which identifies eight key dimensions of wellbeing: (i) material living standards (income, consumption and wealth), (ii) health, (iii) education, (iv) personal activities including work, (v) political voice and governance, (vi) social connections and relationships, (vii) environment (present and future conditions), and (viii) insecurity of an economic as well as a physical nature. The Stiglitz et al. (2009), the OECD as well as the EU Better Life Indicators are the best starting tools for switching from the dominant focus on GDP (and GDP growth) at present to alternative benchmarks. The progress towards “Better Life” is measured by a set of indicators based on theoretical concepts on the one hand, and their availability for many countries and a longer time horizon on the other (OECD, 2015B; see also European Commission, 2015B).<sup>15</sup>

The OECD approach is open to different weightings of the dimensions as well as the indicators. This leads to a certain degree of flexibility which can be seen as an advantage as it allows countries and individuals to use weights according to their starting positions, preferences or goals. WWWforEurope concentrates on three strategic goals, gives them equal importance and proposes objectives (see Table 2) which allow monitoring by using the Better Life Indicators provided by the OECD or the EU.

### “Nowcasting” is necessary and feasible

Nowcasting beyond-GDP indicators enables regularly short-term assessments of Europe's wellbeing and the success of the strategy. Recently available indicators on wellbeing will be necessary to replace GDP as the ultimate indicator.

The main reasons why GDP dominates as the overarching performance benchmark are its standardisation and international comparability and the near-term availability of data. In many countries the first estimates of quarterly GDP are available 30 days after the reference period (“flash estimates”). Moreover, using “nowcasting” techniques, which are usually part of a forecasting process, it is possible to get information on the quarterly GDP results as early as the current quarter.

A new benchmark such as wellbeing requires indicators to monitor the strategic goals contributing to wellbeing, and these indicators have to be available quickly (within or at the end of the current year). WWWforEurope proposes starting “nowcasting”

<sup>15</sup> [http://ec.europa.eu/environment/beyond\\_gdp/index\\_en.html](http://ec.europa.eu/environment/beyond_gdp/index_en.html).

for those beyond-GDP indicators needed to monitor economic dynamics, social inclusiveness and environmental sustainability.<sup>16</sup> By looking at those easily available indicators it is possible to make an early assessment as to whether a goal has been reached recently, even if these assessments may be imperfect. Such early indicators could encompass, for example, employment data for unskilled workers or profit predictions of stock market companies in order to predict income spreads. Transport kilometres or electricity production could be used to predict “Environmental Sustainability”. The indicators mentioned are available monthly and could be used to nowcast the social and environmental goals targeted in the strategy in the current year. Adding them together (or weighting them) could result in a “Flash-Wellbeing” Index with a specific beyond-GDP character.

Analysing beyond-GDP categories in “real time” (i.e. without a substantial time lag) should be made as common as done with GDP data today. If a “nowcast” of broader welfare goals were available as it is for GDP, the beyond-GDP approach would gain more visibility and relevance in economic policy.

With support from a new benchmark system, Europe could gradually become the first region in which policy is monitored using beyond-GDP goals and thereby become the first “beyond-GDP area”. A flash forecast of wellbeing – using nowcasting techniques – will then gradually complement or substitute GDP (*Dimitrova et al.*, 2013).

Each country should start making its own assessment of progress applying beyond-GDP indicators (*Weiss and Unterlass*, 2015). In a next step, the European Commission should advise and coordinate these efforts. Finally, the Commission should use these indicators in its annual reports and country-specific recommendations as indicators to assess performance and serve as the basis for policy conclusions.

<sup>16</sup> Among WWWforEurope papers dealing with beyond-GDP and its indicators are: *Aiginger et al.* (2013A); *Dimitrova et al.* (2013); *Kettner et al.* (2012, 2014); *Luptáček et al.* (2015); *Weiss and Unterlass* (2015).

**KEY INFO**

- ▶ The reform strategy should be based on three guiding principles: simultaneity between goals, the pursuit of high-road ambitions, and a two-stage implementation process.
- ▶ It is important to address the three goals simultaneously, respecting tradeoffs and creating synergies. Silo strategies are costly and inefficient.
- ▶ A high-road strategy implies going for a quality strategy, based on new technology, innovation, higher skills and upgrading capabilities.
- ▶ The first stage of the strategy focuses on restarting dynamics so as to reduce inherited unemployment, debt and income inequality. This should be supported by massive investment in social innovations and decarbonisation. In the second stage, higher levels of wellbeing are based on lower dynamics.

[Next chapter ▶](#)

## 3. THREE GUIDING PRINCIPLES

**A successful transition to a new growth path requires simultaneity of the three goals, a high-road strategy and a two-stage approach.**

WWWforEurope defines three guiding reform principles needed for the socio-ecological transition to a new growth path: the simultaneous attainment of the goals, high-road ambitions and a two-stage implementation process.

Firstly, the principle of simultaneity demands that the three goals are pursued applying a systemic and comprehensive approach, and not by striving to achieve the goals separately ("silo approach"). Secondly, the call for a high-road strategy presumes that Europe can only succeed in the long run through an ambitious strategy using instruments specifically suited to high-income countries. And thirdly, a two-stage approach is necessary: In the first stage of "consolidation and reprogramming", past imbalances have to be addressed and instruments and incentives for change have to be developed. In a second stage, this will enable a socio-ecological transition along a new path of development. We introduce these guiding principles in the following sections.

### 3.1 Simultaneity between goals

#### Creating synergies as a core principle of WWWforEurope

**The three strategic goals need to be jointly defined and integrated. Choosing and adjusting the right instruments can minimise conflicts, create synergies and make mutual learning possible.**

The simultaneous approach is a core characteristic of WWWforEurope. It means that the three goals of the strategy (economic dynamics, social inclusiveness, environmental sustainability) have to be defined and integrated into a joint approach. It further implies choosing and adjusting the right instruments, so as to minimise conflicts and create synergies and mutual learning. Simultaneity furthermore prevents negative spillover effects.



The simultaneity of goals and instruments is a demanding but also promising alternative to the "silo approach" followed up to now. A "silo approach" addresses problems in isolation without taking negative spillover impacts on other goals into consideration. Nevertheless, this approach still dominates policy design at the regional, national and European levels.

A simultaneous strategy will be even more successful if its implementation respects the initial situation, i.e. the heterogeneity of preferences or conflicting interests.

### Consequences of a lack of simultaneity

If goals are targeted separately, policy interventions will be far more expensive given that each measure aiming to reach one goal might have negative spillovers (extra costs) for one or more of the other goals. If there are specific strategies for each

#### Box 2: Evidence of simultaneity missing so far

Simultaneity is absent or at least underemphasised in most real-life strategies:

The EU 2020 Strategy addresses all three of our goals, calling for smart, inclusive and sustainable growth. The objectives are addressed without explicating the relationships between the goals, their objectives and the instruments selected. This failure is to some degree hidden by the fact that the goals are formulated as adjectives for the term "growth", which makes economic growth the overarching priority while "smart", "inclusive" and "sustainable" growth are pursued by means of "silo strategies" which might conflict.

Another example of a lack of simultaneity is Horizon 2020, which aims at reducing the research deficit in Europe, promoting cooperation between research institutions and Member States and increasing European dynamics. Programmes for green university spinoffs, research on environmental issues, sustainability and alternative energy sources are, however, dramatically underrepresented.

The Five Presidents' Report (European Commission, 2015C) addresses governance problems

that prevent Europe from solving current problems and maintaining a strong position in the globalised world. The creation of a "genuine economic and monetary union" does not, however, address how a joint European climate strategy could increase dynamics, employment and cooperation in Europe, as well as contribute to global solutions.

Proposals for a change of structural policies dominate most of the reform programmes put forth by the European Commission (together with the European Central Bank and the International Monetary Fund). The focus therein very often lies on labour market inflexibility, a problem especially virulent in Southern Europe. However, the problem that labour market liberalisation might aggravate social problems and raise poverty, at least in phases of low-growth or shrinking economic activity, is not addressed.

And, as a latest example, the European Fund for Strategic Investment (EFSI) rightly addresses the investment gap in Europe (Juncker, 2014), but it missed – at least at its start – the opportunity to prioritise projects jointly addressing the three goals

goal, the costs of problem solving will increase and the capacities of policy agents and institutions will be overstrained. Lobby groups and extremist political parties will always try to undermine the general strategy by arguing that some particular measure might have negative consequences. A joint strategy can partly compensate the losers of one particular measure through benefits from another measure. The overall increase in wellbeing will discourage vested interests and weaken opposition from lobby groups (*Bayer*, 2015).

There already exists evidence of promising and effective instruments and combinations of instruments, but to some extent the strategy will have to advance into unknown territory. This will require innovations and fine-tuning, looking for partners and indicators for success. In the following chapters we will address the systemic character of the respective objectives and the selected instruments.

### Potentially conflicting goals

The issue of conflicting goals is well known in economic literature. So-called "Magic Triangles" between three goals (or "polygons" between even more goals) illustrate potential conflicts between goals. It is essential to take these conflicts into account from the outset – this helps, firstly, to avoid incompatible formulations of goals and, secondly, to develop instruments which mitigate existing tradeoffs.

Tinbergen's early approach (1952) postulated that no solution to a problem can exist as long as the number of instruments exceeds the number of goals; it is possible to solve the optimisation problem for different goals. However, this is only correct if each goal can be attained by a separate instrument, not if several instruments are needed and not if instruments impact several goals, affect each other<sup>17</sup> or have spillover effects on other goals.

The Theory of the Second Best more realistically addresses the consequences of complex optimisation problems. If one condition for an optimal solution cannot be fulfilled, a first best solution can no longer be reached.<sup>18</sup> According to the "Strategy of the Second Best", each single goal should be modified to make it compatible with the others. Economic literature applies this method to individual policy areas (for fiscal policy see Cournède et al., 2013; for environmental policy, Bennear and Stavins, 2007). WWWforEurope extends this approach to all of its goals. Looking for compromises (including "clumsy" solutions) will yield better results than "corner" solutions calling for the maximal value to be reached separately for one goal (see also *Bayer*, 2015 and section 5.1).

**Preventing contradictory goal formulations will minimise conflicts from the outset. Compromises should be preferred to corner solutions.**

<sup>17</sup> Interrelation between the instruments is at least given since the total costs of interventions aggregate and have to be optimised (*Tichy*, 2015C).

<sup>18</sup> "The general theorem of the second best states that if one of the Paretian optimum conditions cannot be fulfilled a second best optimum situation is achieved only by departing from all other optimum conditions." (Lipsey and Lancaster, 1956–57).

## Tradeoffs and mitigating instruments

The choice of instruments should be designed ex ante in a way to minimise conflicts and to create synergies.

Research papers within WWWforEurope address conflicts and synergies and our econometric models look for solutions that have the potential to create double or triple dividends.<sup>19</sup> This is easier if the choice of instruments is designed ex ante, keeping in mind potential conflicts and synergies (*Tichy*, 2015C).

- Welfare systems are costly and policies for combating poverty and addressing new risks may reduce cost competitiveness and economic dynamics in a globalising world. This problem can be mitigated if industrialised countries go for a high-road strategy based on innovation and skills, since this reduces the importance of costs to competitiveness (*Leoni*, 2015; *Asatryan et al.*, 2014A, 2014B; *Mileva et al.*, 2013).
- The conflict between welfare expenditures and economic dynamics can be mitigated if welfare systems change their emphasis from a protective, curative approach to a social investment approach, providing capabilities to cope with structural change and economic dynamics.
- Economic dynamics tend to require ever more energy and resources, leading to the depletion of non-renewable mineral resources and higher emissions, thereby contributing to global warming. This tradeoff can be mitigated if emissions per unit of output are constrained by higher energy prices, by regulation (*Naqvi*, 2015; *Fischer-Kowalski and Wiedenhofer*, 2014; *Fischer-Kowalski et al.*, 2013) and emission trading, and if innovation policy, regulation and changes towards a circular economy are incentivised.
- Unemployment will increase with the low or zero growth demanded by high environmental standards if production is shifted abroad. This can be mitigated if environmental standards increase continuously, as is known well in advance in a strategic approach that fosters innovation and encourages the raising of standards in emerging countries and the diffusion of best technologies in trade and investment agreements. This can also be mitigated<sup>20</sup> by reductions in working hours, specifically for those who have high incomes and work longer than preferred (*Gerold and Nocker*, 2015; *Walterskirchen*, 2016; *Altzinger et al.*, 2015; *Scharle et al.*, 2015; *Busl and Seymen*, 2013).
- Greater labour market flexibility and labour market deregulation, as well as flexible contracts, might promote employment and growth but lead to fragmented labour markets, working poor and gender differences. This problem can be addressed by rules for making labour markets and flexibility more symmetric, extending rights to temporary and part-time labour, including an offer to switch to full-time jobs if a firm increases employment.

<sup>19</sup> The overall finding is that some conflicts might be less severe than imagined and that instruments exist for a joint, simultaneous approach.

<sup>20</sup> For employment strategies under low growth see *Antal* (2014).

**Table 3: Examples of tradeoffs between goals and WWWforEurope's strategic answers**

Tradeoff	Argument	Strategic answer/instrument
Openness vs. welfare	Globalisation will hit welfare states	High-road strategy based on capabilities (innovation, skills, institutions, etc.)
Welfare vs. dynamics	Competitiveness is lost if social costs are high	Innovation, education, training and a shift from protection to social investment
Dynamics vs. environment	High output requires cheap energy / increases emissions	Green tax reform High environmental standards, renewables Redirecting innovation to energy and resource efficiency
Unemployment vs. environmental ambition	High environmental standards lead to low employment and carbon leakage	Consistent employment/ environmental strategy Focus on consumption instead of production Diffusion of best technology

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

### Double and triple dividends in econometric models

Using a mix of instruments simultaneously in a well-designed strategy can prevent tradeoffs, particularly between social and environmental issues, and generates double and triple dividends.

WWWforEurope has screened existing econometric models and developed new ones in order to investigate the interrelations between the three policy goals (*Kratena*, 2016). The result of the majority of models is that the possibility of negative tradeoffs between goals cannot be excluded. However, several model simulations highlight how tradeoffs between the goals can be averted and how double or triple dividends can be achieved. And there are also instrument mixes which yield advances to all three goals.<sup>21</sup>

The tradeoff between environmental goals and the level of income are lower than expected and, above all, far from straight forward: In some models, GDP rises less in an environmentally aware setting compared to the baseline, and disposable income is eroded by emission-reducing strategies, but the effect on GDP is modest. In models with an environmental damage function, GDP even increases relative

<sup>21</sup> To model the possible tradeoffs and synergies the models have to provide (i) a link between monetary aggregates and physical flows (e.g. emissions), (ii) an explicit representation of technical change and its relevance for the environment, and (iii) a detailed treatment of the behaviour of agents (households and firms). Simulations have been carried out using two families of models, namely stock-flow consistent Keynesian macroeconomic models and Dynamic New Keynesian models.

to the baseline.<sup>22</sup> Synergies between reducing emissions and increasing incomes in particular can be achieved if the targeted emission reduction is not too radical. Double dividends of this kind are limited (the positive income effect evaporates) if a country engages in such a strategy unilaterally, with the neighbouring countries not taxing emissions. In this case, the prices of domestic products rise (despite the compensating decrease in labour taxes) and the external balance of payments deteriorates.<sup>23</sup>

The most significant tradeoff that can be identified from the simulation results is that between environmental targets and equity (defined as limited income spreads). This is driven by the fact that low-income households tend to have a higher share of many categories of energy consumption<sup>24</sup> and tend to consume more energy and emission-intensive products (e.g. food). If emissions are taxed without reducing taxes on labour, employment as well as incomes will suffer and income spreads rise. This effect of emission taxes on income distribution can be compensated by specific measures such as a higher reduction in labour taxes for lower incomes or a lump-sum payment to low-income earners. Alternatively, energy taxation can be made progressive and linked to household consumption (where this can be metered, e.g. gas and electricity consumption, or with kilometres driven by a person). Taxes can be made dependent on the size and engine type of cars.

The FALSTAFF model (*Jackson et al.*, 2014; Jackson and Victor, 2014, 2015) shows that income inequality tends to rise with decreasing growth rates. To avoid rising inequality as growth rates decline, wages need to be protected against aggressive cost-reducing strategies favouring increasing profit shares— especially in economies characterised by high substitution rates between labour and capital. Stabilising the wage share or limiting the increase in incomes in the highest earnings segment would have the beneficial side effect of maintaining high employment even in a low-growth economy.

*Naqvi* (2015) shows that neither the link between output and distribution, nor the one with the environment is predetermined – both depend on the assumed policy scenarios. A scenario considering emissions feeding back into the depreciation of the capital stock results in decreasing unemployment levels, but impacts negatively on equality and increases emissions due to increased investment requirements. Environmental taxes on firms or households have mainly distributive effects in this

<sup>22</sup> An environmental damage function accounts for the fact that the rehabilitation of environmental damage itself induces new investments to stabilise production capacity. Then again, there are models that show that this additional investment may not only lead to rising GDP, but again produce emissions above the baseline.

<sup>23</sup> Even if the tradeoff between environmental ambitions and income and income growth is not significant, the extent of the necessity to decarbonise is considerable and increases with growth. Antal and van den Bergh (2014A) estimate the reduction requirement for limiting the global average temperature rise to 2°C. This requirement is an emissions reduction of 82% (annually 4.5%) until 2050 if per capita GDP increases by 1.5%. Even with zero economic growth, an impressive 67% intensity reduction (3% per year) is still needed.

<sup>24</sup> This is not the case for electricity consumption, which is slightly higher in high-income groups.

model while leaving output and emissions largely unchanged. Thus, consumption is redirected away from workers towards firms which, in the long run, reverts output and emissions to pre-tax levels. However, two policy scenarios induce triple-win situations. On the one hand, innovations in capital or in energy productivity reduce both energy use and emissions, while at the same time raising real incomes and redistributing in favour of workers. On the other hand, achieving a higher share of renewable energy reduces emissions while leaving all other outcome variables virtually unchanged.

The model of *Rengs et al.* (2015) describes improvements in the carbon intensity of production due to innovation and the diffusion of associated greener products under the influence of various policies. The authors introduce a carbon tax which generates revenues that can be used to create and finance various additional instruments. The results show that the scenarios generate similar trends for most variables but with different impact levels. Tradeoffs are inevitable in all scenarios. As GDP is quite constant, with variations of 1 percentage point, the results for the unemployment rate reveal a wider bandwidth of up to 4 percentage points. The scenario with the lowest unemployment rate shifts taxes from labour to carbon emissions, while the worst scenario for unemployment but the best for carbon emissions only implements a carbon tax.

Thus the models are able to produce rich and different results depending on the model type and the policy instruments used. The results are presented in Part II of the report, in the model chapter, as well as in the Area 2 report, which extensively investigate tradeoffs in scenarios with ambitious environmental goals.

One study critical of the feasibility of a double or triple dividend is *Luptáček et al.* (2015). Using data envelope analysis (DEA), the authors find that none of the inputs or outputs (GDP, labour, capital stock, greenhouse gas emissions and the Gini coefficient) can be improved without worsening at least one of the other inputs or outputs. This indicates that reforms which do not use an instrument mix including strong price signals (increasing prices of emissions, reducing that of labour) lead to deviations from past optima at least for one goal.

To summarise, win-win situations usually cannot be created using only one instrument. Using two instruments in a well-designed way can offer several double dividends. Triple dividends can be achieved if three policy changes occur simultaneously and instruments are used in such a way as to cope with potential tradeoffs. An environmental tax reform, i.e. the reduction of labour taxes and a taxing of emissions, plus tax reforms specifically favouring low incomes and taxing over-proportionately high energy consumption can increase dynamics, reduce income spreads and emissions. Additional strategies facilitating triple dividends would be boosting and redirecting technical change from labour saving to energy and resources saving. Changing consumption patterns with incentives for clean, low-emission products, taxing consumption instead of production and inviting other countries to follow in taxing emissions could further reinforce such strategies.

## 3.2 Going for the high road

**Aiming at a high-road strategy implies a quality strategy targeted at new technologies, innovation, higher skill levels and upgrading capabilities.**

Today, Europe has two very different strategic choices for succeeding in the 21<sup>st</sup> century: it can either opt for a cost-driven strategy by doing, in principle, the same as before but at lower costs; or adopt a quality-driven strategy<sup>25</sup>, aiming for a new path based on new technology, innovation, higher skill levels and upgraded capabilities. We refer to the first option as a "low-road strategy" and to the second one as a "high-road strategy".

WWWforEurope strongly postulates that Europe has to adopt a high-road strategy (*Bailey et al.*, 2016; *Ketels*, 2015; *Ketels and Protsiv*, 2013; *Aiginger et al.*, 2013A; *Aiginger and Firgo*, 2015A), for the following reasons:

- Europe is a high-wage region, with more ambitious social and environmental standards than other regions; it has a rather large public sector and high taxes. Going for a low-road strategy in this position would provide only short-term relief, as each year ever more countries will be able to produce goods and services comparable to Europe's, but at lower costs.
- If Europe opted for low costs, emerging economies would be forced to copy this strategy. This would lead to a "devaluation" contest that would be much easier to win for truly low-cost countries. Going for a high-road strategy instead strengthens the quality of leadership and increases the distance to tomorrow's competitors.
- However, the most important reason is probably that opting for a high-road strategy makes it possible to develop an authentic, distinct model built on Europe's own preferences and strengths. This model can then be evolved further, being used internally as a coordination tool and externally as defining characteristics of the "European Model".

Strategic management theory claims that a middle-road – an indecisive path between the cost and the quality strategy – would be difficult to follow, both for firms and for regions (Porter, 1985). Low-road strategies tend to favour old technologies, even if these have become inferior, since costs are temporarily low when fixed "sunk" costs are not taken into account. This leads to "path dependency", i.e. sticking to old, "dirty" technologies (Aghion et al., 2009). High-road strategies, on the other hand, promote a change to radically new technologies, even if the upfront costs are high (e.g. new engines for cars or ultra-low carbon technologies for steel production); such a strategy has to be supported by rising industry standards and an innovation policy.

<sup>25</sup> The terms "cost strategy" and "quality strategy" were coined by Porter (1985). In economic theory – in econometrics as well as in game theory – such decision-related problems yield multiple equilibria (outcomes), which can be ranked according to their desirability.

## Elements of a high-road vs. a low-road strategy

Quality, structural change, education and innovation supported by an activating social policy and environmental ambitions are instruments of a high road strategy.

As low- and high-road strategies have different objectives, they also require different instruments. A low-road strategy on the product markets very often entails subsidies or even some form of import protection or, if possible, a devaluation of the currency. Labour markets are deregulated and some fragmentation of the workforce exists. This strategy is very often taken by low-to-medium-income countries.

High-road competitiveness, on the other hand, is supported by growth and trust-building institutions (*Aiginger and Firgo*, 2015B), as well as by a climate of cooperation between business, government, technology platforms (*De Propris and Corradini*, 2013) and clusters (*Ketels and Protsiv*, 2013; *Ketels*, 2015). If medium-income countries wish to switch to such a high-road strategy, they will first have to use physical investment and inward FDI as important growth drivers, while high-income countries will have to rely much more on innovation, education and top universities.

If costs are perceived as too high, a low-road strategy will simply focus on reducing costs and wages, while a high-road strategy will aim at increasing productivity since unit (labour) costs are more relevant than overall costs. A high-road strategy therefore means paying more attention to the productivity side, even if this takes more time and may require capital or technology imports. One of the advantages is that labour costs rising in line with productivity raise income and consumption. High wages thus reduce uncertainty, poverty, and expenditures on supplementary social benefits. A high-road strategy includes an enabling social policy (which we label as a social investment strategy in this project) and an ambitious environmental policy.

The feasibility of a high-road strategy based on quality, structural change, education and innovation, and supported by an activating social policy and environmental ambitions, has been demonstrated by the Nordic countries (and to a certain extent by Switzerland and Austria) who have been able to increase income

**Table 4: Low-road vs. high-road strategies**

	Low-road strategy	High-road strategy
Competitive advantage	Low costs (wages, energy, taxes) and standards	Quality, productivity, product sophistication
Growth drivers	Medium skills, dual labour market, inward FDI	Innovation, education, universities
Ambitions	Cost advantage, flexible labour, long working hours	Social empowerment, environmental excellence, trust
Instruments	Subsidies, devaluation	Business environment, entrepreneurship, dialogue
Strategic goals	Catching up in income, elimination of imbalances	Leading position, beyond-GDP goals

Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.



### Box 3: Denmark – an economy well on the way to the high road of dynamics, inclusiveness and sustainability

Denmark is considered a role model for a policy striving forward a dynamic, inclusive and environmental development path. We qualify this by looking at the WWFforEurope competitiveness ranking that relies on beyond-GDP data (Aiginger *et al.*, 2013A, OECD, 2015C) and by looking at the decoupling of emissions and material consumption from GDP (Aigner *et al.*, 2016).

Denmark has the ninth highest per-capita income within the EU28; for all income indicators together it is ranked 11<sup>th</sup> (Aiginger *et al.*, 2013A).

As far as social inclusion is concerned, Denmark has low youth unemployment and a low long-term unemployment rate. Income dispersion is low, but there is still a risk of poverty in old age. The gender gap is also low and health insurance is comprehensive despite which life expectancy at birth is disappointingly low at 80 years. The overall ranking puts Denmark in fifth place for the social pillar. Furthermore, civic engagement (voter turnout of 85% during the 2015 elections), the quality of the social support network, education and skills, personal security as well as the quality of jobs and the levels of earnings are well above the OECD average (OECD, 2015C).

With respect to environmental sustainability, Denmark is a country with average per capita CO<sub>2</sub> emissions which has fulfilled its self-imposed targets to reduce its greenhouse gas emissions (Aigner *et al.*, 2016). It scores high marks regarding its share of renewable energy (52% of electricity consumption in 2014; Danish Energy Agency, 2015) and low energy intensity. The 2016 Climate Change Performance Index (CCPI) ranks Denmark for the fifth time as the best-performing country due to its promotion of renewable energy and its effective energy efficiency (Burck *et al.*, 2015). Denmark and

Sweden are the only two countries that are on track to stay below the 2°C threshold (Burck *et al.*, 2014). Denmark has managed to decouple emissions and material use from GDP. While GDP grew by 40% between 1990 and 2012, CO<sub>2</sub> emissions from the Danish territory decreased by 25.5%. Material consumption declined by 42% between 1993 and 2012. If we switch to consumption-based data (including emissions and material embodied in imported goods), the environmental “footprint” of Danish domestic consumption increased by 2.3% between 1995 and 2012, showing a strong relative decoupling but no longer constituting an absolute one (Aigner *et al.*, 2016). Additionally, Danish firms have more than doubled their activities and ownership in global shipping (plus 240% from 1990 to 2010)<sup>1</sup>, so that 2.1% of global trade was handled by Danish ships in 2015 (UNCTAD, 2015).<sup>2</sup> If CO<sub>2</sub> emissions from shipping are included, Danish emissions increase by 20% from 1990 to 2012.

A number of ambitious environmental targets have been set in recent years. The overarching environmental goal of the Danish government published in the ‘Energy Strategy 2050’ in 2007 is to become independent of fossil fuel use by 2050. The roadmap to independency from fossil fuels by 2050 includes the following steps (REHVA, 2014): by 2030, coal is not to be used anymore in power plants; by 2035, all electricity and heating are to be provided by renewable sources of energy, and, by 2050, all energy supplied to and consumed in the transport sector is to be provided by renewable sources.

<sup>1</sup> Measured as a merchant fleet by flag of registration and type of ship in dead-weight tonnage (dwt).

<sup>2</sup> The world’s largest container ship operator, Maersk Line A/S, with a market share of 13.45%, has its headquarters in Denmark (UNCTAD, 2015).

To reach these targets, The Danish Government (2015) has implemented the following priorities:

**Compensating taxation:** To compensate poor households and households with children for high energy costs, a tax-free lump sum benefit (a so-called “Green Check”) was introduced (European Commission, 2015D).

**Forward-looking building regulations:** It is forbidden to use fossil energy (for heating) in new buildings from 2016 onwards; for existing buildings located in areas with district heating or natural gas supplies, the installation of new oil-burning boilers is prohibited (REHVA, 2014).

**Greening transport:** A Centre for Green Transport supports green initiatives. Subsidies are granted for recharging stations for electric cars and infrastructure for hydrogen and gas (heavy transport). Fuels must also contain a 10% share of biofuels by 2020 (DMCEB, 2012).

**Climate strategies:** An independent Climate Council was established in 2014, which has to propose recommendations on policy initiatives to the government at least once a year. The Ministry for Climate, Energy and Building has to issue a Climate Policy Report each year and has to propose new greenhouse gas targets with a 10-year perspective once every five years (The Danish Government, 2015).

The results show that a high-road strategy can work: Denmark is among the top countries in beyond-GDP rankings considering its economic, social and environmental performance, and has also managed to decouple emissions and material use from GDP, at least relatively. This success is reflected in indicators on wellbeing. Denmark is number one in terms of happy life years, number two in terms of life satisfaction and number three in terms of its work-life balance (Helliwell et al., 2015; OECD, 2015C).

and employment without accruing external deficits (*Aiginger et al.*, 2013A). High wages have been compensated by higher productivity, while greater inclusiveness and environmental ambitions have been used as growth drivers. This was made possible by upgrading skills and innovation.

### The temporary need for low-road elements

Even adopting a high-road strategy in the long run may require some low-road elements in exceptional situations. This particularly holds for countries with large external deficits due to excessively high labour costs and taxes, the breaking away of a market in the wake of political disturbances or the rise of new competitors. A high-road strategy takes time to be designed and requires processes of trial and error, as well as a shift of financial resources. When implementing low-road instruments, it is absolutely necessary not to lose sight of the long-term need to upgrade productivity, improve skills, boost innovation and create new firms, as shown in *Aiginger et al.* (2012A). From the outset, it must be credibly communicated that the low-road instruments employed constitute only transitory relief and that they will be phased out automatically.

Implementing a high-road strategy takes time and might therefore demand some low-road elements, specifically for countries with large imbalances.

### 3.3 A two-stage strategy implementation

A new strategy for Europe has to lead to a new trajectory but must also address existing disequilibria and imbalances – some of them stemming from the financial crisis. To facilitate this transition, a two-stage strategy is needed for Europe.

#### Stage 1: Consolidation and reprogramming

In the first stage – the next ten to twenty years – policies will have to focus on preventing new crises and getting demand back to supply potential. Given the current incentives and governance structures, inherited disequilibria (unemployment, poverty, inequality and public debt) are more difficult to resolve under conditions of underutilised labour and capital, low growth and financial instability (Aiginger and Guger, 2014). At the same time, large investments making infrastructure enabling decarbonisation are needed, which could increase economic dynamics.

At the start of stage one Europe faces the following problems and stylised facts:

- Currently, unemployment is about 10% in Europe (with youth unemployment about 20%). Political instability and unemployment in regions bordering Europe are also high (implying inward migration to Europe). These problems cannot be solved with slow growth.
- Technical progress today is mainly labour-saving, so that low growth tends to increase unemployment or underemployment (involuntary part-time jobs).
- Government (and private) debt is high and needs to be reduced in the majority of EU Member States in order to provide at least some room for manoeuvre during future crises.
- Poverty has not yet been eradicated. Since the financial crisis, it has actually increased in many European countries. Differences in income and wealth as well as opportunities at the start of life remain significant. The lower the growth rate of incomes is, the more difficult it is to build up wealth through incomes and the larger the contribution of inherited wealth.
- Pension systems rely on rising incomes. Unfunded systems promise payments from the current workforce to the retired generation based on the expectation that, over their life-cycle, the younger generation will have higher incomes than the retired one. Funded or private systems need a positive real rate of returns.

Therefore, for the next ten or twenty years, industrialised countries need to restart growth as to make it higher than the increase of labour productivity. This necessity is greater in countries with low per capita incomes and in countries with considerable under-used labour capacities, capital reserves and high debt levels.

The task of the first stage is twofold. First, to address past imbalances such as reducing unemployment (and specifically youth unemployment) as well as the spread between high and low incomes, and public debt. Second, and equally important, Europe has to initiate the changes in terms of behavior, innovation and the incentives needed for the second stage. This implies massive investment in decarbonisation,

**The focus of the first stage lies on triggering dynamics by means of social innovations and investment in change. High unemployment and debt, poverty and inequality all have to be reduced.**

redirecting technology and changing consumption patterns. Therefore, this stage, on the one hand, requires more dynamics and structural change than today and, on the other hand, it can provide these dynamics since investment in decarbonisation, social and environmental innovations will lead to higher levels of investment, consumption and employment.

Economic growth therefore is not the ultimate goal, it is the consequence of aiming at higher employment, inclusiveness and the necessity to mitigate climate change.

This first stage of the new strategy should by no means be the continuation of established policies. The goal is to increase wellbeing by economic dynamics, employment and starting decarbonisation and policy has to induce changes in behaviour by incentives. We therefore label stage one as “consolidation and reprogramming”. The term “consolidation” indicates the necessity of tackling existing disequilibria, the term “reprogramming” stresses that this must not be the continuation of past policies (“business as usual”) but the consequence of investment in change.

## Stage 2: Socio-ecological transition

Long-term forecasts for industrialised countries predict lower growth rates, declining even further along the time horizon. This may result from the catching up of emerging economies, planetary limits, the decreasing marginal utility of higher incomes, and the successful transition to a circular economy with higher resource and energy efficiency. Therefore, in the second stage, the highest priority has to be achieving higher levels of wellbeing based on a given output or very low growth rates.

The preconditions for this are a reduced gap between high and low incomes, lower public debt levels and a stable financial sector serving the needs of the real economy. These changes, as well as decoupling employment and emissions from output, have to be initiated by implementing new incentives, regulation and behavioural change as soon as possible during the first stage. And this requires investment in infrastructure which is consistent with lower levels of reliance on fossil-based energy. We call this second stage “socio-ecological transition”.

## Reprogramming now – from the start of the first stage – is all-important

Even if industrialised countries return to moderate growth over the next ten to twenty years, this first stage cannot be “business as usual”. There has to be massive investment in change (reprogramming). This implies:

**In the second stage higher levels of wellbeing should be attained from a given output or from lower growth. Emissions as well as employment should be decoupled from economic output.**

**“Reprogramming” has to start now, by replacing GDP and by addressing goals such as employment, equality, climate change and wellbeing more directly and steering technical progress towards reducing resource and material use.**

- building new infrastructure,<sup>26</sup>
- developing social innovations (e.g. sharing instead of buying),
- increasing energy efficiency and decarbonisation,
- switching to renewable energy and circularity in the economy,
- changing mindsets and institutions to encourage bottom-up strategies.

In terms of economic policy, the dominance of GDP has to be replaced by directly addressing wellbeing (as captured by the three strategic goals and measured by

**Table 5: First and second stage: objectives, drivers and settings**

	First stage: consolidation & reprogramming	Second stage: socio-ecological transition
Why	Underutilisation of labour (unemployment) Worldwide savings glut, lack of demand Major imbalances and disequilibria, high debt Upcoming social unrest, political destabilisation	Planetary boundaries (in many dimensions) Political conflicts about water and other resources  Marginal utility of income declines
Objectives	Cutting unemployment and debt Increasing dynamics, not least through green investment Reducing income spread and fostering gender equality Absolute decoupling: energy and material Disseminating best technologies, technology transfers Investment in decarbonising: infrastructure	New employment models (choices, fairness)  Finance serves real economy and is stable  Welfare content of GDP rises Decoupling of employment from output  Absolute decoupling of emissions worldwide
Drivers of change	Demand management (wages, investment) EFSI: investment in intangibles and decarbonisation Smarter public sector: taxes and expenditures  Reformed financial sector	Steering via price system and regulation Instruments redirecting technical progress  Best available technology improved, disseminated  Increased awareness
Facilitators of reforms	Building trust and reliability by vision and standards Respecting heterogeneity and plurality Learning by experiments, best practices Bringing people, regions and stakeholders on board	New preferences/habits/concepts steer New technologies, functionality approach New governments, participation structures European influence on global rules
Caveats	No business as usual, start reprogramming now Change incentives, respect different starting positions	Be aware of high uncertainty of technology Beware of vicious regional/worldwide circles

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

<sup>26</sup> A new infrastructure includes transport systems, urban planning, housing and energy systems (Schleicher, 2015).

beyond-GDP indicators). It is important to redirect technical progress; this has to shift from saving labour to a reduction of resource and material use.

It is essential that this reprogramming starts right now. Every year lost will make the transition more costly. Increasing social expenditures to address new challenges in a period of diminished growth will be impossible. If infrastructure built today still has high and fossil-based energy requirements and mobility is based on fossil fuels, the takeoff for the second stage will prove extremely difficult. Country reports by the OECD, the annual growth report as well as country-specific recommendations issued by the European Commission should therefore start to stress the "reprogramming task" and advocate investment in change.

### 3.4 Policy recommendations

WWFforEurope proposes the following coherent strategy to pursue the goals of economic dynamics, social inclusiveness and environmental sustainability:

- pursue all three goals simultaneously, capitalising on synergies between policies and instruments,
- go for the high road in Europe, designing a genuine European model for policies and institutions based on new technologies, innovation, higher skill levels, upgrading capabilities, enabling social policies and ambitious environmental policies,
- forfeit instruments of wage depression, subsidies or import protection; avoid reducing social and environmental standards and diverting efforts away from the ultimate goal of increasing wellbeing,
- be aware of tradeoffs, especially between environmental and distributional issues, and design instruments to mitigate negative spillover effects,
- accept that, in the long run, economic growth will no longer be a panacea, be it due to reasons described by the secular stagnation hypothesis, decrease marginal utility of incomes (for high-income earners) or the necessity to curb production growth, because of the limits of the planet,
- start reprogramming policies and institutions to enable a socio-ecological transition towards an economy in which employment and emissions are decoupled from growth,
- invest in infrastructure enabling decarbonisation and reduce income spread. The resulting recovery of economic demand will reduce past imbalances and allows systems and individuals to adapt. The European Fund for Strategic Investments (EFSI) should focus on physical and intangible investment which increases wellbeing promotes social innovation, business start-ups and decarbonisation.

**KEY INFO**

- ▶ The WwWforEurope strategy identifies seven drivers of change: redirecting innovation, increasing dynamics, reforming welfare, improving skills and symmetric flexibility, decoupling energy, a smarter public sector and reforming finance.
- ▶ Innovation is at the core of a strategy striving for three potentially conflicting goals. Technical progress has to be directed towards social and environmental goals. Demand can be stimulated by reducing income inequality and by investment in change, and by restoring optimism in the European model.
- ▶ Welfare systems have to address new risks and increase wellbeing; WwWforEurope proposes shifting the priority from protection to social investment. Combating unemployment requires an upgrading of qualifications and increased flexibility for firms in order to react to changing demands, combined with the rights of employees to adjust their working hours to fit their work-life balance.
- ▶ Higher prices for fossil energy as well as an innovation policy aimed at environmental projects could decouple energy use from economic output and decarbonise the economy.
- ▶ The large public sector could be a major game changer by halving taxes on labour and increasing taxes on energy, emissions, financial speculation and by improving tax compliance. The financial sector has to be re-connected to the real sector and enable investors to invest in societal needs.

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## 4. DRIVERS OF CHANGE

### 4.1 Boosting and redirecting innovations

**Boosting innovation provides simultaneity between the three goals.**

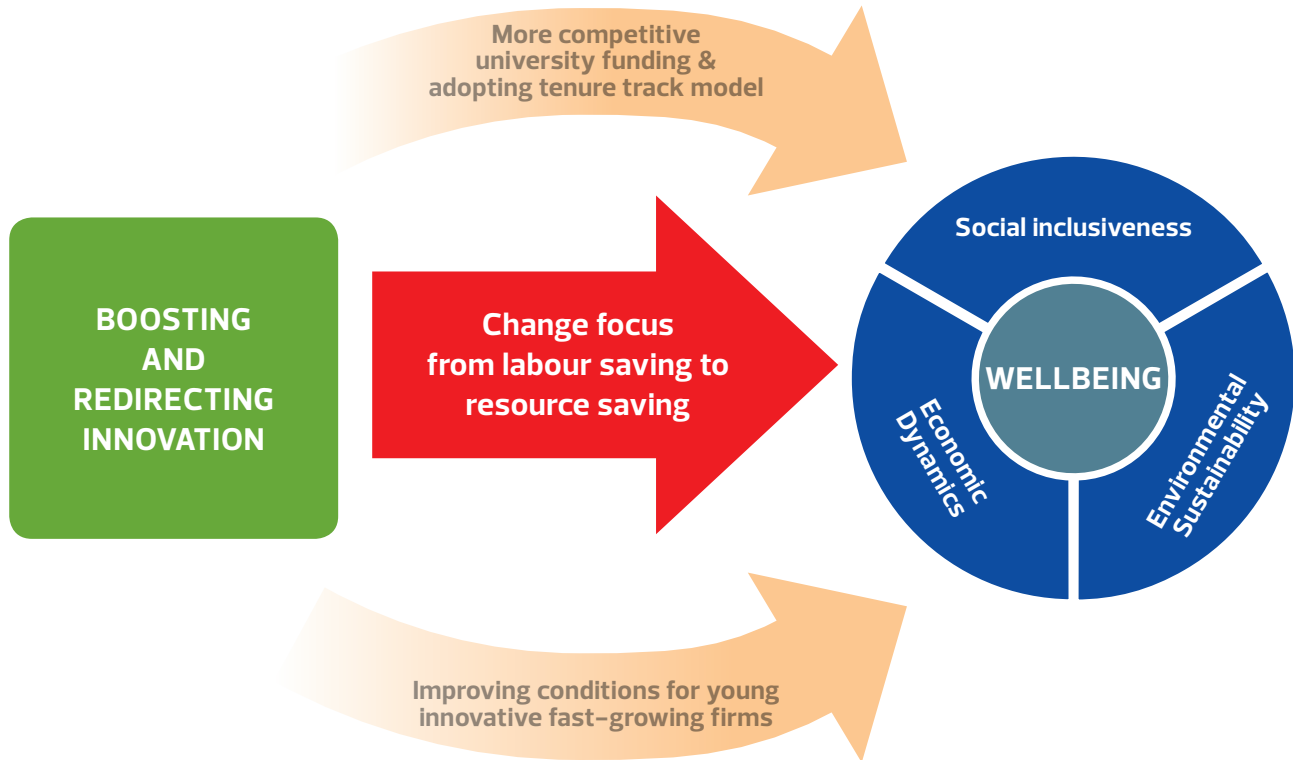
Innovation is all-important for a high-road policy since it reduces the dependence of firms and economies on low costs. It is the crucial link which prevents negative tradeoffs between the three goals and provides the simultaneity of economic dynamics, social inclusiveness and environmental sustainability. In the first stage of the strategy, the European knowledge base, the incentives for innovation, and innovative performance all have to be improved so as to close the technology gap of Europe towards the new technology frontier. At the same time, the direction of technological progress has to be shifted away from primarily labour saving to saving energy and material inputs. Boosting and redirecting innovation is the key to economic dynamics, increasing wellbeing and double decoupling of labour and energy from growth during the second stage.

**The speed and direction of technological progress is highly uncertain. The public sector is strongly committed to basic but also applied research in market economies. It should be used to connect innovation to societal needs.**

### Acceleration or deceleration of technological progress?

Uncertainty is typically associated with innovations and their effects, and this is one of the reasons why public policy plays an important role related to innovation in a market economy (Veugelers, 2015, Rodrik, 2009). Uncertainty exists regarding the current and, even more so, the future speed of technological progress. The secular stagnation literature (Gordon, 2014) claims that technological progress will decelerate

Figure 2: Redirecting innovation



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

in the future, since there are no new generic technologies, and all breakthroughs in the technologies dominating past decades have already been channelled into production or consumption. At the other extreme (Rifkin, 2014), there are scenarios in which new forms of automation, intelligent machines, 3D printing and self-driving cars will make even skilled work redundant.<sup>27</sup>

As the quotes in Box 4 illustrate, it is always difficult to predict the directions and speed of technological change. Innovation offers historically unknown opportunities and choices. It can also lead to temporary or lasting disruptions in societies as shown in the industrial revolution(s) (Brynjolfsson and McAfee, 2012; *Baccianti and Löschel*, 2014). It will be up to European society – and European industrial and innovation policy – to make stronger use of the potential of innovations. Search processes and rewards for new solutions are all-important to the openness and mobility of a society. Innovations prevent the petrification of structures, habits and hierarchies, making a region attractive as a location for production and living. But this should be guided by societal needs, which implies some broad interventions. Given the degree of uncertainty, this should never be a case of micro-management (Aghion et al., 2009).

<sup>27</sup> Industry 4.0, or "the internet of things" as it is often called in US literature, is characterised by robots saving materials, directing logistics and solving problems with little need for human interventions.



## Box 4: Innovations – difficult to predict, but more radical than expected

“This ‘telephone’ has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us.”  
(Western Union memo, 1876)

“Heavier-than-air flying machines are impossible.”  
(Lord Kelvin, British mathematician and physicist, president of the British Royal Society, 1895)

“To place a man in a multi-stage rocket and project him into the controlling gravitational field of the moon where the passengers can make scientific observations, perhaps land alive, and then return to earth – all that constitutes a wild dream worthy of Jules Verne. I am bold enough to say that such a man-made voyage will never occur regardless of all future advances.”  
(Lee DeForest, American radio pioneer and inventor of the vacuum tube, in 1957)

“There is not the slightest indication that nuclear energy will ever be obtainable. It would mean that the atom would have to be shattered at will.”  
(Albert Einstein, 1932)

“I think, there is a world market for maybe five computers.”  
(Thomas Watson, Chairman of IBM, 1943)

“Computers in the future may weigh no more than 1.5 tons.”  
(Popular Mechanics Magazine, forecasting the relentless progress of technology, 1949)

“You can see the computer age everywhere but in the productivity statistics.”  
(Robert Solow, 1987)

## Boosting innovation in Europe

**Innovation is a crucial part of a high-road strategy, fending off competition from low-cost countries.**

Europe is far from being the global technology leader today; at best it is at the frontier in specific technologies.<sup>28</sup> It has the choice of either remaining in the “upper-middle position” or of pursuing leadership in important new technological fields. Innovation is a necessary ingredient for minimising the losses of European shares on global markets; it expands the scope for welfare increases and for a return to full employment. It shelters Europe from the competition of emerging countries, which themselves are trying to attain a medium-level technology position. For firms at the technological frontier, innovation is basically the only competitive strategy left as they cannot compete on costs (Hölzl and Janger, 2014). Innovations therefore have to be at the centre of the high-road strategy. WWWforEurope advocates using innovation as a tool to shape the future and to enable the new growth path. Redirecting innovation will be much easier if the underlying performance of innovative activities is improved. A

<sup>28</sup> For an up-to-date picture of the EU position on the frontier in key technologies see <http://www.oecd.org/newsroom>.

higher rate of innovative activity will make it easier to shift innovation in the direction of new aims, given that the switching costs will be lower.

There are many problems with the level of innovative activity in Europe today. On the one hand, the gap in R&D investment relative to the US but also to Korea is significant and, on the other hand, China is advancing steadily towards the European R&D intensity level. While the share of public R&D is similar in Europe and in the US, European firms invest much less. Intra-EU cross-country differences in innovation intensity have not declined since the financial crisis, the structural reform strategies of Southern European crisis-hit countries did not focus at all on closing gaps in innovation (Veugelers, 2015; Aiginger et al., 2012A; Aiginger et al., 2013B).

### Availability of venture capital and quality of research

Apart from R&D spending, WWForEurope maintains that two issues associated with Europe's innovation policy in particular are holding back the rate of innovative activity: the availability of venture capital and the quality of academic research. As regards the first, a well-known need is fostering the financing of young, fast-growing innovative firms in the EU, e.g. by creating a pan-European venture capital market. Attempts have been started, but progress is slow. The quality of university research also influences start-up dynamics, as university rankings impact on flows of talented students (van Bouwel and Veugelers, 2013). 50% of all US-based PhD graduates in science and engineering come from abroad, with many of the best staying in the US afterwards.

Improving the quality of teaching and research at universities requires a three-pronged approach: (i) increased funding, (ii) more competitive funding (Aghion et al., 2010) and (iii) reforms to organisational and career structures. As to the last, European universities should be able to offer jobs to the most talented researchers; jobs which, in turn, will attract the best students (Janger, 2015). Apart from competitive salaries and sufficient research funding, attractive job elements for talented young researchers are a tenure track model, early independence and flat hierarchies (Janger and Nowotny, 2013), elements that are far from being universal at European universities (Janger et al., 2013). The transition to a new growth path will crucially depend on Europe's ability to attract or retain talents, in order to achieve "brain circulation" rather than "brain drain" (Hunter et al., 2009).

Cooperation between universities and firms can help turn ideas into value added, but this only works when the quality of research and teaching is high (see Janger, 2015, for a survey).<sup>29</sup> Linking universities with firms and society without ensuring the quality of research and teaching is an ineffective approach. The role of universities in training graduates has to be strengthened.

In summary, deficits in the availability of human and venture capital are holding Europe back. There are too few young, fast-growing and innovation-intensive

<sup>29</sup> See the concept of a "European paradox" (European Commission, 1995; Dosi et al., 2006).

R&D spending in general and the availability of venture capital specifically are important for stabilising global market shares, both build on the quality of academic research.

firms (Veugelers and Cincera, 2010) which are needed in order to turn emerging technologies into new industries and employment. With persistent innovation deficits, the “Apple” or “Google” of environmental innovation will not be founded in Europe, further impairing Europe’s economic dynamics (Colombelli *et al.*, 2015).

## The need to shift the focus towards green innovation

**The focus of new technologies should switch from increasing labour productivity to resource and energy productivity.**

Today, the focus of innovative activity is on saving labour. GDP growth rates have to be as high as the increase in labour productivity in order to stabilise employment and increase wellbeing. Given the trend of declining growth rates in advanced industrial economies, we do not see this “growth imperative” as a future-oriented and environmentally sustainable strategy even during the first stage.

Therefore, WWWforEurope proposes redirecting innovation in the direction of social inclusiveness and environmental sustainability (see also Weizsäcker and Ayres, 2013). This would be a worthwhile contribution to eliminating or at least mitigating potential tradeoffs between the three goals of the WWWforEurope strategy (Bailey *et al.*, 2015A). Green technologies can cut inputs of material or energy, reduce emissions associated with production or consumption and prevent negative spillovers. Green innovation can create more employment than other innovations (Licht and Peters, 2013, 2014). WWWforEurope also found evidence that green gazelles – young, fast-growing, innovative firms selling environment-related products – grow particularly fast in terms of employment (Colombelli *et al.*, 2015). They benefit from the demand induced by environmental regulation.

However, even though the EU is the global leader in energy efficiency, for instance, the evidence of a pronounced shift towards environmental innovation so far is weak (Veugelers, 2014). China, in particular, is investing heavily in relevant sciences and technologies and, as a result, is challenging the European lead.

Untapped opportunities may also come from social innovations. Social innovations, be they social in terms of their means (new types of labour and cooperation between firms) or social in terms of the needs addressed (solving societal problems), are less labour-saving than process innovation, while having the potential of being more welfare-enhancing (Ulinski, 2015).

The message of WWWforEurope therefore is that innovation policy should redirect innovative activity away from focusing on labour productivity towards raising resource and energy productivity. Green product innovations and social innovations are particularly beneficial for employment.

## How to redirect innovation

**Long-term price signals, research grants and regulation are instruments for redirecting innovation.**

Redirecting technological progress away from labour saving to energy and resource saving should be easy given the present level of public intervention in financing innovation, universities and basic research. This redirecting should rely on (i) price signals, (ii) subsidies and research grants and (iii) regulation (Bailey *et al.*, 2015A, 2015B).

Stronger and more effective price signals (e.g. for carbon emissions) and stricter regulation will be needed to successfully redirect innovative activity. To enable a real change in corporate strategies, regulation has to be implemented credibly and long-term.<sup>30</sup> Such a strategy would additionally boost economic dynamics by increasing the demand for suppliers of green technologies (*Colombelli et al.*, 2015).

During the implementation of such measures, firms will have to be supported, mainly through increased R&D subsidies. It is also important to improve the appropriability of innovation; otherwise, instead of increasing R&D efforts, firms might simply adjust their prices or bear the increased burden.

Compared to past R&D framework programmes, the EU's current R&D promotion programme, Horizon 2020, does not have a particular focus on climate change (*Veugelers*, 2014). The share of green projects in Horizon 2020 is currently only 9%, unchanged from previous programmes. There is definitely also scope for adjusting the targets of the "key enabling technologies". And, as green R&D has now become global, some level of international coordination would be beneficial as well in order to pool resources, avoid excessive duplication and accelerate diffusion. So far, the EU has exhibited few efforts aimed at international coordination on these issues (*Veugelers*, 2014).

Redirection could be supported by cutting taxes on labour or more specifically, by reducing employers' social security contributions in exchange for higher energy taxes, which would promote energy-saving rather than labour-saving technological progress (*Vogel et al.*, 2015).

## Towards a greening of industrial policy

One of the core features of a new industrial policy is that it should take societal needs into account (Aghion et al., 2011; Rodrik, 2014).

The importance of manufacturing for industrialised countries has been reappraised, specifically in the wake of the financial crisis and of China's rise to the world's number one in manufacturing. A "new industrial policy" should bolster re-industrialisation which is different from the old selective and interventionist policy (Aiginger, 2007, *Aiginger*, 2014B). It should be pro-competitive, in line with societal needs, integrated with innovation and regional policy and build on competitive strength, with "sustainability at centre stage" (European Commission, 2010).

<sup>30</sup> *Veugelers* (2014); *Crespi et al.* (2015); *Ghisetti and Quatraro* (2015); *Arfaoui et al.* (2015); *Bailey et al.* (2015A). A recent case in point is the EU mechanism for determining car fuel consumption and particle emissions – which have remained unchanged for seven years in spite of many calls for revision. That strict environmental regulation or sophisticated consumers can be an advantage of a location (and not a burden for firms) has already been established by Porter. According to the "Porter hypothesis" (Porter, 1991), strict, well-designed regulation incentivises innovation and thus contributes to improving the competitiveness of firms. Environmental regulation not only induces innovation that reduces the cost of compliance with environmental standards, it can also deliver "innovation offsets", generating both environmental benefits and improvements in the product or the production process which offset the cost of regulation (Porter and van der Linde, 1995A, 1995B).

**A new industrial policy should be pro-competition and in line with sustainability, as well as with societal needs in general, and integrated into innovation and regional policy.**

Environmental standards should no longer be considered an obstacle to competitive manufacturing. Europe has set targets for increasing energy efficiency, increasing shares of renewables and cutting emissions first by 2020 and then by 2050, demanding the reduction of greenhouse gas emissions by 80% to 90%, based on new technologies and CO<sub>2</sub> emission prices of € 250 per tonne.

Headwinds to this ambitious path are coming from low oil and gas prices, especially in the US due to a new extraction technology and from the failure of the European emission trading scheme. The question now arises as to whether Europe has to cope with low prices of fossil energy in the US, or whether Europe can stick to the goals of the envisaged integrated and systemic industrial policy in order to raise energy efficiency as well as to reduce carbon emissions by means of new technologies. A new industrial policy in Europe could definitely match the US cost advantage in terms of energy by closing the technology gap, improving skills and going for excellence in energy efficiency and clean technologies.

Industrial policy should promote a competitive advantage of Europe by fostering new, clean energy technologies, ultra-low carbon technologies and higher energy efficiency. Europe should strive to become the technology leader in decarbonisation. This is the superior strategy in the long run (*Aiginger, 2013B*).

EU research funds can be used to massively invest in pre-competitive research, for example, to replace the internal combustion engine in the automotive sector. Stricter emission tests are recommended and public procurement should foster experimentation with new types of electric or hydrogen-powered cars. Renewable energy, could be another industrial growth opportunity if prices and regulations, as well as R&D support, are set at the right levels (*Rodrik, 2014*). In order to promote innovations in environmental products, a combination of energy taxes and subsidies are needed given that taxing energy influences process innovations in a negative way but enhances product innovation expenditure. *Baccianti and Löschel (2015)* conclude that a constant product innovation subsidy of 20% increases aggregate consumption by around 6%, but that a 25% energy tax decreases aggregate consumption by only 3%.

Becoming the leader in decarbonisation requires time to evolve and invest in knowledge building (*Reinstaller and Reschenhofer, 2015; Kolev et al., 2012*), but environmental technology and decarbonisation are fields where Europe could definitely take the lead. Cross fertilisation using technology platforms (across technologies) may speed up the process (*De Propris and Corradini, 2013*).

Innovation and industrial policy needs to take account of the heterogeneity of EU Member States (*Veugelers, 2015*). The diffusion of technologies and different policy priorities within Europe are needed in order to allow countries with less innovation intensity and lower per capita incomes to catch up. While some may focus on scientific excellence, others will profit more from upgrading industrial structures, coming closer to the frontier and adopting technologies developed elsewhere (*Rodrik, 2004*). Referring to the two-stage strategy, it is vital for Europe during the first stage ("Consolidation and Reprogramming") to catch up with the frontrunner,

Fostering new, clean energy technologies will facilitate a comparative advantage for Europe.

## Box 5: Greening industrial policy also means greening transport

Transport accounts for 25% of total EU greenhouse gas emissions<sup>1</sup> and contributes substantially to reducing air pollution, noise and habitat fragmentation. Road transport is responsible for around 21% of total European CO<sub>2</sub> emissions and for approximately 71.9% of transport's greenhouse gas emissions.<sup>2</sup> The aviation sector accounts for 12.8% and shipping for 13.9% of the EU transport sector's greenhouse gas emissions. The shipping sector is the only sector that is not subject to any CO<sub>2</sub> reduction targets and tax loopholes are systemic. Maritime and international aviation transport also contribute heavily to Europe's NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>2.5</sub> emissions<sup>3</sup> and urgently require an international strategy for solving these problems. European transport still depends highly on oil (95% of all kilometres travelled in the EU are powered by oil-derived fuels), which severely burdens the environment and human health (European Environment Agency, 2014A, 2015A; Gurría, 2013).

WWFforEurope recognises that a strategy to reduce carbon emissions in all sectors of transport is necessary (Barnebeck and Kalff, 2015; Sauer et al., 2015A). Best practice examples for a game-changing and successful policy shift in the transport sector might be Norway's strategy to promote electric cars.

### Best practice: electric vehicles in Norway

Norway has the highest number of electric cars per capita in the world and is leading the electric vehicles market. In April 2015, Norway had already met its 2018 goal of 50,000 electric vehicles

and has set an additional target of 100,000 electric cars by 2020 (Lutsey, 2015). 35% of total electric cars sold in Western Europe were sold in Norway in 2014 and 95% of these are fully electric and not only plug-in hybrids (Haugneland, 2014).

The Norwegian government and the Norwegian Electric Vehicle Association (NEVA) offer strong incentives for choosing an electric vehicle (EV). The incentive package includes: zero VAT on EV purchases, taxation exemptions on importing an EV, lower annual road fees, free toll roads, national ferries and municipal parking, access to free charging at most of the 3,500 registered public charging points and permission to drive in bus lanes.

The attractiveness of electric vehicles for consumers is increased even more by the high prices of petrol and diesel as well as purchase prices of EVs that are competitive with those of traditional cars in Norway. Additionally, the government offers R&D support to businesses in order to increase market growth (Haugneland and Kvisle, 2013).

With the increasing number of electric vehicles, traffic noise has been reduced and, with this trend continuing, greenhouse gas emissions from Norwegian cars will be halved within two to three decades. The higher energy efficiency of EVs supports the reduction of energy consumption considerably and contributes to the transition toward a low-carbon economy. If the entire passenger car fleet is electrified, only 6% of Norway's hydropower output would be needed to operate them (Fridstrøm and Alfson, 2014).

1 The highest emission level among European sectors is attributable to transportation, with the current level being 20.5% above the benchmark of 1990.

2 Cars and vans are responsible for 15% and trucks and busses for 6% of total EU CO<sub>2</sub> emissions.

3 19% of NO<sub>x</sub>, 17% of SO<sub>x</sub> and 11% of PM<sub>2.5</sub> emissions.

the US, in terms of R&D expenditures and the quality of education and innovation systems but, at the same time, to start the transition to stage two (“socio-ecological transition”) by influencing the direction of technological change, as firms need time to adjust their capabilities. In terms of European governance, public funding of R&D and innovation should be prioritised and exempted from expenditure cuts in hard times, and European governance (in the European Semester) should demand continuous innovation even in crisis-hit countries and during periods of austerity.

A systemic innovation and industrial policy (*Bailey et al.*, 2015A) can contribute to redirecting innovative activity towards social and environmental targets, while at the same time boosting economic dynamics, at least during the first stage of transition. Both should no longer be isolated policies, but systemic in the sense that different policy strands – such as R&D programmes, taxation, regulation, public procurement, etc. – are coordinated by the common vision of achieving economic dynamics, social inclusion and environmental excellence.

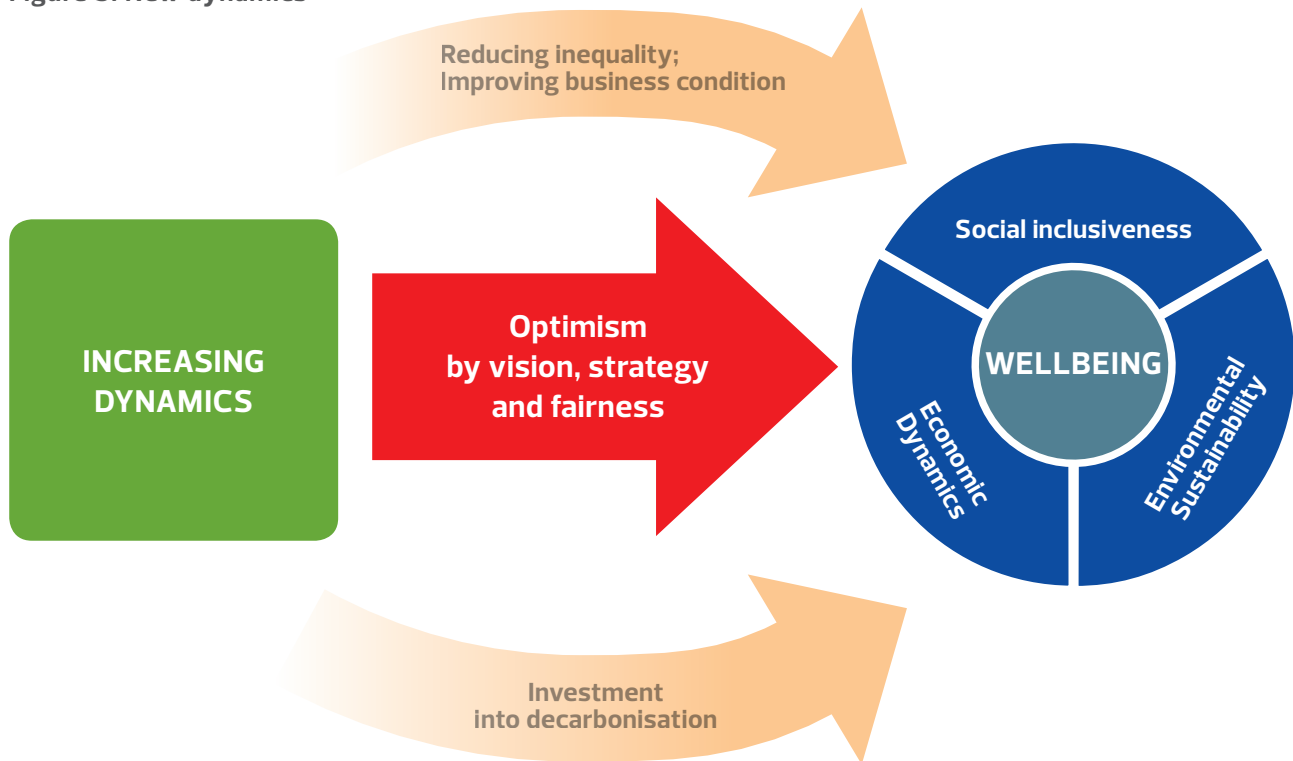
### Policy recommendation

- Shift the focus of innovative activity towards more radical innovations and re-direct innovation as well as industrial policy toward a greening of the economy. Europe should try to regain its former leadership in environmental sustainability and decarbonisation.
- Utilise all of the instruments and resources of the public sector to incentivise such a shift: carbon pricing or taxation, regulations, EU emissions scheme, R&D subsidies, public procurement.
- Focus Horizon 2020 and its successor, as well as the European Fund for Strategic Investments, on the grand challenges and especially on green projects as funding priorities.
- Pool the still fragmented national research infrastructures within the EU to allow relevant green research within the European Research Area and coordinate public R&D policies at the international level (including the US and China).
- Foster breakthrough science through more competitive university funding. Reform organisational and career structures by supporting tenure track models, flat hierarchies and early independence of researchers in order to attract young researchers.
- Create a pan-European venture capital market to foster the founding of new, innovative firms (green gazelles).
- Follow the simultaneity principle in innovation and industrial policy, looking for coherence with other policies.

### 4.2 Increasing dynamics on the demand side

European dynamics have been slow recently due to supply as well as demand-side factors. Innovation has been dealt with in the last section, and education – the second important driver of supply-side dynamics – is referred to in the following

Figure 3: New dynamics



Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

sections under the heading of social investment. Here, we concentrate on private-sector demand, which comprises consumption, investment and exports.<sup>31</sup>

Given the high unemployment rates and the underutilisation of capacities prevailing today in most Member States, it is important to stimulate demand during the first stage. Envisaging the strategy goals, this has to be done in a way which is compatible with social goals and decarbonisation (Ederer, 2015). Closing the investment gap by means of investment in new infrastructure and boosting consumption of products and services with higher value added and lower carbon footprints reduces past disequilibria and prepares for socio-ecological transition.

### New incentives for private sector investment

Private sector investment remains sluggish after the financial crisis and profits are being used to reduce debt levels and buy back shares on the stock market. The European non-financial business sector, which used to be a net debtor, has turned into a net creditor (Summers, 2014). The reasons for the low level of investment

**Low investment levels due to pessimistic expectations and uncertainty have turned the non-financial sector from a net debtor to a net creditor. Investment in low-carbon infrastructure could reduce the European investment gap.**

<sup>31</sup> While it makes sense at the analytical level to distinguish between demand and supply-side factors, we have to acknowledge that demand-side components spill over to the supply side and are conversely influenced by supply-side factors such as innovation and structural change. This interplay of demand and supply holds particularly true for socio-ecological transitions, where radical innovations change the structure of consumption and require additional investment.



are pessimistic expectations regarding long-run growth rates and uncertainty about the future dynamics of Europe. Incentives to invest in innovation and new technologies are low due to unambitious environmental standards, the low prices of fossil-based energy and the availability of unskilled labour. Incentives for investment in decarbonisation could revive investment and provide a first-mover advantage for Europe. Public-funded or public-private partnerships – e.g. supported by the European Fund for Strategic Investment (EFSI) – for radical innovations are necessary, as well as financing and insurance tools for firms engaging in new technologies, in order to bolster investment in Europe.

New energy-efficient infrastructure, ranging from housing and offices to transport and energy grids, will encourage investment during the first stage and enable an absolute reduction in emissions and resources during the second stage. Higher upfront costs for houses with the highest standards in terms of insulation and the optimal use of alternative energies may be a burden for low-income earners and this must be taken into account in a comprehensive strategy. Higher costs for manufacturing due to higher prices of fossil energy in Europe have to be compensated by lower costs for firms associated with research and improvements in the supply of skilled labour as well as lower labour taxes. Raising environmental standards must be well communicated in advance and known in the long run so as to limit uncertainty which could depress the business climate.

The European investment gap – low investment relative to past experience and even relative to the low output path – is being addressed by the EFSI. Its financial means – as well as those of other public private partnership (PPP) endeavours – should be invested in new infrastructure which reduces emissions and material inputs. The EFSI should focus on intangible investments or at least physical investments with complementary social and environmental innovation (Aiginger, 2014A, 2014C).

Another route to boosting investment is to reduce red tape and the administrative burden on firms, which today face a plethora of local, national and European regulations which increase costs and delay investment. Many large-scale investment projects are subject to an intensive ex ante evaluation – an activity with social and environmental value – but the procedures are too complicated and time-consuming.

There is no evidence of a general credit crunch at present, but stricter credit standards reflect higher risk aversion in the banking sector and the necessity to increase banks' own assets (Hellwig, 2010; Basel Committee on Banking Supervision, 2009). This, in turn, limits the expansion of small and the creation of new firms. Venture capital and alternative financial instruments (crowd financing) should therefore be developed and supported (Ebner and Bocek, 2015). Surveys show that it is difficult, time-consuming and expensive to create new firms in Europe. More proactive encouragement of startups (specifically innovative startups), the deregulation of product markets, and simplifying the launch of new businesses are all needed in order to create new firms, particularly innovative ones and those targeting environmental and social innovations.

The conditions for enabling more young, innovative, fast-growing firms in Europe could be improved e.g. by creating a pan-European venture capital market and ensuring a supply of well qualified researchers and graduates. Business parks and a “Silicon Valley” culture near universities are conducive to a high-road strategy. Competition policy should be stricter when evaluating big mergers. Some large firms use cash flow to buy competitors instead of innovating and creating new products.

## Reducing inequality can boost consumption

**Education, social contracts and tax relief for low incomes are the keys to reducing income differences, limiting poverty and stimulating consumption.**

The second important factor accounting for demand not catching up with existing capacities is private consumption. Rising inequality reduces economic dynamics (OECD, 2015A). Bolstering wages (and particularly lower wages) in countries in which the wage share in national income has declined could increase consumption and thus – if capacity utilisation is higher – also investment and innovation levels. Reducing the income spread increases consumption on the part of low-income earners; this leads to a stronger increase in wellbeing since the marginal utility of incomes is higher for low incomes. On the other hand, low-income earners consume goods with relatively high carbon inputs. Thus, in a simultaneous approach, reducing income spreads has to be combined with incentives to decrease energy inputs and emissions.

Fears of losing cost competitiveness as a result are unfounded for the majority of Member States given that Europe has a current account surplus and the competitiveness of industrialised countries primarily depends on capabilities (i.e. skills and innovation, *Aiginger et al.*, 2013A). Lower wage levels in the past have not been used to boost investment levels, but for paying back debt and buying back companies' own shares. Wages consistent with productivity support structural change by making a low-road strategy built on temporary profits from a low-wage segment unattractive.

Income differences have increased in most Member States, thereby depressing demand and hampering the goal of poverty reduction (or even increasing relative poverty among the working poor).

The main sources of rising inequality in most industrialised countries are:

- globalisation shifts demand for low skilled labour to emerging countries,
- new technologies require highly skilled workers,
- the progressivity of European tax and transfer systems declines,
- strains on public budgets limit the scope for financing new social risks,
- the scope of collective wage bargaining has decreased.

A long-term and lasting reduction in income differences can be achieved best by eliminating differences in education – a strategy which also serves to actively counteract social and ethnic segregation. In the medium term, an active labour market policy as well as social contracts between representatives of firms and employees (e.g. about training and re-training) will extend this policy to training during people's working life. In the short term, higher minimum wages (with the caveat that they should not differ too much from market-level wages), minimum pensions and in-work

benefits for low-wage earners could limit poverty as well as stimulate consumption. Even more effective would be the reduction of taxes and social contributions on low wages since this does not make labour more expensive for firms (in what is probably a wage-sensitive employment segment) and is less costly than in-work benefits, accompanied by raising taxes on inheritance and property. Tax shifts can bolster consumption relatively quickly and could be implemented in a way compatible with environmental sustainability (if the tax cuts are funded by raising taxes on energy).

### Extra-European exports of sustainable technologies

Exports could also stimulate economic dynamics. However, it is not easy to increase dynamics via trade for a region that already has an export surplus. It is foreseeable that other regions of the world might retaliate, thereby triggering a devaluation spiral. Boosting exports via a low-cost strategy would further reduce European incomes, at least in the short run. Instead, a feasible and welfare-enhancing strategy for Europe – and also for the target countries of exports – would be to provide goods and services not provided by other competitors. These could be environmental technologies, designs for building smart (low-carbon) infrastructure, new engines based on alternative energy sources and products with low carbon content. Products with higher energy efficiency ratings, renewable energy or low-carbon resources are competitive advantages of Europe and also improve wellbeing in other countries. Planning and know-how services, for instance related to healthcare, transport or urban development, raise incomes and are labour-intensive, while also saving energy and reducing emissions. Given the rising importance of emissions and the emergence of social problems in the new and growing “megacities” worldwide (see Box 6), this approach could raise wellbeing in all three dimensions.

The public sector cannot stimulate demand by increasing its deficits, since public debt is high and has to be reduced in preparation for stage two. It can, however, support change and promote wellbeing by changing the structure of its expenditures and, even more so, the structure of taxes (see Section 4.6). At the European level, the midterm evaluation in 2016 of the multi-annual financial framework should be used to shift expenditures to education, research and radical innovations as well as low-carbon cross-border infrastructure, while reducing spending on large-scale and industrial agricultural units.

### Reducing uncertainty as a prerequisite for boosting dynamics

Consumption driven by disposable income and investment funded by cash flows are highly dependent on economic (un-)certainty. If large imbalances, national crises, political turmoil and a lack of confidence prevail, structural change and income dynamics are hindered and unemployment increases. Agreeing on a vision of how Europe can be successful in the long run and increasing the wellbeing of its citizens along all of its dimensions will reduce uncertainty. The same holds true if

Developing a welfare-enhancing export strategy would entail providing goods and services with low carbon footprints specifically demanded by dynamic emerging economies and not provided by other competitors.

A simultaneous approach targeted at all three goals, as well as increasing levels of trust in institutions, credible strategies and supporting a culture of change are also required to reduce uncertainty.

the distribution of incomes and wealth, as well as economic and political reforms, are considered as fair.

Reducing uncertainty cannot be achieved by means of economic policies alone, but again requires a systemic and simultaneous approach including all three goals. A common vision as to where Europe should head and a clear guiding strategy – making use of the forces of heterogeneity and pluralism – will foster confidence. Increasing trust in institutions, designing credible strategies and positively supporting a culture of change and fairness, incorporating NGOs and youth organisations will also be important elements (see also Chapter 5).

Uncertainty stems from economic imbalances and regional crises. Current account deficits in some Member States and surpluses in others have raised the question as to whether the euro area will disintegrate. Uncertainty also comes from political crises in neighbouring regions, spilling over into Europe and depressing stock markets and investors' confidence. Improved coordination of European policy as well as the monitoring of imbalances (including social imbalances and differences in environmental policies) will improve the business climate and boost investment. Increased economic and cultural cooperation with neighbouring countries will stabilise European programmes, as did the European Recovery Programme after the Second World War. A European "Fulbright Scholar Program for students" from neighbouring countries would stabilise economic and political relations.

## Policy recommendations

During the first stage of the socio-ecological transition it will be necessary to boost economic dynamics, to increase capacity utilisation and employment, to repay public debt and to reduce income spreads and provide a stream of innovation, including environmental and social innovation. Dynamics will also increase as a consequence of the investment needed to achieve decarbonisation and change consumption structures. Investment in decarbonisation therefore increases wellbeing via two channels: firstly, by reducing unemployment and, secondly, by enabling a decoupling of material and energy inputs from output. The following policies are needed for a systemic high-road strategy:

- Communicate the long-run strategy of social inclusion and environmental sustainability, but also the commitment to innovation and economic dynamics (including structural change and mobility).
- Bolster trust in institutions and support a positive attitude towards change in order to reduce uncertainty and to enable recovery from the currently low levels of consumption and investment. Reduce red tape and the administrative burden on firms stemming from regulation at local, national or community levels.
- Encourage business starts by cutting costs and red tape. Reduce the time needed to found a firm or launch large infrastructure programmes.

- Reduce inequalities of income in order to boost consumption. Promote equal opportunities, remove unproductive differentiations in education and reduce taxes on labour, specifically on low incomes.
- Increase wages in line with productivity and even more so if the wage share has fallen and profits are not used for investment purposes.
- Support firms to produce consumer and investment products with low carbon intensity. Foster the export of green products and services, thus increasing export-based economic dynamics as well as technological change and innovation and the promotion of decarbonisation. Exploit the fact that environmental as well as social innovations are employment-intensive.
- Make quick and efficient use of the EFSI, concentrate its financing power on investment in decarbonisation and other environmental and social investments.
- Reduce uncertainty by monitoring economic imbalances in Europe and political conflicts in neighbouring countries. Intensify economic and political cooperation with neighbours, including cultural relations and invitations to study at European universities. Think about programmes similar to the European Recovery Fund and the Fulbright Scholar Program after the Second World War.

### 4.3 Reforming welfare systems and fostering social investment

High unemployment, increasing economic inequality and social risks demonstrate the need for adaptation of the European welfare state.

Europe has the most developed and comprehensive welfare system of all major regions. WWWforEurope (*Aiginger et al.*, 2013A) argues that this does not need to be a disadvantage; quite the contrary.

Nevertheless, most EU Member States have not been able to prevent unemployment and inequality from rising in the past two decades. High unemployment, increasing economic inequality (“today at its highest in many countries ... since data collection started”; OECD, 2015A<sup>32</sup>) and new social risks (e.g. gender gaps) demonstrate that the European welfare system has to be adapted. Unemployment has risen sharply since 2008. Today, it is at double-digit levels in many countries and youth unemployment is nearly twice as high.

#### Evidence: no retrenchment, some convergence

Major differences in social expenditures, but no downward trend in European countries.

Social expenditures in Europe amount to one third of GDP (with Denmark having the highest level, at 33%, while the average expenditure level of the bottom three countries is only 15%). Total government expenditures amount to more than 50% of GDP in many countries. This is a different model than in the US, where social as well as

<sup>32</sup> The OECD changed its assessment of inequality from a neutral analytical perspective to a clearly negative assessment in the last three reports on inequality, choosing for the last report the subtitle, “why less inequality benefits all” (OECD, 2015A). It calculates a GDP loss of 4.7% in 1990–2010 as a result of increasing inequality relative to 1985 and 2005.

overall government expenditures are lower and a higher share of social expenditure stems from private sources.

In recent years, contrary to sometimes voiced concerns, there has been no evidence of a race to the bottom in Europe's social systems and, overall, there has been only a moderate retrenchment of social expenditures, with a particular focus on pension systems. Across European countries, social spending levels converged until the start of the recent financial crisis (Schmitt and Starke, 2011). Southern Europe has increased its (low) share while the Nordic countries have reduced high welfare expenditures relative to GDP.

### New challenges call for welfare reforms

Alongside the persistent goals of reducing poverty and unemployment, new challenges have also arisen: the ageing of populations is leading to higher dependency ratios, and the break-up of traditional family structures and career paths as well as lifestyle changes due to individualisation and post-industrialisation are reducing traditional family-based social safety nets. Higher life expectancy necessitates longer employment and consequently revised qualification strategies for firms, individuals and labour market policy. Increasing national and also international mobility presents a challenge to systems relying on work-based benefits.

Although globalisation generally raises income and productivity levels, it constitutes a challenge to the welfare system: on the one hand, it constrains social policy due to higher levels of competition; on the other, as a by-product of structural change, it creates losers in labour-intensive and low-skilled sectors. In the short-run, increases in wage inequality are driven by an increase in inter-sectoral wage inequality, while in the long run, wage inequality is driven by an increase in the skill premium (Mileva et al., 2013). Demand for skilled workers is rising faster than the corresponding labour supply. Low-skilled workers are confronted with very high unemployment rates in their labour market segments and cannot find new jobs. These vulnerable groups require assistance in the areas of re-training, searching for new employment and incentives for re-employment (Huber et al., 2013).

### Reforms to date

Transformational changes have taken place in recent decades in numerous European countries. Prominent examples are the Hartz reforms in Germany and the welfare system reforms in the Netherlands, which has become the first "part-time economy" in the world. Welfare system adaptations have targeted activation, i.e. increasing the participation rates of groups characterised by low work intensity levels. This has led to a more employment-centred orientation in social policy (Leoni, 2015). Some of the reforms have involved processes of re-commodification (i.e. a stronger linkage of social protection to labour market participation; Pierson, 2002) and dualisation (i.e. a stronger differentiation concerning rights and entitlements between different categories of recipients; Emmenegger et al., 2012).

Ageing populations, lifestyle changes, post-industrialisation, increasing mobility and globalisation are new challenges.

Ideally, the implementation of “flexicurity” should have led to a combination of greater flexibility for firms and higher security for individuals (by means of re-training and assistance in finding new jobs). However, as shown by higher unemployment rates and increased inequality, new jobs have often not been created at the necessary rate and of the intended quality. Moreover, during the recent financial crisis, the flexibility side was relied upon heavily, while options for re-training and the speeding-up of relocation in the labour market were limited by strained budgets. Many recent reforms have focused on increasing labour demand by means of cost containment, which has contributed to rising inequality and lower consumption, thus triggering a vicious circle with declining employment and dynamics of consumption and investment. For a more “symmetric” version of flexibility see section 4.4.

### The game-changing answer: shifting social policy from protection to investment

Switching from ex post protection towards social investment mitigates the tradeoffs between efficiency and equity.

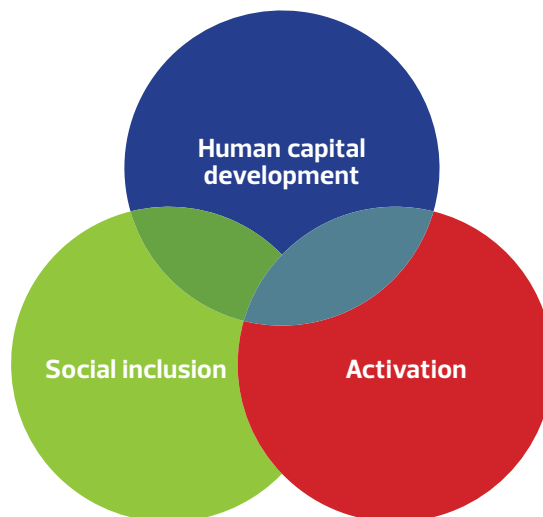
The strategy WWWforEurope proposes to reform welfare systems and to combat inequality is a switch from the social protection focus to the social investment approach. This would be a game changer since it mitigates the old tradeoff between efficiency and equity. Additionally, we propose looking for synergies by linking social investment and environmental innovations (*Leoni*, 2015).

The social investment perspective calls for social policy which triggers a form of Copernican Revolution to accommodate new socio-economic changes instead of being centred on specific risks and focusing on compensating individuals who have been hit by the corresponding negative event. Social policy should first aim at providing individuals with a toolkit to avoid the occurrence of these events and minimise their impact. Rather than relying on insurance and redistribution, and thus largely “compensating” and “repairing”, social protection systems should pay more attention to “preparation” and “prevention”. This preventive function rests primarily on two pillars.

The first one is support for employment and labour market integration, with paid employment as the mainstay of economic independence. The second one is education and human capital formation as prerequisites for success in the economic sphere and as the basis for wellbeing. Figure 5 provides a representation of the three pillars of a social investment strategy, corresponding to activation, human capital formation and social protection. These pillars have to be seen as mutually reinforcing.

The social investment approach attributes different policies to different phases of life: During childhood and youth, social investment means investing heavily in quality childcare, (early) education and the elimination of unequal opportunities. During prime working age and the phase of family formation, the focus is on employability – therefore investment in training and all forms of instruments supporting the reconciliation of work and family are needed. In older age, policies that support active ageing and employability are called for (e.g. effective rehabilitation measures, services

**Figure 4: Pillars of the social investment welfare system**



Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

and residential care). Apart from thus absorbing social risks in different phases of life, all of these policies would also have positive employment effects.

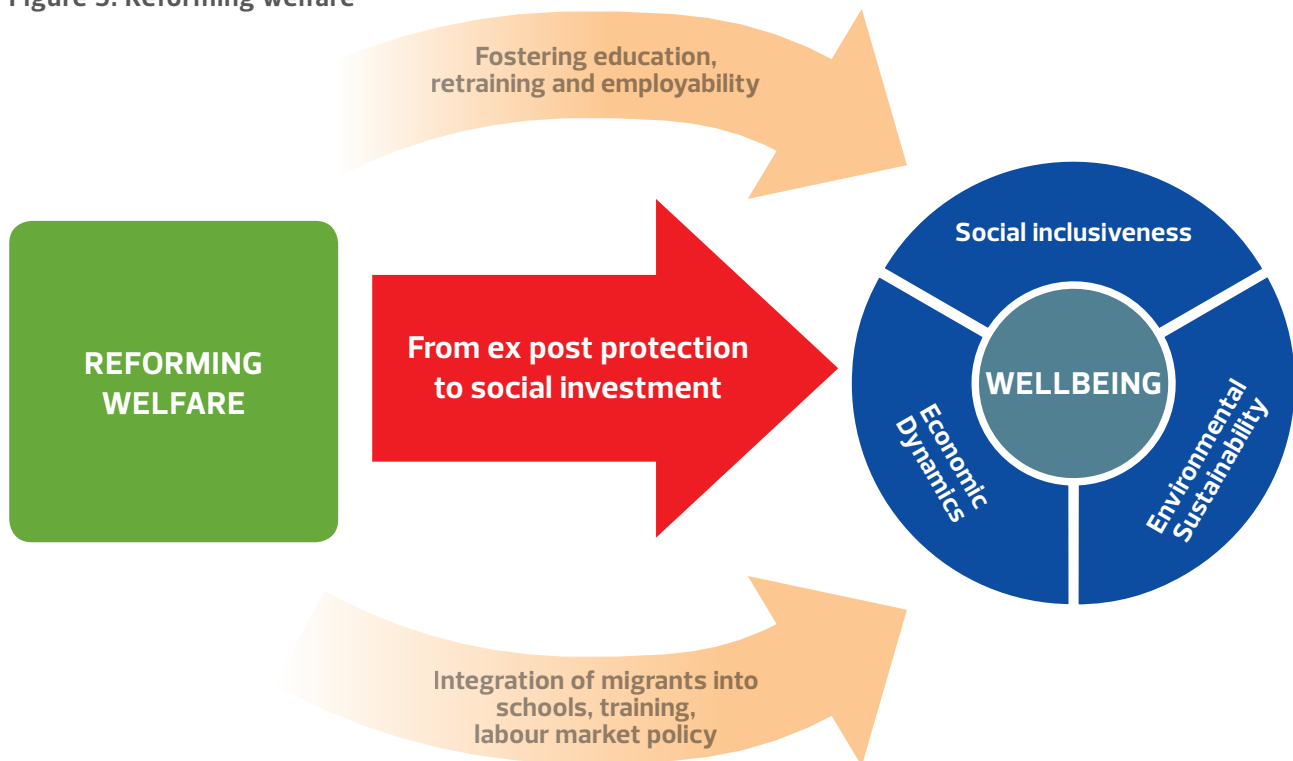
In particular, WWWforEurope proposes the following priorities for changing the welfare system and combating inequality of opportunity and life chances:

- Investment in education, skills and human capital is at the core of the social investment strategy. This is economically efficient and effective since early interventions have the highest economic and social returns.
- Education policy has to put the greatest emphasis on access for all children to education, without family background and inheritance, region of birth or gender influencing the choice of schools and education.
- Early education for and the integration of migrants provide equal opportunities and high economic returns (*Huber and Oberdabernig, 2013*).

Intergenerational mobility has to be increased, both by an education policy explicitly favouring disadvantaged groups and by social policies strengthening the financial capacities of households in order to give children the best opportunities regardless of their (socio-) economic background. Other instruments to foster the transition towards more equality comprise upgrading the skills of school leavers and the under-qualified, the learning of languages, jobs for handicapped and disabled persons, and jobs in the non-market sector, particularly those associated with social and environmental activities. Policies to support skill formation and employment during all life stages have to be matched with measures to help individuals manage transitions between life stages smoothly. Individual biographies have become more fluid and heterogeneous, increasing the number of transitions, for instance due to repeated shifts from education to work or from care to work (*Leoni, 2015*).



Figure 5: Reforming welfare



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

### Re-invigorating the redistributive effect of taxes and transfers

**The progressivity of the tax system should be restored given the increasing spread in market wages and wealth.**

While, at the end of the 20<sup>th</sup> Century, economists were divided as to whether inequality offered more advantages (such as providing incentives for hard work, risk taking and investment) or disadvantages (e.g. less consumption), in recent years this assessment has shifted so that the mainstream opinion today is that the disadvantages predominate. The majority of recent studies assert or prove the negative effects of inequality on growth, mainly emphasising the inheritance of skills and decreasing social mobility as well as the negative impact on human capital formation due to the unequal use of talents rooted in increasing inequality of opportunity. Inequality destabilises societies, thereby increasing both xenophobic reactions and political extremism.

Although the reduction of inequality should therefore be at the core of strategies to attain social inclusiveness, the redistributive effect of the tax system has actually decreased over recent decades in many Member States. First of all, labour taxes have increased much faster than other taxes. Taxes on inheritance, wealth and capital incomes as well as on high incomes, on the other hand, have been cut or abolished, and taxes on corporations have also been reduced. Tax compliance has decreased due to profit shifting and tax evasion in the globalising world. At the same time, transfers have increasingly come under pressure due to the need to consolidate public budgets.

To again make tax systems more progressive, taxes on wealth and inheritance could be increased, using the additional revenues to cut labour-related taxes, particularly for lower and middle incomes (for a general cut of taxes on labour within a fundamental tax shift see section 4.6).

## Relationship to simultaneity and the two-stage strategy

Welfare reforms and increasing equality of opportunity should be aligned with policies for environmental sustainability. For example, subsidised housing should focus on lower costs from a lifecycle perspective – effective insulation and modern heating systems fuelled by renewables not only reduce the costs for inhabitants but also serve environmental goals.

When growth rates decelerate, as envisioned by the WWWforEurope strategy, it is crucial that income inequality and unemployment have already been reduced. In a low-growth scenario, it will be difficult to reduce differences in incomes and wealth since lifetime income will be low relative to inherited wealth, and the chances of shifting from a lower to a middle position on the social ladder by earning more will be further reduced.

## Towards a social union

Welfare system reform and the challenges related to unemployment and labour markets represent highly complex problems. Social innovation therefore cannot only occur bottom-up, it also requires a high degree of policy coordination and forward-looking policies. For this purpose, governance structures are needed that enable the coordination and implementation of adequate social policies. It can be argued that governance reform should be regarded as a priority of equal importance to socio-economic policy reform (Hellström and Kosonen, 2015).

Social Europe currently is not fully developed. One reason for this is that social goals have long been primarily in the domain of Member States (Breuss, 2002).<sup>33</sup> The EU has been given authority only in certain social areas, particularly those assuring free movement of workers, health and safety at the workplace, gender equality and the fight against discrimination. Over the years, legislation based on a qualified majority has been introduced on certain other issues, a social fund has been created, a European social dialogue has been established, and a social protocol has been included in the Amsterdam Treaty. The social partners have been allowed to sign collective agreements that can become binding via a decision by the European Council (Thillaye, 2013B).

The main mean disposable in the EU to promote social issues is the open method of coordination, which relies on benchmarking, recommendations, mutual learning,

<sup>33</sup> "The need to promote improved working conditions and improved standards of living for workers" was expected to be the implicit result of "the functioning of the common market, which will favour the harmonisation of social systems" (Article 117 of the Treaty of Rome, Fernandes and Maslaukaite, 2013).

**Welfare reforms have to be connected to sustainability and economic dynamics. Investment in decarbonisation and upgrading skills reduce unemployment, public debt and inequality, therefore preparing the way for socio-ecological transition.**

**Social innovation requires a higher degree of policy coordination, an improved governance structure and forward-looking policies in order to move in the direction of a European social union.**

## Box 6: Metropolitan areas – where social and environmental innovation meet

The share of populations living in urban areas in Europe will increase from 73% today to 82% by 2050.<sup>1</sup> Urban areas are engines of growth and emissions as a result of which, by 2030, European metropolitan areas will account for 59% of regional GDP (Dobbs et al., 2011) and for 75% of EU energy consumption (Kamal-Chaoui and Robert, 2009). Large cities are increasingly attractive, having both positive and negative effects. Agglomeration and advantages in terms of knowledge spillovers make large cities hubs of innovation and productivity. Cities offer better individual living standards, job perspectives and higher wages even if these higher wages are often offset by higher costs of living (OECD, 2015D). Nevertheless, the continuing global trend of urbanisation creates many problems. Social segregation and exclusion are spreading, and urban sprawl and peripheralisation, unequal development between North-Western and South-Eastern Europe, need to be addressed adequately and rapidly.

A first step has to be to implement existing infrastructure solutions on a broad scale, such as renewable energy systems, energy efficient buildings, sustainable waste services and especially innovative transport solutions (UNEP, 2011). Re-programming will have to encompass targeted urban planning with urban containment instruments (greenbelts, urban growth boundaries) for confining urban sprawl, as higher urban density helps to enhance cities' resource efficiency and energy productivity as well as reducing the costs of new

and sustainable infrastructure. Innovative public transport systems, cycle lanes and walkable neighbourhoods could offset density-related congestion, support lower emissions and help to boost equality (Floater et al., 2014A).

Social innovations in metropolitan areas can be fostered by permitting and supporting urban experiments and the development of bottom-up policies addressing poverty, education and the labour market both legally and financially (Noll, 2015). Broad access to education, jobs and training can prevent or reduce social exclusion (OECD, 2015D).

### Best Practice: Copenhagen

In the European Union, no one-size-fits-it-all solution will be successful. Therefore, different strategies are needed for different cities: strategies which consider individual needs, economic structure and existing infrastructure. Nevertheless, there exist best practices others can learn from.

The city of Copenhagen can serve as an example for forward-looking urban planning. It has committed itself to the following targets: to become CO<sub>2</sub> neutral by 2025; 10% of CO<sub>2</sub> reductions should be reached through construction and renovation projects (public buildings are being upgraded to the highest standards of energy efficiency); all residents live within 350 metres of the next public transport station; all new offices with over 1,500m<sup>2</sup> of floor space need to be located within 600 metres of a railway station (Floater et al., 2014B); 50% of people should cycle to work or school. Today, already 80% of new urban developments are built on existing brown field sites to prohibit further soil sealing and urban sprawl (Siemens, 2012).

<sup>1</sup> There is no common definition of 'urban area' across countries. "The criteria for classifying an area as urban may be based on one or a combination of characteristics, such as: a minimum population threshold; population density; proportion employed in non-agricultural sectors; the presence of infrastructure such as paved roads, electricity, piped water or sewers; and the presence of education or health services" (United Nations, 2014).

guidelines and statistical comparisons, but is without legal and binding consequences. The Lisbon Treaty has a "horizontal social clause" stating that the Union should take social issues into account in all its "activities and policies". In the Europe 2020 Strategy, inclusive growth is one of the three pillars, defined as "fostering a high employment economy delivering social and territorial cohesion". An employment goal has been set as well as goals for poverty reduction and the reduction of the number of school dropouts. Social indicators (with most attention being paid to unemployment) are surveyed in the European Semester and in the Macroeconomic Imbalance Procedure. The European Commission has asked Member States to prioritise social investment; it has proposed a Social Investment Package (SIP). The Five Presidents' Report (European Commission, 2015C) stresses that employment and social concerns must feature highly in the European Semester.<sup>34</sup>

## Policy recommendations

A comprehensive welfare system is a constitutive part of the European model. It has over decades not prevented – but probably even supported – the success and performance of European economies and it has limited income dispersion and poverty in the long run. But since the start of the financial crisis it could not prevent rising unemployment and poverty levels. High labour costs and new challenges therefore necessitate reforms:

- A switch from the protection focus to a social investment strategy. This aims at targeting employment rather than unemployment, focusing on early ex ante activation instead of ex post financing of unemployment.
- Incentivising the reconciliation of work and family life in order to promote gender equality and make voluntary reductions in individual working hours and temporary "timeouts" feasible.
- A focus on education, and particularly early education. This is important for creating equal opportunity as well as limiting income spreads later in life. Instead of later repairing damage and compensating the losers of globalisation, the focus has to be on expenditures for education and health and on incentivising employment.
- Integrating migrants rapidly into the labour market by appreciating their qualifications without excessive red tape and by giving them full and effective access to schools, the apprenticeship system and training. Integrating a qualified and flexible group into the workforce will boost dynamics, reduce public spending and political and social conflicts.

<sup>34</sup> As previously argued by Fernandes and Maslukaite (2013), a common currency implies that the interdependencies between the Member States increase; as a consequence, increased cooperation on social and employment policies is needed. Reinforcing the four EMU pillars (fiscal, economic, banking and political) affects social questions directly and indirectly. Therefore, the social dimension should be mainstreamed in the national and EMU-level initiatives in response to various short and long-term challenges rather than being treated as a separate pillar of a genuine EMU.

- Strengthening the redistributive function of taxes and transfers through higher tax compliance as well as taxes on property and inheritances and lower taxes on labour, particularly for low and middle incomes.
- Increasing the social dimension in European governance and boosting EU-wide cooperation on social and employment policies (*Aiginger et al.*, 2013B; European Commission, 2015F).
- Incorporating the monitoring of social indicators in the surveillance framework of the European Semester.

#### 4.4 Upgrading skills and symmetric flexibility

**Unemployment could be persistent in Europe, also in the medium to long terms, and has to be addressed by means of specific strategies.**

Ensuring high employment rates and low unemployment are essential elements of a social inclusion strategy and therefore a major goal of WWForEurope. Employment is highly correlated with reductions in poverty and social risks. Full employment tends to increase the wage share and reduce income spreads, and a tight labour market is specifically beneficial for newcomers and less skilled workers. In the aftermath of the recent financial crisis, unemployment is high and persistent in Europe even if some minor improvements were visible in 2015.

Unemployment can be expected to remain a phenomenon in Europe in the medium to long run and will have to be addressed by specific strategies. Existing forecasts and analyses of future trends in Europe often ignore this. Firstly, since the models often assume that unemployment will automatically return to its equilibrium rates; secondly, because growth is assumed to return to past rates, and finally, since ageing is predicted to reduce labour supply.

In contrast to the overwhelming majority of analyses, WWForEurope does not expect a quantitative shortage of labour supply at least up to 2030. The important problem is a mismatch – a shortage of high-skilled labour and high unemployment in the low-skilled segment (see Box 7). The dominant phenomenon, at least in stage one, is a quantitative oversupply of low-skilled labour and therefore actual or hidden unemployment. This could change in stage two, but even this is uncertain given the new migration trends.

Thus we definitely expect an oversupply of labour in the first stage. More uncertainty exists with regard to the second stage. Current predictions expect a decline in the active working population. The actual labour supply will depend on the speed at which the retirement age increases and how migration develops, but there is some chance that unemployment might decrease. How quickly the pressure on unemployment will ease depends on the degree to which economic growth levels off.

The strategies to prevent unemployment are similar during both stages. Cutting taxes on wages could make output and growth more employment-intensive. Efforts to reduce the mismatch between supplied and demanded qualifications should be made as quickly as possible, and symmetric flexibility and voluntary reductions in working time will reduce the oversupply of labour. The earlier this is undertaken, the greater

## Box 7: No quantitative shortage of labour in Europe prior to 2030

In contrast to the assertion made by most medium- and long-term analyses that Europe will encounter a labour supply shortage due to ageing, WWFforEurope maintains that Europe will have no general quantitative shortage of labour supply in the period up to 2030.<sup>1</sup> It could face a labour shortage problem after 2030, but even this is questionable given the high pressure of inward migration to Europe.

Prima facie, demographic trends would suggest a labour supply problem: The total European population aged 15 to 64 is forecast to shrink by 12 million by 2030.<sup>2</sup> It can therefore be assumed that the potential labour supply will accordingly decrease.

Such a potential decline in the workforce can be neutralised by mobilising untapped reserves in several ways. Firstly, by activating the working age population by increasing the participation rate of the age group of 15- to 64-year-olds. Secondly, labour supply could even be increased by extending the “working age” to the larger group of 15- to 69-year-olds and by fostering the extremely low participation rate of the group aged between 65 and 69 in most countries.

An additional way to make the most out of the potential of labour supply would be to reduce unemployment. Currently, around 10% of the labour force or 24 million people are unemployed. Bringing more unemployed back into employment (filling va-

cancies) will increase employment rates and result in a better use of the potential labour supply.

Reducing involuntary part-time work, preventing youth un- and underemployment, and increasing intra-European circular migration (from countries with high unemployment to those with labour shortages) would serve as additional sources of labour in Europe if labour demand is higher than its supply. Tapping these resources is a further method to some extent offsetting an ageing-related reduction in the labour supply by 2030.

Furthermore, migration from countries outside the EU will continue in the future and will also help to reduce labour shortages. Reaping the full benefits of such migration, however, requires a fundamental shift in perspective by regional, national and European policy makers, which considers immigration an integral part of the policy debate as well as a natural and positive aspect of EU development. It will also require policies to provide for better-targeted and co-ordinated approaches to both selecting and integrating highly skilled immigrants, improving the recognition of skills and skill development among immigrants, reforms to education systems and the labour market governance of receiving countries to align labour market, social policy and education institutions to the needs of an increasingly multi-ethnic society as well as regional strategies to improve integration and effective initiatives to ease the mounting concerns of EU residents over increased immigration (Crespo Cuaresma *et al.*, 2015B).

<sup>1</sup> For empirical analyses and policy conclusions in this direction see Hammer and Prskawetz (2014); Zwickl *et al.* (2016) and European Parliament (2015).

<sup>2</sup> From 2014 to 2030 it is forecast to decrease from 329 million to 317 million for EU28.

the chances of decoupling employment from output in the second stage. Some soft forms of decoupling have already started since the rise in labour productivity (and the warranted rate of growth needed to stabilise employment, often referred to as "Okun's Law") has already decreased, mainly through a higher share of voluntary or involuntary part-time. However, this has not happened to the extent needed under conditions of low growth and, given today's structure of incomes, this is at variance with social goals (due to increasing poverty and cutting pensions).

### Employment under low growth

**There will be no quantitative shortage of labour in Europe due to ageing until at least 2030. There will however be an oversupply of low-skilled and a shortage of high-skilled workers.**

Economic growth rates are predicted to be low in Europe over the coming decades. Let us assume, for the sake of argument, that real GDP growth will stagnate. Under these circumstances, stylised facts derived from past experience indicate that employment might decrease each year and unemployment will rise.<sup>35</sup>

The obvious reaction to low or zero growth in the literature is to recommend a reduction in working time, thus distributing the existing amount of work between a larger number of workers to prevent a rise of unemployment (*Jackson et al.*, 2014).

### The effect of working time reductions in times of high and low growth

**In a period of underutilised capacities, general working-time reductions most likely will be implemented without compensating increases in hourly wages and will increase productivity more than employment.**

In the past, working time has been reduced during high-growth periods, usually partly compensated by higher hourly wages. If working time has been reduced during economic slumps – for example, during the recent financial crisis – income reductions often were cushioned by government, and hours were made more flexible by using working time accounts (which is a strategy feasible only in the short run). However, collective agreements to permanently reduce general weekly working hours have been almost completely phased out in the last decade.

Reactions to reduced working hours can take four forms: (i) more overtime (paid or unpaid), (ii) higher productivity (or, from the employees' point of view, higher workload), (iii) more employees (often part time), and (iv) lower output due to increases in unit labour costs.

Empirical studies of working time reductions in "good times" show a positive employment effect of partially compensated working hour reductions. The reduction can actually be cost-neutral if the productivity-increasing effect is reflected in higher hourly wages and the employment-increasing effect is "accepted" (as an income loss) by employees. In a cross-country analysis (*Baumgartner et al.*, 2001), the employment effect proved to be 40% and the productivity effect 60%.<sup>36</sup>

<sup>35</sup> Labour productivity in the past used to increase by 2% (taking full employment equivalents). With growth of output declining also the rate of labour productivity decreases, but it never levels off to zero (given the incentives prevailing up to now).

<sup>36</sup> For a working time reduction of 10%, this would imply a cost-neutral increase in wages per hour of 6% and monthly wages would be cut by 4% (*Walterskirchen*, 2016).

It can be presupposed that, in a period of low growth, declining working hours will be accompanied by no or only minimal compensation (increase) in hourly wages. In a period of strained public finances, government will not be able to offer compensation (for example, in the form of "in-work" benefits or by offering a basic income). If capacity utilisation is low and workers have been kept in employment to prevent dismissal ("labour hoarding"), an increase in labour productivity per hour is the most likely reaction to a reduction in working time.<sup>37</sup>

## Broadening choices and improving work–life balance

An alternative to a general working time reduction would be that those working longer and engaged in overtime today might sharply reduce their working hours, while those working regular hours even part-time would not reduce them at all.

The best way to weaken Okun's Law is a voluntary decrease in working hours (Antal, 2014). That this voluntary approach may work – if supported by some incentives or by removing obstacles to permanent or temporary requests for working time reductions – can be expected based on the evidence that a large number of full-time employees wish to reduce working hours and more employees wish to reduce rather than increase their working hours (Koch, 2015).

Reducing the spread in weekly working hours between those working overtime and those working fewer hours, as well as individual voluntary adjustments, makes sense when considering aspects of distribution and fairness, inter alia with regard to gender relations. Lower differences in hours worked would have advantages in terms of preventing burnout, and, since the majority of well-paid people actually want to reduce their weekly working time, it would also satisfy individual preferences. Not least, it would be one major instrument for redistributing paid and unpaid work among men and women, which in many Member States is distributed rather unevenly. A general reduction in working time (without compensatory increase in wages per hour) is opposed both by the majority of employers, who fear a shortage of specialists, and by those employees who (i) still want to advance in terms of the income hierarchy, (ii) simply need more money, or (iii) are afraid of non-standard work agreements (Berg et al., 2014). Another reason might be the fear of subsequently reduced pensions. Furthermore, empirical studies are quite ambiguous regarding the question as to whether working time reductions actually promote employment (Bosch and Lendorff, 2001).<sup>38</sup>

This calls for more flexibility to the benefit of both sides. For example, overtime (if needed) rather than being compensated financially, could be compensated by means of time-off, longer vacations, sabbaticals, and job-related or unrelated training. Time

<sup>37</sup> If there is no wage compensation for shorter working hours and if shorter working hours are used for per hour productivity increases, additionally cyclical downward spirals might result from decreasing incomes, followed by a reduction of consumption and investment levels.

<sup>38</sup> Considering the setting of empirical analyses is essential in interpreting the results of working time reduction studies (Bosch and Lendorff, 2001; Kapteyn et al., 2004).

**Voluntary work-time reductions can improve work–life balances, reduce the incidence of burnout and unemployment. They should at least not be hindered.**



credits should be available not only in the short run but also in the longer-term, to allow employees to optimise their work-life balance over their working lives.

Instruments for increasing the acceptance of and the welfare gains from part-time jobs would be (i) to improve the right to change to part-time and later switch back to full-time work, (ii) preferential treatment of part-timers when applying for full-time jobs (when new full-time job opportunities arise), and (iii) offering more training and qualifications to part-time workers. Leisure options integrated into collective agreements (e.g. allowing employees to choose between wage increases or reductions in working hours) could work in the same direction.

### Informal work is no comprehensive solution

An alternative to a general reduction in working time discussed in the so-called degrowth literature (Kallis et al., 2012; Nørgård, 2013; Loske, 2013; Hinterberger et al., 2011; Jackson, 2009) is to downgrade the goal of full employment as measured in terms of traditional formal employment. There are alternative employment possibilities outside the classical labour market that are more self-determined and self-motivated, and which meet public and private demands, often in the neighbourhood (such as community work). Since these “meaningful” occupations provide positive emotional feedback, remuneration can be lower than in the traditional formal sector. Informal occupations and social innovations, such as service exchanges based on time banks, can represent strategies to address changing needs and aspirations in society. Both in quantitative and qualitative terms, however, they are unlikely to provide a comprehensive solution to the economic challenges reflected in labour markets.

Most importantly, a shift towards informal works is at odds with trends favoured in the past for very good reasons. Switching from informal to formal labour has traditionally been seen as social progress, since it included formal rules (like maximum working hours, security, minimum wages, etc.), symmetric rights for employers and employees, and the ability to negotiate collectively. Formal contracts provide insurance irrespective of family ties. All these aspects can and should be carefully considered when changes towards more informal work are advocated, as is the case in large parts of the “degrowth” literature.

### Flexibility has to be symmetric

Making working time more flexible can have a positive effect on firms as well as on employees (Esping-Andersen et al., 2002). Firms that adjust their working hours to reflect demand can cut costs, making it easier to capitalise on their specific capabilities. Employees who are able to adapt their working hours according to individual preferences (be it family, education or leisure) achieve greater satisfaction from employment. Job satisfaction can increase in line with working time flexibility (Koch, 2015) and can lead to stable employment relations.

**Informal work can meet private and public demands and provide positive emotional feedback, but lacks several advantages of formal employment ranging from minimum wages to insurance.**

**Working time flexibility has to be symmetric, enabling firms to adjust labour input to demand and employees to adjust their working hours to work-life balance.**

In order to achieve this win-win situation it is essential that increasing flexibility be symmetric in the sense that the needs of firms and the preferences of employees are matched. Employees should have a guaranteed right to adjust their working time to individual preferences and life cycle needs. The rights of employers as well as employees should be negotiated in collective agreements or contracts at the firm level. This increases the scope for reducing working hours in periods of low demand.

A dangerous strategy for stabilising employment in times of high unemployment is to create a permanent sector of low-paid jobs (or a "second labour market"). Such jobs ("one euro jobs") may have the advantage of bringing the long-term unemployed back to work (and preserving their wage-related skills) and offer young people their first work experience. However, careful monitoring is needed in order to ensure that this strategy remains an entry strategy only and does not open up a second labour market of permanent low-paid jobs leading to more working poor without chances of gaining further qualifications and switching to the first labour market. Dual labour markets came into existence as a reaction to rising unemployment rates in many European countries, even before the financial crisis, and have since persisted.

### There is a problem of mismatch

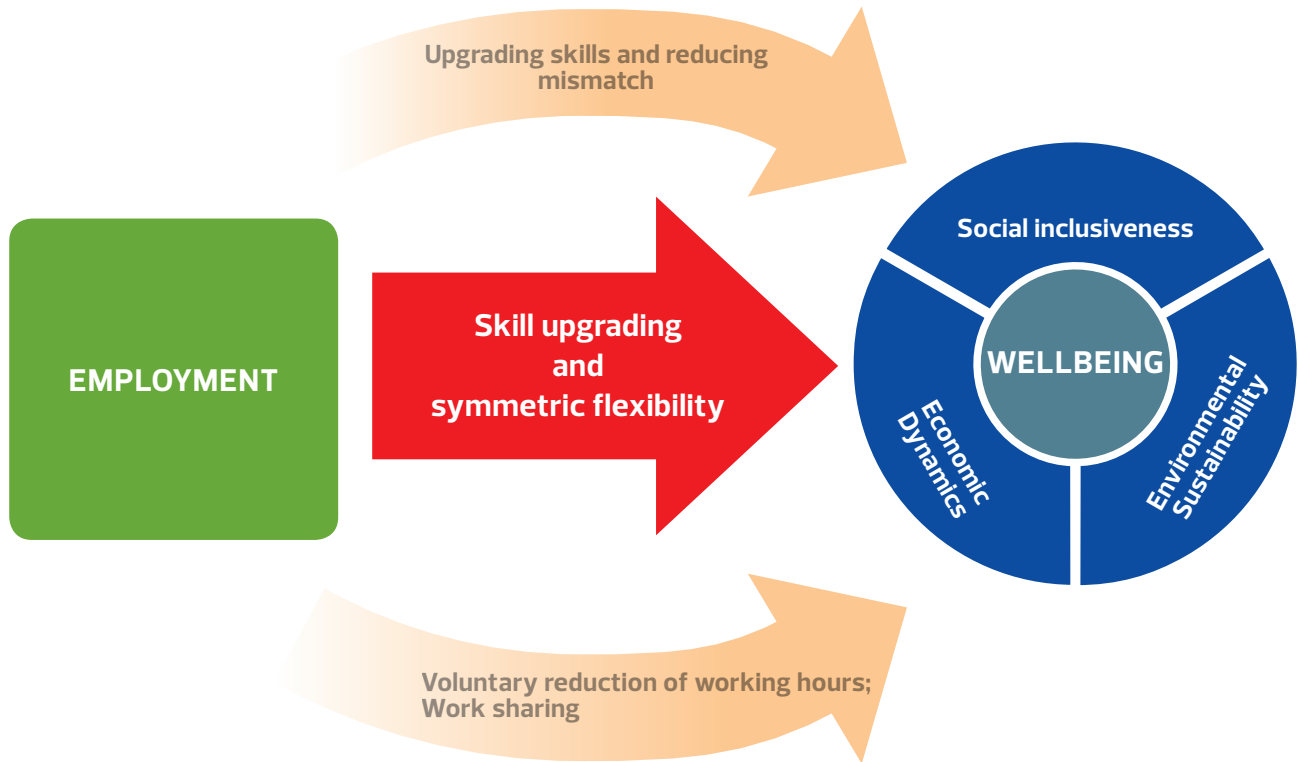
While there is no general quantitative shortage of labour, there is no doubt that a significant mismatch exists between formal qualifications available and those demanded. Four out of ten firms report (CEDEFOP, 2015) that they cannot fill job vacancies because they are unable to find candidates with the required skills. In the literature, this mismatch is divided into the following types (World Economic Forum, 2014; International Labour Office, 2014):

- demand for a particular type of skills exceeds supply,
- the type or levels of skills are different from those required, i.e. qualifications do not match,
- there co-exist over-skilled and under-skilled workers,
- skills have become obsolete,
- regional mismatches add to the above categories.

Addressing these mismatches could be done by improving pre-school education, later differentiating between school types, improving the integration of migrants and their offspring into education and apprenticeship systems, broadening types of qualifications to improve the response to changes in demand, and fostering lifelong learning. If these mismatches are reduced, firms will be less restricted in their quest for qualified labour and less sceptical about working time reductions or wider employee choices for flexibility. This would narrow income spreads and enable low-paid employees to opt for working time reductions or combinations of paid and unpaid work.

**A distinct mismatch between available and demanded skills exists in the European labour market. Unemployment is high among low-skilled workers while there is a shortage of highly skilled labour.**

Figure 6: Skills and symmetric flexibility



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

**Voluntary working time reduction, symmetric flexibility and lower labour taxes will reduce unemployment in the first stage and enable further decoupling of employment from output in the second stage.**

### Decoupling employment from growth is needed

If growth rates further decline employment should be decoupled from output. All three often proposed solutions (general working-time reductions, re-switching to informal labour and work-independent or complementing incomes) to solve the unemployment problem under conditions of low growth will be of limited effectiveness during the first stage. Unemployment is high, the labour force is not decreasing and public expenditures are restrained by high levels of debt. A partial decoupling in the sense of lowering the "productivity buffer" which "transfers" growth below 2% into lower employment (or Okun's Law in the literature) has already started (to a large extent by means of voluntary and involuntary increases in part-time work). A further voluntary reduction in working time should be made possible – obstacles should be removed during the first stage, and working time reductions should be intensified during the second stage of the strategy.<sup>39</sup>

By far the best solution for both reducing unemployment in stage one and decoupling in stage two even more is a significant cut in taxes on labour. Decreasing taxes on labour will reduce the pressure to increase labour productivity and make

<sup>39</sup> The same holds true for work sharing if this is voluntary and should not increase poverty (including old age poverty). It should be considered as an option for reducing the work force.

full employment more compatible with low growth.<sup>40</sup> Decoupling during the second stage will be easier if educational differences and income spreads have been reduced and the probability of falling back into poverty has decreased.

The employment problem cannot be solved and decoupling cannot be achieved by means of a labour market strategy alone. What is needed is a strategy simultaneously addressing all goals and using all policy lines. Restarting dynamics during the first stage and reprogramming make the decoupling of labour from output during the second stage feasible. Symmetric flexibility will boost the acceptance of a general downward trend in terms of working hours. Cutting taxes on labour will reduce the necessity for growth since labour productivity will grow less and the “growth warranted imperative” i.e. the rate of growth which stabilises employment is reduced.

## Policy recommendations

The main problem during the first stage is unemployment, specifically the oversupply of low-skilled labour. At the same time Europe has a shortage of skilled labour in certain segments. Qualification, requalification, lifelong learning and better matching of supply and demand have to be the key priorities. This includes integration of migrants into school, vocational training and rapid acceptance of their qualifications gained in their home countries.

WWWforEurope contends that formal employment is and will remain the most important way of obtaining earnings. Nevertheless the labour market is becoming increasingly differentiated and structural developments related to labour demand and supply have to be incorporated into a long-term strategy. We therefore propose the following recommendations:

- Reduce taxes on labour so as to reduce the pressure on firms to increase labour productivity.
- Upgrade skills and improve the matching of qualifications supplied and demanded. Improve the qualifications of unskilled workers by fostering apprenticeship, training and lifelong education. This should be done during the first stage so as to make decoupling easier during the second stage.
- Promote symmetric flexibility that allows firms to adapt production to demand while at the same time allowing employees to adjust working hours to their individual preferences and work-life balance. This is a win-win situation and should be promoted in collective bargaining agreements.
- Integrate migrants into preschool education, schools and training, and acknowledge their previously attained qualifications. Make efficient use of the existing skills of migrants through the speedy recognition of qualifications acquired in their land of origin and upgrade the skills of less-skilled migrants.

<sup>40</sup> For a game-changing proposal along these lines see section 4.6.

- Unemployment can be reduced by a primarily voluntary reduction in working time, especially for those with long working hours. A general reduction in working hours, which is easier to be enforced for low-income jobs, may increase poverty and contradict upward mobility ambitions. Given that the reduction would be primarily without compensation through higher hourly wages, it could lead to downward spirals of lower consumption and lower investment. However, overtime compensation or preferential tax treatment for overtime should be abolished and voluntary reductions should at least not be hindered.
- Support initiatives and create incentives for a partial (and voluntary!) reduction in working hours, especially during the first stage of the strategy. In this domain, there is major scope for sectoral and other collective bargaining agreements, which can introduce forms of working time reductions (such as time credit schemes, "leisure" options and longer vacation periods) which are tailored to specific industries/sectors of the economy.
- Increase the acceptance of and welfare gains from part-time jobs by improving the right to switch between part-time and full-time employment. Support preferential treatment of part-timers when applying for full-time jobs (when new full-time job opportunities arise), and by offering more training and qualifications to part-time workers.

#### 4.5 Decoupling energy from output

**The need for decarbonisation has become a focus of international awareness. A successful transition requires major policy changes.**

Absolute reductions in the use of energy and material resources are necessary in order to limit climate change and to respect other planetary boundaries. In a strategy simultaneously aiming at economic dynamics and social inclusion, this is a very ambitious goal. A deep decarbonisation of product and consumption is required in order to mitigate climate change, as acknowledged in long-run scenarios and policy documents such as the OECD's call for zero net emissions of CO<sub>2</sub> in the second half of the century or decarbonisation by 2100 called for by the G7. These goals have gained political momentum with the outcome of the Paris Climate Conference 2015, which suggests limiting global warming to even less than 2°C.

It would be naive to assume that a policy aimed at a strong, absolute decoupling of growth and emissions could be achieved with only minor policy changes. In the short to medium run and given existing economic structures, there is a potential conflict between ambitious environmental goals and the short-run performance of firms and economies. Higher standards or regulations as well as other policy instruments aiming at the internalisation of negative environmental effects increase production costs and limit choices for certain sectors, enterprises and households.

On the positive side, evidence shows that, in general, demand for a clean environment rises with higher incomes in industrialised countries – albeit not in a linear way and not independently of policy measures. Further results on the macro level show that high-income countries in Europe are leading in energy and

resource efficiency (*Aiginger et al.*, 2013A), and that radical transitions are more likely in economies with high consumption (*Fischer-Kowalski and Hausknost*, 2014). Countries embarking on new technologies can be leaders in export markets as opposed to countries trying to get a free ride first (Stern, 2007). On the micro level, Porter (1991) suggests that sophisticated consumers and ambitious standards may increase companies' competitiveness by providing a first mover advantage. Porter and van der Linde (1995A, 1995B) stipulate that environmental regulation can be beneficial to economic performance.

### Empirical evidence on the decoupling of resources and energy

Empirical evidence on decoupling differs with respect to the input (energy, other resources, or a specific input such as sulphur or CFCs), the country group referred to (emerging vs. industrialised countries), the period investigated and whether a national perspective is taken or imports are included.

Countries in the process of industrialisation generally experience growth of resource and energy consumption that are higher than output growth. In middle-income regions, a parallel increase of energy and output is typical, while mature economies tend to experience a mild relative decoupling. These trends are driven *inter alia* by the fact that in early phases of development the share of manufacturing tends to grow; this is later followed by a shift from manufacturing to services and subsequently to a so-called information society.

The post-World War II era (1950 to 1975) was globally characterised by relatively parallel growth of resource consumption and output. The two oil shocks in the 1970s and the following price hikes for energy led to a significant increase in energy efficiency and to economising energy-intensive materials. The subsequent relative decline in energy prices invoked a return to a parallel development, with at best a modest "relative" decoupling (defined as growth rates of energy consumption lower than those for output). In the last ten years, energy consumption has decreased in 24 out of the 28 EU Member States, enabled by a combination of low growth and high oil prices.

Today, energy and resource efficiency vary considerably across countries. In the EU 28, for instance, energy efficiency is twice as high as in the US, and in Switzerland it is even three times higher. This indicates that there is no technologically fixed relationship between energy input and output.

*Fischer-Kowalski and Wiedenhofer* (2014) report that, in most European countries, domestic resource use has stagnated or even declined (e.g. in Germany and the UK) since the early 1970s, while economic growth has continued, albeit at a slightly lower rate.

Global CO<sub>2</sub> emissions, however, have been rising sharply. Over the past decades, they have tended to increase at a lower rate than GDP.<sup>41</sup> For 2014 the International

<sup>41</sup> On average, 2003 to 2013 CO<sub>2</sub> emissions increased by about 30% and GDP by about 40%.

Successful decoupling is possible but, given low prices for energy, this has not happened anywhere to the extent needed. Differences in energy intensity across countries indicate a huge potential.

Energy Agency (2015) reported for the first time a stabilisation of global energy-related greenhouse gas emissions in a year characterised by a fast-growing global economy. Although certain non-recurring factors could have played a role (e.g. hydroelectricity enjoyed an unusually good year in China), and the absolute decline has also been questioned after emission figures were revised (Liu et al., 2015), the results indicate that, with stronger national and global efforts, a decline in world emissions could be possible earlier than previously thought.

Any sign of relative decoupling is dwarfed by the extent of absolute decoupling needed to keep global warming within the 2°C limit. Antal and van den Bergh (2014A) calculate that, from 2013 until 2050, a reduction of 2.9% p.a. greenhouse gas intensity (67% by 2050) is necessary if incomes per capita do not grow. For GDP per capita growth of 1.5%, the improvement has to be 4.4% p.a. (or cumulatively 82%) between 2013 and 2050.

For Europe several scenario analyses exist which show that greenhouse gas emission targets can be reached while GDP still grows or that growth can even be positively affected by decarbonisation efforts, indicating a strong double dividend (Jaeger et al., 2011; European Commission, 2011). Jaeger et al. (2011) show that a scenario involving a 30% greenhouse gas reduction (instead of the 20/20/20 targets) might be accompanied by a positive GDP impact.<sup>42</sup> The ambitious absolute decoupling is mainly driven by introducing learning-by-doing effects for carbon-free technologies and higher investment rates induced by mitigation policies.

## Instruments needed for decoupling

Decarbonisation can only be achieved by a mix of instruments including price signals as well as regulations. The prices of fossil-based energy and CO<sub>2</sub> emissions will have to rise continuously to signal a credible trajectory to transition and to prevent lock-in investment and rebound effects.

According to several estimates (OECD, 2012; International Energy Agency, 2012), subsidies for fossil-based energy are currently considerably higher than those for renewables. Phasing out subsidies and interventions for fossil fuels will generate at least double dividends. Firstly, it reduces path dependency and lock-in positions favouring fossil energy. Secondly, the elimination of subsidies increases energy efficiency and improves the cost competitiveness of new (low carbon) technologies and – as a side effect – also reduces public deficits and debt, thus creating budgetary leeway to reduce overall taxation or to increase future-oriented expenditures.

Forward-looking standards and regulations are needed to foster transition. It is vital to rapidly define ambitious standards and regulations for long-term infrastructure such as buildings, transport and energy supply, and to consequently

<sup>42</sup> They use a CGE model GEM-E3 for Europe, where the energy demand and emissions are fully linked to the economic system.

**A comprehensive and well communicated strategy with ambitious standards and regulations, price signals and the phasing out of subsidies for fossil fuel are all needed.**

continuously raise these. Investments made today determine the level of emissions and resource use in the long run.

Decoupling energy use and emissions from growth requires a comprehensive strategy. To this end, it will also be necessary to raise the awareness of the need for change and to bring businesses and NGOs on board (see also Chapter 5).

Even using all these instruments together it is no easy task to make environmental and economic goals compatible (e.g. Jackson, 2009; UNEP, 2011; Antal and van den Bergh, 2014A; Antal, 2014). A precautionary approach suggests developing employment and other strategies to increase wellbeing for low/no-growth scenarios. These strategies can be essential for welfare if strict climate and environmental policies turn out to limit consumption growth or innovation cannot be redirected sufficiently towards resource efficiency or decarbonisation.

### “Escape routes” currently preventing decoupling

Despite some encouraging signs, there is no evidence of an absolute global decoupling of the scope needed for limiting climate change. Among the reasons for this – in addition to unambitious climate policies, low prices for fossil fuels and unambitious innovation policies – are two “escape routes” (*van den Bergh*, 2015; van den Bergh, 2012) that reduce the impact of environmental policies intended to limit energy and resource use:

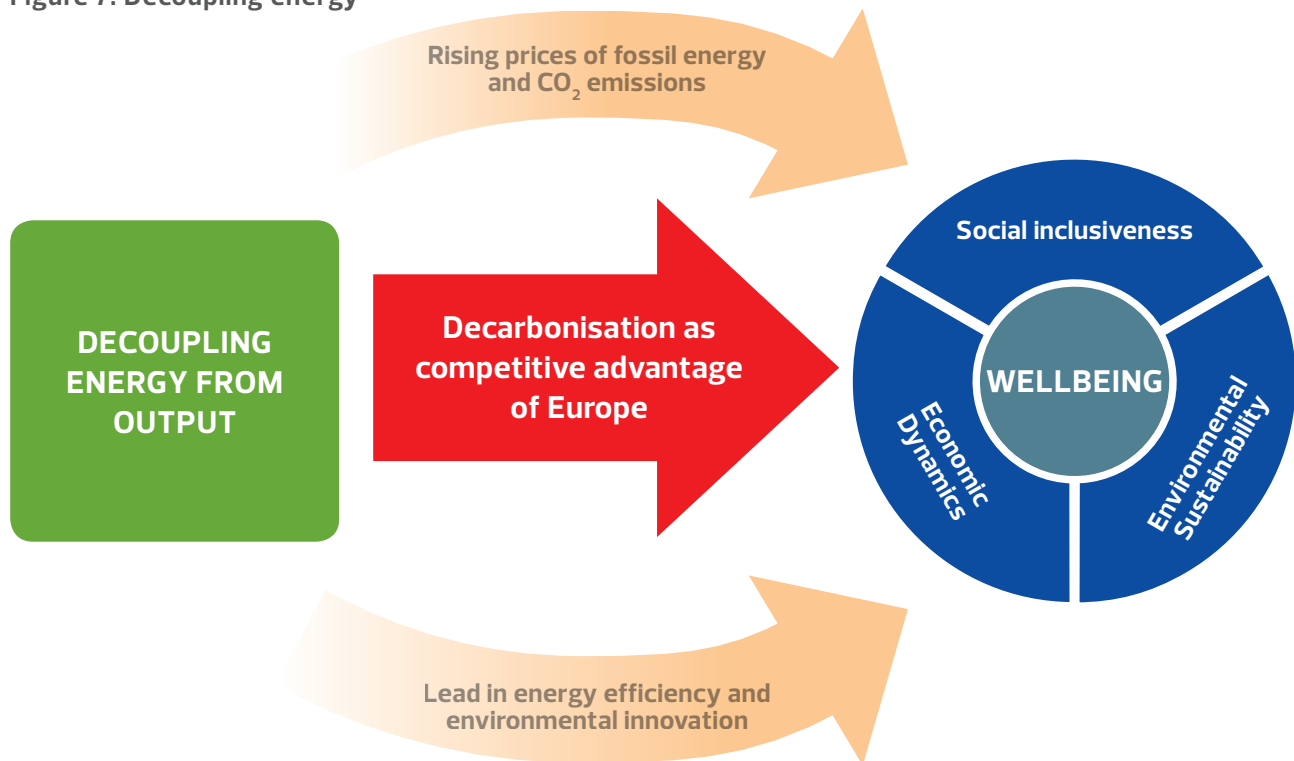
- Rebound effects: One kind of rebound effect is that energy savings lead to monetary savings (for consumers or firms), which are then spent on other products, reducing, and in the worst case potentially neutralising, the impact on net energy conservation and related emissions. Another rebound effect arises if energy-intensive goods become cheaper to use through energy efficiency improvements or conservation actions by consumers or firms, which may again stimulate demand.
- Carbon leakage: Differences in environmental or climate policy stringency between countries translate into distinct production costs, particularly for energy-intensive industries. This in turn can shift production to countries with lower standards or carbon prices, through both changes in trade patterns and the relocation of industries. Ultimately, global emissions might change only slightly or not at all. Instead, lower emissions in some countries would be offset by higher emissions in others.

Any strategy for absolute decoupling has to address these two potential “escape routes”. Rebound effects can be prevented by continuously increasing energy and pollution prices (*Antal and van den Bergh*, 2014B). Policy instruments such as energy or carbon taxes thus have to include “dynamic” externalities in order to curb global climate change. Additional policy measures such as regulations and standards need to be applied to guarantee the achievement of the emissions targets.

In order to take full advantage of environmental policies, escape routes such as carbon leakage and rebound effects need to be addressed.



Figure 7: Decoupling energy



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

Carbon leakage needs to be addressed in international climate, investment and trade agreements in order to promote the diffusion of the best technologies. Multinational firms could be obliged to use state-of-the-art technologies in all subsidiaries. This could be achieved directly, if enforced in trade agreements, or indirectly through shareholder information. Mandatory obligations for reporting emissions at all plants of a company's sites could be a first step. A shift of incentives (subsidies and taxes) and regulation from production to consumption would also contribute to reducing carbon leakage.<sup>43</sup>

### Policy recommendations

In order to limit climate change, a thorough decarbonisation of the economy is indispensable. To meet the ambitious long-term emission reduction targets, a comprehensive policy strategy should include the following aspects:

<sup>43</sup> See proposals such as taxing carbon emissions in consumption instead of production and using tax receipts to lower taxes on labour, e.g. the "green devaluation approach" by *Kratena and Sommer* (2014) and *Kratena* (2016).

## Box 8: Sustainable Agri–Food System

Agriculture is a major threat, a major victim, and an important sector for mitigating environmental and social problems. Despite its relatively small size in terms of value added, agriculture is responsible for a significant share of human impact on the environment. Due to its spatial spread over much of the global landmass, it will experience substantial direct and indirect impacts from climate damage (OECD, 2015E). WWWforEurope covered agriculture and the food system in its research agenda as far as urban farming and subsidies for rural areas are concerned (Schicklinski, 2015; Camaioni et al., 2013, 2014; Bonfiglio et al., 2014). This box builds on the literature summarised in Sinabell (2016).

Agriculture accounted for 9% of total European greenhouse gas emissions (0.44 Gt CO<sub>2</sub> eq in absolute terms) in 2010. While this share has declined slightly (1990: 10%), the most recent outlook of the European Environment Agency (2015A) indicates a shifting trend. Agricultural emissions are projected to reach 0.453 Gt CO<sub>2</sub> in 2030.<sup>1</sup> If this development prevails, EU agriculture will substantially deviate from the EU targets<sup>2</sup> of reducing emissions in the non-ETS sectors (to which agriculture belongs) by 30% compared to 2005.

WWWforEurope recognises both a great need and great potential for a new role of the agricultural sector to support its environmental sustainability and social inclusiveness goals. A high-road strategy of simultaneous objectives should encompass the following:

On the demand side, greenhouse gas footprints can be reduced by making CO<sub>2</sub> costs visible in food prices. An even greater reduction in emissions can be reached by including the agricultural sector and the transport system in the emissions trading system

(ETS). On the supply side, higher levels of innovation, better land use by farmers, as well as targeting the fiscal resources of the Common Agricultural Policy (CAP) can support the environmental goal of the WWWforEurope strategy.

By switching from first-generation to second-generation bio-fuels, more resources become available and these can be used for habitat reconversion or food production (Sims et al., 2010; Havlík et al., 2011). Policies aimed at improving water quality and management, reducing the loss of biodiversity and other environmental damages directly support the protection of planetary limits.

Understanding the systemic relationship between food production and consumption (Dunn, 2010; Okrent et al., 2012; Smith and Tasnádi, 2014), the reduction of poverty, land use and environmental goals can increase wellbeing in the European Union and worldwide. By supporting poor households in situations of rising food prices (due to internalised CO<sub>2</sub> costs), educating society on healthy diets (reduction of meat consumption by 25%; Clay, 2011; Tilman et al., 2011; Demaio and Rockström, 2015) and offering assistance in the production of home-grown food increases social inclusiveness. A reduction in food waste is perceived as a major opportunity to reduce redundant resource use (Kummu et al., 2012; FAO, 2014) and related emissions, with potential of savings up to 24% (FAO, 2011). Furthermore, supporting farmers in their mitigation and adaptation efforts, as well as empowering research and innovation could help decrease emissions and resource use. Improving working conditions and employing refugees on farms can have positive impacts on equality and work-life balances. For further research and recommendations, see Bale et al. (2008); Committee (2010); Ehrlich et al.

<sup>1</sup> In a scenario “with additional measures” which takes into account mitigation measures planned but not yet adopted in late 2014.

<sup>2</sup> The Council agreed to reduce emissions of the non-ETS sectors including agriculture, by -30% by 2030 compared to 2005 (European Council, 2014).

- Making the decoupling of energy use and emissions from growth one of the core objectives of a high-road strategy, capitalising on a simultaneity approach as much as possible.
- Prioritise technologies for switching to low-energy and low-carbon structures as new materials, electric vehicles and advanced low-carbon technologies for energy supply.
- Designing an instrument mix. Price incentives have to be combined with regulation, procurement policy and behavioural changes. Innovation policy has to foster public-sector environmental projects.
- Raising prices for fossil-based energy continuously to signal the commitment to a long-term transition.
- Phasing out distorting subsidies and interventions for fossil fuels and for infrastructure with outdated technology quickly in a period of low energy prices.
- Improving incentives for energy efficiency, boosting environmental innovation and redirecting technological progress away from labour saving to resource and energy saving efforts.
- Defining ambitious standards and regulations for long-term infrastructure and raising them continuously.
- Raising awareness of the need for change and bringing business, social partners and NGOs on board.
- If European manufacturing has to pay a higher price for fossil energy, it should be compensated by larger R&D subsidies and specific funds for decarbonisation, as well as by improved framework conditions for business activity, such as improved skill provision for employees and higher quality graduates from higher education.

#### 4.6 A smarter public sector: halving taxes on labour

**The public sector – larger in Europe than in other regions – could contribute to social and environmental transition much more than it currently does.**

The size and potential steering capacity of the public sector are substantial in Europe. With an expenditure-to-GDP ratio of 48%<sup>44</sup>, almost one half of the output of Europe's economies is re-allocated through the public sector. In addition to government expenditures and revenues, the public sector affects all sectors of the economy via legislation and regulation. Providing information and moral suasion are further non-monetary instruments. The most important expenditure categories are transfers to individuals or private households and firms, public investment and consumption. Revenue-based instruments comprise taxes, including tax exemptions (indirect subsidies), fees and environmental certificates.

EU Member States' public sectors have evolved over centuries; there are very traditionally organised and supervised. The contribution of such a large sector to transition (particularly in terms of curbing emissions) is very disappointing. The

<sup>44</sup> The same ratio is 38% in the US and 43% in Japan.

public sector consists of various layers, from the local to the EU level, with blurred goals and overlapping institutions. If expenditures on future-oriented investment, social inclusiveness and environmental goals are to be increased, reforms of the public sector and cuts in other expenditures will be necessary. Making use of the public sector's potential for sustainable development is a crucial game changer, and perhaps the most important one. For almost all drivers of change highlighted in the WWWforEurope strategy, we find a pivotal role of the state and the public sector in designing and implementing policies. In this chapter we want to look again at these strategies from the point of view of the public sector and show the manifold ways and levers through which it can contribute to a two-stage and, simultaneous high-road strategy.

### The expenditure side

**Governmental expenditure should support environmental and social goals and promote a new infrastructure enabling decarbonisation.**

Government expenditures could support a new strategy for Europe on a broad basis. Infrastructure investment, be it infrastructure for public or private transportation, resource management, urban development or energy networks, has to pursue environmental and social goals. Government not only acts as the provider of public goods and services, it also sets standards (e.g. for the construction of residential and office buildings) and impacts the economy via public procurement.

A future-oriented social policy has to address new social risks that stem from domestic developments as well as from globalisation (social investment approach; see section 4.3).

Subsidies should be shifted – away from securing low prices for fossil-based energy to supporting activities with positive dynamic externalities (e.g. R&D subsidies), which may increase benefits and decrease costs, including environmental and social costs, in the future.

Expenditure structures should also be shifted at the EU level. The lion's share of EU expenditures consists of transfers preserving existing structures rather than contributing to a socio-ecological transition. This is particularly true for agricultural subsidies and cohesion policy. A large portion of agricultural subsidies still supports large-scale and environmentally unsustainable farming (see also Box 8). Furthermore, unintended spillover effects occur since a large part of the positive effects of the common agricultural policy (CAP) do not support rural areas as initially intended (*Camaioni et al.*, 2013, 2014; *Bonfiglio et al.*, 2014). Cohesion funds could be used more intensively to further environmentally sustainable public infrastructure, e.g. cross-border railways, electricity grids or broadband.

Although, over the years, an ever larger share of the EU budget has been assigned to R&D, this is still insufficient to reach the Europe 2020 goals and generate top universities. It will also be important to channel a larger share of R&D funds provided by the EU budget into environmentally and socially relevant research. The lack of expenditures aimed at sustainability goals and the aggravating fact that the system of own resources for funding the EU budget does not contain any sustainability-

oriented financing sources (Schratzenstaller, 2013) should be addressed in the midterm review of the EU budget scheduled for the end of 2016.

## The role of public procurement

**Public procurement should respect life-time costs, including environmental and social impacts, and help to drive down the costs of new, clean technologies.**

Public expenditures on goods, services and work account for around 20% of GDP, and a large and increasing part of this today is cross-border procurement (Handler, 2015). The basic regulations in this field have been designed to foster competition, increase efficiency, reduce prices, and cut costs. Over time, environmental and social goals have been added, thus striving for green procurement (reduced negative environmental impacts) and then for sustainable procurement (balancing out economic, social and environmental goals). However, movement towards effectively accounting for environmental and social criteria in public procurement is too slow.

One major change would be to adopt "lifecycle costing" criteria in public procurement, i.e. considering the full lifecycles of products in the cost assessment of a tender instead of upfront costs. A second important change would be to use comprehensive costs (including social and environmental externalities) as a benchmark instead of narrow market valuations that exclude external costs.

By creating new markets, procurement policy can also be used to drive down costs in the private sector. For example, if all levels of government were to switch their transport and car fleets to highly efficient or electric cars, prices for this new technology would fall and infrastructure (charging stations) would be provided (see Box 5). Market creation for new technologies has been a success story in the telecom sector, where it was supported by a procurement policy promoting the use of telecommunications in public-sector schools. Other markets have been created by the public sector for waste management, e-government, sharing systems and energy standards for housing and offices.

## Changes in the tax system – creating the right incentives

**Tax avoidance by profit shifting and tax fraud, high labour taxes and environmentally harmful tax exemptions should be reduced within a fundamental shift in the tax structure in the direction of equal opportunity, environmental sustainability and fairness.**

From a sustainability perspective, governments are currently taxing the wrong activities:

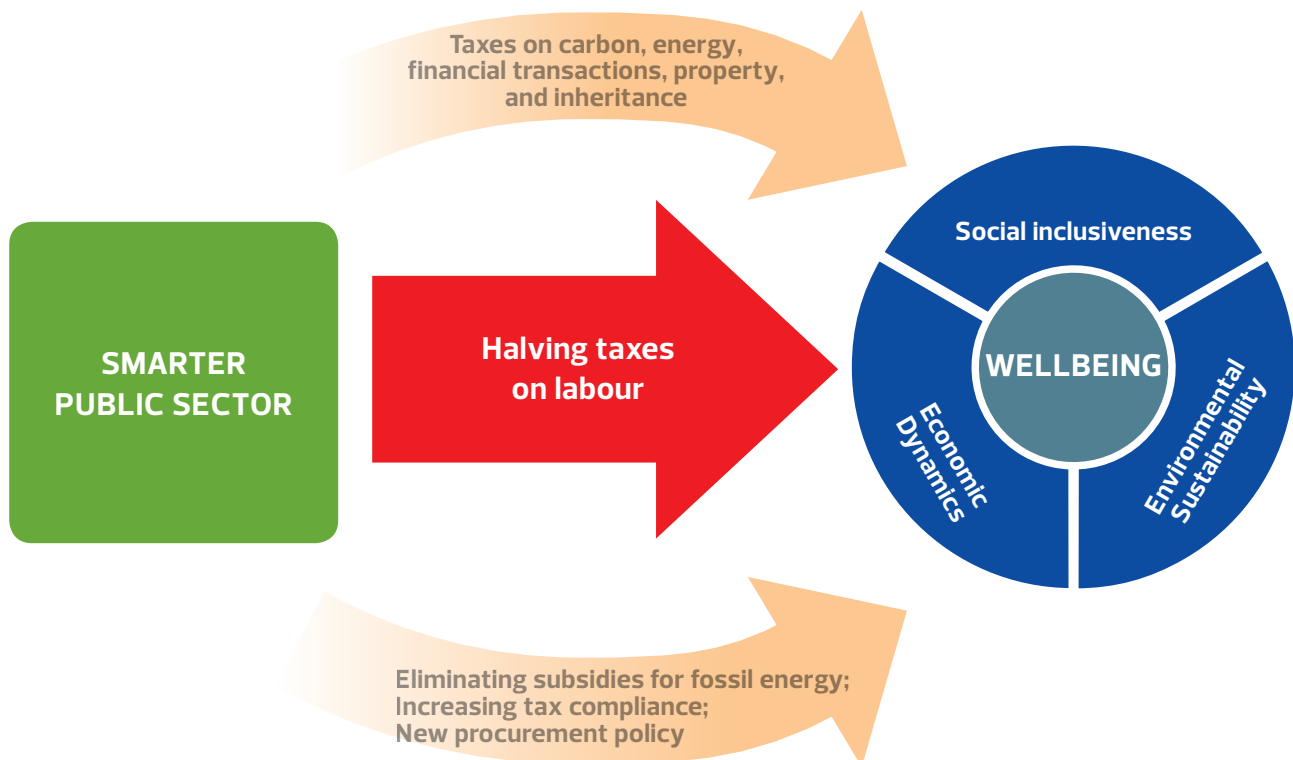
- While labour should actually be made cheaper in order to support employment (particularly in the low-skill segment), the bulk of public revenues is raised via labour-related taxes.
- While (fossil-based) energy should be made more expensive for environmental reasons, energy taxes are moderate and revenues have even partly declined since 2000. Additionally, environmentally harmful tax exemptions prevent the rise of renewable energy and cause substantial tax losses (Eurostat, 2014).
- Though creating equal opportunity, particularly at the beginning of life, is both a social goal and a significant contribution to making a market economy more efficient. Inheritance taxes are currently rather moderate and declining in relevance.

- Though income and wealth inequality is on the rise in many Member States, which is not only problematic in the sense of fairness but also has negative consequences for economic efficiency, taxes on wealth and inheritance, as well as taxes on high incomes have been reduced in recent decades and profit shifting has increased.
- Though short-term financial transactions tend to destabilise the economy, the financial sector pays lower taxes than the real economy. There is no valued added tax for financial services and transaction taxes are limited to stock markets or, as in the majority of Member States, non-existent.

WWWforEurope proposes a fundamental shift of tax structures to correct these counterproductive incentives in Member States' tax systems.

A sustainability-oriented tax system serving all three goals (economic dynamics, social inclusion and environmental sustainability) would combat tax avoidance through profit shifting by multinational enterprises (Schratzenstaller, 2015). By strengthening international cooperation and the exchange of information, the enforcement of taxes on high incomes and wealth could be improved. Effectively containing legal and illegal tax flight would make the tax system fairer. It would support equity goals and – since statutory tax rates for low and middle incomes could be reduced – would increase economic dynamics and employment. To obtain

**Figure 8: Smarter public sector**



Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

triple dividends, elements of green fiscal reform would have to be added: In particular, environmentally harmful tax exemptions should be eliminated, and effective minimum rates for environmental taxes should be introduced at EU level. The introduction of EU taxes – such as on CO<sub>2</sub> emissions or financial transactions – may contribute to sustainable taxation as well. EU taxes to finance part of the EU budget could replace national governments' contributions to the EU, allowing them to reduce the tax burden on labour (Schratzstaller et al., 2016).

### A game-changing tax reform: an ambitious and a moderate variant

WWFforEurope worked out a back-of-the-envelope proposal that would reduce taxes on labour, from a current level of 20% to 10% of GDP.

Compensating tax revenues to the extent needed for a revenue-neutral halving of labour-related taxes could be obtained by the following measures:

- improving tax compliance for value added tax and corporate income tax on the profits of multinationals would yield additional tax revenues of 1.6% of GDP,
- introducing a financial transaction tax – a tax rate of 0.05% on all financial transactions in a scenario of high tax avoidance and high elasticity of the tax base would yield tax revenues of 0.9% of GDP,
- increasing revenues from taxes on tobacco and alcohol consumption to the level of those three Member States with the highest revenues from these taxes would yield additional tax revenues of 1.3% of GDP,
- doubling current environmental taxes would yield additional tax revenues of 2.4% of GDP,
- introducing a CO<sub>2</sub> tax – a tax rate of € 100 per tonne of CO<sub>2</sub> would yield tax revenues of 2% of GDP,
- eliminating tax exemptions for fossil fuels would yield additional tax revenues of 0.2% of GDP,
- increasing revenues from real estate taxes to the level of those three Member States with the highest revenues from these taxes would yield additional tax revenues of 1.1% of GDP,
- moderately increasing inheritance and gift taxes, thereby generating additional tax revenues of 0.1% of GDP,
- introducing a very moderate tax on net wealth, thereby generating tax revenues of 0.4% of GDP.

This ambitious tax shift would require a considerable degree of supranational tax coordination: in the form of minimum tax rates, intense cross-border exchange of information and cooperation, tax harmonisation or introducing specific sustainability-improving taxes at the EU level allowing a corresponding reduction in national tax burdens.

A less ambitious, moderate approach, which could be implemented in the short run, based on less supranational tax coordination, would be to reduce labour taxes by

**Taxes on labour could be cut to half if tax compliance were increased and taxes associated with activities causing environmental and social problems were raised. A blueprint for a game changing tax reform is offered in two variants.**

**The ambitious variant requires a considerable degree of supranational tax coordination and may only be possible in the second stage. The moderate option should be attempted as soon as possible. Both variants increase employment and reduce emissions and income spreads.**

around one third, from 20.1% to 13.3% of GDP. The tax revenues of about 7% of GDP required to compensate for the resulting revenue loss could be generated through a less ambitious effort to reduce tax evasion and less ambitious taxation of financial transactions, CO<sub>2</sub> emissions, tobacco and alcohol, a lower tax increase on immovable property and inheritance and without a wealth tax. Increasing environmental taxes and removing subsidies for fossil energy should remain ambitious so as to foster decarbonisation.

The potential of tax shifts to boost wellbeing in all its dimensions is substantial and would generate double dividends and – given some additional assumptions – also triple dividends (*Kratena, 2015*) by simultaneously contributing to economic dynamics, social inclusiveness and environmental sustainability. Economic dynamics is strengthened by stimulating employment through the reduction of labour taxes, particularly for low and middle-income groups, which are especially tax sensitive. Targeting labour tax cuts for lower and middle incomes is also important from the perspective of social inclusiveness. Particularly if such a labour tax cut also includes some kind of tax relief for the very low incomes not liable for taxation, this can help cushion the potentially regressive effects associated with certain – though by far not all – environmental taxes. Social inclusiveness is further improved by this radical tax shift through higher taxes on inheritance and wealth. In addition, by restricting tax avoidance, especially that by large multinational corporations, the (perceived) fairness of the overall tax system is boosted. Higher taxes on tobacco and alcohol consumption, which may foster public health, can be seen as a contribution to social inclusiveness, but also strengthen economic dynamics. Finally, increasing environmental taxes and restricting tax exemptions on fossil fuel use can improve environmental sustainability, but – if embedded into an "eco-social" structural tax reform – may also spur innovation and employment.

Of course, the list of potentially wellbeing-oriented tax measures underlying our "back-of-the-envelope" calculations is not exhaustive. Further candidates are taxes on unhealthy food and drinks (e.g. a fat or sugar tax), taxes on kerosene use, and adequate taxation of the profits and emissions of the shipping industry (which enjoys tax privileges which are only to a limited extent covered by the available estimates for tax exemptions on fossil fuels). Table 6 contains the potential substitutes for the labour tax cut for the ambitious as well as the moderate variants. Table 7 reports the tax structures in the EU before and after the radical tax proposal.

Meta analyses using parameters from different model simulations carried out in this project indicate that the ambitious tax shift would increase employment by approximately 5% in the short run (2020) and 10% in the long run (2050). Emissions of greenhouse gases would be reduced by 65% in the long run. These calculations model the shift between labour taxes and environmental ones, and assume that other countries will not increase taxes on emissions. Under these extreme conditions a marginally negative effect on European GDP growth (between 0.2% and 0.3% p.a.) may occur. If the other countries increase taxes at least to some extent, the European GDP will also rise as compared to the no-change scenario. Triple dividends



**Table 6: Substitutes for labour tax cut (in % of GDP)**

Compensation in % of GDP	Ambitious	Moderate
Fighting value added tax fraud and profit shifting	1.6	1.2
Introduction of financial transaction tax	0.9	0.5
Increase in taxes on tobacco and alcohol consumption	1.3	0.9
Increase in environmental taxes	2.4	2.4
Introduction of CO <sub>2</sub> tax	2.0	1.0
Elimination of tax exemptions on fossil fuel use	0.2	0.2
Increase in real estate tax	1.1	0.5
Increase in inheritance and gift tax	0.1	-
Introduction of net wealth tax	0.4	-
<b>Total compensating increase</b>	<b>10.0</b>	<b>6.8</b>

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016; own calculations.

would also occur even more if environmental taxes were levied to a larger extent on consumption instead of production.

### Policy recommendations

The public sector reallocates nearly 50% of output in Europe and additionally influences economic and social activity via regulation, legislation, procurement and influences on education and innovation. It could use its influence more effectively to promote all three goals of the strategy, most prominently the environmental and the social goals.

Halving taxes on labour from currently 20% of GDP in Europe to 10% is ambitious but feasible. WWWforEurope has designed a blueprint in which this happens in a revenue-neutral way. Of course, it would make also sense to discuss a general reduction in taxes, since taxes in the EU are higher than in other regions, but we wish to demonstrate the game-changing proposal in a revenue-neutral form. The compensating revenues come from improved tax compliance (as envisaged in recent proposals by the OECD and EU), through an increase in environmental taxes and very moderate increases in property, inheritance and wealth tax, and by taxing financial speculation. We additionally propose a moderate version of cutting taxes on labour by only one third, including foregoing some tax increases and still achieving the result of a reduction of one third. This would increase employment and dynamics in the first stage and make the decoupling of labour from output much easier in the second

stage. Since part of the compensation is by means of property and inheritance taxes, income and wealth inequality will decrease. If labour taxes on low incomes could be reduced overproportionally, this additionally increases social inclusion. Emissions will decrease and repair costs may decrease, thus leading to a triple dividend.

An agenda for a smarter public sector supporting wellbeing includes the following elements:

- a shift in expenditures and subsidies from issues conserving old structures to those promoting a socio-ecological transition and channelling more funds of the EU budget towards R&D in general and environmentally and socially relevant R&D in specific,

**Table 7: Tax structure in the EU – before and after radical tax reform (in % of GDP)**

Taxes EU28	2012	After tax shift	
		Ambitious	Moderate
Labour taxes (total)	20.1	10.1	13.3
Capital taxes excluding property taxes	5.9	6.7	6.5
Corporation tax	2.6	3.4	3.2
Other capital taxes	3.3	3.3	3.3
Property taxes	2.3	4.8	3.3
Taxes on immovable property	1.5	2.6	2.0
Other property taxes <sup>1</sup>	0.8	2.2 <sup>2</sup>	1.3 <sup>2</sup>
Indirect taxes	11.1	17.7	16.1
VAT	7.1	7.9	7.7
Tobacco and alcohol	0.9	2.2	1.8
Environmental taxes	2.4	7.0 <sup>3</sup>	6.0 <sup>3</sup>
Other indirect taxes	0.6	0.6	0.6
<b>Total taxation</b>	<b>39.4</b>	<b>39.4</b>	<b>39.4</b>

Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016; own calculations, using Eurostat data. –<sup>1</sup> Including net wealth tax and inheritance and gift tax. –<sup>2</sup> Including financial transaction tax. –<sup>3</sup> For simplicity, the additional revenues from eliminating tax exemptions on fossil fuel use are added to the revenues from environmental taxes, although they will partly increase labour taxes, taxes on the income of corporations and other indirect taxes.

- incorporate environmental and social decision-making criteria into public procurement processes, e.g. by using lifecycle cost accounting and comprehensive costs (including external costs) in public procurement assessments; deploying public procurement to create and foster demand in new, "green" markets,
- making the EU system of own resources more sustainability-oriented, in particular intensifying the initiatives for EU taxes (financial transaction tax and carbon tax) so as to reduce taxes on labour,
- shifting the tax burden from labour to the environment and property, designing green fiscal reforms, including the elimination of environmentally harmful tax exemptions,
- enforcing tax compliance on high incomes and wealth by increasing international cooperation and the exchange of information, combating harmful tax competition<sup>45</sup> and avoidance (profit shifting) as well as tax fraud (value added taxes),
- strengthen tax harmonisation at the EU level and, to some extent, globally.

All of these analyses illustrate that wellbeing and the principle of simultaneity are closely intertwined with the public sector, as this is where policies and instrument mixes are designed, implemented and monitored. The public sector has the possibility and the means to create synergies and thereby generate double and triple dividends.

#### 4.7 Reforming the financial sector

**A healthy and resilient financial sector that supports the real economy has to be established.**

Once again, problems originating primarily in the financial sector have destabilised the real economy and led to the recent financial crisis with its long-lasting negative effects on the economy, the social system as well as on environmental sustainability. It is an essential precondition for a socio-ecological transition that a healthy and resilient financial sector is stable and supports the real economy.<sup>46</sup> Currently, the largest portion of transactions entered into by the financial sector are with other financial counterparties.<sup>47</sup>

#### Three key objectives for further reforms

**Prohibiting negative spillovers, fostering the financial sector's ability to strengthen the real economy, enabling investors and pension funds to invest according to environmental and social goals, are essential for future financial reforms.**

By any measure, financial regulatory reform in the EU following the financial crisis has been extensive. In areas such as capital regulation and rules for derivatives and banking resolutions, reforms have been far-reaching. The banking union has taken a huge step forward. In general, banks have become more resilient and a significant "de-risking" has taken place (Breuss, 2015).

<sup>45</sup> The BEPS Project by the OECD (2015F) addresses harmful tax competition.

<sup>46</sup> WWForEurope draws on Schuberth (2012) and Trappi (2015), who analyse the beginning of the crisis, the problems revealed and the policy changes initiated since the crisis.

<sup>47</sup> Less than 10% of securities issued are issued by non-financial counterparties (Tichy, 2015B). World trade equals less than 2% of currency trading. In the EU, loans to households and non-financial corporations represent roughly only 30% of total assets of banks' balance sheets (HLEG, 2012).

Differences exist in policy steps between Europe and the US. While in the US, the principle of intervention in the banking structure was legislated early on (Dodd–Frank Act, and especially the Volcker Rule), legislation on structural bank reform in the EU is still work in progress. The EU furthermore lags behind the US in regulating derivatives (Veron, 2014). Most new legislation in Europe is derived from the G20 Agenda; in some areas, the EU has gone beyond that agenda, with stricter regulations across markets.

Further reforms of the financial sector should have three overarching objectives, thus contributing to the three goals of WWForEurope: (i) to prevent negative spillovers from the financial sector to the real economy; (ii) to incentivise the financial sector to effectively strengthen the real economy; and (iii) to motivate and enable investors and pension funds to address the needs of society, specifically innovation, social cohesion and the transition towards a low-carbon economy.

### Regulation of the shadow banking system

Shadow bank entities have strong links to the traditional banking sector that amplify risk contagion, e.g. via correlated asset exposures. They have also been used to bypass regulation. Moreover, the prominence of shadow banks has increased since the financial crisis.<sup>48</sup> Regulatory reforms are at their best in their early stages.

WWForEurope recommends limiting the exposure of regular banks to shadow banks, imposing strict and uniform limits on leverage and maturity transformation on all shadow bank entities, and trying to close tax and regulatory havens, at least in the EU. Effective international coordination and cooperation are needed for these reforms.

### Banking structure reform and completion of the Banking Union

While the Banking Structure Reform is still under negotiation, the setting up of the first two pillars of the Banking Union (the Single Supervisory Mechanism and the Single Resolution Mechanism) has been a major step forward.

Further progress towards the Banking Union has been successfully achieved by implementing centralised supervision through the ECB. In order to complement the Banking Union, the still undefined common deposit guarantee scheme should be implemented as soon as possible. Not only banks but all (significant) financial counterparties should be supervised at the central level.

By implementing the Banking Structure Reform, the separation of deposit banking from risky proprietary trading is particularly important. WWForEurope supports separating certain potentially risky trading activities from deposit-taking business.

Without a common deposit guarantee scheme, the Banking Union remains incomplete. WWForEurope favours implementing a common deposit guarantee

<sup>48</sup> In Europe, the Securities Financing Transaction Regulation (SFTR) was adopted by the European Parliament on 29 October 2015 (European Commission, 2015E).

**The exposure of regular banks to shadow banking should be limited, and tax and regulatory safe havens should be closed.**

**The Banking Union creates a centralised system of banking supervision. Risky trading activities have to be separated from deposit-taking business.**

scheme as soon as possible. Furthermore, in the medium term, all significant financial counterparties should be supervised at the European level.

### Efficient macro-prudential instruments

Macro-prudential tools, such as the countercyclical capital buffer, the leverage ratio (tying total assets to bank equity) and the capital surcharge for systemically important financial institutions are currently in the process of being implemented.<sup>49</sup>

Further instruments in a macro-prudential policy framework, such as caps on loan-to-value ratios (LTV), debt service to income ratios (DTI) or loan to deposit ratios (LTD) have already been put into place in some countries.

A financial transaction tax helps to limit boom-bust cycles in asset prices, provides deterrents to short-term portfolios of financial instruments and larger rewards for fundamentally long-term investors (Schulmeister et al., 2008; Schulmeister, 2012, 2014). Its receipts could be used to reduce the tax burden on the real sector.

### Fostering finance for small and innovative companies

The European financial systems are heavily bank-based, with a limited role for non-bank financial providers and capital markets. Having more diversified sources of financing could offer firms easier access to funding. In particular, this holds true for small and medium-sized firms and start-ups. Promoting venture capital, crowd-funding and some capital market financing of innovative firms may not only promote growth and employment but would increase private risk sharing across Europe (see also our analysis and proposals for a new innovation and industrial policy in section 4.1). However, it is crucial that efforts be made to regulate these markets effectively as well to avoid the migration of risk from banks to capital markets.

### Simplify regulation

The far-reaching and complex Basel framework has to be applied by all banks. There are only few exceptions for smaller banks. Although a distortion of competition must be prevented, certain further exceptions for some smaller banks could make sense considering the complexity of the Basel III Framework.

Simpler rules are associated with multiple dividends: They minimise the administrative burden and reduce the scope for circumventing regulation. By definition, they reduce opaqueness and increase accountability. Smart regulation

**Diversified sources of financing can improve the access of young, small and innovative firms to funding.**

**Regulation should be less detailed. It has to focus on the main issues, thus reducing the administrative burden and the incentives to circumvent regulation.**

<sup>49</sup> Macro-prudential supervision is still the domain of national public authorities (e.g. central banks). It should at least be discussed whether centralised supervision might make sense in some sectors. For example, the countercyclical capital buffers can be defined by national authorities through "rule-based discretionary decisions". This will lead to different decisions concerning the extent of the buffer in different countries. There is also some criticism of the countercyclical capital buffers that should be considered in further regulations. The fact that the problem of procyclicality is addressed by no tool other than the capital buffers should also be discussed (Tente et al., 2015).

Investors should be given information about the social and environmental impact of funds.

implies the possibility to better focus on strategic and long-term aims and means less burdening of firms.

## Supporting the transition to a green economy

In order to reach the 2°C climate target, some 50 trillion Euros in cumulative capital expenditure will be needed over the next 20 years (OECD, 2015G). Much of this investment will be needed in low-carbon infrastructure. Numerous proposals<sup>50</sup> have been made to use the institutional investors' enormous assets as a resource for these investments and to incentivise banks to support a transition-consistent capital reallocation and foster sustainable development (UNEP, 2015A, 2015B; *Antal and van den Bergh*, 2014C).<sup>51</sup> Adjusting banking regulation by forcing banks to take into account underlying social, environmental and economic risks related to a loan might be an option. Another proposal is that central banks could be geared towards these efforts, for example by accepting 'green bonds' or 'green asset-backed securities' as collateral for providing liquidity support to banks.<sup>52</sup>

Green investor networks have emerged (Paulson, 2015) and should be encouraged. European financial institutions have undertaken commitments on the Equator Principles.<sup>53</sup>

The development of securitised green assets (transparent green asset-backed securities) as a way of generating more funding for environmentally sustainable economic activity should be on the agenda of the Capital Market Union. Green bonds could provide for green investment. The public sector should play a role as a catalyst in mobilising private resources via credit enhancements or guarantees. It can also play this role through green investment banks.

Special development banks and a broadening of the scope of existing ones could promote green energy, science, technology and innovation, as well as financial inclusion and infrastructure investment.

Industry and the scientific community have, to a certain extent, pushed ahead in the development of inclusive and sustainable funds. In line with this, ratings and labels for sustainable investments have been established. These should help investors to

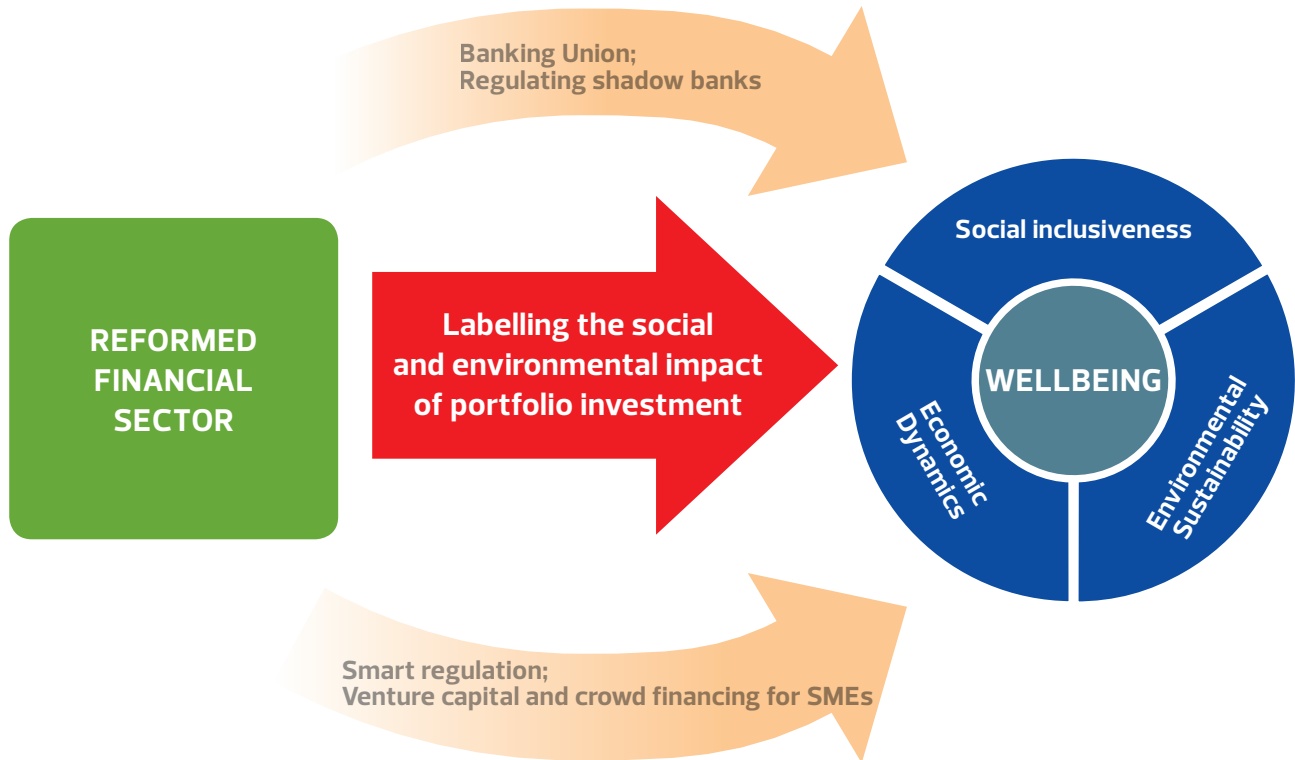
<sup>50</sup> The study calculates with necessary expenditures of 53 trillion USD.

<sup>51</sup> For instance, some argue that higher capital requirements for longer-term project financing loans might have had the unintended consequence of undermining long-term green financing projects.

<sup>52</sup> For an analysis of the performance of socially responsible investments see Revelli and Vivani (2013, 2015).

<sup>53</sup> The Equator Principles are a framework for managing environmental risk. However, in order to have an impact on carbon emissions, such green financing concepts need to be adopted widely. This is why, as China takes leadership of the G20 next year, there is an opportunity for the group to adopt green financing as a new agenda and to create practical models for the developing world (Paulson, 2015).

Figure 9: Reforming finance



Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

identify and compare investments with regard to their sustainability. One of these approaches is the Environment Social Governance (ESG) rating.<sup>54</sup>

Another approach is that of labelling, through which certain companies<sup>55</sup> provide social return on investment (SRI) labels for funds that primarily invest in sustainable companies.

### Policy recommendations

The financial sector has to be reformed so that it supports and strengthens the real economy and incentivises sustainable as well as socially and economically desirable investments. In order to pursue this aim, the following reforms are necessary:

<sup>54</sup> [www.yoursri.com](http://www.yoursri.com). Within the rating process, certain NGOs (e.g. Sustainalytics, CDP) evaluate the sustainability of a company based on certain aspects (criterion for exclusion, best-in-class and engagement). The result is published on the website of the NGOs or even on the website of the stock exchange (e.g. <http://www.boerse-frankfurt.de/de/aktien/siemens+ag+DE0007236101/nachhaltigkeit>).

<sup>55</sup> <http://www.unpri.org/>; <http://www.novethic.com/socially-responsible-investment/french-european-sri/sri-market.html>; [https://www.nachhaltigkeit.info/artikel/esg\\_1609.htm](https://www.nachhaltigkeit.info/artikel/esg_1609.htm).

- regulation of shadow banks and a separation of certain potentially risky trading activities from deposit-taking business,
- implementation of a common deposit guarantee scheme as soon as possible,
- introduction of a financial transaction tax and other effective macro-prudential instruments,
- making regulation of the financial sector simpler and smarter,
- taking into account underlying social, environmental and economic risks related to loans provided; unifying legal requirements for ratings and labelling processes for sustainability and social return on investment,
- promoting venture capital and crowd-funding for innovative firms,
- boosting investments that benefit society and the economy by means of better information and lower risks weights.



**KEY INFO**

- ▶ WWWforEurope analysed past reforms in order to learn under which conditions a strategy can be successful following the disappointment caused by the Lisbon and Europe 2020 Strategies.
- ▶ Successful reforms have to be comprehensive, ambitious and effectively communicated. They cannot aim at only one goal and have to accept compromises which sometimes look clumsy. They have to bundle goals. Losers should be compensated, but only partially, so as to enable and incentivise changes in behaviour.
- ▶ Reforms should bring partners on board, including business, social partners, but also NGOs, youth and migrants. A strategy has to respect heterogeneity of behaviour and preferences. Knowledge about the future is limited so that learning about optimal solutions is needed.
- ▶ Success has to be monitored by means of indicators. WWWforEurope proposes starting the new strategy with a declaration issued by the European Parliament, the European Commission and the Council of Europe.

[Next chapter ▶▶](#)

## 5. FACILITATORS OF REFORMS – HOW IT COULD WORK THIS TIME

### 5.1 Overcoming reform resistance by learning from past transitions

WWWforEurope pleads for profound reforms in Europe. However, politicians and voters need to be convinced that the envisaged reforms – in contrast to past strategic efforts – will work. This chapter reviews the literature, looks for best practices and provides own research results showing how the chances of reform implementation can be increased. It reports a variety of “facilitators” of transition.

#### Characteristics of successful reforms

Europe is known for setting ambitious goals, which so far, however, have had only a limited impact on policy and performance. Merely setting goals is not enough and does not prevent poor performance in case of new challenges. Even a more flexible and country-specific approach such as the Europe 2020 Strategy does not guarantee that countries will achieve their goals. WWWforEurope has therefore screened the literature for success factors in large-scale reforms and transitions (*Bayer*, 2015; Fischer-Kowalski, 2011; *Fischer-Kowalski and Hausknost*, 2014; *Pitlik et al.*, 2014).

- Comprehensive holistic transition strategies are needed to overcome segmentation between policy lines and to identify synergies as well as conflicts. Simultaneity between goals has therefore been made a guiding principle of the WWWforEurope strategy.
- In contested terrain (between objectives and actors; between the short and long run) corner solutions in which one goal is given an absolute priority above others

Large-scale comprehensive and broadly accepted reforms should focus on common goals, a shared vision. They require leadership as well as democratic support.

should be avoided. Frequently, the most effective solutions prove to be those which do not appear elegant and easy. Pragmatic, “clumsy” solutions will be more successful. However, a shared vision, leadership, and democratic support for the goals to be attained are indispensable.

- Broadly accepted agreements can mitigate the risk of losing the support of certain segments of society, including the electorate. Otherwise, strong pressure groups have the ability to block or even sabotage reform implementation. Far-reaching consultations and discussions of feasible options and outcomes are necessary. Deliberations should include civil society and local bottom-up processes. Experts should be consulted, but their role should be restricted to giving advice to policy makers and publicly disseminating insight, while binding decisions should only be made by European and national parliaments.
- Technical solutions will not be enough and behavioural change is required; therefore, educational systems as well as the media have to support the transition. Knowledge of local, regional and individual concerns is necessary and helpful.
- Successful strategies should not be uniform, but rather allow different methods of achieving the common goals, as there is a large heterogeneity of individual preferences as well as political, financial and societal conditions among the European countries.

### Partial compensation and bundling

As transition strategies always generate losers, short-run compensation for those negatively affected by policy change may be necessary, in order to calm political resistance and win approval for reforms. A practicable strategy would be to cushion losses by extending the transition period or including grandfather clauses. Old rules can continue to be applied for existing situations, and a new rule will only apply to new cases. However, adjustment periods should not be excessive, nor should concessions be too generous. Combining different programmes in a reform package could be successful. The bundling of reforms of different policy areas permits to compensate potential losers from one reform by prospective gains in another policy area. Reform losers should not, however, be fully compensated. Prospective losers should also have incentives to change from old to new positions. Policy has to support learning and change. Finally, welfare system reform packages should include measures to secure an effective protection of the subsistence level as a minimum guarantee for reform losers (*Pitlik et al.*, 2014).

Reform deals will be more easily negotiable if opposing political sides concentrate on top priorities, while compromising in secondary aims. Successful reform implementation requires the credibility of authorities. Firstly, governments must be able to credibly convey that they will stick to long-term policy goals. Secondly, citizens and companies must be convinced that reforms will be introduced as announced, since adjustment often requires up-front investment in physical or human capital. Indeed, if investors have to take into account the possibility of policy reversals, they will wait

The credibility of public authorities and confidence in democratic institutions are needed.

Bundling reforms helps to compensate losers of one reform by means of prospective gains from another policy area.

and see, and adjustment will be disappointingly slow. Governments can demonstrate commitment and self-restraint by adopting tight rules and procedures. The binding budget rules stipulated by the Fiscal Compact were intended to be a role model in this respect. Another example of such binding rules is offered by pension reforms: The introduction of life-expectancy factors in reform laws that provide for automatic adjustment of the retirement age can help keep discussions about reform reversal out of the political sphere. Third, promises of compensation to potential losers should never be broken; otherwise, reforms will generate mistrust and lose their political impact. These arguments show that successful implementation of reform strategies will be difficult in countries where institutional trust has eroded, such as in Southern Europe (e.g. *Heinemann and Grigoriadis*, 2013). Voters need minimum confidence in democratic institutions in order to accept the uncertainties involved in far-reaching institutional change (*Pitlik et al.*, 2014).

### Fairness and trust enable deeper reforms

Reforms have to be accepted as fair; reform measures benefit from trust.

Another central factor for reform success is the perceived fairness of reform measures and strategies. Policies will be accepted more readily if the reforms are regarded as 'balanced' and 'fair'. WWForEurope working papers by *Andréasson et al.* (2013), *Heinemann and Grigoriadis* (2013) and *Pitlik and Kouba* (2013) find that deeply rooted societal norms shape codes of behaviour and views of what is 'desirable' and 'right'. Fairness does not refer exclusively to equality of outcomes, e.g. the distribution of income, wealth or opportunities. The merit, impartiality and unbiasedness of political decisions and economic implementation procedures matter at least as much (*Andréasson et al.*, 2013). Increased inequality following a policy change can be a crucial impediment to reforms, if it is perceived as the result of an unfair process or not based on merit. It will matter even more if the terms of burden-sharing are also decided according to mechanisms deemed unfair. In this context, fundamental beliefs about underlying sources of inequality matter for preferences for redistribution. If people get the impression that markets generally produce unfair outcomes, they will desire more corrective state intervention. Similarly, individuals who have the impression of controlling their own life course are less in favour of redistribution (*Pitlik and Kouba*, 2013).

A climate of mutual social trust reduces the cost of control over cheating on benefits and taxes and the need for regulatory intervention, for example on labour markets (*Pitlik and Kouba*, 2013). A lack of general trust and governance problems like corruption goes hand-in-hand. Thus, the perceived fairness of political procedures is greater in trusting societies. The relatively smooth reform processes of Nordic welfare systems since the beginning of the 1990s were built on trust as well as fairness, and they successfully bundled several reform areas (pensions, budget rules, and the labour market).

## Governance changes and support for supra-national cooperation

In order to implement the WWFforEurope strategy of a new dynamic, inclusive and sustainable path at the European level, significant changes are required in the procedures and institutions of the European Union (*Kouba et al.*, 2015; *Thillaye et al.*, 2014; *van Aarle*, 2013; *Aiginger et al.*, 2012B).

WWFforEurope did not engage in own research on democratic processes in the EU and on the so-called democratic deficit hypothesis (discussed in Habermas, 2013; Innerarity, 2014; Follesdal and Hix, 2006; Moravcsik, 2008). It refers to a declining support for the European project in some dimensions (*Thillaye et al.*, 2014) and delivers proposals on how to foster legitimacy (*Badinger and Thillaye*, 2016). On the other hand, Eurobarometer results show that trust in European institutions is higher than trust in national governments (Eurobarometer, 2015), and if crises occur, the call for European solutions is large. There was overwhelming support for European cooperation in fighting the financial crisis (*Thillaye et al.*, 2014). And there is support for proactive European solutions to the refugee crisis, as well as for better and earlier cooperation with neighbouring countries.

### A Vice President for Sustainability

Building support for transition begins with the acknowledgement that this is a task with a European dimension, in which details can differ across countries, but common principles can and should be agreed upon. Therefore, WWFforEurope proposes (*Bayer*, 2015) starting with a "European Declaration of Transition towards Sustainability" that should stipulate the joint achievement of all three goals of transition, and stress the need for simultaneity. Democratic support should be signalled by the fact that the declaration is jointly issued by the European Parliament, the European Commission and the European Council.

The strategy therefore has to be perceived and communicated as a common project of important European institutions as well as European citizens. At the same time, a public awareness campaign should be run, establishing the necessity and feasibility of this strategy and why it can work "this time" after the failure of the Lisbon strategy and disappointment in Europe 2020. It will be important to point out all the game changers the high-road strategy encompasses.

WWFforEurope proposes installing European "Vice President for Sustainability" with the agenda to draw up a sustainability programme. This may signal even stronger commitment. Member States should develop annual sustainability programmes substituting the national reform programmes of today based on regional and local initiatives.

It is important to acknowledge that there are problems that cannot be solved at the European level alone, but require a global approach. Therefore, a common representative for Europe is necessary in shaping global solutions, given the declining quantitative shares of member countries in the world economy (the largest Member States will have a share of 2% or less in world economic output in 2050).

**A new strategy requires an awareness campaign. It needs to be made visible through the appointment of a Vice President for Sustainability in the European Commission.**

## Policy recommendations

- Address the importance of holistic reforms and the necessity of compromise as a guiding principle of the transition,
- formulate a consistent strategy stressing priorities and do not overload it with side issues of secondary importance,
- implement the strategy gradually in order to smooth reform adjustment, but do not be shy of pursuing a bold course to boost credibility and signal commitment,
- secure support for the changes needed by suggesting short-run but not full compensation of reform losers through credible compensation schemes; make clear that the reforms will be followed consistently and that there will be no reversals,
- consider the perceived fairness of reforms, in particular the fairness of the decision-making process regarding reform implementation, trust in government and other public institutions to be essential to the success of the transition,
- start the implementation of the new strategy with a joint declaration by European Parliament, the European Commission and the European Council and a public awareness campaign; install a Vice President for Sustainability and initiate national sustainability programmes.

## 5.2 Taking partners on board and looking for new actors

### Centralisation versus pluralism

There are more and more challenges that can only be mastered if European and even worldwide instruments and programmes are applied. This holds particularly for climate policy, the fight against the spread of diseases, speculative finance, the erosion of taxation, illegal activities, and the issue of migration. Therefore, increased international and especially European cooperation is needed. But this cooperation is impeded by the still-substantial heterogeneity of countries and regions within Europe. WWForEurope work has shown (*Schweickert et al.*, 2013) that they do not really converge in a single European model; ideas on how to cope with new problems, preferences, cultures and habits are diverse; trade partners and neighbours vary between the North, the East, the South and the West. Furthermore, heterogeneity increases with open borders, globalisation and migration.

The European Union is a prime example of pluralism within a common framework of shared values, beliefs and institutions (North and Thomas, 1973; Rosenberg and Birdzell, 1986; Acemoğlu and Robinson, 2012; *Tichy*, 2015A). It has been shaped by institutional competition and learning, imitating, successful trials, and eliminating errors. No central plan but vision and leadership have paved the way for the rule of law, the market economy, and democratic government.

Two different ideas about this federal, supranational Europe have existed from the very beginning of the European project (Karlson, 2014; Lijphart, 1999). The first idea

is pluralistic and stresses that voluntary cooperation is possible. Economic, civil and political freedoms are upheld by common institutions within a shared legal structure. According to this view, cooperation, integration and economic development are the results of free trade, the market economy and the free movement of products, services, capital and people. This requires a shared, but limited federal system with European courts. Other responsibilities, such as welfare policies, are handled in institutional competition by the Member States in a polycentric system of governance (*Sachs and Schleer*, 2013). Vertical division of power and institutional competition is considered beneficial.

The other idea is centralistic and emphasises that mutual benefit is best achieved through central regulation and planning from above. The prerequisite are common institutions that can coordinate and organise the issues that are considered of common interest. Cooperation, integration and economic development are the results of common legislation and rules for the production of products, services and capital within a federal system.

The shift from the Lisbon Strategy to the Europe 2020 agenda was an attempt to switch from centrally predetermined and identical European objectives to goals differentiated according to national starting situations and strategies. Today's European Union is an ad hoc mix of inter-governmentalism and centralisation. The process of institutional learning is blocked in many areas. The rule of law may be threatened due to the policy failures that follow. Aims are set but not pursued because neither the incentives nor the information required for achieving them exist at the effectively European level.

## Capabilities, empowerment and learning

A strategic approach requires an enhancing of capabilities that directly addresses the individual actors of the envisaged transition. The aim is to invest in the capability of European citizens to behave, both individually and collectively, in a more sustainable way in the governance of common-pool resources like energy, water, green spaces, etc. (*Sauer and Huber*, 2016).

There are strong reasons for assuming that agents have to make sustainability transitions possible: "... while many of the effects of climate change are global, the causes of climate change are the actions undertaken by individuals, families, firms, and actors at a much smaller scale .... To solve climate change in the long run, the day-to-day activities of individuals, families, firms, communities, and governments at multiple levels – particularly those in the more developed world – will need to change substantially." (Ostrom, 2009). Thus, to solve global social problems, a significant shift of perspective towards the behaviour of individuals and groups managing critical resource systems on a local scale is necessary.

European citizens and their capabilities and willingness to change behaviour in the direction of more sustainability will decide the success of the strategy. Critical resource systems have to be managed on a local scale.

## Polycentrism, bottom-up initiatives and new actors

Empirical evidence shows that the heterogeneity of populations and cultural diversity can be both advantageous and a source of conflict. Diversity can increase productivity and provide new solutions to problems; on the other hand, when diversity results in too much complexity it can impede effective governance.

Centralism can be advantageous in reducing emissions as well as in questions of distribution and common security. These areas should be defined by parliament, based on the suggestions of experts, civil organisations and NGOs. However, in most areas there is strong empirical support for both increased democratic legitimation and economic efficiency in a pluralistic system, where voters get closer to decision makers and policy makers, who in turn can learn from others facing similar challenges (Ostrom, 2010A, 2010B).<sup>56</sup>

In designing the future growth path, a new balance has to be defined between what should best be handled at the central or federal level and what should be handled at the level of Member States or regions.

## Institutional diversification and the third sector

Polanyi (1944) pointed out that great transformations are always driven by the emergence of new actors pushing for change. However, it might be difficult to find transition managers from the existing mainstream who are accepted and trusted by these new actors. It is more likely, therefore, that these new social groups themselves will emerge as the change agents of a Great Transformation (German Advisory Council on Global Change, 2011).

Given their vested interests, it is extremely unlikely that either the profit-driven business sector or the tax-revenue-dependent government sector should emerge as the originators of new, less growth-focussed institutions. Thus, a substantial part of WWWforEurope research on the urban and regional dimension of socio-ecological transitions (*Sauer et al.*, 2015A, 2015B; *Sauer and Huber*, 2016; *Barnebeck and Kalfj*, 2015; *Schicklinski*, 2015; *Kaphengst and Velten*, 2014) directed its attention towards a third sector of not-for-profit economic activities originating in civil society (Evers and Laville, 2004; Moulart and Ailenei, 2005; Osborne, 2008). WWWforEurope research highlights that non-profit activities originating in civil society are able to yield new institutional arrangements that often lead to better socio-ecological performance than those developed within the traditional market-government dichotomy. These new institutional arrangements could also be considered as laboratories for a more sustainable way to produce and consume.

<sup>56</sup> Ostrom concludes her empirical work as follows: "No governance system is perfect, but polycentric systems have considerable advantages given their mechanism for mutual monitoring, learning, and adaption of better strategies over time. Polycentric systems tend to enhance innovation, learning, adaption, trustworthiness, levels of cooperation of participants, and the achievement of more effective, equitable, and sustainable outcomes ..."

The third sector of the economy has to enable new institutional arrangements, more sustainability-aware behaviour, value chains characterised by lower resource consumption and improved socio-ecological performance.

This third sector can produce new relations between producers and consumers, and promote a more sustainability-aware and deliberate behaviour in more transparent and less resource-consuming value chains. Thus, bottom-up activities and organisational forms of resource governance are the ideal complements to a functional top-down approach.

### Box 9: The sharing economy – participation and collaboration in the market

Sharing instead of buying is a way to contribute to at least two, if not all three, goals of the WWWforEurope strategy. According to Belk (2014), the sharing economy is defined as the peer-to-peer process of “coordinating the acquisition and distribution of a resource for a fee or other compensation”, whereas other compensation also includes non-monetary compensation, such as bartering, swapping or trading.<sup>1</sup> It allows consuming goods with much less resource input through recirculation and increased utilisation, which lowers the carbon footprint. Low income persons are able to consume goods that they could not afford to buy and thereby generate higher welfare out of their income.

The introduction of sharing acquires a legal framework to provide legal certainty for providers and users of sharing platforms to assemble credibility and trust between them, e.g. standard warranty and liability rules, assistance in contract design and insurance-related issues. By introducing incentive schemes (e.g. environmental taxes, internalising recycling cost, rewarding high waste recovery rates) that internalise the true costs of resources and establish tax relief for sharing goods, people are economically incentivised to reuse and share products. Image and awareness campaigns can help inform the public about the advantages of shar-

ing. The establishment of sharing platforms should be supported via advisory services (e.g. start-up consultancy, specialist information, waste avoidance centres), practical everyday accompaniment (e.g. testing schemes) and the implementation of projects (Leismann et al., 2013). Further policy recommendations are included in Botsman and Rogers (2010) and Hamari et al. (2015).

#### Car sharing as a well-established model of a sharing market

New sharing strategies in the car sector fit well into the WWWforEurope strategy, because they connect the three goals. A lot of automobile companies have created their own ‘car sharing’ services (e.g. car2go from Mercedes or BMW’s DriveNow; Belk, 2014) and compete with peer-to-peer car sharing services like Zipcar. These car sharing services reduce the environmental burden by offering smaller and newer cars, as well as cost transparency that leads to fewer driven kilometres (Loose, 2010). Additionally, ride-sharing or car-pooling allows people to offer a ride for a specific route and share its costs with the people joining them (e.g. karzoo, mitfahrzentrale.de), thereby saving resources (Rifkin, 2014). If sharing is organised among some kind of peer group, it is furthermore able to foster a strong sense of community.

<sup>1</sup> This definition varies between authors. Some also include the transfer of ownership.



## Urban resource systems – a tradeoff between complexity and participation

Within cities, this new civil society would have hands-on urban experience and insist that the key urban resource systems (green spaces, energy, climate, and water) be regarded and managed as commons and not as tradable commodities (Ostrom, 1990, 2009; The Ecologist, 1994; Bollier and Helfrich, 2012; Helfrich, 2012).

WWWforEurope research (*Sauer and Huber*, 2016) brought forward a significant trade-off between the (technological) complexity of the resource systems considered and the opportunities for urban citizens to participate in their governance. The extent to which citizens have equal access to the governance of urban resource systems in terms of delegated power and citizen control depends on the system's characteristics.

Cultivating urban green spaces requires less infrastructure, less know-how and lower financial commitment than the citizen self-organisation of local energy or water systems. However, new technologies can support the institutional transition, as in the case of (renewable) energy production. This can be organised in a cooperative, decentralised, and small-scale way instead of as a centralised, large-scale one. In this sense, technological transition entails an institutional transition (*Friesenbichler*, 2013).

This means that the feasibility of institutional diversity, in the sense of self-organisation and citizen participation, very much depends on the comprehension of the subject, as well as on the governance levels regarded as appropriate – even more so if some types of infrastructure require a certain amount of centralised control (e.g. management of networks; *Schicklinski*, 2015).

## Taking business, civil society and partners on board

**Improving the European model is only possible through an enhanced social dialogue ensuring that business, trade unions and civil society are brought on board.**

Europe has a strong and successful business sector and the institution of successful social partnerships. A continuous dialogue between government and stakeholders – with differences between Nordic, Southern and Continental European countries and new members – is partially responsible for the past success of European integration. This should be used and enhanced for improving the European model. Innovation policy could be based on this dialogue as well as used to specifically strengthen it, since redirecting innovation towards social and environmental issues is high on the agenda. A new industrial policy has to incorporate societal needs and place a high emphasis on energy and resource efficiency. A systemic industrial and innovation policy becomes more effective by including into the dialogue innovative start-ups and finance (*Amison and Bailey*, 2013).

On a broader scale, however, the social partners represent a key resource for governance structures that underpin welfare system adaptation and the socio-ecological transition. Social dialogue provides a basis for tackling tradeoffs and exploiting synergies between goals and policies as well as for securing the collaboration between different social actors. At the same time, those less bound to

the short-term cycle can lobby for long-term strategies. They can also provide the continuity and consistent monitoring of the implementation of long-term strategies (which risk is jeopardised when political changes usher in new governments; *Thillaye*, 2013A, 2014; *Thillaye et al.*, 2014).

The goals of WWWforEurope and the simultaneous approach required can only be attained by finding a consensus among social partners and government built on a tripartite dialogue. As early as 2012 a Social Pact was proposed by the European Trade Union. There is, however, some reluctance to press in that direction too strongly, due to the fear that the autonomy of social partners might be limited by European legislation. It should, however, be possible to combine legislations in the joint interest of the social partners, and to define a scoreboard of social indicators specifically relevant to a Social Union while respecting the autonomy of social partners in regard to wage negotiations at the national level.

Social partners are also in the privileged position of being able to design and implement innovative measures to increase flexibility in the labour market in a "symmetrical" way, i. e. by fostering compromise and win-win solutions that match the flexibility needs of employers with the needs and wishes of employees.

### **Integrating bottom-up initiatives and new actors in order to change behaviour**

**Transition requires new actors and new modes of behaviour.**

Civil society, NGOs and representatives of new firms, youth and alternative organisations in general are all important to changing behaviour (*Sauer and Huber*, 2016). Education, universities and minority representatives play a major role in transition. This might lead to unconventional solutions, new business models and non-market employment.

New modes of behaviour provide a culture favourable to change. Concepts of a circular economy that focus on recycling, reuse and the re-manufacturing of resources, as well as models of collaborative consumption ("sharing instead of buying") have been recognised in a rising number of studies as important tools for promoting sustainability and decoupling economic dynamics from resource consumption. They can play a significant role in the transition process.

To summarise, Europe boasts a large diversity of institutions and organisations. These include the social partners (employers' and employees' organisations, those for one-person firms), representatives of youth organisations as well as those for retirees, of regions and cities and NGOs. This variety allows change processes to happen at various levels; sometimes it may decelerate reform processes, while in other cases it enables new solutions and reforms without central planning.

### **5.3 A new way of thinking: the functionality approach**

One promising reform strategy is to look for the main components of welfare (constituent function which provides wellbeing) and then examine which combination

of stocks (infrastructure) and flows (energy, material) can optimally provide a high level of welfare. This approach makes it possible to achieve a high degree of wellbeing with fewer resources and is called the “functionality approach” (*Kettner et al.*, 2014). Applying a “function by function” approach should not distract from the guiding principle of keeping all three goals of the project and their simultaneity in mind.<sup>57</sup>

## Wellbeing and the functionality approach

The concept of functionalities is tied to the capability approach (Sen, 1993, 1999; Nussbaum, 2003, 2008; Alkire, 2005; Anand et al., 2007) which relates wellbeing to the ability to fulfil certain needs.<sup>58</sup> Examples of such functionalities are shelter (the ability to live in a pleasant building), mobility (the ability to have access to persons, goods, information, culture), or nutrition (the ability to be well nourished; *Schleicher*, 2015).

WWWforEurope concludes that being aware that wellbeing can be subdivided into needs or functionalities allows developing better tuned strategies that achieve goals with minimal resources.

## Stocks and flows provide functionalities and thereby wellbeing

Functionalities are generated by the interaction of stocks and flows (*Köppl et al.*, 2014; *Schleicher*, 2015). Applying this, for example, to the “comfortable climate in a building” need, the stocks to be optimised would relate to the thermal quality of buildings; flows to be minimised would be related to energy and materials.

This example illustrates that it can be possible to decrease the quantity of flows needed for the provision of the same functionalities, if the policy strategy first focusses on a capital stock of high quality (e.g. thermally efficient buildings) and, second, on low resource flows (*Schleicher*, 2015; *Köppl et al.*, 2014).<sup>59</sup> It has to be added that a given thermal quality can be achieved by using different materials and that given energy flows may come from different energy sources; they need to be chosen so that CO<sub>2</sub> emissions are minimised. Both stocks and flows are produced by a combination of skills, energy, materials and natural capital. A transition strategy should therefore provide incentives for technologies with less emission-intensive products and production processes avoiding the use of exhaustible and non-substitutable natural capital (*Kettner et al.*, 2014).

WWWforEurope's vision for Europe 2050 is that each functionality be provided at a high welfare-creating level, due to better stocks and minimised resource flows.

<sup>57</sup> Research on the relevance of stock–flow interactions to provide wellbeing with fewer resources started at WIFO more than a decade ago (*Kletzan et al.*, 2006). The project ClimTrans2050 is a research plan for the development of a model structure focussing on functionalities.

<sup>58</sup> Any economic activity serves a purpose which can be coined as a functionality that ranges from surviving in a shelter to driving a luxury car.

<sup>59</sup> The production of the stock itself also requires energy and other inputs which have to be accounted for.

Optimised infrastructure combined with minimised energy inputs generate the needs which contribute to welfare.

Optimising stocks includes resource-efficient low carbon production processes of the stocks and maximum use of non-exhaustible resources for the flows.

## Field of action #1: Heating of residential and office buildings

The technology is available to build residential and office buildings with very low energy flows.

Residential and office buildings that are constructed today will shape the building stock for several decades – and thus have a decisive influence on whether the decarbonisation of the European Economy as planned in the EU 2050 Roadmap and the decisions on the 2015 United Nations Climate Change Conference in Paris can be achieved. Today, the technology is already available for residential and office buildings which require very low energy flows for heating and cooling, or which are even able to collect more energy than they need. The construction of a new generation of buildings may initially require energy-and-emission-intensive materials such as cement, but transitions towards recycled material as well as wood are both necessary and feasible.<sup>60</sup> This could imply an increase in flows (cement and energy) and emissions (CO<sub>2</sub> from industrial processes) in the transition phase. However, once this transition is accomplished, the desired functionalities can be supplied with very low energy and material flows. A thermally efficient building stock, intelligent control technology, increased energy-saving habits, and a switch from fossil fuels to renewables will minimise the emissions impact of buildings.

Policy measures to support this transition are:

- give priority to low energy flows, alternative energy systems and interconnectivity in public procurement and subsidised housing,
- ensure that houses and offices built today are compatible with future climate goals,
- reduce (forbid) the use of fossil energy for heating (best practice: Denmark),
- set the goal of zero emissions for residential buildings and offices,
- shift to re-usable materials for building to prevent emissions-intensive insulation,
- WWForEurope proposes to accelerate the implementation of building standards along the intentions of the European Buildings Directive.

## Field of action #2: Mobility

Mobility can operate with low flows due to reduced transport demands, shifts to energy-saving transport modes and cars driven by alternative sources of energy.

Three major aspects are relevant to mobility. Firstly, transport demand (passenger kilometres or tonne kilometres) has to be reduced, e.g. through better spatial planning, teleworking or video-conferences. Secondly, a shift between transport modes, e.g. a shift from energy-intensive modes like passenger cars to energy-saving modes, such as cycling and walking, must be achieved. Thirdly, energy efficiency has to be

<sup>60</sup> In addition, different materials and technologies for this transition can already be used, e.g. energy from renewables.

## Box 10: The circular economy

The Circular Economy is defined as “a continuous positive development cycle that preserves and enhances natural capital, optimises resource yields, and minimises system risks” (Ellen MacArthur Foundation, 2015). A rising number of studies (Ellen MacArthur Foundation et al., 2015; Ellen MacArthur Foundation, 2015; Horbach et al., 2015; World Economic Forum, 2014; European Commission, 2014; De Groene Zaak Sustainable Business Association et al., 2015) recognise the circular economy as a major tool to promote sustainability, job creation, innovation and economic growth.

WWFforEurope acknowledges a circular economy approach as a strategy for mitigating the trade-off between environmental sustainability and economic dynamics through recycling, reuse, remanufacturing and innovation. CO<sub>2</sub> emissions could be cut by 48% by 2030 in the areas of mobility, food systems and built environment as a consequence of this transition. Primary material usage can be diminished by 32% (2030) and 53% (2050) compared to current levels. Shifting from a linear to, respectively, a circular development path could increase the EU's GDP by as much as 11% by 2030 and 27% by 2050, compared with 4% and 15% in the current development scenario (Ellen MacArthur Foundation et al., 2015).

Taxes on resources must be increased and taxes on labour need to be reduced to create an industrial model less dependent on primary energy and material inputs. Furthermore, the waste management industry will play a major role in the transformation towards a circular economy e.g. with the

introduction of pre-cycling premiums (European Environmental Bureau, 2015).

### Best Practice: Scotland and the circular economy

Scotland became an early adopter of a circular economy approach in 2012 (The Scottish Government, 2013, 2015). Raising resource efficiency, as well as decreasing Scotland's waste by 15% by 2025 (from 2011 levels), has been the focus. Additionally, the Government stipulated that recycling, composting and reuse of household waste has to amount to 60% by 2020 and 70% by 2025, respectively. Applying this model, the plan is to reduce carbon impact from 113.2 million tonnes of CO<sub>2</sub> emissions in a business-as-usual scenario to 55.5 million tonnes by 2050. GDP could be increased by € 4.06 billion and 50.000 new jobs might be generated in the UK.

To facilitate a smooth transition towards lower emissions and greater efficiency, the Scottish government introduced manifold policy measures such as the Zero Waste Plan, the “Safeguarding Scotland's Resources Programme” (implementing new standards of resource efficiency) or the creation of the Scottish Institute of Remanufacturing – the first of its kind in Europe. Beyond policy measures, the overall behaviour of actors has to change in the direction of waste reduction, efficiency, recycling and reuse throughout the entire transition process. The feasibility of the transition is demonstrated by the best practice example of Scotland.

increased through improved engine technology and/or a lower number of vehicles. To enable this transition the following measures are necessary:

- start with spatial planning that reduces mobility needs (e.g. better integration of living, work and school),
- provide public infrastructure (trains, bicycle lanes, city planning),
- support zero-emissions cars produced with low material input,
- provide car sharing facilities (incl. insurance),
- combine the most efficient low-carbon technology with the lowest material flows required in the entire life cycle (e.g. favour electric motors over combustion engines),
- complete a high-speed train network that spans over the total continent.

To summarise, a radical increase in resource productivity can be combined with increased wellbeing if there is a focus on functionalities relevant to wellbeing and if the stocks and flows needed to provide these functions at a high level are optimised.

## 5.4 Policy recommendations

The progress of the transition has to be monitored using readily available indicators at the national, as well as the European level.

### Overcoming reform resistance

- Increase the probability of success by starting from a vision and well-defined goals; overcome segmentation of policy lines; do not afford absolute priority of one goal over another.
- Use bundling of reforms and partial compensation of losers to reduce resistance; communicate credibility and long-term goals; and, above all, go for reform strategies that are considered fair.
- Combine clear goals primarily set at the central level, but allow and encourage pluralism, as well as different methods and speeds of achieving the common goal; new strategies require learning and innovation; polycentric reform processes are needed, as is institutional diversification.
- Adapt strategies if they do not work; look for best practices, but stick to the goals, so as to remain credible.
- Increase the role of parliament as a reform partner, starting with a joint declaration of parliament, the European Commission and the European Council; ask for annual sustainability reports and install a vice president for sustainability.

### Partners and actors

- Reforms cannot be implemented in a top-down way or through a uniform strategy.
- Take business and social partners on board, as well as civil society and the third, self-organised and cooperative non-profit sector. This improves and adapts the implementation to the specific conditions of each country, region or period.

- Respect that new actors play an important role in any transition. This makes it specifically necessary to include youth organisations, NGOs, new firms, and representatives of migrants in the strategy. The necessity and benefits of change, but also uncertainty with respect to details and scope, should be communicated in schools and the media, so as to encourage innovation, engagement and personal creativity.
- Strengthen the formal and financial decision-making autonomy of the local government with respect to key, common-pool resources such as energy, water, and other services. Boost the expertise of the citizens themselves and raise it to a level on par with that of scientific recommendations.
- Implementing elements of a circular economy, planning of cities, urban areas and megacities works in the same direction of providing higher wellbeing with fewer resources.

## 6. A NEW STRATEGY FOR EUROPE

The European Union is a long-run success model. It began with six members, focussing on the reduction of tariffs and subsidies, and eventually became a 28-member Economic Union, with more applicants currently due for closer cooperation or membership. Today the European Union is the biggest economic region in the world, a common research area, and an upcoming Banking Union, having established a common currency for the majority of its members. It is acknowledged as an area of peace, having been awarded the Nobel Peace Prize, and deemed an "integration machine" by the World Bank, due to its successful integration of formerly socialist countries.

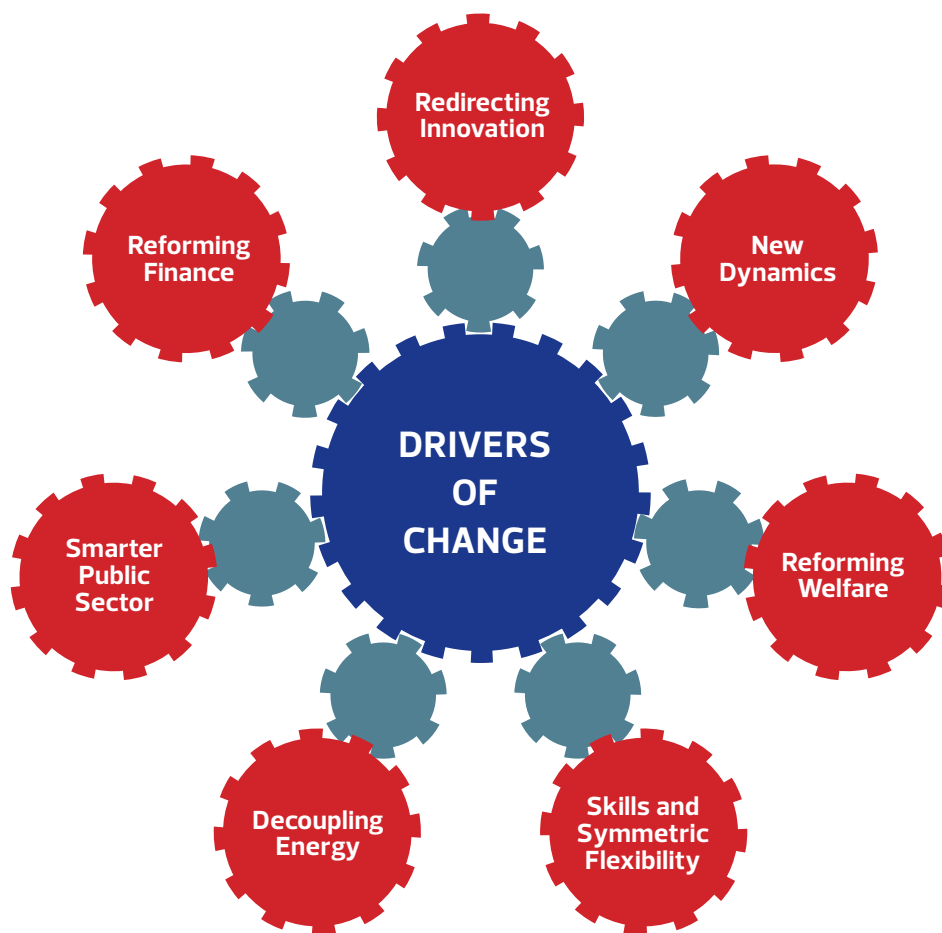
However, progress stalled during the 1990s and could not be reinvigorated by the Lisbon or the Europe 2020 Strategy. Today "... our European Union is not in a good state" (Juncker, 2015). It suffers from sluggish growth, high unemployment and internal imbalances. The goal of an "ever closer Union" lost its appeal. New challenges have come up with respect to population ageing, globalisation, climate change and, most recently, the instability of the neighbourhood and streams of refugees – developments for which answers are desperately needed.

This project ventures to establish a vision for Europe's future based on its existing strengths, new challenges and new opportunities. As a benchmark of performance we propose substituting the currently dominant GDP with "wellbeing". This shift is substantiated by the insights of the Stiglitz – Sen – Fitoussi Report. To make this new benchmark operational, we define three strategic goals that contribute to wellbeing, economic dynamics, social inclusiveness and environmental sustainability. The first goal comprises income dynamics but equally important structural change, mobility and openness. Social inclusiveness requires low unemployment and reduced inequality of income, wealth and opportunities. Environmental sustainability calls for respecting the limits of the planet and an absolute decline in resource use and emissions. Objectives are formulated for all three strategic goals and indicators are available to monitor the success in the Better Life Indicators of the OECD or the EU. Sustainability conditions are defined which make it possible to assess the long-term viability of the policy aiming at each goal.

We propose three guiding principles which have to a large extent not been followed in reforms thus far. The first is simultaneity, which means that goals are not targeted independently in "silos"; instead, potential tradeoffs and synergies between the goals and the policy instruments are taken into consideration. The second guiding principle is the distinct pursuit of a high-road strategy that resists the enticement of lower costs, reduced social and lower environmental standards which might help to achieve short-term targets. Even if these defensive strategies have been needed in certain crises, it should be taken into account that an exit from the crisis modus in



Figure 10: The seven drivers of change



Source: WWWforEurope Synthesis Report, Vienna, Brussels, 2016.

all countries requires investments in skills, new firms and innovation. We call this the "high road of competitiveness".

The third principle is a two-stage approach. In the long run, the need for and possibility of quantitative growth is low for industrialised countries. In the first stage, restarting dynamics is necessary for solving current problems like unemployment, high debt, unequal distribution of income and wealth and regional imbalances. At the same time massive investment in change (e.g. for decarbonisation) is needed and incentives for social and environmental innovations have to be set. Dynamics at this stage are therefore as much the result of investment into a new infrastructure, as the consequence of policies directly aiming at the reduction of unemployment, debt and inequality. We therefore call this stage "Consolidation and Reprogramming". In the second stage – if socio-ecological transition has been achieved – employment as well as emissions have to be decoupled from output, so as to ensure wellbeing independently of a specific growth rate for GDP.

We define seven drivers of change for increased wellbeing based on the three strategic goals.

- The first driver of change is to boost and redirect innovation. This opens up the potential to achieve all three goals simultaneously. The game-changing policy here is to change the focus of innovation from the saving of labour to a reduction in resources and energy. Innovations should address social and environmental problems. Given the impact of the public sector in education and innovation, this should be feasible through a systemic industrial and innovation policy based on research programmes, price changes, new regulations and incentives.
- The second driver of change is to stimulate dynamics via the demand side: consumption can increase if income spreads are lower. Consumption, however, should also shift to products with a lower carbon footprint. Investment can be stimulated by reducing the current pessimism resulting from a lack of strategy and from high administrative costs. Environmental standards and decarbonisation goals will boost investment if this is carried out within a well-communicated, consistent strategy and supported by research grants and skill improvements. Investment into a low-carbon infrastructure will reduce unemployment. The EFSI has to focus on investment for change with a strong emphasis on social and environmental innovation and decarbonisation. Exports should increase to fast-growing countries, focussing on products in which Europe has a competitive advantage, such as environmental technology and energy efficiency.
- The third driver is to reform the welfare system from protecting people after risks occur to preventing risks from arising. Switching from social protection to social investment is the main game changer for this driver. Migrants and their offspring should be included into early education and preschool, school, apprenticeship system and retraining.
- Fourthly, employment can be stimulated by reducing the mismatch between qualifications in supply and qualifications in demand (high-skilled workers). A reduction in working time and work sharing can reduce unemployment and increase wellbeing if both of these measures are voluntary. The skill shortage should be addressed and income spreads should be reduced in the first stage so that this strategy does not increase poverty or create a segment of working poor. Symmetrical flexibility is a main game changer, implying that firms can adjust the working hours to short-run demand and employees can reduce working time, so as to increase work-life balance. Social contracts should guarantee the symmetry of the approach. Flexibility and a better match between skills in supply and skills in demand ensure wellbeing.
- Fifthly, energy has to be decoupled from output by increasing energy efficiency. This can be achieved by eliminating the current subsidies for fossil energy, improving standards and regulations, and implementing future-oriented infrastructure that enables decarbonisation. Escape routes for decoupling, such as

carbon leakage and rebound effects, have to be addressed with consistent signals and international agreements.

- The sixth and perhaps most powerful game changer could be a reform of the public sector, whether it be at the local, the national or the European level. Its size of nearly 50% of GDP – higher in Europe than in any other region in the world – empowers it to decelerate or to facilitate transition. The tax system currently penalises employment and favours energy use, and many countries are unable or unwilling to tax high incomes, inheritance or wealth. We propose cutting taxes on wages by half (from 20% of GDP today to 10%) and substituting the losses revenue – if a total cut of the tax rate should not prove feasible, since expenditures are persistently high – with taxes on energy, emissions, tobacco and alcohol, plus moderate taxes on inheritance, property and financial speculation. Taxes on firms are not to be increased; however, tax compliance has to be improved. The tax shift suggested by WWWforEurope leads to a high triple dividend, since dynamics, as well as social inclusiveness and environmental sustainability can be bolstered by this proposal under realistic conditions of some international cooperation and higher tax cuts for low incomes. Coordinating such a game-changing reform across Europe will improve its feasibility and effectiveness. Increasing this power of the public sector to promote transition, public expenditures could be switched towards future-oriented tangible and intangible investment, while red tape and inefficiencies in the public sector can be reduced. Last but not least a procurement policy favouring low energy and resource use and lifetime costs instead of upfront costs would assist transition and make low-emission technologies cheaper. The most important game changer, however, could be a shift in the tax structure.
- The seventh driver of change is a reform of the financial sector making negative spillovers from the finance economy to the real economy less likely. The game-changing proposal here is to shift the emphasis of the sector towards serving the real economy and making social and environmental investment visible for investors choosing financial portfolios.

While the seven drivers of change will provide a successful transition, it is far from clear whether the strategy will succeed in practice, given the European experience of good strategies and poor delivery. We therefore also indicate – based on the analysis of past reforms – how reforms should be designed and implemented in order to reduce reform resistance. Reform partners should be invited and reforms can be made effective by addressing specific needs and sectoral approaches. Reform resistance can be mitigated by bundling reforms and partially compensating the losers. Progress has to be monitored for all the three goals and their impact on wellbeing. Indicators for success should be “nowcasted” if they are available in real time (as it is done for GDP, the benchmark of success which should be substituted by wellbeing). These facilitators of change are decisive in increasing the probability that the new strategy will be implemented and work.

## 7. APPENDIX – RESEARCH GAPS

### Research gaps in the field of WWWforEurope

The WWWforEurope project proposes a comprehensive strategy to set Europe on a dynamic path to a socio-ecological transition. Seven drivers of change were elaborated to increase wellbeing while taking into account the three strategic project goals economic dynamics, social inclusiveness and environmental sustainability. Along the seven drivers, research gaps were defined for topics that could not be addressed in depth within the WWWforEurope project but which appear to be important for the implementation of the envisaged socio-ecological transition.

Table 8 gives an overview over the research gaps identified in intensive discussions between WWWforEurope researchers and selected stakeholders.<sup>61</sup> Firstly, a broad research question is suggested for each driver indicating the main focus of interest. In a second step, several analytical aspects as well as policy aspects are defined to specify the broad research questions. Each of these aspects can form the basis for a specific research question. A more detailed elaboration of the research gaps as well as a list of concrete research questions is provided in [Weiss \(2016\)](#).

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<sup>61</sup> The research gaps presented here were inspired by a workshop held during the project's final conference and by further inputs from WWWforEurope researchers.

Table 8: Research gaps regarding the seven drivers of change in WWFforEurope

Topic	Redirecting innovation	New dynamics and redirecting	Reforming welfare	Future of work	Decoupling energy	Public sector, new governance	Reforming finance
Analytical aspects	How can innovation become energy and resource saving?	Decarbonising infrastructure as investment & export opportunity	Social investment under high debt and low growth	Social innovation and new work patterns under digitalisation	How can radical decoupling be combined with higher welfare?	Public sector and European governance supporting transition	How can finance support the real economy and societal goals
	Redirection of innovation from labour saving to resource saving	New buildings, engines, transport infrastructure for Paris 2015 goals	Role of welfare state to improve efficiency under new constraints	Impact of changing work patterns on careers and social security	Impact of functionality-based modelling on welfare	Impact of shifting taxes from labour to energy and emissions	Labelling investment funds according to social & environmental goals
Policy focus	Scaling up (environmentally & socially) innovative firms	Fostering (sustainable) consumption by lowering income spread	Impact of migration on welfare and employment	Distributional impacts of changing work patterns	Gender aspects in transition to a low-carbon economy	Topics that have to be solved on the European level	Role of financialisation in a socio-ecological transition
	Impact of 'industry 4.0' on work, resources and energy use	Increasing welfare content of outcome	Tax structures promoting socio-ecological transition	Impact of unpaid work on welfare	How to avoid potential negative effects of absolute decoupling	Impact of migration on the economic and political systems	Role of corporate governance in decisions in financial institutions
Policy focus	Determinants of partial productivities (labour, energy, capital, material)	Switching to beyond GDP indicators as policy benchmark	Upgrading skills and human capital formation	Symmetric flexibility with options for firms and employees	Instruments and pathways towards decarbonisation	Coordination and harmonization for effective climate policies	How to overcome reform resistance in the financial sector
	Industrial and innovation policy for high road competitiveness	Strategies for low income regions in times of low growth	Heterogeneity of countries and welfare systems	Strategies to decouple employment from growth	How to prevent 'escape routes' like carbon leakage and rebounds	Fitting a transition strategy into the existing EU framework	How to increase transparency in the financial sector
Policy focus	Industrial policy for fostering a socio-ecological transition	Supporting neighbours for dynamics, stability, transition	Political economy of tax reforms	Strategies for welfare increasing working time reduction	How to reconnect citizens with the European project	How to increase transparency in the financial sector	

Source: WWFforEurope Synthesis Report, Vienna, Brussels, 2016.

## REFERENCES

- Acemoglu, D., Robinson J.A., *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, Crown Business, 2012.
- Aghion, Ph., Hemous, D., Veugelers, R., No green growth without innovation, *Bruegel Policy Brief*, 2009, (07/2009).
- Aghion, P., Dewatripont, M., Hoxby, C., Mas-Colell, A., Sapir, A., "The governance and performance of universities: evidence from Europe and the US", *Economic Policy*, 2010, 25(61), pp. 7–59.
- Aghion, Ph., Boulanger, J., Cohen, E., "Rethinking Industrial Policy", *Bruegel Policy Brief*, 2011, (04/2011).
- Aiginger, K., *The Three Tier Strategy Followed by Successful European Countries in the 1990s*, *International Review of Applied Economics*, 2004, 18(4), pp. 399–422.
- Aiginger, K., "Industrial policy: a dying breed or a re-emerging phoenix", *Journal of Industry, Competition and Trade*, special issue on the Future of Industrial Policy, 2007, 7(3+4), pp. 297–323.
- Aiginger, K. (2013A), *A new strategy for the European periphery*, *WWWforEurope Policy Paper*, 2013, (1).
- Aiginger, K. (2013B), *The 'greening' of industrial policy, headwinds and a possible symbiosis*, *WWWforEurope Policy Paper*, 2013, (3).
- Aiginger, K. (2014A), *The Europe 2020 Strategy at Midterm: Disappointing Assessment Calls for an Urgent Change Driven by Long-run Priorities*, *WWWforEurope Policy Papers*, 2014, (17).
- Aiginger, K. (2014B), *Industrial Policy for a sustainable growth path*, *WWWforEurope Policy Paper*, 2014, (13).
- Aiginger, K. (2014C), *A silver bullet for restarting growth in Europe*, *EurActiv (EU news and policy debates across languages)*, published 18. December 2014.
- Aiginger, K., Firgo, M., Huber, P. (2012A), *Policy options for the development of peripheral regions and countries of Europe*, *WWWforEurope Policy Brief*, 2012, (2).
- Aiginger, K., Cramme, O., Ederer, St., Liddle, R., Thillaye, R. (2012B), "Reconciling the short and the long run: governance reforms to solve the crisis and beyond", *WWWforEurope Policy Briefs*, 2012, (1).
- Aiginger, K., Bärenthaler-Sieber, S., Vogel, J. (2013A), *Competitiveness under New Perspectives*, *WWWforEurope Working Paper*, 2013, (44).
- Aiginger, K., Firgo, M., Huber, P. (2013B), *What can the EMU's peripheral countries learn from regional growth?*, *WWWforEurope Policy Paper*, 2013, (7).
- Aiginger, K., Guger, A., "Stylized Facts on the Interaction between Income Distribution and the Great Recession", *Research in Applied Economics*, 2014, 6(3), pp. 157–178.
- Aiginger, K., Bärenthaler-Sieber, S., Vogel, J., *Competitiveness of EU vs. US*, *WWWforEurope Policy Paper*, 2015, (29).
- Aiginger, K., Firgo, M. (2015A), "Regional competitiveness: connecting an old concept with new goals", in: Huggins, R., Thompson, P. (eds.), *Handbook of Regions and Competitiveness*, Edward Elgar, Cheltenham 2015.
- Aiginger, K., Firgo, M. (2015B), *Regional Competitiveness Under New Perspectives*, *WWWforEurope Policy Papers*, 2015, (26).
- Aigner, E., Sanchez, L.B., Bernhardt, D.A., Curnow, B., Hödl, Ch., Leonhardt, H., Luo, A., *Sustainable Work. Seven case studies on social-ecological implications in Europe*, *WWWforEurope Working Paper*, 2016, (112).
- Alkire, S., "Why the Capability Approach?", *Journal of Human Development* 2005, 6(1).
- Altzinger, W., Crespo Cuaresma, J., Rimplmaier, B., Sauer, P., Schneebaum, A., *Education and Social Mobility in Europe: Levelling the Playing Field for Europe's Children and Fuelling its Economy*, *WWWforEurope Working Paper*, 2015, (80).
- Amison, P., Bailey, D., "Industrial diversity and innovation spillovers: dynamic innovation and adoption", *WWWforEurope Working Paper*, 2013, (45).

- Anand, P., Santos, C., Smith, R., The measurement of capabilities, The Open University, Open Discussion Papers in Economics, 2007, (67).
- Andréasson, H., Elert, N., Karlson, N., Does Social Cohesion Really Promote Reforms?, WWWforEurope Working Paper, 2013, (33).
- Antal, M., "Green goals and full employment: Are they compatible?", Ecological Economics, 2014, 107, pp. 276–286.
- Antal, M., Gazheli, A., van den Bergh, J., Behavioral Foundations of Sustainability Transitions, WWWforEurope Working Paper, 2012, (3).
- Antal, M., van den Bergh, J. (2014A), Green Growth and Climate Change: Conceptual and Empirical Considerations, Climate Policy, 2014.
- Antal, M., van den Bergh, J. (2014B), Energy rebound due to re-spending: a growing concern, WWWforEurope Policy Paper, 2014, (9).
- Antal, M., van den Bergh, J. (2014C), Macroeconomics, Financial Crisis and the Environment: Strategies for a Sustainability Transition, WWWforEurope Policy Paper, 2014, (10).
- Arfaoui, N., Brouillat, E., Saint Jean, M., Credibility of the REACH Regulation: Lessons Drawn from an ABM, WWWforEurope Working Paper, 2015, (92).
- Asatryan, Z., Braun, S., Lechthaler, W., Mileva, M., Montagna, C. (2014A), Compensating the losers of free trade, WWWforEurope Working Paper, 2014, (63).
- Asatryan, Z., Braun, S., Görg, H., Heinemann, F., Molana, H., Montagna, C. (2014B), "Compensating the Losers of Globalisation", WWWforEurope Policy Brief, 2014, (4).
- Atkinson, A.B., Inequality. What can be done?, Harvard University Press, 2015.
- Baccianti, C., Löschel, A., The Role of Product and Process Innovation in CGE Models of Environmental Policy, WWWforEurope Working Paper, 2014, (68).
- Baccianti, C., Löschel, A., Investment-specific vs Process Innovation in a CGE model of Environmental Policy, WWWforEurope Working Paper, 2015, (85).
- Badinger, H., Thillaye, R., "Chapter Area 4: Governance Structures and Institutions at the European Level", in: Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters, WWWforEurope Synthesis Report, Draft Final Version, Vienna, Brussels, 2016.
- Bailey, D., De Propris, L., Janger, J. (2015A), Industrial and innovation policy as drivers of change, WWWforEurope Deliverable, 2015, (9).
- Bailey, D., De Propris, L., Janger, J. (2015B), New industrial policy for more inclusive and sustainable growth, WWWforEurope Policy Brief, 2015, (9).
- Bailey, D., De Propris, L., Janger, J., "Chapter Area 3: Drivers of Change – Innovation and Industrial Policies", in: Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters, WWWforEurope Synthesis Report, Draft Final Version, Vienna, Brussels, 2016.
- Bale, J.S., van Lenteren, J.C., Bigler, F., "Biological Control, Sustainable Agriculture", special issue of Philosophical Transactions of the Royal Society, 2008, (363), pp. 761–776.
- Barnebeck, St., Kalff, Y., Urban Agenda and Urban Sustainability Strategies. Taking Stock of Policy Implementation and Policy Discussion, WWWforEurope Working Paper, 2015, (103).
- Barro, R.J., Determinants of Economic Growth: A cross country empirical Study, MIT Press, Cambridge, MA, 1997.

- Basel Committee on Banking Supervision, Strengthening the resilience of the banking sector, Bank for International Settlements, Consultative Document, Issued for comments by 16 April 2010, December 2009, <http://www.bis.org/publ/bcbs164.pdf?noframes=1>.
- Bauer, T., Longterm Perspective, WWFforEurope, mimeo, 2015.
- Baumgartner, J., Huber, P., Marterbauer, M., Seiler, F., Walterskirchen, E., Zwiener, R., Beschäftigungswirkungen und ökonomische Effekte von Arbeitszeitverkürzungen – Vorläufiger Endbericht, WIFO-Studie, Wien, 2001.
- Bayer, K., Institutional Set-up and Conflict Resolution. Implementation of the WWFforEurope Transition Strategy, WWFforEurope Working Paper, 2015, (99).
- Belk, R., "You are what you can access: Sharing and collaborative consumption online", *Journal of Business Research*, 2014, 67(8), pp. 1595–1600.
- Benveniste, L.S., Stavins, R.N., "Second-best theory and the use of multiple policy instruments", *Environ Resource Econ*, 2007, (37), pp. 111–129.
- Berg, P., Bosch, G., Charest, J., "Working-Time Configurations A Framework for Analyzing Diversity across Countries", *Industrial & Labor Relations Review*, 2014, 67(3), pp. 805–837.
- Beveridge, W.H., Full Employment in a Free Society, 1944.
- Bollier, D., Helfrich, S. (eds.), *The Wealth of the Commons. A World beyond Market & State*, 2012.
- Bonfiglio, A., Esposti, R., Pagliacci, F., Sotte, F., Camaioni, B., Regional perspectives and distributional effects of European regional policies, WWFforEurope Working Paper, 2014, (66).
- Bosch, G., Lehndorff, S., "Working-time reduction and employment: experiences in Europe and economic policy recommendations", *Cambridge Journal of Economics*, 2001, 25(2), pp. 209–243.
- Botsman, R., Rogers, R., *What's mine is yours. The Rise of Collaborative Consumption*, HarperBusiness, New York, 2010.
- Breuss, F., Comments on Tito Boeri, "Does Europe need a harmonised social policy?", *Wettbewerb der Regionen und Integration in der WWU*, 2002.
- Breuss, F., "The Crisis in Retrospect: Causes, Effects, and Policy Responses", in: Badinger, H., Nitsch, V. (eds.), *Handbook of the Economics of European Integration*, Routledge, London New York, 2015.
- Brynjolfsson, E., McAfee, A., *Race Against The Machine: How the Digital Revolution is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy*, Digital Frontier Press, Lexington, MA, 2012.
- Burck, J., Marten, F., Bals, C., *The Climate Change Performance Index. Results 2015*, Germanwatch and CAN Europe, 2014.
- Burck, J., Marten, F., Bals, C., *The Climate Change Performance Index. Results 2016*, Germanwatch and CAN Europe, 2015.
- Busl, C., Seymen, A., (Spillover) Effects of Labour Market Reforms in Germany and France, WWFforEurope Working Paper, 2013, (8).
- Camaioni, B., Esposti, R., Lobianco, A., Pagliacci, F., Sotte, F., Looking for Peripherality, WWFforEurope Working Paper, 2013, (35).
- Camaioni, B., Esposti, R., Pagliacci, F., Sotte, F., How much rural is the CAP?, WWFforEurope Working Paper, 2014, (51).
- CEDEFOP, Skill shortages and gaps in European enterprises: striking a balance between vocational education and training and the labour market, Cedefop reference series, Luxembourg, 2015, (102).
- Chen, Y.-F., Görg, H., Görlich, D., Molana, H., Montagnac, C., Temouri, Y., Globalisation and the future of the welfare state, WWFforEurope Working Paper, 2014, (54).
- Clay, J., "Freeze the footprint of food", *Nature*, 2011, 475, pp. 287–289.
- Colombelli, A., Krafft, J., Quatraro, F., "Eco-innovation and firm growth: Do green gazelles run faster? Microeconomic evidence from a sample of European firms", WWFforEurope Working Paper, 2015, (88).



- Committee (Committee on Twenty-First Century Systems Agriculture; Board on Agriculture and Natural Resources; Division on Earth and Life Studies; National Research Council), *Toward Sustainable Agricultural Systems in the 21st Century*, The National Academies Press, Washington, D.C., 2010.
- Cournède, B., Goujard, A., Pina, Á., "Reconciling fiscal consolidation with growth and equity", *OECD Journal: Economic Studies*, Paris, 2013, (1), pp. 7–50.
- Crespi, F., Ghisetti, C., Quatraro, F., "Taxonomy of implemented policy instruments to foster the production of green technologies and improve environmental and economic performance", *WWWforEurope Working Paper*, 2015, (90).
- Crespo Cuaresma, J., K.C., S., Sauer, P., *Age-Specific Education Inequality, Education Mobility and Income Growth*, *WWWforEurope Working Paper*, 2013, (6).
- Crespo Cuaresma, J., Huber, P., Oberdabernig, D., Raggl, A. (2015A), *Migration in an ageing Europe: What are the challenges?*, *WWWforEurope Working Paper*, 2015, (79).
- Crespo Cuaresma, J., Huber, P., Raggl, A. (2015B), *Reaping the Benefits of Migration in an Ageing Europe*, *WWWforEurope Policy Brief*, 2015, (7).
- Danish Energy Agency, *Energy Statistics 2013*, Copenhagen, 2015.
- De Grauwe, P., *Design Failures in the Eurozone can they be fixed?*, *European Commission, European Economy*, 2013, (491).
- De Grauwe, P., Yi, J., "Has the Eurozone Become Less Fragile? Some Empirical Tests", *CESifo Working Paper Series*, 2015, (5163).
- De Groene Zaak Sustainable Business Association, MVO Nederland and Circle Economy, *More prosperity, new jobs. Manifesto on Circular Economy Policy in the EU*, Den Haag, 2015.
- De Propris, L., Corradini, C., *Technology Platforms in Europe: an empirical investigation*, *WWWforEurope Working Paper*, 2013, (34).
- Demaio, A.R., Rockström, J., "Human and planetary health: towards a common language", *The Lancet*, 2015, 386(10007), pp. e36–e37.
- Dimitrova, A., Hollan, K. Laster, D., Schratzenstaller, M., Walterskirchen, E., Weiss, T., "Literature review on fundamental concepts and definitions, objectives and policy goals as well as instruments relevant for socio-ecological transition", *WWWforEurope Working Paper*, 2013, (40).
- DMCEB (Danish Ministry of Climate, Energy and Building), *DK Energy Agreement*, Copenhagen, 2012.
- Dobbs, R., Smit, S., Remes, J., Manyika, J., Roxburgh, Ch., Restrepo, A., *Urban World: Mapping the economic power of cities*, McKinsey Global Institute, 2011.
- Dohse, D., Gold, R., *Cultural Diversity and Economic Policy*, *WWWforEurope Working Paper*, 2014, (64).
- Dosi, G., Llerena, P., Labini, M.S., "The Relationship between Science, Technologies and Their Industrial Exploitation: An Illustration through the Myths and Realities of the So-Called European Paradox", *Research Policy*, 2006, 35(10), pp. 1450–1464.
- Dunn, R.A., "The Effect of Fast-Food Availability on Obesity: An Analysis by Gender, Race, and Residential Location", *American Journal of Agriculture Economics*, 2010, 92(4), pp. 1149–1164.
- Duval, R., Maisonneuve, C., "Long-run growth scenarios for the world economy", *Journal of Policy Modeling*, 2010, 32(1), pp. 64–80.
- Ebner, A., Bocek, F., *Best Practices as to How to Support Investment in Intangible Assets*, *WWWforEurope Working Paper*, 2015, (101).
- Ederer, St., "Macroeconomic Imbalances and institutional reforms in the EMU", *WWWforEurope Policy Papers*, 2015, (87).
- Ederer, St., Reschenhofer, P., "Macroeconomic Imbalances in the EU", *WWWforEurope Working Paper*, 2013, (42).
- Ederer, St., Reschenhofer, P., *Macroeconomic Imbalances and Structural Change in the EMU*, *WWWforEurope Working Paper*, 2014, (69).

- Ehrlich, P.R., Kareiva, P.M., Daily, G.C., "Securing natural capital and expanding equity to rescale civilization", *Nature*, 2012, 486, pp. 68–73.
- Eichengreen, B., *Secular Stagnation: The Long View*, NBER Working Paper, 2015, (20836).
- Ellen MacArthur Foundation, *Delivering the Circular Economy, a Toolkit for Policymakers*, 2015.
- Ellen MacArthur Foundation, Foundation for Environmental Economics and Sustainability, The McKinsey Center for Business and Environment, *Growth within: A circular economy vision for a competitive Europe*, 2015.
- Emmenegger, P., Häusermann, S., Palier, B., Seeleib-Kaiser, M., "How we grow unequal", in: Emmenegger, P., Häusermann, S., Palier, B., Seeleib-Kaiser, M. (eds), *The Age of Dualization: The Changing Face of Inequality in Deindustrializing Societies*, Oxford: University Press, 2012, pp. 3–26.
- Esping-Andersen, G., Gallie, D., Hemerijk, A., Myers, J., *Why we need a New Welfare State*, Oxford, 2002.
- Eurobarometer, "Public Opinion in the European Union", European Commission, Standard Eurobarometer, 2015, (83).
- European Commission, *Green Paper on Innovation*, 1995.
- European Commission, *An Integrated Industrial Policy for the Globalisation Era Putting Competitiveness and Sustainability at Centre Stage*, COM(2010) 614, Brussels, 2010.
- European Commission, *A Roadmap for moving to a competitive low carbon economy in 2050. Impact assessment*, Commission Staff Working Document, COM(2011) 112, Brussels, 2011.
- European Commission, *Towards a circular economy: Zero waste programme for Europe*, Minsk, September 2014.
- European Commission (2015A), *The 2015 Ageing Report. Economic and budgetary projections for the 28 EU Member States (2013–2060)*, *European Economy*, 2015, (3/2015).
- European Commission (2015B), *Beyond GDP Gross domestic product*, 2015, [http://ec.europa.eu/environment/beyond\\_gdp/indicators\\_gdp\\_en.html](http://ec.europa.eu/environment/beyond_gdp/indicators_gdp_en.html).
- European Commission (2015C), *A Revamped European Semester, Five Presidents' Report "Completing Europe's Economic and Monetary Union"*, 22 June 2015, [http://ec.europa.eu/priorities/economic-monetary-union/docs/single-market-strategy/factsheet-revamp-semester\\_en.pdf](http://ec.europa.eu/priorities/economic-monetary-union/docs/single-market-strategy/factsheet-revamp-semester_en.pdf).
- European Commission (2015D), *Country Report on Denmark 2015*, Commission Staff Working Document, COM(2015) 85 final, Brussels, 2015.
- European Commission, (2015E), *European Parliament adopts Commission proposal to improve transparency of the shadow banking sector*, European Commission press release, Brussels, 2015, [http://europa.eu/rapid/press-release\\_IP-15-5930\\_en.htm](http://europa.eu/rapid/press-release_IP-15-5930_en.htm).
- European Commission (2015F), *Completing Europe's Economic and Monetary Union*, Report by Jean-Claude Juncker in close cooperation with Donald Tusk, Jeroen Dijsselbloem, Mario Draghi, and Martin Schulz, 22 June 2015.
- European Council, *Conclusions*, EUCO 169/14, CO EUR 13, CONCL 5, Brussels, 23 and 24 October 2014.
- European Environment Agency (2014A), *Focusing on environmental pressures from long-distance transport*, TERM 2014: Transport indicators tracking progress towards environmental targets in Europe, Copenhagen, 2014.
- European Environment Agency (2014B), *Public participation: contributing to better water management. Experiences from eight case studies across Europe*, Copenhagen, 2014, [http://www.ecologic.eu/sites/files/publication/2014/eea\\_03\\_2014\\_public\\_participation.pdf](http://www.ecologic.eu/sites/files/publication/2014/eea_03_2014_public_participation.pdf).
- European Environment Agency (2015A), *Trends and projections in Europe 2015. Tracking progress towards Europe's climate and energy targets*, EEA Report, Luxembourg, 2015, (4/2015).
- European Environment Agency (2015B), *The European Environment State and Outlook 2015*, Copenhagen, 2015.
- European Environmental Bureau, *How Ecodesign can Drive a Circular Economy in Europe*, Hamburg, 2015.
- European Parliament, *Labour Market Shortages in the European Union*, DG for internal Policies, Policy Department Economic and Scientific Policy, 2015.

- Eurostat, Taxation Trends in the European Union, Brussels, 2014.
- Evers, A., Laville, J.-L. (eds.), The Third Sector in Europe, 2004.
- FAO (Food and Agriculture Organization of the United Nations), Global food losses and food waste – Extent, causes and prevention, Rome, 2011.
- FAO (Food and Agriculture Organization of the United Nations), Building a common vision for sustainable food and agriculture. Principles and approaches, Rome, 2014.
- Fernandes, S., Maslauskaitė, K., Deepening the EMU: How to maintain and develop the European Social Model?, Notre Europe, Jacques Delors Institute, Studies & Reports, 2013.
- Fischer-Kowalski, M., "Analyzing sustainability transitions as a shift between soci-metabolic regimes", Environmental Innovation and Societal Transitions, 2011, 1(1), pp. 152–159.
- Fischer-Kowalski, M., Hausknost, D., Large scale societal transitions in the past, WWWforEurope Working Paper, 2014, (55).
- Fischer-Kowalski, M., Wiedenhofer, D., An optimal policy mix for resource use, WWWforEurope Policy Brief, 2014, (5).
- Fischer-Kowalski, M., Wiedenhofer, D., Haas, W., Pallua, I., Hausknost, D., Developing Resource use Scenarios for Europe, WWWforEurope Working Paper, 2013, (25).
- Floater, G., Rode, P., Robert, A., Kennedy, C., Hoornweg, D., Slavcheva, R., Godfrey, N. (2014A), Cities and the New Climate Economy: the Transformative Role of Global Urban Growth, New Climate Economy Working Paper, 2014, (01).
- Floater, G., Rode, P., Zenghelis, D. (2014B), Copenhagen: Green Economy Leader Report, LSE Cities, The London School of Economics and Political Sciences, 2014.
- Follesdal, A., Hix, S., "Why there is a democratic deficit in the EU: A response to Majone and Moravcsik", Journal of common market studies, 2006, 44(3), pp. 533–562.
- Fouré, J., Bénassy-Quéré, A., Fontagné, L., The Great Shift: Macroeconomic projections for the world economy at the 2050 horizon, CEPII working paper, 2012, (2012–03).
- Fridstrøm, L., Alfsen, K.H., Norway's path to sustainable transport, The Institute of Transport Economics, Norwegian Centre for Transport Research, TOI Report, Oslo, 2014, (1321/2014).
- Friesenbichler, K., "Innovation in the energy sector", WWWforEurope Working Paper, 2013, (31).
- Geels, F.W., The impact of the financial-economic crisis on sustainability transitions: Financial investment, governance and public discourse, WWWforEurope Working Paper, 2013, (39).
- German Advisory Council on Global Change, World in Transition – A Social Contract for Sustainability, Flagship Report, 2011.
- Ghissetti, C., Quatraro, F., Regulatory push-pull effects on innovation: an evaluation of the effects of the REACH regulation on patents in the chemical sector, WWWforEurope Working Paper, 2015, (91).
- Gold, St., Nocker, M., Reduction of Working Time in Austria. A Mixed Methods Study Relating a New Work Time Policy to Employee Preferences, WWWforEurope Working Paper, 2015, (97).
- Gordon, R.J., The Demise of U.S. Economic Growth: Restatement, Rebuttal, and Reflections, NBER Working Paper, 2014, (19895).
- Gurría, A., The climate challenge: Achieving zero emissions, Lecture, London, 9 October 2013.
- Habermas, J., Democracy, Solidarity and the European Crisis, Social Europe, 01.05.2013.
- Hamari, J., Sjöklint, M., Ukkonen, A., "The sharing economy: Why people participate in collaborative consumption", Journal of the Association for Information Science and Technology, 2015, (forthcoming).
- Hammer, B., Prskawetz, A., Freund, I., Reallocation of Resources Across Age in a Comparative European Setting, WWWforEurope Working Paper, 2014, (13).
- Handler, H., Strategic Public Procurement: An Overview, WWWforEurope Policy Papers, 2015, (28).
- Handler, H., Janger, J., Leoni, T., Schratzenstaller, M., How can the public sector contribute to sustainable development?, USP for Synthesis Report for WWWforEurope, Vienna, mimeo, 2015.

- Haugneland, P., Kvisle, H.H., Norwegian Electric Car User Experiences, EVS27, Barcelona, 17–20 November 2013.
- Haugneland, P., Norwegian Electric Car User Experiences 2014, European Electric Vehicles Congress Brussels, December 2014.
- Havlik, P., Schneider, U.A., Schmid, E., Böttcher, H., Fritz, S., Skalský, R., Aoki, K., Cara, S.D., Kindermann, G., Kraxner, F., Leduc, S., McCallum, I., Mosnier, A., Sauer, T., Obersteiner, M., "Global land-use implications of first and second generation biofuel targets", *Energy Policy*, 2011, 39(10), pp. 5690–5702.
- Heinemann, F., Grigoriadis, T., Origins of Reform Resistance and the Southern European Regime, *WWWforEurope Working Paper*, 2013, (20).
- Helfrich, S., Heinrich-Böll-Stiftung (eds.), *Commons. Für eine neue Politik jenseits von Markt und Staat*, 1st ed. Bielefeld, 2012.
- Helliwell, J.F., Layard, R., Sachs, J. (eds.), *World Happiness Report 2015*, Sustainable Development Solutions Network, New York, 2015.
- Hellström, E., Kosonen, M., "Governing the Welfare State and beyond Solutions for a complex world and uncertain future", in: *Vision Europe Summit, Redesigning European welfare states Ways forward*, 2015, pp. 98–141.
- Hellwig, M., "Capital Regulation after the Crisis: Business as Usual?", *CESifo DICE Report*, Ifo Institute for Economic Research at the University of Munich, 2010, 8(2), pp. 40–46.
- Hemerijck, A., "Two or three waves of welfare state transformation?", in: Morel, N., Palier, B., Palme, J. (eds.), *Towards a Social Investment Welfare State? Ideas, policies and challenges*, Chicago: Policy Press, 2012, pp. 33–60.
- Hinterberger, F., Pirgmaier, E., Freytag, E., Schuster, M., *Growth in Transition*, Earthscan from Routledge, London, 2011.
- HLEG (High-level Expert Group on reforming the structure of the EU banking sector), *Final Report*, Brussels, 2012, [http://ec.europa.eu/internal\\_market/bank/docs/high-level\\_expert\\_group/report\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/high-level_expert_group/report_en.pdf).
- Hözl, W., Janger, J., "Distance to the frontier and the perception of innovation barriers across European countries", *Research Policy*, 2014, 43(4), pp. 707–725.
- Horbach, J., Rennings, K., Sommerfeld, K., *Circular Economy and Employment*, Augsburg, 2015.
- Huber, P., Leoni, T., Pitlik, H., *Reforming Welfare States*, *WWWforEurope Deliverable*, 2013, (1).
- Huber, P., Oberdabernig, D., Does migration threaten the sustainability of European welfare states?, *WWWforEurope Working Paper*, 2013, (21).
- Hunter, R.S., Oswald, A.J., Charlton, B.G., "The Elite Brain Drain", *The Economic Journal*, 2009, 119(538), pp. F231–F251.
- Innerarity, D., What Kind of Deficit? Problems of Legitimacy in the European Union, *European Journal of Social Theory*, 2014, 3(17).
- International Energy Agency, *World Energy Outlook 2012*, OECD/IEA, Paris, 2012.
- International Energy Agency, *World Energy Outlook 2015*, OECD/IEA, Paris, 2015.
- International Labour Office, *Skills mismatch in Europe*, *Statistics Brief*, Geneva, 2014.
- Jackson, T., *Prosperity without Growth. Economics for Finite Planet*, Earthscan, 2009.
- Jackson, T., Drake, B., Victor, P., Kratena, K., Sommer, M., *Foundations for an Ecological Macroeconomics: Literature review and model development*, *WWWforEurope Working Paper*, 2014, (65).
- Jackson, T., Victor, P., Does slow growth increase inequality? A stock-flow consistent exploration of the Piketty hypothesis, University of Surrey, *PASSAGE Working Paper*, Guildford, 2014, (14/02).
- Jackson, T., Victor, P., *Towards a Stock-Flow Consistent Ecological Macroeconomics*, University of Surrey, *PASSAGE Working Paper*, Guildford, 2015, 15/01.
- Jaeger, C., Paroussos, L., Mangalagiu, D., Kupers, R., Mandel, A., Tabara, J.D., *A New Growth Path for Europe. Generating Prosperity and Jobs in the Low-Carbon Economy*, *Synthesis Report*, Potsdam, 2011.
- Janger, J., *Business science links for a new growth path*, *WWWforEurope Working Paper*, 2015, (107).
- Janger, J., Nowotny, K., *Career choices in academia*, *WWWforEurope Working Paper*, 2013, (36).

- Janger, J., Strauss, A., Campbell, D., Academic careers: a cross-country perspective, WWWforEurope Working Paper, 2013, (37).
- Juncker, J.-C., A New Start: European Commission work plan to deliver jobs, growth and investment, The European Fund for Strategic Investments (EFSI), Brussels, 2014.
- Juncker, J.-C., State of the Union 2015: Time for Honesty, Unity and Solidarity, European Commission – Speech – [Check Against Delivery], Strasbourg, 9 September 2015.
- Kallis, G., Kerschner, Ch., Martinez-Alier, J., "The Economics of Degrowth", *Ecological Economics*, 2012, 84, pp. 1-270.
- Kamal-Chaoui, L., Robert, A. (eds.), *Competitive Cities and Climate Change*, OECD Regional Development Working Paper, 2009, (2).
- Kaphengst, T., Velten, E.K., Energy transition and behavioural change in rural areas – The role of energy cooperatives, WWWforEurope Working Paper, 2014, (60).
- Kapteyn, A., Kalwij, A., Zaidi, A., "The myth of worksharing", *Labour Economics*, 2004, 11(3), pp. 293-313.
- Karlson, N., "EU:s Janusansikte", in: Karlson, N. (Ed.), *Vilket EU vill vi ha?*, Ratio/Publit, Stockholm, 2014.
- Ketels, Ch., "Competitiveness and Clusters: Implications for a New European Growth Strategy", WWWforEurope Working Paper, 2015, (84).
- Ketels, Ch., Protsiv, S., Clusters and the New Growth Path for Europe, WWWforEurope Working Paper, 2013, (14).
- Kettner, C., Köppl, A., Stagl, S., List of wellbeing indicators, WWWforEurope Working Paper, 2012, (2).
- Kettner, C., Köppl, A., Stagl, S., Towards an operational measurement of socio-ecological performance, WWWforEurope Working Paper, 2014, (52).
- Keynes, J.M., *The General Theory of Employment, Interest, and Money*, 2nd Edition, Harcourt Brace Jovanovich, New York London, 1936, 1964.
- Koch, V., Potential limits and Ramifications of Working Hour Reductions in Low-Growth-Economies, Master Thesis, WU, Vienna, 2015.
- Kolev, A., Riess, A.-D., Zachmann, G., Calthrop, E., Investment and growth in the time of climate change, European Investment Bank, Bruegel, Brussels 2012.
- Köppl, A., Kettner, C., Kletzan-Slamanig, D., Schleicher, S., Damm, A., Steininger, K., Wolkingner, B., Schnitzer, H., Titz, M., Artner, H., Karner, A., "Energy Transition in Austria: Designing Mitigation Wedges", *Energy & Environment*, 2014, 25(2), pp. 281-304.
- Kletzan, D., Köppl, A., Kratena, K., Schleicher, S., Wüger, M., "Towards sustainable consumption: Economic modelling of mobility and heating for Austria", *Ecological Economics*, 2006, 57(4), pp. 608-626.
- Kouba, L., Mádr, M., Nerudová, D., Rozmahel, P., Policy autonomy, coordination or harmonization in the persistently heterogeneous European Union, WWWforEurope Working Paper, 2015, (95).
- Kratena, K., Thematic report: Macroeconomic models including specifically social and environmental aspects, WWWforEurope Deliverable, 2015, (8).
- Kratena, K., Sommer, M., Policy implications of resource constraints on the European economy, WWWforEurope Policy Briefs, 2014, (6).
- Kratena, K., "Modell Chapter", in: Badinger, H., Bailey, D., De Propriis, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., *New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters*, WWWforEurope Synthesis Report, Draft Final Version, Vienna, Brussels, 2016.
- Kummu, M., de Moel, H., Porkka, M., Siebert, S., Varis, O., Ward, P.J., "Lost food, wasted resources: Global food supply chain losses and their impacts on freshwater, cropland, and fertiliser use", *Science of The Total Environment*, 2012, 438, pp. 477-489.

- Lancefield, D., Ogier, T., Selfin, Y., *The World in 2050: The accelerating shift of global economic power: challenges and opportunities*, Price Waterhouse Coopers, January 2011.
- Lechthaler, W., Mileva, M., *Two-Country Dynamic Model of Trade with Heterogeneous Firms and Comparative Advantage*, WWWforEurope Working Paper, 2013, (12).
- Leismann, K., Schmitt, M., Rohn, H., Baedeker, C., "Collaborative consumption: towards a resource-saving consumption culture", *Resources*, 2013, 2(3), pp. 184–203.
- Leoni, T., Eppel, R., *Women's Work and Family Profiles over the Lifecourse and their Subsequent Health Outcomes. Evidence for Europe*, WWWforEurope Working Paper, 2013, (28).
- Leoni, T., *Welfare state adjustment to new social risks in the post-crisis scenario. A review with focus on the social investment perspective*, WWWforEurope Working Paper, 2015, (89).
- Licht, G., Peters, B., *The Impact of Green Innovation on Employment Growth in Europe*, WWWforEurope Working Paper, 2013, (50).
- Licht, G., Peters, B., *Do Green Innovations stimulate Employment? Firm-level Evidence From Germany*, WWWforEurope Working Paper, 2014, (53).
- Licht, G., Peters, B., Köhler, Ch., Schiebacher, F., *The potential contribution of innovation systems to socio-ecological transition*, WWWforEurope Deliverable, 2014, (4).
- Lijphart, A., *Patterns of Democracy: Government Forms and Performance in Thirty-six Countries*, Yale University, 1999.
- Lipsey, R.G., Lancaster, R.K., "The general theory of the second best", *Review of Economic Studies*, 1956–57, XXIV(1), pp. 11–32.
- Liu, Z., Guan, D., Wei, W., Davis, S.J., Ciais, P., Bai, J., Peng, S., Zhang, Q., Hubacek, K., Marland, G., Andres, R.J., Crawford-Brown, D., Lin, J., Zhao, H., Hong, C., Boden, T.A., Feng, K., Peters, G.P., Xi, F., Liu, J., Li, Y., Zhao, Y., Zeng, N., He, K., "Reduced carbon emission estimates from fossil fuel combustion and cement production in China", *Nature*, 2015, 524(7565), pp. 335–338.
- Loose, W., *The State of European Car-Sharing, Momo study Final Report D 2.4*, Bundesverband CarSharing, 2010.
- Loske, R., *The Good Society without Growth. Why Green Growth is not Enough*, Balsiliken-Press 362, August 2013.
- Luptáčík, M., Nežinský, E., Lábaj, M., *Drivers of the change in social welfare*, WWWforEurope Working Paper, 2015, (105).
- Lutsey, N., *Transition to a Global Zero-Emission Vehicle Fleet: A Collaborative Agenda for Governments*, The International Council on clean Transportation, White Paper, Beijing Berlin Brussels San Francisco Washington, 2015.
- Marth, St., *How strong is the correlation between unemployment and growth really? The persistence of Okun's Law and how to weaken it*, WWWforEurope Policy Paper, 2015, (23).
- Meyer, I., Sommer, M.W., *Employment Effects of Renewable Energy Supply A Meta Analysis*, WWWforEurope Policy Paper, 2014, (12).
- Mileva, M., Braun, S., Lechthaler, W., *The Effects of Globalization on Wage Inequality: New Insights from a Dynamic Trade Model with Heterogeneous Firms*, WWWforEurope Working Paper, 2013, (49).
- Molana, H., Montagna, C., *Selection, Trade, and Employment: the Strategic Use of Subsidies*, WWWforEurope Policy Paper, 2015, (21).
- Moravcsik, A., "The Myth of Europe's Democratic Deficit", *Intereconomics*, 2008, 43(6), pp. 331–340.
- Moulaert, F., Ailenei, O., "Social Economy, Third Sector and Solidarity Relations: A Conceptual Synthesis from History to Present", *Urban Studies*, 2005, 42(11), pp. 2037–2053.
- Naqvi, A., *Modeling Growth, Distribution, and the Environment in a Stock-Flow Consistent Framework*, WWWforEurope Policy Paper, 2015, (18).
- Noll, M., *Transition to sustainable and liveable cities*, WWWforEurope Lecture Series, 15 June 2015 at WIFO, presentation available at [http://www.foreurope.eu/fileadmin/events/lectures/Noll\\_Margit/WIFO\\_Urban\\_Transition\\_Noll\\_20150610.pdf](http://www.foreurope.eu/fileadmin/events/lectures/Noll_Margit/WIFO_Urban_Transition_Noll_20150610.pdf).

- Nørgård, J. S., "Happy Degrowth through more Amateur Economy", *Journal of Cleaner Production*, 2013, 38, pp. 61–70.
- North, D.C., Thomas, R.P., *The Rise of the Western World. A New Economic History*, Cambridge University Press, 1973.
- Nussbaum, M., "Capabilities as Fundamental Entitlements: Sen and Social Justice", *Feminist Economics*, 2003, 9(2–3), pp. 33–59.
- Nussbaum, M., *Women and human development: the capabilities approach*, reprint, Cambridge University Press, 2008.
- OECD, *Looking to 2060: Long-term global growth prospects. A going for growth report*, OECD Economic Policy Papers, Paris, 2012, (03).
- OECD (2015A), *In It Together: Why Less Inequality Benefits All*, OECD Publishing, Paris, 2015.
- OECD (2015B), *How's Life? 2015: Measuring Wellbeing*, OECD Publishing, Paris, 2015.
- OECD (2015C), *OECD Better Life Index. Denmark*, accessed on 10 December 2015.
- OECD (2015D), *The Metropolitan Century: Understanding Urbanisation and its Consequences*, OECD Publishing, Paris, 2015.
- OECD (2015E), *The Economic Consequences of Climate Change*, Organisation for Economic Co-operation and Development, Paris, 2015.
- OECD (2015F), *OECD/G20 Base Erosion and Profit Shifting Project, 2015 Final Reports, Information Brief*, Paris, 2015.
- OECD (2015G), *Mapping Channels to Mobilise Institutional Investment in Sustainable Energy, Green Finance and Investment*, OECD Publishing, Paris, 2015.
- Okrent, A.M., Alston, J.M., "The Effects of Farm Commodity and Retail Food Policies on Obesity and Economic Welfare in the United States", *American Journal of Agricultural Economics*, 2012, 94(3), pp. 11–646.
- Osborne, St.P., *The third sector in Europe. Prospects and challenges*, 1st Edition, Routledge studies in the management of voluntary and non-profit organizations, London, 2008, 8.
- Ostrom, E., *Governing the Commons. The Evolution of Institutions for Collective Action*, Cambridge University Press, New York, 1990.
- Ostrom, E., *A polycentric approach for coping with climate change*, Policy Research Working Paper, 2009, (5095).
- Ostrom, E. (2010A), "Beyond Markets and States: Polycentric Governance of Complex Economic Systems", *American Economic Review*, 2010, 100(3), pp. 641–672.
- Ostrom, E. (2010B), "Polycentric Systems for Coping with Collective Action and Global Environmental Change", *Global Environmental Change*, 2010, 20(4), pp. 550–557.
- Paulson, H., *We need incentives to save the climate not just agreement*, *Financial Times*, 18 November 2015.
- Pierson, P., "Coping with permanent austerity: welfare state restructuring in affluent democracies", *Revue française de sociologie*, 2002, 43(2), pp. 369–406.
- Pitlik, H., "Chapter Area 1: Challenges for the European Welfare States", in: Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., *New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters*, *WWWforEurope Synthesis Report, Draft Final Version*, Vienna, Brussels, 2016.
- Pitlik, H., Kouba, L., *The interrelation of informal institutions and governance quality in shaping Welfare State attitudes*, *WWWforEurope Working Paper*, 2013, (38).
- Pitlik, H., Heinemann, F., Schweickert, R., *Overcoming reform resistance and political implementation of large-scale welfare state reforms*, *WWWforEurope Policy Brief*, 2014, (3).
- Plantenga, J., *Searching for welfare, work and gender equality*, *WWWforEurope Working Paper*, 2014, (59).
- Plantenga, J., Doneva, D., *The economics of gender equality; a review of the literature in three propositions and two questions*, *WWWforEurope Working Paper*, 2015, (104).
- Polanyi, K., *The great transformation. The political and economic origins of our time*, 2nd Edition, Beacon Press, Boston, 1944.
- Porter, M., *Competitive Advantage*, Free Press, New York, 1985.

- Porter, M.E., "America's Green Strategy", *Scientific American*, 1991, 264(4), p. 168.
- Porter, M.E., van der Linde, C. (1995A), "Toward a New Conception of the Environment–Competitiveness Relationship", *Journal of Economic Perspectives*, 1995, 9, pp. 97–118.
- Porter, M.E., van der Linde, C. (1995B), "Green and Competitive: Ending the Stalemate", *Harvard Business Review*, 1995, 73(5), pp. 119–134.
- REHVA (Federation of European Heating, Ventilation and Air Conditioning Associations), "Danish plans towards Nearly Zero Energy Buildings", *REHVA Journal*, 2014, 51(3), pp. 6–8.
- Reinhart, C.M., Rogoff, K.S., *The Aftermath of Financial Crises*, NBER Working Paper, 2009, (14656).
- Reinstaller, A., Reschenhofer, P., Path dependence in national systems of production and "self discovery" of environmental technologies in the EU 28 countries, *WWWforEurope Working Paper*, 2015, (106).
- Rehn, O., Concluding remarks at the Conference "Economic Growth for Better Quality of Life in Europe, September 2010, [http://europa.eu/rapid/press-release\\_SPEECH-10-432\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-10-432_en.htm).
- Rengs, B., Scholz-Wäckerle, M., Gazheli, A., Antal, M., van den Bergh, J., Testing innovation, employment and distributional impacts of climate policy packages in a macro-evolutionary systems setting, *WWWforEurope Working Papers*, 2015, (83).
- Revelli, Ch., Viviani, J.-L., "The Link between SRI and Financial Performance: Effects and Moderators", *Management International*, 2013, 17(2), pp. 105–122.
- Revelli, Ch., Viviani, J.-L., "Financial performance of socially investing (SRI): what have we learned? A meta analysis", *Business Ethics: A European Review*, 2015, 24(2), pp. 158–185.
- Rifkin, J., *The Zero Marginal Cost Society: The internet of things, the collaborative commons, and the eclipse of capitalism*, Palgrave Macmillan, 2014.
- Rodrik, D., "Industrial policy: don't ask why, ask how", *Middle East Development Journal*, 2009, 01(01), pp. 1–29.
- Rodrik, D., *Industrial policy for the twenty-first century*, Harvard University, Cambridge, MA, 2004.
- Rodrik, D., "Green industrial policy", *Oxford Review of Economic Policy*, 2014, 30(3), pp. 469–491.
- Rosenberg, N., Birdzell, L.E., *How the West grew rich*, Popular Prakashan, 1986.
- Sachs, A., *Governance Structures in Europe*, *WWWforEurope Deliverable*, 2013, (2).
- Sachs, A., Schleer, F., "Labour market performance in OECD countries: A comprehensive empirical modelling approach of institutional interdependencies", *WWWforEurope Working Paper*, 2013, (7).
- Sauer, Th., Elsen, S., Kuhn, St., Barnebeck, St., Garzillo, C., Kalff, Y., Schicklinski, J. (2015A), *Cities: Places of new European prosperity. Compendium of case studies on the socio-ecological transition of urban commons*, *WWWforEurope Deliverable*, 2015, (6).
- Sauer, Th., Barnebeck, St., Kalff, Y., Schicklinski, J. (2015B), *The Role of Cities in the Socio-Ecological Transition of Europe (ROCSET)*, *WWWforEurope Working Paper*, 2015, (93).
- Sauer, Th., Huber, P., "Chapter Area 5: The role of regions in the European Socio-ecological Transition", in: Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., *New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters*, *WWWforEurope Synthesis Report, Draft Final Version*, Vienna, Brussels, 2016.
- Scharle, Á., Váradi, B., Samu, F., *Policy convergence across welfare regimes: the case of disability policies*, *WWWforEurope Working Paper*, 2015, (76).
- Schicklinski, J., *Civil society actors as drivers of socio-ecological transition? Green spaces in European cities as laboratories of social innovation*, *WWWforEurope Working Paper*, 2015, (102).
- Schleicher, St., *Deepening the scope of the "economic model": Functionalities, structures, mechanism, and institutions*, *WWWforEurope Policy Papers*, 2015, (24).



- Schmitt, C., Starke, P., "Explaining Convergence of OECD Welfare State: A Conditional Approach", *Journal of European Social Policy*, 2011, 21(2), pp. 120–135.
- Schneebaum, A., Rimplmaier, B., Altzinger, W., Gender and Migration Background in Intergenerational Educational Mobility, *WWWforEurope Policy Paper*, 2014, (11).
- Schatzenstaller, M., "The EU Own Resources System – Reform Needs and Options", *Intereconomics*, 2013, 48(5), pp. 303–313.
- Schatzenstaller, M., Sustainable Tax Policy Beyond the Tax Ratio for the EU as Core Element of a "Fiscal Union", in: *Workshop Proceedings No. 21 Toward a genuine Economic and Monetary Union*, OeNB, 2015.
- Schatzenstaller, M., Krenek, A., Nerudová, D., Dobranschi, M., EU Taxes as Genuine Own Resources to Finance the EU Budget – Pros, Cons and Sustainability-oriented Criteria to Evaluate Potential Candidates for EU Taxes, *Fair Tax Working Paper*, 2016, forthcoming.
- Schuberth, H., "Tax Policies and Financial Stability Lessons from the Crisis", in: Braude, J., Eckstein, Z., Fischer, St., Flug, K. (eds.), *The Great Recession: Lessons for Central Bankers*, MIT Press, 2012.
- Schulmeister, St., "A General Financial transaction Tax: Strong Pros, Weak Cons, *Intereconomics*", *Review of European Economic Policy*, 2012, 47(2).
- Schulmeister, St., A General Financial Transactions Tax. Motives, Effects and Implementation According to the Proposal of the European Commission, *WIFO Working Paper*, 2014, (461).
- Schulmeister, St., Schratzenstaller, M., Picek, O., A General Financial Transaction Tax. Motives, Revenues, Feasibility and Effects, *WIFO*, 2008.
- Schweickert, R., Ahlborn, M., Frank, K., Orosz, A., Sikulova, I., Szanyi, M., Large-Scale Transformation of Socio-Economic Institutions Comparative Case Studies on CEECs. Interim Report, *WWWforEurope Working Paper*, 2013, (16).
- Sen, A.K., "Capability and wellbeing", in: Nussbaum, M., Sen, A. K. (eds.), *The quality of life*, OUP, Oxford, 1993.
- Sen, A.K., *Commodities and Capabilities*, North-Holland Sole distributors for the U.S.A. and Canada, 1st Edition, Elsevier Science Publishing Co, New York, 1985, reprinted as Sen, A., *Commodities and Capabilities*, 2nd Edition, Oxford University Press, Delhi New York, 1999.
- Siemens, *The Green City Index: A summary of the Green City Index research series*, 2012.
- Sims, R.E.H., Mabee, W., Saddler J.N., Taylor, M., "An overview of second generation biofuel technologies", *Bioresource Technology*, 2010, 101(6), pp. 1570–1580.
- Sinabell, F., *Towards Sustainable Agriculture: Challenges for Europe*, WIFO, 2016, forthcoming.
- Smith, T.G., Tasnádi, A., "The Economics of Information, Deep Capture, and the Obesity Debate", *American Journal of Agricultural Economics*, 2014, 96(2), pp. 533–541.
- Solow, R., *We'd better watch out*, *New York Times Book Review*, 1987, p. 38.
- Stern, N.H., *The economics of climate change: the Stern review*, Cambridge University Press, Cambridge, 2007.
- Stiglitz, J., Sen, A., Fitoussi, J.-P., Report by the Commission on the Measurement of Economic Performance and Social Progress, Commission on the Measurement of Economic Performance and Social Progress, European Commission, Paris, 2009.
- Summers, L.H., "U.S. Economic Prospects: Secular Stagnation, Hysteresis, and the Zero Lower Bound", *Business Economics*, 2014, 49(2), pp. 65–73.
- Szanyi, M., Large-Scale Transformation of Socio-Economic Institutions Comparative Case Studies on CEECs. Background Paper 3: Varieties of Capitalism and CEECs, *WWWforEurope Working Paper*, 2013, (19).
- Temple, J., "The new growth evidence", *Journal of Economic Literature*, 1999, 37(1), pp. 112–156.
- Tente, N., Stein, I., Silbermann, L., Deckers, Th., *Der antizyklische Kapitalpuffer in Deutschland. Analytischer Rahmen zur Bestimmung einer angemessenen inländischen Pufferquote*, Deutsche Bundesbank, Frankfurt/Main, 2015.

- Teulings, C., Baldwin, R. (eds.), *Secular Stagnation: Facts, Causes, and Cures*, A VoxEU.org eBook, CEPR, London, 2014.
- The Danish Government, *The National Reform Programme*. Denmark 2015, Copenhagen, 2015.
- The Ecologist, "Whose common future: reclaiming the commons", *Environment and Urbanization*, 1994, 6(1), pp. 106–30.
- The Scottish Government, *Zero Waste. Safeguarding Scotland's Resources: Blueprint for a more Resource Efficient and Curcular Economy*, Edinburgh, October 2013.
- The Scottish Government, *Making Things Last: Consultation on Creating a more Circular Economy in Scotland*, August 2015.
- The World Bank, "Spotlight One: Europe convergence machine", in: Gill, I., Raiser, M., *Golden Growth: Restoring the luster of the European economic model*, World Bank publications, 2012, pp. 71–84.
- Thillaye, R. (2013A), *The challenges of EU governance and the quest for long-term growth*, WWWforEurope Working Paper, 2013, (4).
- Thillaye, R. (2013B), *Coordination in place of integration? Economic governance in a non-federal EU*, WWWforEurope Working Paper, 2013, (32).
- Thillaye, R., *Improving the legitimacy of EU economic governance: why and how?*, WWWforEurope Working Paper, 2014, (72).
- Thillaye, R., Kouba, L., Sachs, A., "Reforming EU economic governance: is 'more' any better?", WWWforEurope Working Paper, 2014, (57).
- Tichy, G., *Subjective wellbeing and socio-ecological transition*, WWWforEurope Policy Paper, 2013, (6).
- Tichy, G. (2015A), *European integration as an underestimated success programme*, WWWforEurope Working Paper, 2015, (109).
- Tichy, G. (2015B), *On transformations in financing structure in an affluent society*, WWWforEurope Policy Paper, 2015, (20).
- Tichy, G. (2015C), *Protecting social inclusion and mobility in a low growth scenario*, WWWforEurope Working Paper, 2015, (100).
- Tilman, D., Balzer, C., Hill, J., Befort, B.L., "Global Food Demand and the Sustainable Intensification of Agriculture", *PNAS*, 2011, 108, pp. 20260–20264.
- Tinbergen, J., *On the theory of economic policy*, North Holland, Amsterdam, 1952.
- Trappl, St., *Vergleich der Great Depression und der Great Recession hinsichtlich Einkommensverteilung, Geldpolitik und Finanzmarktentwicklungen*, Dissertation, Vienna University of Economics and Business, Vienna, 2015.
- Ulinski, S., *Corporate Social Innovation as a Driver of Performance and Welfare*, WWWforEurope Policy Papers, 2015, (25).
- UNCTAD (United Nations Conference on Trade and Development), *Review of Maritime Transport 2015*, United Nations Publication, 2015.
- UNEP (United Nations Environment Programme), *Towards a green economy: pathways to sustainable development and poverty eradication*, 2011.
- UNEP (United Nations Environment Programme) (2015A), *Aligning the financial system with sustainable development: pathways to scale*, The Inquiry's 3rd Progress Report, 2015.
- UNEP (United Nations Environment Programme) (2015B), *The Financial System we need. Aligning the financial system with sustainable development*, The UNEP Inquiry Report, 2015.
- United Nations, *World Urbanization Prospects, the 2014 Revision*, UN Department of Economic and Social Affairs, Population Division, 2014, <http://esa.un.org/unpd/wup/>, for detailed data see <http://esa.un.org/unpd/wup/CD-ROM/Default.aspx>.
- United Nations, *Adoption of the Paris Agreement, Framework Convention on Climate Change, Conference of the Parties, Twenty-first session*, 2015, <https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf>.
- van Aarle, B., *Surveillance and Control of Fiscal Consolidation on a Supranational Level*, WWWforEurope Working Paper, 2013, (46).

- van Bouwel, L., Veugelers, R., "The determinants of student mobility in Europe: the quality dimension", *European Journal of Higher Education*, 2013, 3(2), pp. 172–90.
- van den Bergh, J., "Environment versus growth A criticism of 'degrowth' and a plea for 'a-growth'", *Ecological Economics*, 2011, 70(5), pp. 881–890.
- van den Bergh, J., "Effective climate-energy solutions, escape routes and peak oil", *Energy Policy*, 2012, 46, pp. 530–536.
- van den Bergh, J., *Green Agrowth as a Third Option: Removing the GDP-Growth Constraint on Human Progress*, WWWforEurope Policy Paper, 2015, (19).
- van den Bergh, J., "Chapter Area 2: Analysing policies for a transition to a low-carbon economy", in: Badinger, H., Bailey, D., De Propris, L., Huber, P., Janger, J., Kratena, K., Pitlik, H., Sauer, Th., Thillaye, R., van den Bergh, J., *New Dynamics for Europe: Reaping the Benefits of Socio-ecological Transition. Part II: Model and Area Chapters*, WWWforEurope Synthesis Report, Draft Final Version, Vienna, Brussels, 2016.
- van den Bergh, J., Antal, M., *Evaluating Alternatives to GDP as Measures of Social Welfare/Progress*, WWWforEurope Working Paper, 2014, (56).
- van den Bergh, J., Kallis, G., "Growth, A-Growth or Degrowth to Stay within Planetary Boundaries?", *Journal of Economic Issues*, 2012, 46(4), pp. 909–920.
- Veron, N., *The European Union is the global laggard on Basel III*, Bruegel blog post, 2014.
- Veugelers, R., Cincera, M., "Europe's missing yollies", *Bruegel Policy Brief*, 2010, 06.
- Veugelers, R., *What innovation policies for ecological transition? Powering the Green Innovation Machine*, WWWforEurope Working Paper, 2014, (73).
- Veugelers, R., *Do we have the right kind of diversity in Innovation Policies among EU Member States?*, WWWforEurope Working Paper, 2015, (108).
- Vogel, J., Kratena, K., Hranayai, K., *The bias of technological change in Europe*, WWWforEurope Working Paper, 2015, (98).
- Walterskirchen, E., *Working hours in a period of low economic growth*, WWWforEurope Working Paper, 2016, (110).
- Ward, K., *The World in 2050: Quantifying the Shift in Global Economy*, HSBC Global Economics, 2011.
- WCED (The World Commission on Environment and Development), *Our Common Future*, Brundtland-Report, Oxford University Press, Oxford, 1987.
- Weiss, T., Unterlass, F., *Towards monitoring a socio-ecological transition*, WWWforEurope Deliverable, 2015, (7).
- Weiss, T., *Defining research gaps concerning the implementation of socio-ecological transition*, WWWforEurope Working Paper, 2016, (115).
- Weizsäcker, E.U., Ayres, R.U., "Boosting resource productivity: Creating pingpong dynamics between resource productivity and resource prices", *Environmental Innovation and Societal Transitions*, 2013, 9, pp. 48–55.
- Wilson, D., Purushothaman, R., *Dreaming With BRICs: The Path to 2050*, Goldman Sachs Global Economics Paper, 2003, (99).
- Wilson, D., Trivedi, K., Carlson, St., Ursúa, J., *The BRICs 10 Years On: Halfway Through The Great Transformation*, Goldman Sachs Global Economics Paper, 2011, (208).
- World Economic Forum, *Towards the Circular Economy: Accelerating the Scale-up across Global Supply Chains*, Geneva, 2014.
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