
# Sustainable Work

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# Sustainable Work

Seven case studies on social-ecological implications in Europe

A collaborative work of Ernest Aigner, Lucia Baratech Sanchez, Desiree Alicia Bernhardt, Benjamin Curnow, Christian Hödl, Heidi Leonhardt, Anran Luo

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# Table of Content

# Figures

# Tables

# I. General Framework: Theoretical considerations of sustainable work

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## 1. Introduction

In a highly globalised world where all production and consumption activities are internationally intertwined and the environmental consequences of those actions are hard to identify, rethinking the role of work in our societies according to sustainability principles is a complex but highly necessary task. Salaried work has become one of the crucial indicators to analyse any country in the world. By looking at the proportion of the population that is employed, the working conditions they have, and how productive they are when performing their tasks, it is possible to produce an image of a country's society to assist in the understanding of the levels of well-being of its citizens. Work and labour markets not only largely structure the way the economy and society function, they also heavily influence an individual's life satisfaction and happiness; virtually the entire life of a person is designed around their work.

Given the relevance work has at all levels, diving into the concept of sustainable work is a crucial project due to the urgency of environmental matters. The biggest role humanity faces is how to transform our societies so that they are sustainable from a social, ecological and economic perspective. For the sustainable society vision, work would need to be drastically altered in order to adapt it to the multi-dimensional sustainability requirements. This research aims to contribute to this enterprise by identifying the conditions that define the sustainability of work and then present an overview of seven European countries from this perspective. The present document introduces our conceptualisation of work and explains its main components. These are designed around the idea of the sustainable society and are composed of individuals' needs, equity and planetary boundaries. The final section concludes and introduces the different country-case studies.

## 2. What is sustainable work?

Stepping out of the conventional understanding of work as a paid activity, this research adopts a broader perspective and considers work to be any mediation process between humans and their environment that generates a result that is needed by the individual to reproduce her life. Since the notion of work cannot be separated from the output it creates, we wonder why work is performed. Building on the needs theory developed by Manfred Max-Neef (Max-Neef et al., 1991) we argue that all human labour is performed in order to satisfy the various fundamental human needs.

Our approach builds on the concept of (re)productivity developed by Biesecker and Hofmeister (2010a). This concept emphasises the interconnections and interdependencies of humans and natural ecosystems, and highlights that no productive or reproductive process is exclusively performed by human labour. At the same time, human productive processes build on human reproductive processes, as elaborated further below.

Humans, as living beings, constantly interact with the environment in which they are embedded in performing daily activities such as breathing or eating. This condition also applies to what today are

considered to be economic production processes, where nature's role in generating the raw materials used, absorbing the waste generated, and maintaining the atmospheric and earth conditions that allow life is largely ignored. As Biesecker and Hofmeister (ibid. 2010) show, there is no human activity that does not require inputs from nature's (re)productiveness. Nevertheless, the current mainstream approach to the economy does not recognise the dependencies of those actions on their natural surroundings. Hence, only human labour, in particular paid labour, is valued. In modern societies, furthermore, human labour can analytically be divided into productive work, that generally takes place in the public sphere and is mainly performed by men, and reproductive work, which has historically been related to women and is performed primarily in the private sphere.

Biesecker and Hofmeister (ibid. 2010) argue that this double separation, both between labour reproduction and production as well as between natural (re)production and labour (re)production, is at the root of our current social and ecological crises. According to them, a new concept, (re)productivity, is needed to conceptually reunite the two spheres that in reality are inevitably intertwined. This will overcome the unsustainability inherent in the current economic system, as the reproductive side will gain in importance and come to the centre of attention. Only this would ensure that all (re)productivities are preserved (ibid. 2010).

Consequently, (re)productivity is a capacity that is not only attributed to human beings but indeed is also related to nature's productiveness. Work, based on the definition presented above, relates then to human (re)productivity, as a mediator between nature and desired outcomes. Thus it follows that work cannot only be merely understood as paid labour. It rather encompasses all human activities that reproduce life through the satisfaction of fundamental needs.

Work can be organised in different ways in a society, be it reproductive or productive. Markets, states and communities of various forms are important examples of such ways of structuring labour. These ways of organisation lead to (binary) categorisations such as paid/unpaid, market/non-market or reproductive/productive work. For example, one way of organising work is via markets, where work is valued as a paid activity and thereby divided into paid and unpaid labour. However, as distinctions often go hand in hand with value judgements concerning the legitimacy and value of the different categories, they should be used with caution. Hence, although we make an analytical distinction between paid and unpaid or productive and reproductive work in this paper, this does not mean we consider them to be ontologically distinct categories. We rather use these categories because in the current societal organisation of work, these are common and important distinctions.

According to Biesecker "we need a new understanding of work that integrates the multitude of types of labour that happen outside markets instead of focusing solely on paid work. Moreover, this 'ensemble' of work needs to be without hierarchy and ecologically sound. This new understanding of work is then the foundation for social redistribution and a re-evaluation of work that includes everyone and

overcomes categorizations and degradations based on gender" (Netzwerk Vorsorgendes Wirtschaften, 2013) .

Based on an understanding of the world in which the economy is part of society, and society part of a biophysical environment, we define sustainable work as work that enables and supports a sustainable society. In turn, a sustainable society in our understanding fulfils three criteria: ensuring individual well-being by guaranteeing the satisfaction of everyone's needs; ensuring equity among all members of society; and ensuring that biophysical boundaries are respected so that biocapacity is maintained.

While work is a mediation process between nature and society, it structures the life of individuals, societies, and the environment. To be sustainable under these premises, work needs to be organised in such a way that it fulfils everyone's individual needs, ensures equity between people, and preserves the Earth's ecosystem. In order to make the precise meaning of these three dimensions or preconditions of a sustainable society clearer, we will now elaborate on them in turn.

## 2.1. Individual well-being through satisfaction of needs

Concerning the individual, our understanding of a sustainable society builds on the human scale development approach. Max-Neef introduced the approach in the late 1980s, building on a collaborative work with Antonio Elizalde and Martin Hopenhayn (Max-Neef et al., 1991). At the core of the approach are human needs and how they relate to development - in other words it "entails a theory of human needs for development" (Cruz et al., 2009a). Consequently, the approach differentiates between needs and satisfiers.

As opposed to most value theories that are prevalent in economic theory, needs - as things we value - are here seen as finite, few and classifiable (Cruz et al., 2009a). They are independent of not only individual tastes, habits, opinions or preferences, but also of culture and historical periods. The approach identifies in total nine fundamental needs on an axiological level, meaning nine things we value: subsistence, protection, affection, understanding, participation, creation, leisure, identity and freedom. Moreover, all human needs are of the same importance, the sole exception is the need for subsistence, also known as the need to continue to exist.

Satisfiers, the ways in which (and to what extent) the fundamental needs are satisfied, by contrast, change over time. Each satisfier possesses at least one of the four existential characteristics of being, having, doing and interacting. Cruz et al. (2009) define them as follows:

- "Being, refers to personal or collective attributes or qualities (usually expressed as nouns related to the subject's intrinsic attributes as our biological constitution, character and values);
- Having, registers institutions, norms, mechanisms, tools or things that can be expressed in one or more words (like exosomatic tools, laws and information);
- Doing, has to do with actions, personal or collective that can be expressed like verbs;

- Interacting, makes reference to locations and milieus [or settings] (as times and spaces) and the way people relate to and articulate their environment" (ibid., p. 2023).

A crucial point is that these four existential characteristics complement each other in satisfying needs. For example, any particular setting of interaction (a satisfier) requires specific satisfiers at the other three levels that all play together properly in order to satisfy any of the fundamental needs.

While each satisfier possesses at least one of these four existential characteristics, its relation to a respective axiological need can be one of five different types as defined in Cruz et al. (2009):

- Synergic satisfier, satisfies more than one need at the same time;
- Singular satisfier, satisfies one single targeted need;
- Destructive satisfier, inhibits the satisfaction of one or more needs although applied as a satisfier;
- Inhibiting satisfier, satisfies a single need, but at the same time impairs the satisfaction of other needs; or,
- Pseudo-satisfier, "stimulates the false sensation of satisfying a given need" although impairs the satisfaction of the respective need in the long run.

Finally, it is worthwhile mentioning that needs are satisfied with regard to different contexts. A need can be satisfied with regard to the individual (Eigenwelt), with regard to society (Mitwelt), and with regard to the environment (Umwelt) (Max-Neef et al., 1989). Although all three contexts are of importance, in this section we focus solely on the individual level, as society is mainly theorised in terms of equity in the next section, followed by a discussion of the environment in terms of the planetary boundaries concept. As we deem the characteristics of being, having, doing and interacting to be central for the understanding of work as a satisfier, we elaborate on these in the next section.

To illustrate the interplay of these characteristics, Cruz et al. (2009) give a broad example of our modern society. They argue that the "modern free-market society (as a new *interacting* milieu) requires for the members of society a full range of new satisfiers at the *having* level (money, property, credit, etc.), of *being* (consumer, owner, free to buy and sell, etc.) and *doing* (shopping, acting 'rationally' in chrematistic terms, etc.) in order to satisfy their fundamental needs" (Cruz et al., 2009a, p. 2023). Thereby the concept helps to "understand how the distribution of power and wealth within a society has to do with the way different satisfiers and dimensions complement and relate to each other as well as the way different members of the society have access to them" (ibid.).

Similarly, in our modern (although not necessarily free-market) society, where - in particular paid - work structures individual lives, as well as societies and nature, work serves as a central satisfier of fundamental needs. Which needs are satisfied by work, how the satisfaction of needs through work is distributed within a society, which work is used to satisfy needs, who has access to work as a satisfier, and who decides on these questions, all depends on the distribution of wealth, power and income in a

society. In the following, we discuss work in the light of the human-scale approach to development in order to outline dimensions of work as a satisfier of needs.

### 2.1.1. Work as a synergic satisfier of needs

Along the four existential characteristics, Cruz et al. (2009) list several examples of satisfiers, among them "work". Work is conceptualised as a satisfier both on the levels of having (satisfying the need for subsistence, protection, participation, creation and identity), as well as doing (where work satisfies subsistence and creation). At the same time, a broader conceptualisation of work along the concept of (re)productivity reveals several other areas where work serves as a satisfier, especially at the level of doing. Examples include "taking care of", "feed", "educate", etc. This shows a somewhat limited understanding of work as production process, depicting only the side of human productivity in Biesecker's understanding, but not reproductivity. However, Cruz et al. (2009) seem to not make a distinction between paid and unpaid work, although some dichotomy between work as the production process itself and work as generating returns can be observed (e.g. work as satisfier for identity vs. work as satisfier for subsistence).

Furthermore, they locate work primarily in the context of *having*, say little about *being* and *doing*, and do not mention *interacting* at all. In the following we address this gap and theorise work, defined as mediating processes between society and nature, as a satisfier of fundamental human needs in terms of *being*, *having*, *doing* and *interacting*. Before doing so, however, it is important to stress again that the four existential characteristics are inherently interrelated. For example, someone working at home (*being*) is *doing* care work and has paid or unpaid work while *interacting* in the setting of the household - and altogether thereby satisfies his need (among others) for identity or affection. Nevertheless, a separation of the four existential characteristics is useful, since each raises different questions and helps to illustrate different dimensions of work.

In terms of *being*, work addresses the question of which individual and collective attributes relate to workers in a society and in which ways they satisfy needs. Many different "*beings*" are conceivable: individuals can be workers, unemployed, underemployed, part of the paid labour force or not, unwilling to work, willing to work, caregivers, in work training, high productivity workers, low productivity workers, home workers, community workers, volunteers, etc. These *beings* then interact with other characteristics to satisfy needs.

Beings are strongly influenced by society and the state, which create categories of being and enforce them. States can also prioritise and enhance specific forms of being - e.g. being part of the labour force, as in the case of most European countries where belonging to this group entails a number of rights. Being a worker of some sort is also associated with certain privileges and disadvantages. For instance, not being part of the paid workforce can have a negative influence on the satisfaction of the need for identity, as well as it can imply a number of institutional rights (e.g. retirement pension, public health insurance) that the citizen cannot access if he or she does not have this status.

Depending on the qualities that apply to an individual, he or she has the ability to actually have work. Work, conceptualised through *having* and thereby understood as a "thing to be possessed", addresses primarily the human (re)productive process. Thus, here work is a satisfier of individuals needs through having a position and taking part in the process of (re)production, which is highly connected to the satisfaction of participation needs. At the same time, and this is particularly true for modern societies, work is one of the central means to access material goods as satisfiers and thus connects with the need for subsistence. Therefore, with regard to *having*, two questions are relevant. First, does a person actually have work (where work is understood as a process), and second, what are the returns a person has from work. This resonates with the different needs work can be a satisfier for: as a satisfier for participation, it is the process of having work that counts (cf. also the literature on work and self-actualisation), whereas as a satisfier for subsistence, it is the returns from work that are important. However, both features play a role in any instance of work as a satisfier.

Having work is a characteristic that a society or a state authority can strongly influence, for example through norms and institutions. With regard to both dimensions mentioned above, distribution and access are important. Laws that regulate the access to labour markets allow people to have paid work or not, dependent upon such things as age, place of birth, nationality, or residence status. At the same time, parental-leave schemes, time-off for familial care, and regulations that limit daily, weekly or annual working time, allow individuals to have unpaid reproductive work by limiting the obligation to be part of the labour market. Finally, the organisation of working time affects the distribution of work in general, and specific forms of work, between individuals, gender and ethnicity, etc.

Having access to returns from work, on the other hand, addresses income, but also in-kind services and returns from reproductive work. Access to the labour market, welfare services, and care workers in the first instance determine (among other things), the possibility to enjoy the returns. At the same time, the distribution of returns depends on the distribution of income before taxes and the distribution after state interventions (e.g. taxation, and cash as well as in-kind benefits).

Work in terms of *doing* refers to working as an activity. *Doing* work can satisfy different needs, depending on how the work is organised and the work that is performed. As with *having*, *doing* work can satisfy needs in itself, such as the need for creation, or satisfy needs through the creation of goods and services derived from doing work. A typical example of the latter would be a farmer who can satisfy his need for subsistence by feeding himself with the products he has grown. However, *doing* work satisfies many other needs at the level of society, and their relevance depends on the number of people that are employing their time in that type of work. For example, if care work were the most important form of *doing* work, the need for protection and affection would be primarily addressed; however, if it is predominantly the production of material goods that is pursued, subsistence is more central. Here, again, next to the market and individuals, the state may influence which needs are more and less satisfied through welfare state policies, taxes, work-place regulations and workers' rights.

Finally, work takes place as interacting itself, but also creates specific settings of interaction within a society. For example, work as a process can support the interaction among individuals or enable individuals to experience privacy. Depending on the institutional setting, and on the type of actions, different forms of interacting satisfy needs. Since, as discussed above, *havings*, *beings* and *doings* are influenced by actors like states, modes of interacting are equally shaped by government policies.

This discussion of work makes apparent that: 1) work in terms of *being* assigns attributes to individuals which satisfy needs; 2) in terms of *having*, both having work as well as having access to the returns from work satisfies needs; 3) in terms of *doing*, the activity itself but also the goods created through the respective activity satisfy needs and; 4) work structures the ways we interact and thereby satisfies needs. At the same time it is important to note that work is not only a synergic satisfier, but can also be a singular, destructive, inhibiting or pseudo-satisfier.

Several examples can illustrate work as a satisfier: if work is organised in a way that only focuses on the production of goods that would cover the need for subsistence, it could inhibit the satisfaction of the need for protection, due to lack of time for reproductive work. Beyond the sphere of work, too much work could inhibit, for example, the need for leisure and freedom. Accordingly, the framework would suggest in this case that paid work would need to be reorganised both in terms of outcome - to allow for reproductive work that enables the satisfaction of protection - but also in terms of the process – in order to allow for more creativity and creation in the work place.

Another example refers to access to labour markets. If members of a certain group of society are prevented from accessing labour markets, for example asylum seekers, they cannot have formal paid work. This situation would not only limit their satisfaction of the need for subsistence, but also a lack of interaction and doing work would limit the satisfaction of their needs for affection and creation. Thus, giving these groups access to the labour market could be crucial in increasing the satisfaction of a broad range of their needs.

Finally, a last example is particularly important concerning the sustainability of work. Although it has been little addressed up to now, many satisfiers besides work such as communitarian institutions or the environment can be crucial to increase people's well-being. A sound environment can satisfy the need for subsistence or relaxation. Relating this to work, the pollution of the environment due to production processes may satisfy the needs of workers in several ways, but at the same time make it impossible for workers to satisfy other needs, for example, their need for recreation by being in an environment they value, or the need for subsistence through a healthy environment. Here again, productive work would be an inhibiting satisfier.

Hence, depending on which needs policy makers focus on, and which forms of work in terms of *being*, *having*, *doing* and *interacting* are applied, work structures individuals' lives in ways that allow them to satisfy their needs on various levels. The focus of the human needs approach hereby appears

individualistic, and thus does not allow to address uneven social relations or inequitable distribution of means to satisfy needs. We therefore address this gap in the next section.

## 2.2. Ensuring equity between all members of society

Inherent in the above definition of a sustainable society, and in the human scale to development approach, is that everyone's need should be satisfied. Cruz et al. (2009) acknowledge that by referring to "fundamental socio-universal needs, [this] mean[s] that their fulfilment is always desirable for all, and their deterrence is undesirable for all as well". In this sense, equity is intrinsic to our framework and an inequitable society is unsustainable by definition. Moreover, this is not only true for equity within a given generation in time, but also - particularly when referring to sustainability – equity with regards to future generations.

The concept of equity is part of the debate on social justice and is intimately connected with the idea of fairness and equality. All human beings have different attributes, capacities and skills, which shape the unequal distribution of resources, power or wealth in society. When we say that not all human beings have the same capabilities to satisfy their needs, it is due to this double layer of differences. On the one hand, personal characteristics will make a given individual more or less able to satisfy her own needs and on the other hand, the social class and environment of this individual is determinant in this respect. Having certain attributes might be very relevant to satisfy certain needs, but they may not be sufficient to cover others if this person does not enjoy a favourable social position. Since we claim that all needs need to be fulfilled, redistribution processes are relevant so that the situation of each individual and the social group he belongs to can be improved.

Public policies focusing on increasing social justice address precisely this topic. They can adopt an egalitarian approach, where the goal is to distribute the existing resources in a similar way; or an equity approach, where the intrinsic differences between individuals are observed and therefore the redistributive process will be done according to each person' necessities. Building on the idea that individuals all have different characteristics and we live in societies where the different types of capital are unevenly distributed, it is necessary to take the principle of equity as a middle path for the sustainable society.

It has been shown in a number of ways that equity is highly valuable in itself and there are strong social preferences towards it. Equity can be operationalized through measurements of equality - although equality is a contested concept (Gosepath, 2011). However, recent research in game theory highlights the preference of individuals for more equal societies (Fehr and Schmidt, 2004). This preference is a major determinant of the widespread occurrence of redistributive tax systems (which are in place in all our case study countries), and is reflected in the recently increasing criticism of the growing gap between high and low-income groups(Stiglitz, 2012).

Although today's world is characterised by very strong between-country inequality, within country equality itself has many dimensions (Milanovic, 2010). With regard to work and the returns obtained from it, equality can refer to the access to work and access to the returns it generates. As mentioned above, it is necessary to consider the two intertwined aspects: individual's attributes as well as social groups' characteristics, which could be considered in terms of age, gender, ethnicity and status of citizenship. For the former, (Wilkinson and Pickett, 2009) show that equal societies are happier, healthier and live longer than less equal societies. With regard to the entire society and specifically to the economic system, (Piketty, 2014) shows that more unequal societies are more prone to economic crises. Finally, recent findings in behavioural economics suggest that individual's consumption levels depend on relative incomes rather than on absolute income levels (Kahneman, 2013; Tversky and Kahneman, 1984). These findings refer to already existing social theories that elaborate on how an individual's social class determines her consumption (e.g. Bourdieu, 1984; Duesenberry, 1949; Veblen, 1919). These theories suggest that taste, hobbies and consumption preferences are mechanisms of individual distinction. Furthermore, consumers in unequal societies face stronger incentives to follow certain consumption patterns as they strive for belonging to specific social groups and therefore increase their total level of consumption. Thus, inequality tends to lead to higher levels of consumption to participate in society. This suggests a basis for the worldwide correlation between GDP, raw material use and environmental degradation.

Particularly with regard to climate change, it is important to stress inter-state equity. Historical records show that citizens of high-income countries have already used a higher amount of their carbon budget on an aggregate level (Baer et al., 2008). An equal distribution of the carbon budget therefore requires particularly strong targets from high-income countries. This has been acknowledged in the COP9 negotiations in Copenhagen. Furthermore, it needs to be noted that the nation state framing of equity can make it difficult to address certain dimensions of the concept. For example, access to labour markets is often defined by country of birth, automatically creating an inequitable outcome. Furthermore, production chains not only operate between and within nations, but also within certain groups of society independently of countries. One example is care chains, where care work is undermined on the base of regulations embedded in nation state containers (Yeates, 2001).Besides this, environmental impacts may also be unevenly distributed over localities between, and within, nation states. In both cases, the nation state framing is only of limited help for mitigating inequities.

Inequality does not only relate to income or labour market policy. Environmental policy also has distributional consequences. The OECD report "The political economy of environmentally related taxes" (OECD, 2006) stresses the potential regressive effects of environmental taxes (e.g. pricing carbon emissions). Such regressive taxes for environmental reasons can lead to political opposition due to the prevailing preference for income equality in societies. However, research shows that if introduced in combination with other policies, for example in-kind services (e.g public transport) or progressive taxes

on labour, these regressive effects can be mitigated. Moreover, research in the US shows that, in particular, low-income and African-American neighbourhoods are often located in polluted environments (Zwickl et al., 2014). Hence, here environmental policy can mitigate the harmful consequences for low-income groups and thus have a double dividend. Environmental policy and equity are then mutually reinforced – good news for a more sustainable society.

Finally, equity between future and present generations can be conceptualized in at least two ways. Adams (2007) in reference to the book 'Future Matters' differentiates between the present future, and the future present. The former is concerned with the present value of the future, and is little concerned with the circumstances future generations face due to our current actions, whilst the latter emphasizes the impacts on future generations. Hence, our framework differs distinctly from predominant labour market conceptualizations, which, due to their foundation on utilitarianism, can only relate to the future in terms of the present future, and not, as required by the statements in the Brundland et al. (1990) to the future present.

In summary, equity with regard to current and future generations is intrinsic in a sustainable society as defined in this framework. Moreover, research has identified that most people have an intrinsic preference for equality. Finally, societies that are more equitable are beneficial for environmental and social development while conversely, environmental policy can often be used to achieve greater equity. However, besides concerns of equity, for societies to be sustainable in the long run, environmental policy needs to directly address the preservation of a sound environment where nature's (re)productivity is maintained and the bio-capacity is not exhausted. This topic is discussed in the next section.

### 2.3. Planetary boundaries and preserving natural (re)productivity

In recent years it has become more and more apparent that humanity is causing severe environmental problems, both through the extraction of resources and materials from the biophysical world, as well as the flow of wastes and emissions back into the natural system. Effects range from soil degradation and destruction to pollution and greenhouse gas emissions, all of which disturb the balance of the world's ecosystems and biophysical systems.

Accordingly, Biesecker and Hofmeister (2010) write that a "sustainable economy … will have to recognize the need to create a (re)productive 'nature' as its most urgent task". Therefore the economic process needs to be organized in such a way as to ensure that the (re)production of all productive processes in nature is maintained. This also means that work as a mediation process has to be structured and organised accordingly. From a worldview as described above, where society is embedded in the biophysical world around it, this is all the more obvious: the biophysical and hence natural world forms the basis of human existence, as a source for inputs as well as a sink for outputs. Therefore these capacities - (re)productivities - need to be maintained in order for a society to be sustainable.

Hence, the biophysical world has limits in terms of production as well as in its capacities to absorb wastes. While these limits may be fuzzy and subject to uncertainties, non-regenerative resources are assuredly not endless, and neither is the capacity of the atmosphere to take up harmful substances while providing hospitable conditions for humans, to name but two examples.

One famous illustration thereof was introduced by Rockström et al. (2009) and recently updated by Steffen et al., (2015), showing that our society is "overshooting" some biophysical limits. Humanity moves out from its "safe operating space", creating disturbances that can destabilize the Earth system with harmful consequences for humanity. The authors identify two of the planetary boundaries - climate change and biosphere integrity - as core boundaries. These are fundamentally important for the Earth system. The former of the two, climate change, has been recognised as a critical problem by almost all nations worldwide and plays a prominent role in policy making in many countries (cf. most of the case studies in this report). Although other boundaries receive much less attention in policy making, this illustrates that some natural (re)productivities - in this case of the atmosphere - are slowly being integrated into economic decision making.

What is lacking, however, is a full integration into all policy areas, including work as a crucial societal process. Biophysical boundaries and natural (re)productivity need to be taken into account in all decisions if a sustainable society is to be established. However, this should not only happen for instrumental reasons alone (as, for example, the notion of "natural capital" would suggest), but also due to an intrinsic valuation of ecosystems and the biophysical world. Otherwise the incommensurability of the value of nature and other, more instrumental, values might be overlooked.

In sum, respecting biophysical boundaries in order to maintain natural (re)productivity, is essential for any society to be sustainable. This therefore also applies to work – sustainable work is to be organised in such a way that harmful consequences on the biophysical world are minimised.

## 2.4. Summary

To sum up, sustainable work needs to be understood as a mediation process between nature and society. Furthermore, to be sustainable, policies need to be guided by three essential principles: With regard to individual well-being, policymakers need to be concerned with work in terms of being, having, doing and interacting. Policy needs to consider that work structures individuals' lives and allows them to satisfy their needs. On the social level, policy needs to ensure the equitable distribution of access to the different forms of work, the means of production, and the positive as well as negative outcomes of work. Equity thereby can go hand-in-hand with well-designed environmental policies that ensure the maintenance of natural reproductivity by staying within the planetary boundaries.

## 3. Seven case studies on Sustainable Work

### 3.1. Austria

The Austrian case study elaborates on how work and labour market policies address sustainability and equality. It tries to identify indications of sustainable work as well as links between labour market and environmental policies. The focus lies on the ability of the Austrian labour market to sustain social (re)productivity, especially regarding to gender equality and the family/work balance. Therefore flexible working hour arrangements and measures for working time reduction are analysed. As statistics indicate, the attempts that are made to reconcile family and work are not sufficient. Furthermore, the ecological sphere is hardly considered in labour market policies.

### 3.2. Denmark

The case study on Denmark describes a country that is seen as a role model in both environmental policymaking, as well as labour market policies. Denmark could therefore be a possible example of sustainable work in practice. However, this case study shows that 1) despite very ambitious and successful environmental policies, these do not permeate other areas of policy making. Moreover, absolute decoupling of emissions from GDP growth has only taken place to a small extent when considering consumption-side indicators. 2) Labour market policies in recent years have increasingly focused on economic growth and paid work as the main way of satisfying needs, leaving aside other concerns or environmental considerations. Therefore, there is still plenty of room for improvement even for such a role model country like Denmark.

### 3.3. Greece

The Greek case study tells the Greek narrative from the perspective of work, or lack thereof, in the country, how people are dealing with the existing labour climate to ensure their subsistence and other fundamental needs as well as what emerging trends mean for matters of social equity and biophysical limits. The first part is devoted to giving a descriptive overview of the Greek environmental, labour and social spheres in its recent history. Three individual coping mechanisms – emigration, a return to agriculture, and the growing sharing economy - and their effects on the labour market will be elaborated in the second part. Opportunities for government to adapt policies and actions to grassroots coping to help increase sustainability are also examined.

### 3.4. Netherlands

This case study focuses on the feasibility of achieving ‘sustainable work’ in the Netherlands. It explores the reasons behind the current imbalance between levels of well-being and environmental quality in the Netherlands. Work is identified as being part of a society that is embedded in the biophysical environment. To continue, work is then perceived as a multi-dimensional aspect within our society. The emphasis, however, lies on the monetary value of paid work. A reconceptualization of work towards ‘sustainable work’ is thus needed where work is seen as an anthropocentric mediating process between

nature and human beings. The reproductive features of both nature and human beings are of utter importance herein where unpaid work in the form of household chores, volunteering and informal care gain greater acknowledgement as well as importance. A focus will therefore lie on the identification of the satisfaction of human needs, the ensuring of an equitable society and the respecting of our biophysical limits in relation to work. Currently, labour policies and environmental policies in the Netherlands are mutually exclusive. In order to overcome the current socio-ecological crisis, labour policies related to for example working-time reduction and division of labour on the one hand and the environment such as climate change mitigation and environmental taxes on the other, need to compliment each other in order for a sustainable society to prevail. A revaluation of work as a mere paid activity into sustainable work can then only thrive within a sustainable society where biophysical limits are respected.

### 3.5. Spain

The case study on Spain provides an overall description of the social, economic and environmental dimensions in the unsustainable organisation of work in the country. The study is divided in two sections: part 1 describes the country as it was before the economic crisis from an economic, social and ecological sustainability perspective; and part 2 studies the impacts of the crisis in society and in employment. This research concludes that the development model existing in Spain before 2008 was economically unstable, socially unequal and highly environmentally unsustainable and that the crisis and the policies applied since 2010 have substantially expanded the unsustainability of the Spanish society. Especially with regards to work, this country is clearly backwards in comparison to European standards in a number of ways and radical transformations would need to take place in order to achieve a more sustainable organisation of work.

### 3.6. Sweden

This case study discusses sustainable work in Sweden since 1990 with a focus on the implications of paid work-centred cohesion policies as well as increasing inequality for social and natural (re)productivity. Work policies in Sweden have historically been renowned for sustaining high employment rates and assuring low unemployment rates by re-educating the unemployed to find better jobs. Furthermore, they have successfully realised equality between genders as well as narrowing the income gap. All this, through a successful combination of present-oriented social rights based policies, social investments and future-oriented activating labour market policies (ALMP). Concerning the environment, Sweden was one of the first countries to implement a carbon tax and has been the biggest overachiever of the Kyoto goal. With the implementation of the generational goal in 2010, Sweden by now changed its focus from production-based emissions to consumption-based emissions. However, cutbacks in the welfare state, increasing unemployment, rising inequality and a shift in environmental policy towards voluntarism of consumers, businesses and trade partners are presented in this case study.

Reasons for these changes lie in the economically and politically motivated policies, with distinct implications for the satisfaction of needs, the maintenance of equity and protection of the environment.

### 3.7. United Kingdom

The United Kingdom case study examines how the UK economy was able to achieve reductions in both working hours per worker, and material and energy use, whilst substantially increasing economic output. It looks at changes in the institutional framework of the labour market, the relative importance of key industries, types of occupations, working arrangements, social outcomes and environmental impacts. It finds that the changes in the UK economy have involved creating a highly unequal labour market which increasingly shifts the costs of flexibility onto the poorest workers whilst outsourcing environmentally damaging production to other nations. As a consequence it fails to meet the needs of a sizeable number of individuals, society as a whole, and the environment. It cannot therefore be considered a useful model for the transition towards a truly sustainable society.

## 4. Conclusion

Work is one of the main forces structuring life's of individuals, societies, and the environment in modern societies. Surprisingly then, there has been little research into how work would need to be structured in a sustainable society, and particularly on the links between work and the environment. We find that work understood only as a paid activity is too narrow a conception. The division between human productive and reproductive work, which is associated with different attributes and levels of social recognition, generates social tensions and inequalities. In addition, focusing on work in labour markets fails to convey the embeddedness of all human activities in their natural environment. No work happens in isolation from the environment and artificially separating the two leads to the exploitation of natural ecosystems.

Creating a new vision of work is therefore a key element in the depiction of a sustainable society. We have established three broad criteria that allow us to identify patterns of sustainability or unsustainability in current societies. We argue that work needs to be understood as a mediation process between nature and society. Furthermore, to be sustainable, policies need to be guided by three essential principles: individual well-being, social equity and a preserving natural reproductivity. With regard to individual well-being, policymakers need to be concerned with work in terms of being, having, doing and interacting. Policy needs to consider that work structures individuals' lives and allows them to satisfy their needs. On the social level, policy needs to ensure the equitable distribution of access to the different forms of work, the means of production, and the positive as well as negative outcomes of work. Equity thereby can go hand-in-hand with well-designed environmental policies that ensure the maintenance of natural reproductivity by staying within the planetary boundaries.

To gain a deeper understanding of the current organization of work in western European countries we followed a case study approach. In total seven case studies were conducted, each on an individual

country, and all within the context of the framework outlined in this section. In this sense, each case study presents an opportunity to shed light on aspects and concepts of the theoretical framework outlined in this section. At the same time, each of the identified mechanisms requires additional research, both qualitative and quantitative, to further assist in informed policy decision making.

Case studies were conducted on Austria, Denmark, Greece, Netherlands, Spain, Sweden, and UK, each with a different focus as presented in the next section. All these cases are dynamic and do not just present a fixed picture of the country as it is, they are completed by historical developments and an exposition of current government policies relating to work, society and environment. Given the context of crisis that dominates the continent, all cases analyse the recent behaviour of labour markets and their effect on well-being.

Despite the uncertainties involved in the research, it reveals an overall lack of focus on non-paid work, a disregard of environmental concerns in labour market policies, a lack of concern with concrete individual needs instead of abstract disutility, and an overall increase in inequality as well as a decrease in welfare provision.

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# II. The state of sustainable work in Austria

Investigating social and ecological aspects.

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# 1. Introduction

From 2010 until 2012 Austria had the lowest unemployment rate in the EU-28, which made the Austrian labour market a role model for Europe. During this period the impacts of the economic and financial crisis led to average unemployment rates of about 10 per cent in the EU-28. Unemployment in Austria was rather constant at around 4 per cent while some countries struggled with rates around 15 or even 25 per cent. Although Austria lost its leading position, unemployment in 2014 was still low at 5.6 per cent compared to the EU-28 average of 9.8 per cent (Eurostat 2015).

From an economic perspective Austria was less severely affected by the crisis than other countries and current GDP is estimated to be around 35,500 Euro per person in 2015, making it the fifth highest in the EU-28 (WKO 2015). However, GDP decreased about -4 per cent in 2009 due to the crisis (Eurostat 2015).

The decrease in GDP had on the other hand positive effects on the environmental performance as energy consumption and GHG emissions decreased remarkably alongside production (APCC 2014). Apart from that, Austria's environmental performance is problematic: industrial production contributes the most to energy consumption and GHG emissions and accounts for 30 per cent in both areas. 78 per cent of GHG emissions were caused by fossil energy sources in 2011. Following the Kyoto Protocol, Austria should reduce GHG emissions about -13 per cent compared to 1990 until 2020. Yet in 2010 emissions were 19 per cent higher than in 1990. If imported emissions from the external trade balance are included, Kyoto goals were missed by +44 per cent (ibid.).

The numbers above highlight the relation between the production process, and therefore work, and the social and ecological sphere. Work is the major mediator between the environment, and hence natural resources, and society. As Littig & Grießler (2005; 71) phrase it, "Work in the broadest sense (paid and unpaid labour, care work) plays a central role for sustainability, since the satisfaction of needs – and thus the exchange between society and nature – involves mainly some sort of work. It is also the foremost organisational and structural principle of society, which is also subject to historical transformation processes". However, labour market policies are almost exclusively focused on achieving full employment to facilitate economic growth (BMASK 2012) while the ecological sphere is hardly considered.

This report is part of a series of country case studies that build on a common framework to develop a theoretical concept of sustainable work. As in the framework, building on concepts from Biesecker and Hofmeister (2010) as well as Max-Neef (1991), sustainable work is defined as a mediating process between the environment and society that sustains natural and social (re)productivity and promotes equal conditions for people to satisfy their needs[2].

[2] The general Framework provides a detailed description on the underlying concepts of (re)productivity and needs.

Based on the definition of sustainable work, this report elaborates on how work and labour market policies address sustainability and equality and if there are indications of sustainable work in Austria. In doing so, the focus lies on the ability of the Austrian labour market to sustain social (re)productivity, especially regarding to gender equality and the family/work balance. In addition the report elaborates on links between labour market and environmental policies. This is done in a descriptive way, before the findings are linked back to the theoretical framework and the definition of sustainable work.

The report starts with a description of developments in the Austrian labour market in section 2. Section 3 describes the problems of gender inequality in the labour market, in particular regarding part time work and child care responsibilities. A related topic is the rise of flexible work time arrangements described in section 4. Section 5 identifies links between labour market and environmental policies. Finally section 6 seeks to link back the empirical findings from the descriptive part to the theoretical definition of sustainable work and draws conclusions about how sustainable the Austrian labour market is.

## 2. Developments in the Austrian labour market

This chapter briefly elaborates developments in the Austrian economy during the last few decades, which had far-reaching consequences for employment and the labour market. The Austrian economy has undergone vast changes as a result of international developments: the globalization of markets and the opening of the economy to free trade. Austria's entry into the EU allowed access to the European Single Market. In conjunction with this liberalization process major reductions to welfare expenditure were introduced. Through a slow but steady transformation process several austerity packages were imposed; the first one in 1987 while the most recent major welfare cuts took place in 2003 (Hermann & Flecker 2015). In addition, unemployment benefits have been reduced, not only because of budget restrictions, but also as consequence of emerging active labour market policies. The economic crisis of 2008 had negative effects on the labour market and unemployment, although Austria was not hit as hard as other European countries. Finally the rising share of part-time employment is discussed. This trend can also be observed in other European countries, but the particularly high gender bias in Austria is distinctive.

### 2.1. EU membership and Internationalisation of markets

Austria's economic system in the post-war decades was known as Austro-Keynesianism and was characterized by a high share of public ownership of industry including banks, as well as extensive market regulation to shield businesses from international competition. Since the end of this period in the mid-1980s the economic system has undergone vast changes. The restructuring that took place over the last three decades was mainly intended to attract foreign capital and to make domestic capital more competitive through the liberalization of trade and capital flows and the reduction of corporate taxes (Hermann & Flecker 2015). Austria's economy has always been export orientated and admission to the EU in the mid-1990s has led to an even greater European and international orientation. Domestic capital

profited enormously from the EU´s eastward enlargement and especially from the introduction of the Euro, mainly based on gains in trade and services, including banking and retail activities (ibid.). In 2010 the Austrian Institute for Economic Research (Breuss 2010) found that the economic and employment effects of the EU membership and especially the eastward enlargement were rather positive. The annual effect on Austria's GDP has been estimated to be between +0.5 to +1.0 per cent annually, although if taking into account all European integration measures since 1989 the effect has been estimated at +0.9 per cent annually. The market liberalization led to temporary job losses in certain sectors, such as the electronics and chemical industries (Hermann & Flecker 2015) but the long term effect of the EU membership on employment is seen as positive and accounts for +20,000 additional jobs annually (Breuss 2010).

## 2.2. Active labour market policies

Since the late 1980s, the EU and the OECD have emphasised a new orientation in labour market policies and a shift from passive to active services. The underlying assumption has been that passively received unemployment benefits create disincentives to work. In Austria major policy transformations took place in the mid-1990s due to the accession to the EU and the adoption of the EU employment strategy as well as the restructuring of the labour market administration with the founding of the AMS (BMASK 2012).

Wroblewski (2004) distinguishes between the following types of measures in active labour policy: orientation measures, integration measures (job-search assistance), qualification measures, labour foundations, and subsidised employment in the profit and non-profit sector. The focus in Austria lies on qualification measures, which account for almost two-thirds of the AMS budget for active labour market policies (2.4 billion Euros in 2011). Measured in relation to the unemployment rate, Austria has one of the highest budgets in the OECD (BMASK 2012). Yet supportive measures are only one side of activating policies. At the same time disciplinary measures like restrictions in access to benefits are installed to provide further incentives for people to resume work. Stricter regulations are also installed to combat social security fraud. Therefore unemployment benefits were reduced and access impeded (Atzmüller 2009). Thus, unemployment benefits are no longer seen as a social right, but rather as a burden for the state budget and thus more conditions are required in order to receive benefits.

Although expenditures are high, a study by Schweighofer (2013) concludes that even though certain measures of active labour market policies promote employment for certain groups, they have limited effects on total employment. Some authors also express concerns about the implications of active labour market policies for equality. As unemployment rates rise, there is a tendency for only shorter and less intense measures to be provided to integrate as many people as possible. Only people with better skills and higher chances for reintegration into the labour market are provided with more intense and long-term support measures, leading to adverse selection (Wroblewski 2004). For instance, training institutions are on a tight budget and have to improve employment placement rates so that these policies

force to select their candidates more carefully. What follows is the creation of social problems by institutions of the welfare state (Dimmel 2000). In particular, the long-term unemployed are disadvantaged by these active labour market policies.

AMS application trainings and other job trainings have been heavily criticized for being meaningless and because they were offered to a poorly selected target group (derstandard.at 2014). Hence, as the employment effect is very limited but restrictions on benefits expose unemployed people to social risks and many unemployed do not get access to meaningful programs, active labour market policies need to be reconsidered to improve their accuracy. Nevertheless, developments in Austrian politics point in the opposite direction, as preconditions of reasonable work, which unemployed people are obliged to take up, worsen. For potential jobs people have to be available for longer working hours and willing to commute longer distances to their workplace (Atzmüller 2009), which implies that the unemployed basically have to take any job offered.

## 2.3. The economic crisis of 2008

In 2008 GDP grew by 2 per cent and unemployment remained below the 2007 level but the economic crisis affected the labour market in the following year. In 2009 unemployment increased by 1.5 per cent while total economic production and GDP declined by almost 4 per cent (Hermann 2011). However, compared to most European countries, Austria´s economy was still relatively stable. With an overall unemployment rate of 4.8 per cent in 2009 employment in Austria was less affected than most other European countries although 41,000 jobs with normal working hours were lost, which accounts for 1.6% of all full time jobs (Knittler & Stadler 2012).

The Austrian social partnership played an important role in mitigating the crisis. Representatives of employers and employees implemented a reform of existing short-time work schemes to create incentives for employers to retain employees (Hermann 2011). It became the most popular measure to counter job loss, together with reductions in overtime and leave entitlements. The reform extended the maximum short-time period, first to 18 and later on to 24 months. Also the proportion of short-time work was extended to working hours between 10 and 90 per cent of the normal working time. Employees received an income subsidy from the Austrian Labour Market Service (AMS) depending on the level of unemployment benefit they would have been entitled to (Mandl 2011). In April 2009 at the height of the labour market crisis, more than 37,000 workers were working short time. Although the number of jobs actually preserved is disputed, short-time work helped companies to adjust to the downturn of production by substantially reducing costs for labour. Hence the requirement for restructuring measures was removed, which affected employees positively.

As a consequence of the increase in short-time work, the reduction of overtime, and a shift from full-time to part-time employment, working hours fell significantly during the crisis (Hermann 2011). However, the increase in part-time employment from 2008 to 2009 was not only caused by the crisis, it was also the continuation of a long-term trend, which is framed in the next section.

## 2.4. The rise of part-time employment

Over the last few decades, the form of employment has increasingly shifted away from the traditional 40-hour workweek[3]. On one hand 10 per cent of employees (14.4 per cent of men, 5.6 per cent of women) are working more than 10 hours in a day several days a week. According to Statistik Austria (2015a) full-time employees work 43 hours per week on average in 2014, which is the second highest number within the EU-28. On the other hand the number of people working in part-time jobs has been consistently increasing. Increasing shares of part-time work can be observed in many European countries. However, in 2014 Austria had the second largest share of part-time employment in the EU (27.9 per cent), following the Netherlands (50.6 per cent), whereas the EU-28 average was 20.5 per cent (ibid.). The total number of annual working hours was relatively constant over the last decade, slightly increasing until the 2008 peak and followed by a smooth annual decrease since then (Statistik Austria 2015b). However, average annual hours actually worked per worker are constantly decreasing (2000: 1 842 hours; 2008: 1771 hours, 2013: 1623) (OECD.Stat 2015), mainly due to the increasing share of part-time jobs.

The crisis contributed to this structural change. In the period from 2008 to 2009, 56,600 additional part-time jobs have been created (men +11,300, women +43,300), whereas 57,400 full-time jobs vanished. The recovery of the labour market situation in 2010 and even more so in 2011 was as well mostly driven by an increase of part-time work. Full-time work only increased at a lower rate (Knittler & Stadler 2012). Altogether from 2008 till 2013 standard employment decreased by 61,000 jobs (-2.4 per cent), while the overall increase of employment by 92,000 jobs (2.6 per cent) was mostly due to female part-time employment (+94,000). During the same period, the share of part-time employment for men increased by 47 per cent, however starting from a very low level this increase only accounts for 30,000 jobs. Reasons and implications of the gender gap in the Austrian labour market are elaborated in the next section.

# 3. Gender equality and the labour market

As the previous section has shown, changes in the structure of Austria´s labour market follow a long-term trend with a decrease of normal employment and an increasing share of part-time employment. The dominant form of atypical employment in Austria is a female working part-time, even though other forms of atypical employment are also widespread among young employees at the beginning of their

[3] According to the Statistik Austria micro census, normal working hours are defined as 36 or more hours weekly. Atypical employment includes all forms of employment, which are not subject to a permanent contract or do not have normal working hours: atypical employment includes: part-time or marginal employment, fixed-term contracts, temporary and provisional forms of employment and freelance contracts). Part-time employment is any amount of working hours between 1 and 36 hours. Marginal employment is a subcategory of part-time employment defined by a certain monthly income threshold (2015: EUR 405.98). In terms of working hours forms of formal employment up to 12 hours are considered to be marginal employment (Knittler & Stadler 2012).

career and among older employees at the end of their career (Knittler & Stadler 2012). While 10.9 per cent of men work in part-time jobs (EU-28 average 9.9 per cent), the part-time share in female employment is remarkably high at 46.9 per cent (EU-28 average 32.9 per cent) (ibid.). The total employment rate of women has increased over the last few decades, but is still far below the rates of the Nordic countries, especially in terms of full-time equivalents (Mairhuber 2010).

For almost 40% of those part-time female employees, childcare is the reason for working part-time (Knittler 2014). Becoming a parent therefore deeply affects working time preferences of women, but hardly those of men. Also parents across all educational groups and with various combinations of education levels opted more and more frequently for a "[…] modernized male breadwinner model in which women work part-time" (Berghammer 2014; 6).

The traditional understanding of gender roles has changed a lot over the last decades and yet these roles still determine social arrangements in Austria. Because of their role in childcare, women's integration in the labour market is still impeded, even though their labour market participation has risen over time. Hence, most women with children work only part-time and the division of paid labour and unpaid work between genders is still based on the male breadwinner model (Statistik Austria 2011; Knittler 2014). This has far-reaching social implications: "The distribution of paid and unpaid work in a couple also influences other areas, and particularly gender equality between spouses and family members' well-being and satisfaction" (Berghammer 2014; 2).

The EU-wide labour force survey ad-hoc module on "reconciliation of work and family" in 2010 queried respondents on restrictions to their workforce participation due to caring responsibilities and parenthood (Statistik Austria 2011). The results for Austria provide interesting numbers on female labour market participation, which stand out due to the unequal division of care work. In general the age of the youngest child has proven to be crucial for female work participation, but it does not affect men. The employment rate for parents in the age group of 15 to 64 with children under 15 is 64.7 per cent for females, but 93.1 per cent for males. An overwhelming majority of 87.3 per cent of women with children under the age of 8 stopped working temporarily to take care of the youngest child, while only 6.4 per cent of men did the same (ibid.). Women still predominantly use parental leave, even though the proportion of fathers making use of it has increased, although it started from a very low level. Given the high gender pay gap and persistent cultural norms in Austria, an increase in the share of fathers taking parental leave is not very likely (Berghammer 2014). Hence, for a majority of women the decision to have children still means a career break, as 88.0 per cent were on parental leave or not working when they had children under 1, and still 77.3 per cent stayed at home when their children were between 1 and 2 years old. Female labour market participation rises as the youngest child grows older, but the overall part-time rate for women with children under 15 is 43.4 per cent and even 55.1 per cent for mothers of children between 6 and 10 and often also reduced working time after the break (Statistik Austria 2011).

Part-time work, and the higher frequency and duration of job breaks for women due to childcare responsibilities, affect women's income in numerous ways. The first and most direct effect on income is obviously through the lower amount of paid working hours but also hourly wages are typically lower for part-timers (Knittler 2014). Working part-time furthermore affects promotion prospects and therefore hinders the chance for higher wages. Upon retirement it also affects the pension payment, even more so since the introduction of the personal retirement accounts (the so called Pensionskonto) where the level of contribution payments through the whole working life largely determine the amount paid[4].

To promote gender equality in labour markets, two related issues have to be addressed. Firstly, the shortage and the opening hours of childcare facilities are often seen as a problem by working parents. The ad-hoc module on "reconciliation of work and family" (Statistik Austria 2011) revealed a shortage of at least 87,100 childcare places for children under 15. Half of this shortage related to the unavailability of places at specific times of the day and during holidays. Demand was highest for children under the age of three, for which there was a shortage of 43,100 places. There is only very slow progress towards better availability of childcare facilities for children under three in Austria and thus the child-to-staff ratios for infants are rated as poorly by the OECD (Arbeiterkammer Oberösterreich 2014).

Secondly, further family friendly flexibilisation of working-time arrangements is important to reconcile work and family. Politicians and government offices repeatedly emphasize how important it is to push this topic forward (WKO 2013) and labour market policies in Austria are increasingly displaced towards more flexibility. Employees as well as employers are supposed to benefit from flexible arrangements. The following section provides an overview on related regulations and the type of flexibilisation taking place.

## 4. Flexibilisation

Working time and its arrangement is crucial for people's job satisfaction and affects the reconciliation of work and family life as well. Employer and employee demand for greater flexibility in working-time have encouraged new working-time practices over recent decades. In Austria legislative measures were taken to improve the balance between family and work, e.g. more flexible parental leave until the child starts school, and the right to part-time work for parents (WKO 2013). Employers demand for more flexibility reflects the increased desire to counter economic fluctuations and business cycles with flexible forms of employment to keep costs low. The power relations between employees and employers in a country thereby shape the arrangements for flexibility measures (Berg et al. 2014).

### 4.1. Labour market configurations and flexibility

Policies for flexible work time arrangements differ substantially across countries, reflecting diverse labour market institutions and power relations between labour, management and the state. Therefore

[4] Note that there is a compensation payment for child rearing periods in Austria, but pension entitlement is still lower due to the lower earnings prospects after reentering the labour market.

Berg et al. (2014) distinguish between the unilateral, negotiated, and mandated configurations to establish working-time practices. Austria can be classified as a country with negotiated configurations. In this configuration employees have a voice in working time decisions, which results in a high level of options and employee control over their work time. Social partners are equally strong at multiple levels in the economy and negotiations can be decentralized to the company level to meet the needs of employees and employers. Compromises on that level are more likely to meet the needs of individuals within business constrains. Examples are workers ability to adjust working hours over short and long periods, to choose different work schedule options, take parental and training leaves (ibid.).

The social partnership still plays a major role in Austria in negotiating wages and work time arrangements. Due to a declining rate of trade union coverage, employees might have a greater influence to enforce their interests. Note that mandating working-time practices are limited when the unions and other worker representatives are weak. However, union density rate, which is the net union membership as a proportion of wage and salary earners in employment, constantly decreases. During the 1960s and 1970s union density rate was roughly 60 per cent and more, it decreased to less than 50 per cent during the 1980s and to even less than 40 per cent during the 1990s. In 2011 union density rate reached an all-time low at 27.8 per cent (ICTWSS 2015). Therefore the following chapter assesses the development of work time flexibility in Austria and tries to identify if flexible arrangements are beneficial for employees and supports the reconciliation of work and family.

## 4.2. Working time flexibility in Austria

The Austrian act on working time (RIS 2015) is based on a basic model of rather fixed working hours. The normal working week is 40 hours and the normal workday is 8 hours, unless settled otherwise via collective agreements. However, working time accounts allow to average working hours over different periods and therefore creates a variation in daily or weekly working hours. The period for the averaging has to be mutually agreed on by the employer and the respective employee in the form of a company or an individual agreement. For example, adaptable annual working hours models can be agreed on, to counter business cycles and also meet the needs of employees (Böhm et al. 2010). Flexitime models based on company agreements have had a longer history but are not widespread, except in white-collar jobs. Recent developments incrementally allow for more flexibilisation. In 2004 the parental part-time scheme was introduced, which gives parents the right to opt for shortening their working hours safeguarded by protection against dismissal (Arbeiterkammer 2015).

The 2008 amendment of the Austrian Act on Working Time and Rest Periods introduced further options to allow for more flexibility. Daily normal working hours can now be expanded to 10 hours via collective agreement, when maintaining constant weekly hours. Also a 12 hours workday, respectively a 60 hours workweek was made admissible for 24 week annually, instead of the former 12 weeks. Weekly working hours can also be shifted to four workdays if an agreement on the company level is made. In 2012 the amendment of the collective agreement for the graphic industry (GPA-djp 2012) implemented a so

called bandwidth model which allows the employer to average the normal working time over a period of 17 weeks, with a minimum of 29 hours and a maximum of 45 hours per week. Hence, the abandonment of fixed work hours narrows the entitlement of employees to an overtime premium substantially. For part-timers on the other hand an overtime bonus was introduced to support the reconcilability of work and family (Böhm et al. 2010; WKO 2013).

According to Statistik Austria (2011), the majority of employees of both genders had daily working hours with a fixed beginning and end (61.5 per cent) whereas only 19.8 per cent were working flexitime. To promote the reconcilability of work and family 67.6 per cent could shift the beginning or end of their working day by a minimum of one hour for family reasons but for 32.3 per cent that was almost impossible or not possible at all. Nevertheless 75.7 per cent said they could take a full day off for family reasons in addition to their annual leave. Note that women are not entitled to family friendly work time arrangements more often than men even though they are responsible for childcare activities more often.

To conclude, despite the important role of the social partnership, implications of work time flexibilisation in Austria are mixed. Like in most developed countries increasing competition and high unemployment rates exert pressure on employees. Working time becomes highly dependent on the market situation and customer requirements. In addition, companies are operating with the minimum number of personnel. Flexibility measures are therefore often used by companies to react to the economic situation instead of a higher degree of self-determined working hours (Haipeter 2006). Arrangements also highly depend on works councils, since they are increasingly negotiated on the company level. The arrangements therefore depend on the power structure and the strength of the works council within the company. On the upside, employer representatives are encouraging companies to offer family friendly flexible work time arrangements. They argue, that financial benefits in the long run outweigh the costs of such efforts (WKO 2013). But regarding the number of people who can arrange work time according to their needs, there is still a long way to go.

### 4.3. Flexibility and job satisfaction

In light of the structural changes in the labour market and the outstanding gender gap, the question that arises is, how working time arrangements in Austria affect people's job satisfaction. On the European level a regression analysis by Pichler and Wallace (2009) concludes that job characteristics have a higher influence on job satisfaction than the form of employment. The quality of employment is a crucial factor across different countries as well, since job satisfaction is the highest in labour markets that offer a great number of high quality jobs.

According to findings from the Austrian Working Atmosphere Index and the European Working Conditions Survey (Eichmann & Saupe 2014; Eurofound 2012), 91 per cent of Austrians are satisfied or highly satisfied with their work. The majority of employees is particularly satisfied with their work-life-balance and working hours (87 per cent). Lower satisfaction is shown for the level of income (50 per cent) and career prospects (26 per cent). Overall there is a slight bias for females to be more satisfied

with their job regardless of the job characteristics but they are less satisfied with their career prospects (man 30 per cent, woman 22 per cent).

Job satisfaction highly depends on the position held, the occupational activity and socio-economic factors. For instance, executive staff and high-skilled non-manual occupational groups are much more satisfied than the ordinary staff. Looking at specific groups of employees, job satisfaction is particularly high for young workers, highly skilled people and people working office jobs without consumer contact or in banks. For employees aged over 50, low skilled people as well as people working in the construction-, transport-, and cleaning sector, job satisfaction is very low. The lowest job satisfaction can be found among temporary workers (Eichmann & Saupe 2014).

Different patterns can be observed considering work-life balance. In Austria, part-time employees who work less than 35 hours enjoy a high overall job satisfaction (94 per cent; 89 per cent for full time workers) and they are particularly satisfied with their work-life balance (94 per cent; 84 per cent for full time workers). Approximately 37% of employees in Austria would prefer different hour arrangements. While around 30% want to work less, only around 7% would like to work more. In general, average job satisfaction levels are lower among all working hour categories (under-, full- and over employed) for people that report a work hour mismatch. It is not the number of working hours that matter, but whether those hours worked meet the workers' preferences (ibid.).

For Austria, findings from a regression analysis of factors influencing job satisfaction by Eichmann and Saupe (2014) suggest that flexible work time arrangements, working conditions that allow for sustaining good health as well as supportive superiors have the most influence on job satisfaction. Haas et al. (2006) also observed the importance of flexible work time arrangements for the job satisfaction of women. The cross-national study concluded that caring responsibilities do not influence job satisfaction for female part-timers per se. Hence, the observed gender difference in job satisfaction cannot be explained with regard to the family situation. More important seems to be the lack of formal care institutions and long hours work traditions in some countries, which undermine the reconciling of work and family life.

A regression analysis of the European Value Study 2008 (Friesl et al. 2009) points out the main factors influencing Austrians´ life satisfaction, which is closely correlated with job satisfaction for working people. The results demonstrate that a good state of health has the strongest influence, followed by the age and income. No significant differences have been found for genders and also the form of occupation. Neither was life satisfaction for part-timers, students and pensioners found to be particularly different from full-time employees, nor did the level of education show significant effects.

Overall the importance of work for people is diminishing. According to Friesl et al. (2009), only 55 per cent of working people consider work as very important and 74 per cent agree that the main purpose of work is to guarantee a stabile income.

## 5. Linking environmental and labour market policies

Labour market policies focus on full employment to promote economic growth. Environmental aspects are not considered to be subject to labour market policies, except a few recent examples. The green economy is supposed to achieve full employment, economic growth, meet ecological goals and at the same time promote equality. Therefore the EU and the OECD among others promote it. Ecological economists are sceptic about this growth-centered approach. They call for a reduction of working time to lower consumption and therefore environmental impacts. Both approaches as well as a possible ecological tax reform are discussed in this section.

### 5.1. Working time reduction in Austria

Many authors in the ecological economics literature have argued that a reduction of consumption in high-income countries and especially among high-income groups can ease the human burden on the environment (e.g. Pullinger 2014; Stagl 2014; Jackson & Victor 2011; Schor 2005). With reduced work time and levels of consumption, the global North could opt for a new economic and social vision based on quality of life, rather than quantity of stuff. Under the right conditions a reduction in paid working hours could address environmental problems and social issues like inequality between genders and different income groups at the same time. Reduced levels of income are counterbalanced by a time surplus, which could help to shift from resource intense consumption to time-consuming activities and increase wellbeing and the gender bias in unpaid (re)productive work could be dismantled. The key variable is likely to be the total number of hours worked per capita, a measure that includes both average hours per job and per person and the employment-to-population ratio (Schor 2005).

As previously mentioned average annual hours worked per worker are constantly decreasing in Austria, mainly due to the increasing share of part-time jobs. Recently Austrian labour unions show increasing attempts to promote a reduction of normal working hours. According to recent media reports, the proposals include a 38.5 hour work week and one additional week of holidays (Salzburger Nachrichten 2015). However, the objective of the unions is to fight unemployment while environmental aspects are not considered at all. Therefore the claim is to reduce working time with full wage compensation (Profil 2015).

Another measure of working time reduction entered into force in 2013: the leisure option (Freizeitoption) in the collective agreement for the electrics and electronics industry. The leisure option was introduced in the collective agreement for the electrics and electronics industry in 2013. Provided a company agreement is made employees could individually choose between a pay increase of 3% and additional leisure time of 5 hours per week (with slight variations for different employment groups). Leisure time can be consumed hourly, by the day, on a weekly or monthly basis, or accumulated in order to take some time off.

Nocker and Gerold (2015) conducted a mixed methods study to examine prohibiting and supporting factors determining employee's preferences to reduce working time. The findings of this project are presented below.

The first interesting finding is that employees with higher educational levels opt for the leisure time more often. The intrinsic value of family time is the explanation for their choice. Also the educational level is positively correlated with income, giving those employees a greater freedom of choice. Employees with lower levels of income tended to take a pay increase. In the qualitative analysis of the project, interview partners with lower income stated that for them the additional money is more important, for example because they want to offer their families certain material goods or they value the additional money more than leisure time for themselves.

The analysis of household and family characteristic reveals, "[…] that the number of children, the age of the youngest child and the number of earners in the household strongly shapes women's preference for reduced work time, but hardly those of men" (Nocker and Gerold 2015; 106). As already stressed in the section before, the male breadwinner system is still dominant in Austria, fostered by restrictions in the labour market. In this light Nocker and Gerold (2015; 106) see "[…] a great demand for national policies aiming at establishing equal possibilities for men and women to participate in employment as well as in non- paid care and housework. These policies should on the one hand encourage and enable men to take time off in times of high demand for care and housework. On the other hand, they should foster generating good quality part- and full-time jobs for women. Such a policy mix might facilitate the development to equal possibilities of participation in employment".

The results further imply that "[…] the leisure option is not perceived as a tool to reduce weekly work hours. It is rather the case that people who opted for the leisure option either take a whole day off, or they consume the time accumulated as additional holidays. Hence, the leisure option is perceived as a prolonged holiday or as an additional long weekend, resulting in shorter monthly or yearly working hours. Therefore, the leisure option is not perceived and not used for reducing normal weekly work hours" (Nocker and Gerold 2015; 107). That is mainly due to different kinds of employment contracts restricting the way the leisure option can be used.

Regarding the ecological effects of working time reductions, it is crucial how people spend their additional leisure time, for example if they engage in more resource intensive consumption patterns or spend more quality time with friends and family. Hence, the findings from Nocker and Gerold (2015) would imply that the temporal allocation of working time reduction in combination with the level of income has to be considered. Employees with higher levels of education decide for the leisure option more often and the additional leisure time is perceived as rather long holidays instead of shortening weekly working hours, therefore adverse effects on the environment are likely. For this high educational group, presumably financial resources are sufficient and at the same time leisure time is prolonged to allow for additional resource intense consumption like air travel.

## 5.2. Green Jobs: the silver bullet?

A vast number of national and international institutions and governments promote the greening of the economy as the silver bullet to reach environmental goals, a more social inclusive society and on the same time provide high rates of economic growth (e.g. OECD 2013). The focus of this section is on the employment effect of green jobs in Austria and how they contribute to a more sustainable labour market.

The idea of the green economy is to create high-quality green jobs through innovations in resource and energy efficiency while at the same time stimulate economic growth. Hence, the EU "Agenda 2020" aims to create three million additional green jobs to address ecological, economic and employment challenges (Littig 2012). A large number of economists also focus on scientific progress and market competition and therefore on green growth and the potential of green technologies to substantially reduce the use of natural resources (Schor 2005).

On the other hand many authors are very sceptical about the green economy and its potential to achieve the required levels of reduction of natural resource consumption (e.g. Stagl 2014; Brand 2012; Jackson & Victor 2011). Rates of innovation and diffusion of green technologies have been experienced to be to slow and the high related costs are problematic especially for poor countries. The green economies furthermore aims at high rates of economic growth for rich countries while poor countries are supposed to catch up due to even higher growth rates. Therefore it is not likely to achieve a reduction of resource consumption and environmental impacts. Rebound effects are another serious problem if growth in affluence undermines efficiency gains through green technologies (Schor 2005).

The EUROSTAT-Concept of the Environmental Goods and Services Sector (EGSS) provides the common European framework to classify employment as green jobs. The EGSS includes Producers of goods, services and technologies in different sectors if they avoid, reduce, tread or monitor environmental degradation or the depletion of resources (Wegscheider-Pichler 2009).

The total number of green jobs in Austria in 2013 was 185.122, which accounts for 5 per cent of the workforce (Statistik Austria 2015c). Revenue from environmental goods and services (EGS) reached more than EUR 36 billion in 2013 which corresponds to 11.3 per cent of Austria´s GDP (ebid.). According to the OECD (2013) environmental goods and services are more important for Austria's economy and the labour market than traditionally strong sectors like tourism and construction, due to government policies of subsidizing green investments.

Green jobs are commonly thought of as employment in the high tech sector, which is not the case. The sectors with the greatest numbers of green jobs are agriculture and forestry (approximately 20 per cent), construction (approximately 17 per cent), sewerage, waste management and remediation activities (approximately 12.0 – 13.5 per cent) and commerce (approximately 11 per cent). Therefore the environmental services sector account for 40 per cent and environmental Goods for 39 per cent of green jobs. Thus, in terms of employment, environmental technologies play a relatively minor role.

Technicians in the energy sector, which requires technical skills in the environmental area, might fit the idealized image of a green job, but those green jobs only account for 6 per cent (Leitner et al. 2012).

Regarding the quality of employment, green jobs are also quite problematic: in agriculture, construction and waste management low quality employment is very common, work is often physically exhausting and the risk of accidents is high. Wages in these sectors are typically below average and different forms of atypical employment are common (ibid.). Nevertheless the OECD (2013; 71) recommends to coordinate "[…] environmental and labour market policies so that new entrants to the labour market, and workers leaving declining industries, have the skills needed to work in a greening economy".

Regarding the creation of new jobs, Leitner et al. (2012) concludes that although the number of green jobs is rising, the net effect remains unclear. Presumably most green jobs are normal jobs that are relabeled as a result of intersectoral redeployment. The concept of green jobs therefore is not sufficient to contribute to more sustainable labour markets. Neither do green jobs reduce unemployment or provide better quality employment, nor do they substantially improve the ecologic side while the green economy still aims for high economic growth rates.

### 5.3. In search of Links between labour market and environmental policies

So far, green jobs seem to be the only approach in Austria to combine labour market and environmental policies although this concept is not sufficient from a sustainable work perspective. The rare attempts of working time reduction are not intended to address ecological aspects since the goal is to fight unemployment and promote growth. Another broad measure that is promoted from the OECD as well from the WIFO is a socio-ecological tax reform (Köppl & Schratzenstaller 2015; OECD 2013).

"The essence of such reform should be a relief of the high tax burden on labour, in particular for small and medium-size earnings, to be offset by hikes in environmental and certain property-based taxes, within the framework of a comprehensive socio-ecological reform design, supplemented by the abolition of tax exemptions notably in income tax and VAT" (Köppl & Schratzenstaller 2015; 72). Compared to other EU and OECD countries individual income taxes and social security contributions are high in Austria, and also revenues from environmentally related taxes are above average due to a steady increase over the last decades (OECD 2013). The Statistik Austria Report on potentially environmentally damaging subsidies (Baud 2009) concludes that existing environmental taxes show certain aspects of an ecological tax system, but are not sufficient. Especially the structure of government grants and subsidies has to be revised in relation to their environmental impact. In addition, environmentally damaging subsidies should be abolished completely and the cost of environmental damages imposed on polluters. This can be part of a broad socio-ecological tax reform, as the OECD (2013) recommends. The reform should furthermore provide a consistent carbon price signal across the economy, establish an effective carbon tax on fuel used in the sectors that are not covered by the EU Emissions Trading System and ensure that other, non-carbon-related externalities are adequately priced. While Austria still disburses a commuter allowance, a specific recommendation relates to restructuring

vehicle taxes so that they reflect the environmental cost of vehicle use. The raise of environmentally related taxes should be accompanied by the reduction of the tax burden on labour to compensate for regressive distributional impacts (ibid.).

While a shift of the tax burden from labour to environmental taxes is likely to create positive incentives for employment, similar ecological concerns arise as for the green economy. Again the focus is on sustaining economic growth. As Antal (2014) points out, economic growth is strongly correlated with environmental impacts on a global level while negative growth on the other hand is correlated with increasing rates of unemployment. To address environmental and employment goals policies are needed that are not dependent on growth. The proposed socio-ecological tax reform is designed to promote growth and it also depends on growth. A far-reaching reorientation of economic goals is therefore not likely to be achieved.

## 6. Conclusion

The current situation and political focus in Austria is not facilitating sustainable work. Links between labour market and environmental policies are rare in Austria and implications of current labour market policies on the social sphere show room for improvement as well, especially in terms of equal (gender) opportunities. Unemployment is still relatively low, although slightly increasing, but active labour market policies are only beneficial for certain groups, especially higher skilled people, whereas unskilled or long-term unemployed people do not get sufficient support.

Despite a decrease in annual working hours, current developments show an enormous gender bias in the division of paid and unpaid work, due to conservative cultural norms and monetary incentives. Political attempts to support gender equality are neither sufficient nor successful as statistics indicate. The reconciliation of family and work is not only a major issue for equal opportunities to satisfy individual needs, it is also crucial for the social (re) productive process. In this perspective, flexible working time arrangements are important but not sufficient. Many Authors have therefore emphasised the importance of a new definition of work, which includes unpaid (re)productive work and ensure an equal division of the latter between the genders[5].

The major goal of Austrian policies still is to promote economic growth, despite attempts by the European Commission to develop indicators that are more inclusive of environmental and social aspects of progress (European Commission 2015). This growth centered politics are the core problem that hinders a new approach to secure and sustain the natural (re)productive system – and also the social (re)productive system. For the same reason, green jobs and the proposed eco-social tax reform are also missing this fundamental requirement. Internalising costs of environmental damages and increase energy and material efficiency are rather preferable but not sufficient.

[5] Littig & Spitzer (2011) provide an extensive overview on such concepts.

As van den Bergh (2011) argues, neither economic growth nor explicit degrowth politics are likely to solve social and environmental problems, as the latter is not likely to be taken serious by policy makers and mainstream economists. Instead he suggests focusing on achieving environmental goals to stay within planetary boundaries while ignoring implications on GDP. “The most important is to realize an effective international climate agreement at short notice. Only this can stimulate countries to implement sufficiently effective national environmental policies which encourage shifts away from dirty production and consumption through different choices by consumers and producers, and by technological change” (van den Bergh 2011; 889). The focus on environmental policies needs to be complemented by other policies and institutional changes. This implies to “encourage people to work shorter hours; regulate commercial advertisement—notably of status goods; tax status goods with serious environmental repercussions; undertake communication and information provision to motivate changes in preferences, attitudes and voluntary action; stimulate economists, politicians and the public media to ignore GDP; and install technology-specific policies (like research subsidies)” (ibid.). Rather high growth rates are needed to fuel the current economic system and the labour market, but for various reasons low-growth rates are most likely to persist, due to a deteriorating balance of trade, increasing resource prices, consumer restraint of households and less immigration (Stocker et al. 2014). Hence, despite political efforts, high pre-crisis growth can most probably not be achieved.

In a nutshell, to sustain social and environmental (re)productivity in Austria while promoting equal opportunities to satisfy individual needs, two profound structural modifications are required: (1) a redefinition of work that includes unpaid (re)productive work, and (2) a shift away from economic growth as the main political priority towards ecological goals instead. To achieve sustainable progress in Europe, structural changes are needed on the EU level. The global dimension of ecological issues requires international coordinated efforts as well.

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# III. Denmark – a role model for environmental and labour policy?

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## 1. Introduction

Despite being relatively small, Denmark is one of the richest nations in the world in terms of GDP per capita, ranking even higher in terms of Human Development (HDI; 10th best country in 2013) (UNDP 2014). The country's GDP has been increasing at about 2% per year before the start of the economic crisis in 2007/2008, with unemployment being one of the lowest in the EU. Denmark is frequently mentioned as role model for both environmental policies – especially in terms of climate change mitigation –, as well as labour market performance and structure. Both areas are evidently central to the concept of sustainable work, making Denmark a highly interesting case.

Under the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), Denmark has managed to fulfil its ambitious targets for the reduction of greenhouse gas (GHG) emissions (European Environment Agency 2014). As this happened while gross domestic product (GDP) kept increasing, the country has been cited as one of only a few nations that managed to reach "absolute decoupling", breaking the link between environmental impacts and economic prosperity (Brinkley 2014). Even beyond international agreements, Denmark has set itself ambitious goals of emission reductions and is well on track for reaching them.

At the same time, Denmark has had an outstanding performance concerning labour market developments up until recently, with high labour market mobility next to strong employment security. Danes work less (in hours/year) than most other Europeans, earn higher wages (based on higher productivity than most of the countries studied), are among the happiest people in Europe in general and are the happiest with their current job in particular[7] (Eurofound 2012). In fact, the Danish labour market model, "flexicurity", was so successful that the European Union took it up as a recommendation for other member countries.

As these two areas seem central to Danish policymaking, does this mean that the country is a good example for sustainable work? The paper at hand aims at answering this very question by means of a detailed case study, looking into developments and policies in both areas. The first part focuses on Danish GHG reduction strategies and developments as an example for environmental policy. Whether and how Denmark has decoupled emissions from economic growth are the guiding questions for this section. The second part of the case study has labour market policies and the flexicurity system as its central topic. After a general description that focus will be on reforms of the past 15 years and how these relate to the theoretical framework of "sustainable work" that the case study is embedded in. In the final conclusion these two separate areas are bridged in the light of the framework, concluding that Denmark, despite being a showcase in many areas, has not embraced sustainable work to a sufficient degree.

## 2. Part 1: Denmark as a role model for Green Growth and decoupling

As mentioned above, Denmark is frequently considered to be a role model for the reduction of CO2 emissions. It has set itself very ambitious targets both under the Kyoto protocol as well as internally.

[7] For detailed graphs and data on Denmark as well as comparisons to other countries, please refer to the appendix.

Since 2007 Denmark has a target of being "independent of fossil fuels" by 2050, later specified to 100% of energy coming from renewables (Danish Ministry of Climate Energy and Building 2012). Additionally, the government from 2011-2015 has set intermediate targets such as 50% of electricity production from wind by 2020 and electricity and heating supply being fully covered by renewable energy by 2035 (Jamet 2012). The rationale behind these ambitious goals is precisely to be a role model both for the reduction itself as well as for being able to combine this with economic growth (The Danish Government 2013).

Under the Kyoto Protocol, Denmark had set itself the goal of reducing its GHG emissions by 21% in 2008-2012 compared to the base year 1990. It fulfilled this goal - however, the country needed to use the so-called flexibility mechanism and buy emission allowances to do so. Nevertheless, a reduction of 15% compared to the (adjusted[8]) base year was accomplished (European Environment Agency 2014). In order to describe how Denmark achieved this reduction and how the government strives to reach its target for 2050, the following section will give an overview of the composition of emissions as well as reduction strategies.

## 2.1. GHG emissions developments

Energy production/transformation and supply account for the largest, although declining, share of GHG emissions in Denmark – around 36% in 2011 (Danish Ministry of Climate Energy and Building 2013). Total energy production is largely based on oil and natural gas, although with decreasing importance. This is compensated by an increasing share of renewables in total primary energy supply, more than 20% in 2010 (International Energy Agency 2011). The major contribution to these emissions comes from electricity production. Here production moves increasingly from combustion of fossil fuels to wind energy, with both supplying roughly the same amount of electricity in 2014 (Energinet.dk 2015). Altogether, the share of renewables in electricity consumption was 52% in 2014, with relatively constant total consumption. In the last years, Denmark has been a net importer of electricity, the main trading partners being Sweden, Norway and Germany. This means that although Denmark itself does not generate nuclear energy, it does import some from Sweden, depending on weather (e.g. wind) conditions. Similar to the switch to renewables in the electricity sector, district heating is also increasingly from combustion of renewables, with a phasing out of coal, oil and recently natural gas. In 2013, almost half of the fuel consumption for district heating came from renewable energy (Danish Energy Agency 2015).

The second most important share of GHG emissions originates from trade and transport (23% in 2011), with increasing GHG emissions in the past 20 years (Danish Ministry of Climate Energy and Building

[8] Denmark had unusually high emissions in the base year of 1990, as exports of electricity were very high. These exports/imports depend highly on the weather and therefore fluctuate strongly. Having these very low emissions as the base for reductions would have made it additionally difficult for Denmark to lower its emissions. For this reason the EU granted Denmark an adjustment of its base year emissions (European Environment Agency 2014).

2013; Statistics Denmark 2014). CO2 emissions from transport were almost as high as emissions from electricity generation in 2013. Additionally this is the only area where emissions are still increasing, despite efforts to support renewable energy use (Danish Energy Agency 2015).

In summary, while total gross energy consumption is only falling slightly, the share of renewables in critical areas like energy transformation is increasing rapidly, replacing high-emission fuels like coal, oil and gas. This leads to overall falling CO2 emissions. However, although final consumption of energy is decreasing in all other areas (households, industry and agriculture, commercial and public services), it continues to increase in the transport sector. As this sector is largely dependent on fossil fuels it remains one of the few but important areas where also emissions are still increasing.

## 2.2. Climate Change Mitigation Policy

This overall change in fuel for energy conversion and resulting reduction in GHG emissions is supported by several policy initiatives, one main initiative being the Energy Agreement passed in 2012 (for a short version in English see: Danish Ministry of Climate Energy and Building 2012). It lists 62 actions to be implemented by 2020 in fields ranging from upscaling wind-power generation or energy efficiency initiatives for buildings to intensified research and several transport-related initiatives. Altogether, energy policies cover the areas of (Danish Energy Agency 2012):

- Taxes on energy (effective taxes on energy are the highest among EU countries)
- heat savings in buildings (strict regulations for new and renovated buildings)
- use of renewable energy in buildings (e.g. a ban of oil and natural gas boilers in new buildings)
- municipal heat planning (supporting district heating)
- energy efficient electricity and district heat production (e.g. through combined heat & power)
- use of renewables in electricity and district heat production (support wind and biogas)
- effective use of the electricity market and Nordic power pool
- energy savings and use of renewable energy in industry (promote efficiency and renewables)
- energy for transport (use of biofuels and electricity, see further examples below)

Generally, taxes are an important policy instrument in Denmark. Energy taxes and CO2 taxes together lead to the highest effective tax rates on energy among EU countries, although exemptions for industries exist (Jamet 2012). The so-called "Green Check" (sometimes also "Green Cheque"), an income-adjusted tax rebate privileging poor households and households with children, compensates households for these high tax burdens to some extent. Every adult and up to two children per household receive this tax rebate of 170€/40€ (adult/child) if they fall below a certain amount of income. This should ensure that adverse distributional effects of the energy taxes are avoided (Danish Ministry of Taxation 2009).

Several smaller environmental tax initiatives cover areas such as transport, with high and efficiency-dependent taxes on car registration (starting at around 105% of purchasing price) and ownership, with exceptions for electric and hydrogen cars. To name a few other strategies targeting emissions from

transport, instruments include promotion of cycling, cheaper public transport, development of the railways system, investments in electric car test schemes, and strategies for energy efficiency and alternative models for heavy transport (The Danish Government 2013).

For a detailed list of initiatives for climate change mitigation, please refer to the annex of this case study. It contains a list of all policies in place concerning the topic, taken from the national communication on climate change in 2013.

In summary, target-setting and implemented policies in Denmark are very ambitious and already bear fruit. Of greatest importance is the transition to renewable sources of energy for electricity and heat production, while emissions from transport are still rising. Overall, households, agriculture and industry contribute positively to a reduction of GHG emissions. Structural changes – increase of the service sector, increase in imports – add to these developments.

According to the Report to the Kyoto Protocol, Danish GHG emissions therefore amounted to 56.2 M tonnes of CO2-Equivalents in 2011 (without LULUCF), a considerable reduction compared to 1990. However, as described by Statistics Denmark, the actual emissions from Danish economic activities were substantially higher, amounting to almost 120 M Tonnes of CO2-equivalents already in 2007 (Danish Ministry of Climate Energy and Building 2013; Gravgard et al. 2009). Why this is the case will be described in more detail below.

## 2.3. Decoupling emissions from GDP growth

### 2.3.1. Production-side accounting

Figure 1 shows this reduction of CO2-emissions in relation to GDP. For all variables, the values of 1994 were set to 100 in order to make changes comparable[9]. Looking at the total CO2 emissions from Danish territory for the Kyoto emission inventory, an absolute decoupling from GDP-growth is apparent. Similarly, emissions of Methane have decreased while GDP has increased. However, accounting for all CO2-emissions from Danish economic activities the picture looks different: Until 2006, no decoupling has taken place, and only after this year, a relative decoupling trend develops.

[9] I chose the year 1994 (and not 1990) as a base, as not all data used later for the same illustration was available for earlier years (see Figure 2). The general trends remain unchanged if compared to a 1990-base-year calculation.

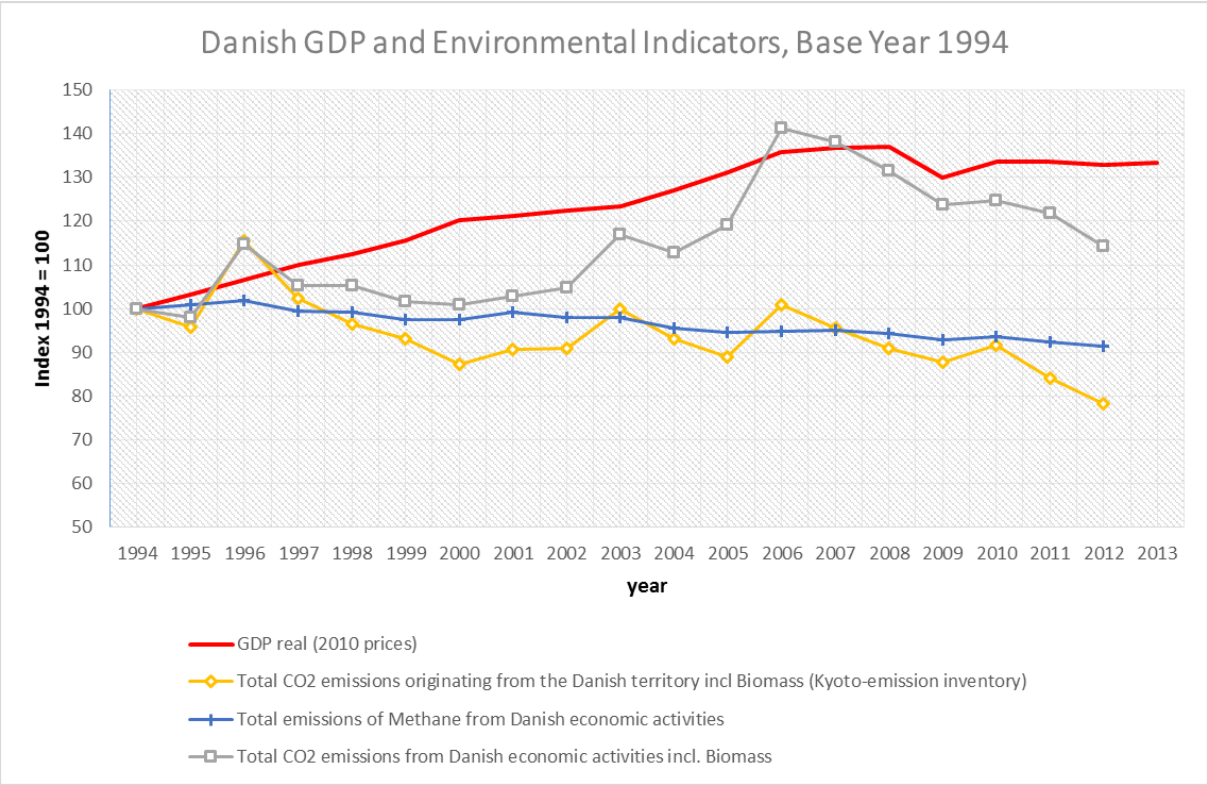


*Figure 1: Trends in Danish GDP, CO2-emissions and emissions of Methane (own calculations based on data from Statistics Denmark), see also Table 1.*

This discrepancy between the emissions as calculated for the Kyoto Protocol and emissions from all economic activities is largely due to the Danish shipping industry. Steep increases (e.g. 2005-2006) are primarily due to acquisitions of other shipping companies by the (already large) Danish industry – all emissions from gasoline bunkered and burnt by these ships then count into the *Danish* emission inventory. This is not the case for Kyoto Protocol calculations – hence the major gap (also recognised and discussed openly by Denmark Statistics (Gravgard et al. 2009)). Looking at concrete numbers, the emissions from all transport abroad (also including emissions from airplanes and other vehicles – although being negligible if compared to emissions from shipping) have increased from 9.448.000 tonnes in 1990 to 28.049.000 tonnes in 2012 – or by 303%. Emissions from bunkering of Danish vehicles abroad (i.e. primarily shipping) now amount to nearly as many tonnes of CO2 as other emissions from Danish economic activity (39.412.000 tonnes in 2012, excluding biomass). Therefore the decrease of the latter has been more than "compensated" by the former when looking at emission inventories for Danish economic activities as a whole (data retrieved from Statistics Denmark, see also table 1).

*Where* these emissions should be taken into account is clearly disputable. However, at the moment they do not count into any country's Kyoto emission inventory. This first of all shows that indicators depict a somewhat random number that always needs to be considered with caution. Moreover, the discrepancy between the two indicators described above brings up the question of who is accountable for which emissions, a discussion that so far largely revolves around the question whether a country's emissions are originally caused by the production of goods within its borders, or whether it is consumption that

drives emissions. In the latter case, emissions made elsewhere in order to produce goods for final consumption within the country should also be considered.

Following this, a number of critics have voiced concerns about the way of calculating emissions based on national borders. One of the main arguments brought forward is that emissions are "exported" as industries and manufacturing move from Western countries to developing nations (also termed "strong carbon leakage"), or consumer goods for the West are at the core of the carbon-intensive economic expansion of the global South even without relocations ("weak carbon leakage") (Davis & Caldeira 2010). A number of methods have been developed in order to calculate environmental impact or emissions based on the final consumption of the citizens of one country. The next chapter will present two indicators for Denmark, shedding new light on the possible decoupling of environmental effects and economic growth.

### 2.3.2. Alternative indicators and consumption side accounting

Measurements of emissions from a consumption perspective are increasingly important, not because so-called "embodied carbon" is a problem per se, but because it would yield very different policy recommendations for countries that want to reduce the adverse impact of their economy on the environment (such as Sweden, see case study in this report). Another argument supporting the use of consumption-based indicators was brought forward by Arto & Dietzenbacher (2014), who confirmed the idea that growth in consumption is the main driving force of global GHG emissions. Hertwich & Peters (2009) found the same result, specifying that the lion's share thereof is caused by private household consumption. Research has shown that outcomes vary dramatically between consumption and production-side calculations and revealed that most countries have *not* decoupled GDP-growth from fuel use or CO2-emissions in consumption (Peters et al. 2011).

Several different methods to calculate environmental effects more generally or the emissions embodied in consumer goods more specifically have been developed – for a recent overview including advantages and disadvantages see Sato (2013). I will describe two of them in the following sections, looking at their application to Denmark.

#### 2.3.2.1. Material Flow Accounting

Economy-wide Material Flow Accounting (MFA, sometimes also Material Flow Analysis) is based on the premise that "primary resources form the material basis of all human activities, including production and consumption of goods and services" (Dittrich et al. 2012, p.9). These materials are extracted from the biophysical surroundings of our socio-economic system and then enter the latter for consumption or manufacturing. The idea is therefore closely linked to the metabolic conceptualisation of the economy, which serves also as the basis for the idea of sustainable work developed in the framework to this case study. MFA measures the material flows across the boundary between the biophysical and the social system, making it possible to quantify them for a whole country. In other words, MFA translates economic activities into physical terms (Fischer-Kowalski et al. 2011).

Figure 2 shows the Domestic Material Consumption (DMC) of the Danish economy, as well as the DMC of fossil materials only (data retrieved from Statistics Denmark). Interestingly both follow the same pattern and a similar trend to CO2-emissions of all Danish economic activities: There is no visible decoupling until 2006, however, after this year patterns change and a relative decoupling trend develops.

It is important to note that all economic activities of a country are incorporated in the calculations of the DMC. Here lies also the key to the explanation of the trend in the DMC for fossil materials[10] and its similarity with the total emissions from Danish economic activities: the bunkering of Danish operated ships contributes so substantially to this indicator that takeover of foreign shipping companies by Danish operators is almost the only determining force of the trend. Additionally, as with territorial emissions, business cycles and fluctuations in electricity imports and exports have an influence. However, one conclusion is clear: from this perspective, no decoupling of material use from economic activities has taken place in Denmark.

Figure 2 also shows another indicator for material flows through the economy: waste. Since every input leaves the economic system after some time as waste, this indicator depicts material flows from a slightly different perspective. To illustrate consumption by private households and firms only, the data shown contains only municipal waste – that means no waste from large industries, construction, etc. Although this is only a vague indicator, it indicates that here no decoupling from GDP has taken place, which stands in contrast to material flows in terms of DMC.

However, Material Flow Accounting does not take into account upstream use of materials or emission of greenhouse gases that stem from production of goods in another country – termed either "hidden flows" or "embodied material/emissions". Only relatively recently methods for calculations of such flows have been developed. The next section will present some newly available data for Denmark.

[10] The DMC of all materials is driven by many other developments too, as it also depends on mining and quarrying activities, among others. It is not driven primarily by fossil material use, although it might seem so from looking at Figure 2.

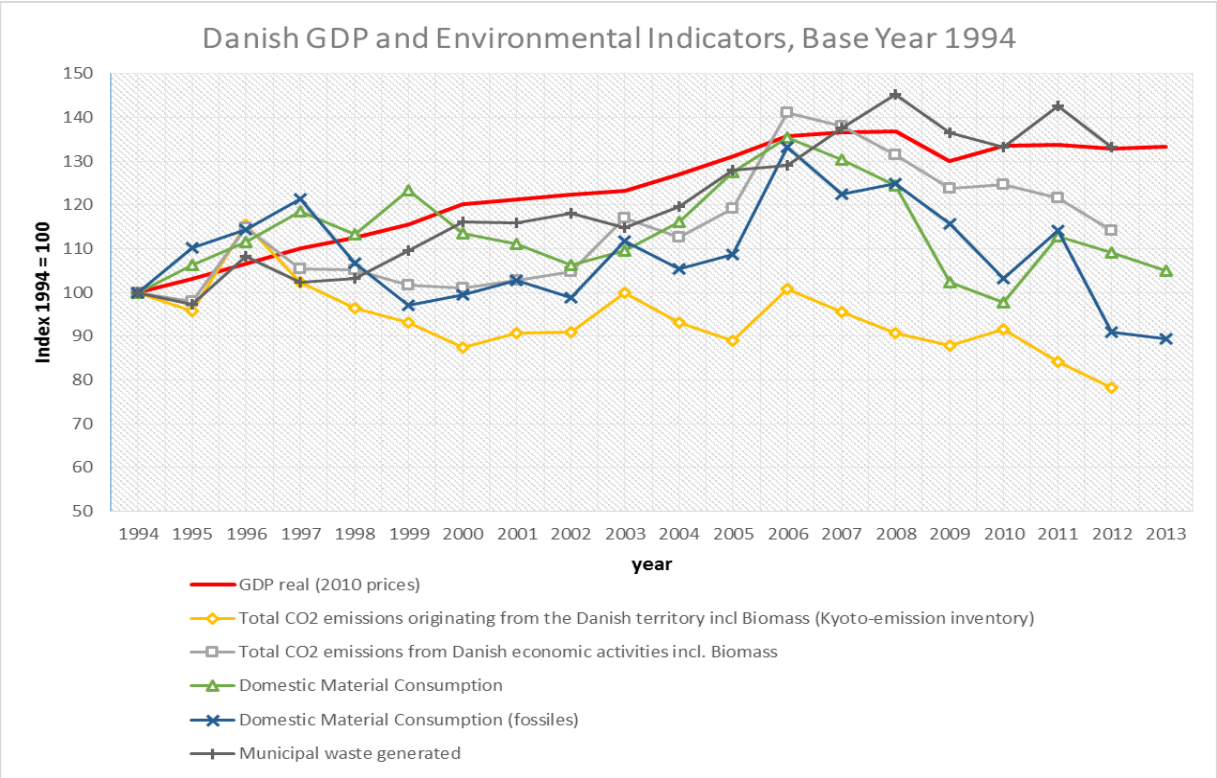


*Figure 2: Trends in Danish GDP, CO2-emissions, Domestic Material Consumption and waste (own calculations based on data from Statistics Denmark & OECD), see also Table 1.*

#### 2.3.2.2. MRIO Analysis and Carbon Footprint

To solve the problem of upstream carbon emissions (or materials, water, land, ...) embodied in products, data from several sources has to be brought together. After a trial-and-error phase with different types of indicators, the most promising method for assessing the total resource requirements embodied in trade now seems to be the "environmentally extended, multi-regional input-output" (EE MRIO) framework (Wiedmann et al. 2013, p.23). This framework builds on economic input-output tables, extended by environmental data taking into account differences in production efficiency and technologies. Sato (2013) considers this method the most appropriate for analysis on country-level. MRIO Analysis entails the calculation of GHG emissions embodied within manufactured products produced domestically for both domestic demand as well as export, and further the emissions embodied in products produced in other countries for import into the studied country. Re-exported products require special attention in order to avoid double counting. This approach then allows aggregation of emissions produced domestically for domestic demand and emissions embodied in imported products to calculate *total emissions embodied in final consumption* (Ahmad & Wyckoff 2003).

Several studies using an EE MRIO approach for Danish CO2-emissions exist, for an overview see for example Sato (2013). One recent study does not contain time-series data, but finds that Denmark's per capita CO2-emissions are among the top 10 highest in the world (Davis & Caldeira 2010). Other studies come to mixed conclusions, but also often build on premises (e.g. concerning CO2 intensity of production) that are considered at least debatable. However, one recent database (the EXIOBASE3.1,

cf. (Wood et al. 2014)) contains detailed and up-to-date data on embodied emissions of CO2, the so-called CO2 footprint.

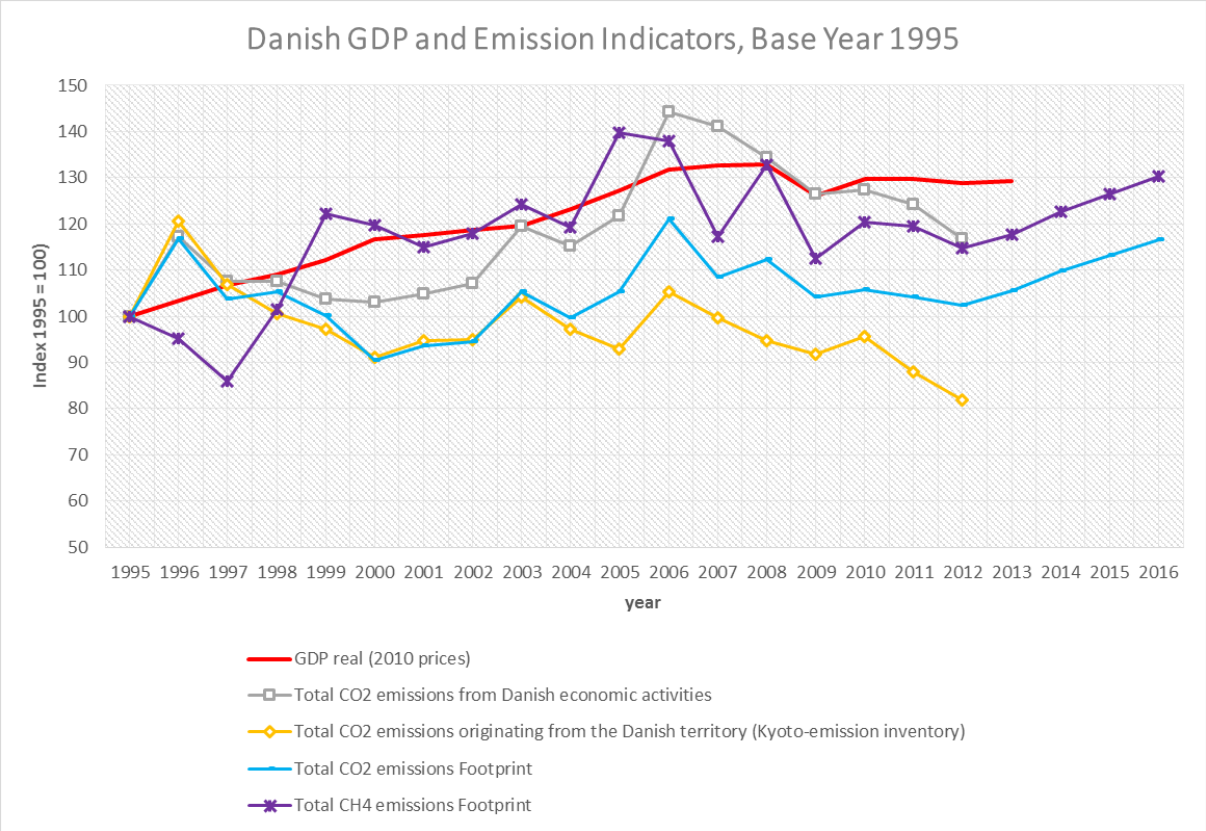


*Figure 3: Trends in Danish GDP and emission indicators, production vs. consumption side calculations (own calculations based on data from Statistics Denmark and EXIOBASE3.1; 2012-2016: estimates), see also Table 1.*

Figure 3 shows these embodied emissions in addition to the production-side based indicators. As data is only available from 1995, this is used as base year in this figure. At first sight, it is visible that no absolute decoupling of GDP and emissions of CO2 or Methane have taken place on an aggregate level, especially when looking at the most recent years. Per capita, CO2-emissions from consumption have decreased slightly until 2012, indicating a weak but still absolute decoupling (see summary table 1). Projections until 2016 however show that the trend in embodied emissions is increasing.

This means that Denmark is doing relatively well, even when consumption-based emissions are taken into consideration. This is confirmed when looking at absolute levels of CO2-emissions: Denmark's emissions from consumption are actually *lower* than its emissions from production – a fact that is very unusual for a developed country (see e.g. Andrew et al. 2013; Davis & Caldeira 2010). In addition, Ghosh et al. (2014) – using a different MRIO-based dataset – argue that since 2001 imports (especially from China) have increased significantly in Denmark, driving up embodied CO2-emissions. According to these authors, Denmark is now one of the countries with the highest consumption-based CO2 emissions per capita, although emissions per unit of GDP are relatively low. A comparison of Denmark with other countries would therefore be highly interesting in order to develop a deeper understanding of these two findings.

### 2.3.3. Comparison of different Indicators

Table 1 presents an overview of different emission indicators and indicated whether an absolute or relative decoupling of emissions from GDP was achieved. The focus is on CO2, although greenhouse gases measured in CO2-equivalents and the DMC of fossil materials are also included for illustrational purposes. Due to data availability, the period for both consumption-side indicators (DMC and CO2 footprint) is 1993-2012 and 1995-2012 respectively. As the production-side indicators are all based on Kyoto Protocol calculations, the period for these was kept at 1990-2012. These differences should be kept in mind when comparing the numbers to figures 1-3. The indicator "CO2 emissions from Danish production, EXIOBASE calculation" was included in order to make the footprint-calculations directly comparable to a production-side indicator: both stem from the same database and therefore use the same method of data integration. EXIOBASE consumption-side data is not strictly comparable to the other indicators, as calculation methods vary significantly.

A few items in the table are worth mentioning. First, the most positive development in terms of CO2 emissions can be seen if emissions from land use, land use change and forestry (LULUCF) are taken into account. The most pronounced overall reduction in comparison to GDP has taken place in the use of fossil materials, although here the different base years make a direct comparison to changes in emissions difficult. Second, as already mentioned, if bunkering of Danish ships abroad is included, the development in emissions is reversed and only a relative decoupling has taken place. In DMC of fossil materials, even an inclusion of shipping still shows a (small) absolute decoupling. Third, as described above, the most robust consumption-side indicator, the CO2-footprint, shows only limited absolute decoupling. Note here that the amount of CO2 emitted in production (EXIOBASE calculation) is still lower than the amount of CO2 embodied in consumption, but the two figures are slightly converging. If trends continue, emissions from consumption will soon be higher than emissions from production.

*Table 1: Overview of different indicators and decoupling of GDP and emission/material use. Source: Heidi Leonhardt, WWWforEurope*

| Indicator | Measurement unit | Period | Level base year | Level 2012 | Relative change | Decoupling from GDP | Data source |
|---|---|---|---|---|---|---|---|
| **GDP real** | 2010 prices, mio. DKK | 1990-2012 | 1289734 | 1807451 | +40,14% | | Statistics Denmark[11] |
| **CO2 emissions** from the Danish territory, Kyoto Protocol calculations, **excl. LULUCF** | 1000 t | 1990-2012 | 52915 | 39412 | -25,52% | absolute | Statistics Denmark[12] |
| | t per capita | 1990-2012 | 10,30 | 7,06 | -31,46% | absolute | Statistics Denmark[12] |
| **CO2 emissions** from the Danish territory, Kyoto Protocol calculations, **incl. LULUCF** | 1000 t | 1990-2012 | 58181 | 38560 | -33,72% | absolute | Danish Air Emissions Inventory (Hjelgaard 2015) |
| | t per capita | 1990-2012 | 11,33 | 6,91 | -39,01% | absolute | Danish Air Emissions Inventory (Hjelgaard 2015) |
| GHG emissions in **CO2-aequivalents** from the Danish territory, Kyoto Protocol calculations, excl. LULUCF | 1000 t CO2 equivalents | 1990-2012 | 68661 | 51637 | -24,79% | absolute | Danish Air Emissions Inventory (Hjelgaard 2015) |
| | t CO2 equivalents per capita | 1990-2012 | 13,37 | 9,25 | -30,79% | absolute | Danish Air Emissions Inventory (Hjelgaard 2015) |
| CO2 emissions **from Danish economic activities** (includes bunkering of Danish ships, planes and vehicles aborad), excl. LULUCF | 1000 t | 1990-2012 | 64877 | 78117 | +20,40% | relative | Statistics Denmark[12] |
| | t per capita | 1990-2012 | 12,63 | 13,99 | +10,80% | relative | Statistics Denmark[12] |
| **Domestic Material Consumption** of fossile materials (based on Danish economic activities) | 1000 t | **1993**-2012[13] | 26227 | 24969 | -4,8% | absolute | Statistics Denmark[14] |
| | t per capita | **1993**-2012 | 5,06 | 4,47 | -11,62% | absolute | Statistics Denmark[14] |
| **DMC** without fuel bunkering of Danish units abroad | 1000 t | **1993**-2012[7] | 22403 | 12944 | -42,22% | absolute | Statistics Denmark[14] |
| | t per capita | **1993**-2012 | 4,32 | 2,32 | -46,36% | absolute | Statistics Denmark[14] |
| CO2 emissions from **Danish domestic production**, EXIOBASE calculation | 1000 t | **1995**-2012[13,15] | 59976 | 53938 | -10,07% | absolute | EXIOBASE 3.1 |
| | t per capita | **1995**-2012[13, 15] | 11,5 | 9,66 | -15,95% | absolute | EXIOBASE 3.1 |
| **CO2 footprint** of Danish domestic **consumption** (incl. CO embodied in products) | 1000 t | **1995**-2012[13, 15] | 46499 | 47574 | +2,3% | relative | EXIOBASE 3.1 |
| | t per capita | **1995**-2012[13, 15] | 8,91 | 8,52 | -4,38% | absolute | EXIOBASE 3.1 |

[11] Retrieved from http://statbank.dk/NAHL2
[12] Retrieved from http://statbank.dk/MRO1
[13] GDP change 1993-2012: +35,55%; 1995-2012: +24,9%
[14] Retrieved from statbank.dk/MRM2
[15] Data for 2012 is estimated

## 2.4. Intermediate Conclusions I

In summary, the first part of this case study shows that Denmark has very ambitious policies in place to combat climate change. It is an outspoken goal of the Danish government for Denmark to serve as an example for combining significant reductions in GHG emissions with continued economic growth. At first sight, the strategy seems to be successful: GHG emissions have been reduced substantially, especially during the past few years. A phasing out of fossil fuels seems viable.

However, the extent of this success depends partly on the indicator that is chosen, mirroring the debate on responsibilities for emissions. While the exclusion of bunkering of Danish ships abroad for territorial emission assessments seems justified[16], this is less true for CO2 footprint calculations. If the consumption of Danish consumers causes emissions in another country, this should be acknowledged and attributed to Denmark.

If this is done, the success of Danish policies is still outstanding, especially compared to other countries. Nevertheless it is much smaller than production-side calculations would suggest: per capita, absolute decoupling and reduction has indeed happened, but the decrease of 4.4% is smaller in comparison to the 15.5% reduction according to production-side calculations based on the same data. Similarly, in total there is only relative decoupling of the CO2-Footprint from Danish GDP: an increase of 2.4% vs. a GDP-increase of almost 25% is an outstanding achievement, but not as remarkable as the 10% (or more) reductions in production. Hence if the "Green Growth" target of Danish policymakers is to be taken seriously, additional policies targeting consumption emissions will be necessary in order to keep the country's "role model" status concerning environmental policy up.

The next section will now explore the second policy area where Denmark is considered to be a role model: labour market policies and the flexicurity system.

[16] Although this does not mean that emissions from shipping should be ignored internationally – on the contrary. In consumption-side calculations such as the footprint, these emissions need to be rigorously included in the total emissions of a consumed good.

# 3. Part 2: A role model for labour market policy?

## 3.1. Introduction

In the past years also the Danish model of labour market organization has been cited as a role model for good labour policy making – in fact it had so much of a good reputation that the EU decided to make the "flexicurity system" one of the cornerstones of its labour market recommendations in 2007 (Andersen & Svarer 2007; Hendeliowitz 2008; Jørgensen & Schulze 2011). It was seen by many as a "third way" between strong flexibility and strong social security prevalent in other countries. While the origins of the concept lie in the Netherlands, Denmark is undoubtedly one of the leading examples that had this policy already very successfully in place for years before the EU's recommendation. After the implementation of the model in its original form, the amount of unemployment in the country had gone down dramatically within a few years, from over 10% in 1993 to below 4% in 2008. The employment to population ratio increased by over 5% during the same period. At the same time GDP per capita rose steadily, keeping Denmark one of the richest countries in Europe, and significantly more wealthy than the EU-average[17].

This outstanding performance is at least partly due to the Danish labour market organization in the above-mentioned flexicurity system. In its "traditional" way, this model consists of three pillars with strong social security, flexible employment protection, as well as strong active labour market policies. According to Andersen and Svarer (2007), the success of the system is primarily owing to this third pillar, strong activation policies, and not only the flexibility and security parts alone.

In order to understand the flexicurity approach better, the next section describes the three pillars in some detail, followed by a description of recent reforms and changes, which, according to a number of authors, have altered the system fundamentally. Nevertheless, it is important to understand the concept as it existed before the 2000s, as this is what is usually referred to (Ploug 2014).

## 3.2. The Flexicurity system before the 2000s

### 3.2.1. Flexibility

Given that Danish politicians can only influence the general economic development of the country to a limited extent, labour market flexibility has for a long time been an important goal of Danish policy making in order to prepare the economy for changes before they occur (Ploug 2014). Hence, employment protection is quite low in international comparison, making it easy for employers to dismiss workers during economically challenging times. Among OECD countries, Denmark has one of the lowest values for difficulty of dismissal, fourth after Canada, Great Britain and Switzerland (OECD 2013). Additionally, working times as well as wage formations have become more flexible (within

[17] For graphs and general data please again refer to the appendix.

certain bounds) during the last decades (Andersen & Svarer 2007). Due to this flexibility, Denmark has very high labour market mobility, indicated for example by the share of newly employed people in the total working population (around 25%, roughly 10% more than the EU-27 average (Eurostat 2015)). Hence, job security in Denmark is relatively low, while employment security is high, as most employees who are dismissed find a new job quickly.

### 3.2.2. Security

The second element of the flexicurity model makes it easier for Danish employees and trade unions to accept the low employment protection legislation: easy and quick access to a tightly knit social security net. The Danish unemployment benefit system is based on unemployment insurance (UI) funds with voluntary membership, currently covering about 76% of the labour force (own calculation based on data from Statistics Denmark), that are subsidized by the public sector (Andersen & Svarer 2007). These UI funds are complemented by social assistance (with lower benefits that UI) for those that are not covered. During the time when Denmark's labour market was prospering, the maximum period for receiving UI benefits was 4 years, with replacement rates of up to 90% of the previous income (although with a relatively low ceiling). The benefit period has been shortened considerably during the last years, additionally to an extension of the minimum required working time for eligibility for benefits (Ploug 2014). These changes will be described in more detail further below. Other important labour market institutions that are important for the security part of flexicurity include rehabilitation for vulnerable workers in order to integrate them in the labour market, as well as extensive family policies such as kindergartens (Hansen 2007; Ploug 2014).

A fundamental principle of the strong social security part of flexicurity is the idea that with the right to social benefits also comes the duty to actively engage in job-searching and upgrading of skills (Andersen & Svarer 2007). Hence active labour market policies play a crucial role as a precondition for receiving UI benefits or social assistance.

### 3.2.3. Active labour market policies (ALMP)

The impressive decline in unemployment during the mid-1990s was mainly due to a number of reforms moving from passive to active labour market policies. The main points were a shortening of the benefit period to four years, the implementation of activation requirements, as well as a change in eligibility for benefits: participation in activation measures no longer qualified for a prolongation of unemployment benefits so that a downgrading to social assistance became a real threat (Andersen & Svarer 2007). Activation became not just a right, but also a duty for the unemployed as well as for people on social assistance. The reform was based on the three principles of needs-orientation (both of the unemployed person as well as the regional labour market), decentralisation, and involvement of the social partners (Ploug 2014). Unemployed people now had to participate in activation programmes such as vocational guidance, job trainings, education, or job search assistance on a regular basis. These were not just seen as a motivation to actively search for a job, but also as a way of upgrading skills according to what the

economy needed at the current point in time. The strong focus on education and skills-development has been termed "learn-fare" approach (as opposed to workfare) by some (Bengtsson 2014; Jørgensen 2009).

### 3.2.4. The Social Partners

In addition to these three components of the flexicurity system, Hendeliowitz (2008) also mentions the co-operation between the social partners in Denmark as one of the decisive features for its success. Many features of labour market policy are negotiated either directly between trade unions and employer's organizations or through consultation by the state. Due to the strong position of the social partners in policymaking, union membership in Denmark is comparably high: 76% of employees were members of a trade union in 2013, with the most important representation being the LO (the Danish Confederation of Trade Unions, an association of 19 member unions) with 867.000 members in 2014. On the employer's side, the most important organization is the DA, the confederation of Danish Employers. However, as also outlined below, the social partners have lost some of their labour market policy making competences during the last decade (Jørgensen & Schulze 2011). Additionally, a more decentralized form of bargaining has gradually replaced the formerly central bargaining, and is partly undermining the strength of the umbrella organizations together with a tendency towards smaller, more specialized unions (Scheuer 2007). Despite these losses of importance and members, much of the responsibility for labour market policy remains decentralized and not with the state (e.g. minimum wage setting or regulation of working time besides EU regulations) (Scheuer 2007).

Underlying all welfare and labour market policies in Denmark are strong egalitarian objectives, where a reduction of benefits is not an option. However, as the welfare state is tax-financed, a large proportion of the population must be in employment in order to make the system financially viable. The expenses for ALMP have been pointed out to be among the highest in the world in terms of percentage of GDP (Madsen 2004; OECD 2014). This leads to the fact that the welfare model is heavily employment-focused in order to increase tax revenue from income tax (Andersen & Svarer 2007). This also becomes apparent in the underlying objectives and ideas of reforms of the last decade, which will be the focus of the following chapter.

## 3.3. Recent reforms of the Danish labour market

Since the early 2000s, many reforms have been made that have altered the flexicurity system from what it is portrayed to be (Bengtsson 2014; Goul Andersen 2011; Jørgensen 2009). These changes have happened gradually, but altogether arguably led to a transformation of the system. Goul Andersen (2011) for example interprets the reforms as a transformation from a so-called Ghent system to a liberal system. The following changes have happened:

In 2002/2003 a reform called "more people to work" tightened control of the unemployed, together with stronger incentives for job search. Social assistance for immigrants as well as some types of families was lowered (Goul Andersen 2011). Education was given less priority in activation policies, illustrated by a renaming of the "individual plan for action" for the unemployed to "job plan" (Goul Andersen

2011). According to Jørgensen (2009), since the implementation of the reform equity and social justice were no longer explicit goals of labour market policies in Denmark.

In a 2006 welfare reform, demands concerning availability for the unemployed were again tightened, along with stricter sanctions, surveillance, and rules concerning activation. Additionally, the retirement scheme was reformed and the retirement age indexed to life expectancy (Goul Andersen 2011; Jørgensen 2009).

The 2007 structural reform (finalised in 2009/10) where the authority over job centres was handed over from the state to municipalities might not seem like a big change at first sight. However, it had several effects in itself as well as through the accompanying changes. Firstly, the social partners lost influence over the actual activation policies and thereafter only had consultory status concerning activation (Goul Andersen 2011; Jørgensen 2009). Secondly, the introduction of funding being given to the municipalities according to the numbers and status of the unemployed, including targets set by the state, had noticeable side effects. As municipalities receive more support from the state for people in activation than for "regular" unemployed persons, they now have an incentive to favour quick and generalized activation efforts such as counselling over long-term individualised education (Bengtsson 2014; Goul Andersen 2011; Jørgensen 2009). Due to this and in combination with a "sick leave action plan", also people on long-term sickness leave are now subject to activation efforts from the municipalities (Goul Andersen 2011; Räisänen et al. 2012).

Just a few years later, in 2009, demands concerning "work ethic" and surveillance were tightened once more, including e.g. the requirement that unemployed persons write at least 4 job applications per week of unemployment (changed later due to complaints from employers) (Goul Andersen 2011). In 2010, another major reform took place: the benefit period for unemployment benefits was shortened from four to just two years, alongside an increase in the conditions for re-eligibility from 26 to 52 weeks of employment during the past 3 years (Bengtsson 2014; Ploug 2014). Although this reform was delayed through intermediate measures due to the crisis, this could signify an important change to the security element of flexicurity. According to Goul Andersen (2011), the strength of this element came primarily from the long duration of the unemployment benefits; hence their change has far-reaching consequences.

In 2011/2012, the retirement age was raised in a retirement reform, alongside a reform of the early retirement scheme (reducing the maximum number of years and the eligibility age) (OECD 2014). The goal of reducing the number of early retirees was additionally supported by the introduction of rehabilitation teams and action plans for each individual in order to support their entrance into the workforce (Ploug 2014). Similar measures were introduced in a reform of the disability pension and flexijob system (for physically and mentally disabled people) in 2013. A tax reform with the aim of increasing employment was introduced in 2012 as well (OECD 2014).

A reform of the social assistance system was introduced one year later, again with the goal of bringing more people into the regular workforce. This included measures such as rehabilitation and support for people with multiple problems or a strengthening of education, but also stricter sanctions for people on social assistance (e.g. being forced to work for the community after 3 months on social assistance). In the same year, a reform of the tertiary education grant system introduced measures that should push student to complete their education as fast as possible (OECD 2014). More reforms (e.g. again to the unemployment benefit system) are planned for 2015 (The Danish Government 2015).

### 3.4. How Sustainable is the Danish Flexicurity Model?

All these reforms are in line with what was set out by the current government in their National Reform Programmes from 2012 to 2015, describing the national implementation of the Europe 2020 strategy (The Danish Government 2012; The Danish Government 2015). One of the main targets is to increase the structural employment share to 80% by 2020 in order to foster GDP growth (The Danish Government 2012). Increasing the labour supply – and through this employment – is one of Denmark's main strategies to foster growth (among others such as increasing competition and productivity). All of the abovementioned reforms to the labour market are in line with this goal, including also a most recent reform on the sickness benefit scheme as well as another unemployment reform planned for July 2015 (The Danish Government 2015). The goal is not only to increase the employment frequency, but also the number of hours worked (The Danish Government 2012).

Although data does not yet show any change of the employment rate, these reforms had several other far-reaching consequences and may have changed the entire system of flexicurity. According to Goul Andersen (2011), the increases in conditionality for receiving unemployment benefits or social security can be interpreted as a change in citizenship in terms of both the balance between rights and duties, as well as a change to the right and duty to be active. Jørgensen (2009) describes this as a shift from "learn-fare" to "work first".

Society is hence increasingly work-centred, with the primary goal of reducing unemployment being replaced by the goal of bringing people into the labour market for state budgetary reasons. Paid work is then seen as good in any case, so that everyone should be in – and hence dependent on – the labour market (Jørgensen 2009). This goes hand in hand with an individualisation of unemployment, where it is not seen as a systemic problem, but rather as a (behavioural) problem of the individual and its conformity (Bengtsson 2014; Jørgensen 2009). Individuals then need to be made "fit" for participation in the labour market, for at least a few hours per week, no matter what. Activation is used more as a "threat" rather than for real development of skills, with the main goal of bringing people into paid work as quickly as possible.

Regarding the theoretical framework this case study is based on, the question now arises of what the Danish system – including its recent reforms – *means* for sustainable work. What are the effects of the Danish labour (market) organization on the needs of individuals, on equity, and on the environment?

What does this mean for the (re)productive forces of humans and nature? I will now elaborate on the three dimensions of needs – equity – environment before concluding with an attempt of a holistic consideration in the light of (re)productivity.

### 3.4.1. Fundamental Human Needs

As described in the framework based on Cruz et al. (Cruz et al. 2009), satisfiers can be systematised as beings, havings, doings, and interactions. These complement each other in satisfying needs. For example any particular setting of interaction requires specific satisfiers at the other three levels that all play together properly in order to satisfy any of the fundamental needs.

Concerning concrete policies, these types of needs according to existential characteristics are all relevant. Regarding *interacting*, the organization of society and the economy as a whole creates a specific setting of interaction, for example concerning the social setting (a satisfier for subsistence), educational settings such as schools (a satisfier for understanding) or possibilities for temporal freedom (a satisfier for creation among others). These are complemented by *havings*, many of which a society or a state authority can influence, for example through norms and institutions. Relevant examples include insurance systems or social security (satisfying the need for protection), educational policies (satisfying, together with the educational settings, the need for understanding), rights and responsibilities (as satisfiers for participation) as well as – importantly – work, which is mentioned as a satisfier for multiple needs such as subsistence, protection, participation, creation and identity.

The two categories of *having* and *interacting* are complemented by the dimensions of *being* and *doing.* The former can be influenced through society and states through categorizations: individuals can be employed, unemployed, part of the labour force or not, houseworker, care worker, migrants, … States can then prioritise and enhance specific forms of being - e.g. being part of the labour force, as is the case for Denmark. This then determines how needs can be satisfied also through the other dimensions as well, e.g. being not part of the labour force has a negative influence on the satisfaction of the need for participation, etc. Doings are to a large extent influenced by the individual only, but can be supported or discouraged by an authority through other satisfiers, such as the settings for interaction.

All satisfiers on a specific level can, in general, be supported or hindered to some extent through the corresponding satisfiers on the other levels (e.g. *being* autonomous, a satisfier for freedom, can be supported through *having* equal rights or hindered by restrictive policies or limited settings of *interaction* for autonomous actions). That means that states can intervene through policymaking on various levels and thereby influence satisfiers.

Cruz et al. (Cruz et al. 2009) suggest that in order to assess a group of people or even country concerning the fulfilment of their needs a matrix of satisfiers can be established in a participatory way. As this is not possible within the context of this paper, I can only attempt to outline possible impacts of the Danish organization of employment on different types of satisfiers.

If the reforms to the flexicurity system in the past years have led to a change in citizenship, as postulated by Goul Andersen (2011), this also means that the interrelation of the satisfiers of being, having, doing and interacting have changed. Therefore, this most likely had an effect on the satisfaction of needs of the Danish population. Noteworthy is for example the fact that "proper" citizenship is clearly related to pursuing paid work, as described by Jørgensen (2009). This means that one specific type of satisfier, *having* monetary income from paid work (i.e. *being* a paid worker), is seen as the most important way of satisfying one's needs. This can be problematic for two reasons: First, it is overlooked that *having* (money or goods) is only one particular dimensions where needs are satisfied – the other dimensions of being, doing or interacting being equally important and intertwined with each other and the dimension of having. Second, while paid work or monetary income might be proper objects for needs satisfaction, they may also be inhibiting, destructive or pseudo-satisfiers concerning other needs or dimensions. While working long hours may be a way of satisfying the need for subsistence, such a behaviour might inhibit at the same time the satisfaction of the need for idleness or creation. Similarly, while employment policies might help people find work as a satisfier for subsistence or participation, they could inhibit at the same time the fulfilment of the need for freedom, or even the need for protection if used as a threat. Moreover, if paid work is placed so prominently in the centre of society, this might lead to it being seen as a satisfier for many things when in reality it is a pseudo-satisfier (e.g. satisfying the need for identity, when in reality it might not be a real satisfier in this respect for a particular person).

The Danish policies of the last years that were described in the previous chapter have hence clearly had impacts on many possible satisfiers, especially from the dimensions of having and being. Social security has been weakened, having a potential negative impact on the satisfaction of the need for protection; rights of unemployed people have been altered, possibly having an effect on the need for freedom of people without paid work (e.g. being required to be ready for work upon very short notice); or the reform of both the student grant system as well as the importance of education for ALMP constitute a change of educational policies, most likely having an effect on the satisfaction of the need for understanding and creation. Changing norms with a focus on work have an influence on the satisfaction of the need for identity. Moreover, strong categorizations for *beings* such as "employed" or "in activation" that go hand in hand with obligations restrict people considerably in their available satisfiers.

In summary, the strong focus on bringing people into employment possibly had negative effects on both those outside the labour force - as they might not be able to satisfy their needs in another way without being disregarded by the rest of society - as well as society as a whole, as other dimensions and satisfiers are overlooked and therefore not supported. It is clear, however, that this is only a very rough sketch of possibilities. A holistic interpretation of the Danish society and the fulfilment of the needs of its people would need an in-depth study including other institutions than only the labour market as well as a group of stakeholders or citizens. Nevertheless, analyzing only the recent changes can be a starting point, as done briefly above. The human scale to development approach can therefore be a useful tool for

analyzing and interpreting changes in certain policy areas and their impact on what should be the ultimate goal of economic activity: the satisfaction of human needs.

### 3.4.2. Equity

As outlined in the framework, equality is an approximate indicator for equity. As the latter is difficult to measure otherwise, this section will mainly focus on equality in Denmark and its labour market. Generally, Denmark has recently been described as the most equal countries in the OECD (OECD 2015), with a relatively low Gini-coefficient for incomes, especially after taxes and transfers (see also appendix). Gender equality is also comparably high, with high female labour market participation and education, as well as gender equality policies being established institutions of society. The welfare state enables the high labour market participation by taking over parts of the care work from the double-earner family. However, the labour market is still largely gender segregated, pointing to some still existing gender inequalities (Hansen 2007). Surprisingly, Denmark is additionally one of the countries with the highest Gini-coefficients for wealth inequality – a puzzle that it shares with some other Nordic countries (Skopek et al. 2014).

Let us now return to the Danish flexicurity systems and the recent reforms to it. Generally, the approach to labour market policies in Denmark is based on equality, as access to social assistance is universal for those citizens without unemployment insurance. However, this equality in access is relativized by the fact that it is means-tested. Nevertheless, the social security system is tightly knit and potentially accessible for everyone – including the ALMP measures included in it.

The flexibility element on the other hand can potentially contribute to equity in society, as it leaves room for individual adjustment of work contracts while establishing basic rules. On the other hand, as some authors describe, the flexible and dynamic Danish labour market as a whole might make it hard for the most vulnerable individuals to keep up with the ever-changing required skills if education and training is not a central part of ALPM (Bengtsson 2014; Madsen 2004). Many of the latest reforms, especially the decentralisation and with it decreasing importance of education as ALMP, therefore most likely had negative effects on equality and equity, as those in vulnerable positions are now more likely to stay there.

On the other hand, some other reforms such as the early retirement pension system or the flex-job reforms have had potential positive effects on equity. Individual action plans and interdisciplinary rehabilitation teams for people with multiple problems follow the principle of helping people with different needs differently in order to ensure a more equitable outcome (although the desired outcome is rather one-dimensional, as mentioned above: labour market participation alone as satisfier of multiple needs). Overall, the impacts of the recent reforms to the flexicurity system on equity and equality are therefore ambiguous and depending on the individual policy.

### 3.4.3. Environmental problems

Labour market policy in Denmark is not related to environmental sustainability. To the author's knowledge, there is no reference to biophysical surroundings in any of the policies mentioned above. One exception are so-called "Green Jobs", contributing to "Green growth" (OECD 2014), also present in the position papers of the social partners in Denmark (DI Dansk Industri 2007; LO 2008). Green jobs, however, are based on the assumption that energy efficiency and a switch to renewable energy are sufficient for a transition to a more environmentally friendly future.

Apart from this, environmental policy is treated as entirely separate policy arena from labour, which is even more surprising when considering that both policy areas are of very high importance in Denmark. Please refer to part one of this case study as well as the overall conclusion for more information on this topic. The next section will now explore how the Danish labour market model can be seen from the broader perspective of (re)productivity.

### 3.4.4. (Re)productivity and Sustainable work

As outlined in the framework to this case study, in order to conceptualise "sustainable work" adequately, a combination of Manfred Max-Neef's human needs concept and Adelheid Biesecker's concept of (re)productivity is helpful. Looking at the Danish labour market from this perspective reveals several points:

The idea and strategy behind Danish labour market policies does not seem to place the satisfaction of human needs at the centre of its attention. Instead, it gives paid work priority over other goals, assuming that it can serve as a satisfier for many needs. On the societal level, GDP-growth is emphasised strongly, possibly assuming that GDP growth can be equated with growth in wellbeing – a point that is highly controversial (van den Bergh 2011; Jackson 2009). Labour market policies are then subordinated to this goal, to the extent that one of the usual arguments of "the economy needs to grow in order to create jobs" is turned around to "more people need to work in order to foster GDP-growth".

Placing the entire focus on paid work can also be criticised from a (re)productivity viewpoint: it is one of the problems that Biesecker and Hofmeister (2010) point to, as this leads to a disregard of labour reproductivity and natural (re)productivity. The danger here lies in forgetting that these (re)productivities need to be taken care of and preserved in order to maintain a sustainable economic process. The lack of reference to the biophysical underpinnings of the economic process in labour market policy shows that this is clearly the case for natural (re)productivity. It seems to be "off the radar" of policymakers that it is important for sustainable work to preserve the biophysical basis in order to ensure existence. Environmental policy is entirely disconnected from work-related policies, showing the lack of attention to the interconnections pointed out by Biesecker. Similarly, Hansen (2007) has pointed out that the flexicurity system lacks a gendered perspective, overlooking effects that its policies have on women and care work in general.

Nevertheless, one point of critique raised by Biesecker and Hofmeister (2010) does not apply to Denmark: They claim that paid work – or labour productivity, in their words – is primarily performed by men, leading to inequality between genders. This is not true for Denmark, where labour force participation of women is almost as high as for men and other marginalized groups are similarly encouraged to participate in society via paid work. Similarly, although unpaid work is still distributed unequally between the genders, this is less pronounced in Denmark than in most other countries. Moreover, research has shown that the gender gap in caring for children has decreased significantly over the past decades (Bonke & Jensen 2012).

### 3.4.5. Intermediate Conclusions II

From the perspective of a combined concept of (re)productivity and the human scale to development approach, Danish labour market policies are far from perfection, although some aspects are positive. The main point of critique is the strong focus on GDP growth and the resulting focus on paid work as a sole satisfier of needs. This leads to a neglect of other possible satisfiers for a good life, as well as a neglect of the (re)productivities that support and enable human production.

Nevertheless, Denmark performs well when compared to other countries. This is especially true for equity and equality, as illustrated by gender equality. The recent reforms to the labour market might have altered this, but outcomes are ambiguous. As to the general satisfaction of needs in society, it would go well beyond the scope of this paper to assess this even in a superficial manner. Concerning the labour market model, it has been shown in this study that the reforms to it have influenced satisfiers at the different levels of having, being, doing and interacting in a potentially negative manner by narrowing down many possible satisfiers to paid work as the only preferred option. The third pillar of a sustainable society according to the framework of this study, taking care of biophysical boundaries, is largely neglected in Danish labour market policies.

As described in the first part of this case study, environmental policymaking is indeed central in Denmark, but seen as an entirely separate arena. What both areas share is that GDP growth is a fundamental component, either as ultimate goal or as necessary condition. Such a focus on GDP growth has been criticised by many, especially as a sole indicator and guiding principle (van den Bergh 2011). Bringing both parts of this case study together, the following final conclusion will aim at building a bridge between the separate areas of environmental and labour policy making, and will discuss Denmark's focus on growth in the light of the sustainable work framework.

## 4. Conclusion: Bridging part 1 and 2

What becomes apparent from the two parts of this case study is that although both environmental as well as labour policy are important areas in Danish policymaking, they are two entirely separate fields. From the perspective of the theoretical framework of this study, this is problematic, as reproductive and productive processes cannot be separated. Any policy for a sustainably society in a holistic perspective should integrate environmental aspects next to its main concerns – and conversely, true commitment to environmental policy making needs to permeate all other policy areas[18]. The Danish example illustrates this – albeit it may seem like "complaining on a very high level", when looking at Kyoto emission inventories and Danish climate action plans.

Lacking this integrated perspective, Danish growth is – although termed "Green Growth" – not sustainable in the long term if viewed through the framework presented here. It leads to (slowly) rising emissions globally, as emissions outside Denmark are projected to keep rising with Danish growth, confirming claims that GDP and environmental degradation of some sort are inevitably coupled (Antal 2014). It also leads to socially detrimental effects within Denmark when targeted as the main goal of policymaking, illustrated by an erosion of welfare standards and a focus on paid work as sole satisfier of human needs. Of course, the quest for GDP growth of Danish policymakers is understandable, as demographic developments will otherwise have a detrimental effect on public finances. However, subordinating other goals – such as general wellbeing or sustainability – to this one objective is at best questionable.

One lesson that can therefore be drawn from this case study is that ambitious plans to combat climate change are an important and helpful step towards a sustainable society – but they are not enough. Accounting for emissions through consumption-side calculations such as the carbon footprint show that decoupling from GDP growth is not happening, or at least not happening fast enough. Other countries continue emitting CO2 to satisfy Danish demand, and the reduction of emissions on Danish territory is almost overcompensated by an increase in emissions elsewhere. This shows that even the most ambitious national policies are not enough if looking at the global scale. Other measures are needed.

Sweden is an interesting example, as it committed itself to pursuing the "generational goal" and therefore taking emissions in other countries into account (cf. case study on Sweden, this report). However, policies for pursuing this goal are not fully developed yet, apart from some initiatives concerning trade. As it is difficult for a single country to influence global developments or production technologies in other countries, policymakers need to find a way of influencing global flows of trade and emissions

[18] Here the Danish "Green Check" as a combination with environmental taxes is an interesting example, as it is a bridge between general social policy and environmental policy. It ensures that the goal of equity is not endangered by environmental policy and introduces a progressive element into ecological taxes. However, the focus here is on labour market policy – which still remains untouched by environmental considerations.

within their own country. As the main target must be to reduce emissions caused by consumption, the latter is precisely the area that should be at the core of corresponding policies.

While there are many possible ways of influencing consumption, one of them could be labour market policies. One frequently suggested policy to promote sustainable lifestyles is a reduction of working time (per week or over a lifetime). Although effects are ambiguous (Kallis et al. 2013), this suggestion is contrary to what Danish policymakers have introduced during the last decade. Another possibly promising route to take concerns transport and commuting, as this is one of the areas where emissions are still rising, even within Denmark. However, as most other propositions that take the same line, both suggestions still constitute only minor changes within the existing setting. What a truly sustainable reorganisation of work needs is a change in the definition and perception of work in line with the concept of (re)productivity, as well as an acceptance of the satisfaction of needs as the ultimate goal of economic activities – not GDP growth. This will require an extensive amount of new research in order to operationalise and guide such a transformation.

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# IV. How has the Greek fiscal crisis transformed its labour market?

## A case study of three individual coping mechanisms

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## 1. Introduction

In the theoretical framework laid out in the introductory article to the series, sustainable work is defined as 'human mediating processes between nature and men/society that enable and support the current and future satisfaction of individual needs, and create equitable societies that operate within biophysical limits' (TF). As such, the focus is on achieving the notions of individual needs as defined by Max Neef and the necessity to restructure both human and natural reproductive and productive labour as demonstrated by Biesecker and Hofmeister (ibid). Obstacles to the realization of such a vision have been identified as the profit-driven nature of our economic system, the alienation between nature and humans, as well as the role of markets as the organising principle of the economy and society. The following Greek country case study illustrates conflicts between actions that could bring society closer to sustainable work, the challenges that stand in the way as well as developments in civil society that can act as enablers and disablers in the context of such a sustainable work vision.

There have been many Greek narratives throughout history. It is the origin of western democracy, philosophy, literature, drama, major science and mathematical principles, and is considered to be the cradle of western civilization. However, in recent years, and especially since the onset of its fiscal crisis in the aftermath of the Global Financial Crisis of 2008, Greek stories have evolved along the lines of tragic comedies. With regards to the utopia where sustainable work guarantees individual and social needs whilst staying within biophysical limits, Greece is a counter-case study rather than a model.

In grand stories, the people are often submitted to a secondary role, reacting to political acts and decisions played out on the national and regional stage. This case study will not focus on how the fiscal crisis came to be or the details of Greek public debt. Instead, it will examine the topic of work, or lack thereof, in Greece, how people are dealing with the existing labour climate to ensure their subsistence and other fundamental needs as well as what such emerging trends can / may mean for matters of social equity and biophysical limits. The first part is devoted to giving a descriptive overview of the Greek environmental, labour and social spheres in its recent history. Three individual coping mechanisms – emigration, a return to agriculture, and the growing sharing economy - and their affects on the labour market will be elaborated in the second part. Opportunities for government to adapt policies and actions to grassroots coping to help increase sustainability will also be examined.

## 2. A Brief Note on Greek Politics

"The Greek crisis was always as much about politics as economics. Now it is all about politics" (Stephens 2015). While politics and economics are inevitably intertwined, the level of uncertainty surrounding Greek politics has been a limiting factor in the research process for this case study.

The Greek crisis has greatly changed the dynamics of Greek politics. The principle dispute between the parties concerns whether to enforce Troika (the European Commission, the European Central Bank and the IMF)-dictated austerity measures in return for bailout funds or to leave the monetary union and

default on its debt and regain power over monetary policy. Popular unrest has seen growing support for fringe parties, of which Golden Dawn has dominated headlines, for its aggressive and violent attitudes to immigrants, as well as its desire to leave the European Union, end austerity and to adopt far reaching redistributive programs (Matsaganis 2013). Generally, the reason behind the popularity of fringe parties is the underlying distrust of the austerity backing European Union. This has been demonstrated by the election victory of the left wing SYRIZA opposition. Its main policy goal was to seek a renegotiation of Greece's €320 billion debt, a development that was feared to potentially trigger Greece's ejection from the Eurozone and default. Following a Keynesian strategy, it criticized austerity and backs a European New Deal, proposing a growth-financed repayment of Greece's debt (ibid).

While the people who elected SYRIZA into power hope that they will end the austerity measures, reverse public cuts across the country and renew government spending to stimulate the economy back into a growth phase, SYRIZA's continued negotiations with the EU have caused civil uproar as they have not fulfilled many of their campaign promises.

As SYRIZA and the Troika debate back and forth on the conditions and compromises for the next bailout deal, policy reforms are revised time and again. The reforms referred to in this case study are those released in April 2015.

## 3. An Overview of Greece Pre-and-Post Crisis

Prolonged unemployment, especially youth employment, hit a record high in 2014 and has only seen slight improvements. Astronomic public debt figures from bailout loans have become the nexus of domestic, regional and international attention, leading to much instability within Greek political and social fabric. While it remains high on the Human Development Index at 29 worldwide, the Greek populace is now one of the least happy people in Europe (see Figure 4) and poverty levels have risen significantly.

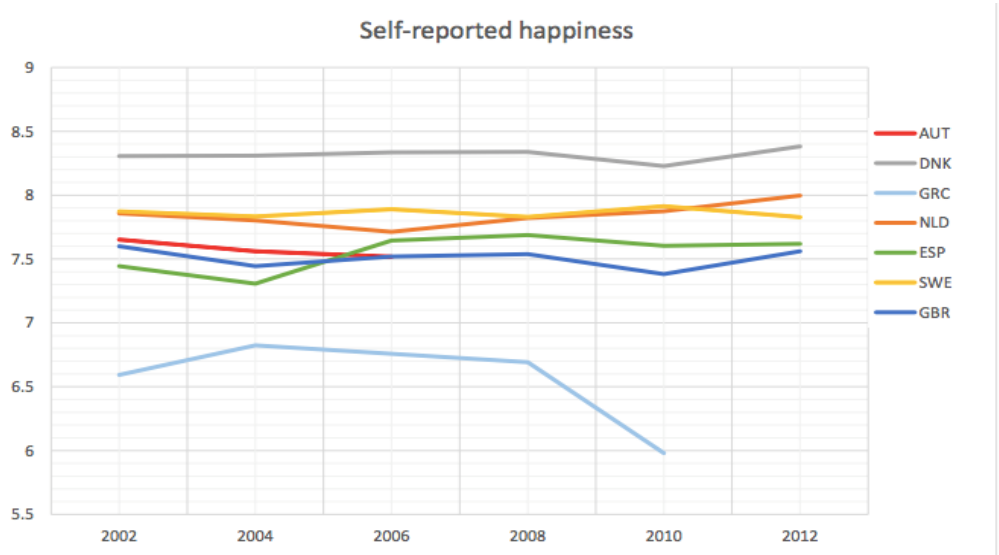


*Figure 4: Self-reported happiness*

## 3.1. Stuck on the Road to Green Development

The environment held little to no priority for the Greek administration until its accession to the European Community/Union, which over the years has played a significant role in molding Greek environmental legislation and policy (Tsaltas 2011, 141-142). Between 1960 and 1980, Greek economic growth rates peaked at a yearly average of 6.1%; this fast growth was bundled with serious environmental problems such as "air pollution, soil erosion, deforestation and noise pollution" (ibid, 144 and 153). Contrary to countries such as Germany, industrial pollution accounts for a relatively small portion of Greek ecological challenges, with the bulk of it stemming from "imported consumption models, anarchic physical planning, medium-and-small-sized enterprises...and...major state infrastructure projects" (ibid, 144). As Figure 5 demonstrates, Greek consumption up until the Global Financial Crisis, increased rapidly with GDP growth, at times surpassing growth rates, showing no decoupling tendencies.

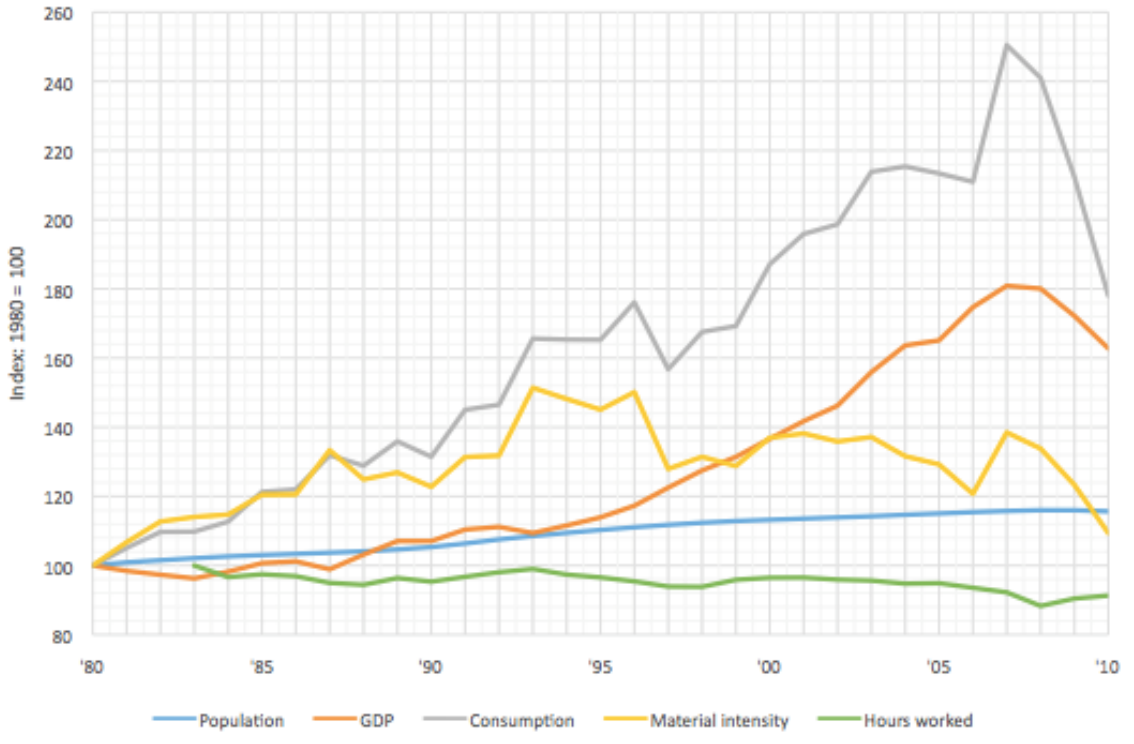


*Figure 5: Greek trends in resource consumption*

Under EU environmental stewardship and as a result of increasingly visible environmental problems, the Greek government under the socialist PASOK party embraced the idea of Green Development, which was primarily conceived of in terms of an ecological modernization that would deliver environmental protection through economic development and also result in mass job creation (ibid, 168). The period of Green Development began before the crisis and extended into its early stages. A major PASOK publication in 2009 stressed: "the economic and the environmental crises are related to the crisis of the conventional development model. The way out of this 'double crisis' would come through

investments and jobs' creation in the environmental sector" (ibid, 168). Select government and NGO policy suggestions to spearhead such job creations included internalizing environmental costs, implementing green taxes and subsidies, penalizing dirty industries and rewarding green ones (ibid, 168-169). While the sustainability of Green Development is debatable, it is evident that in the period leading up to and even in the beginning of the crisis, environmental issues were on the Greek government agenda and policy suggestions moved in a direction that incorporated ecological well being with labour market considerations.

The political backing of explicit Green Development came to a halt as the crisis unraveled. While early phases of the crisis showed decreasing consumption, material intensity and emissions after the fiscal crisis hit Greece, Green Development was redefined into a more conventional development based on direct environmental exploitation (ibid, 174-5).[20]

The first stage of the post-financial crisis impact was represented by environmental benefits in the form of significant reductions in various pollutants from production and consumption activities, mainly due to "fuel related emissions decreases in public electricity and heat, road transportation, manufacturing industries as well as process related emissions from cement production" (EEA 2012). Emissions from all sectors not covered by the EU ETS were significantly lower than target levels, with LULUCF activities decreasing net emissions in contrast to other EU countries. By the end of 2011, Greece was more than on-track to meeting its Kyoto Protocol targets (ibid).

Nevertheless, such short-term impacts soon developed into a more problematic situation that stemmed from economic measures intended to resolve the crisis. An unintended consequence of demands from the second Memorandum package, which hiked up the price of heating fuel to increase state revenue, led to an en masse substitution of central heating oil with wood, other fuel and even dangerous materials such as old furniture and plastics, "resulting in urban smog containing particulate matter PM2.5, sulphur dioxide, carbon monoxide and other pollutants at least five times higher than acceptable levels" (Lekakis and Kousis; 2013; 314-5). As of April 2013, the Troika had not agreed to reduce this tax despite signs that it did not obtain its intended results (ibid). "Under troika policies, major concerns centre on legislative changes, budget reductions and the restructuring of environmental agencies, and the non-implementation of environmental laws" (ibid, 316). As many of Greece's environmental agencies are new, cuts and restructuring lead to their ineffectiveness and general undermining of the progress made in the pre-crisis years in the framework of EU environmental policy (ibid). Pre-crisis references to green

[20] A cabinet reshuffle resulted in the appointment of the previous Minister for Finance, Mr. George Papakonstantinou, to the Ministry of the Environment. In a speech before Parliament, he redefined Green Development as "a kind of development which creates jobs, which highlights and turns into a source of wealth the country's advantages, whether they are the Renewable Energy Sources…the natural environment, the sun, the sea, the forests" (Botetzagias 2011, 174-5).

economy were replaced with the need to create a "business-friendly Greece" (Apostolopoulou et al, 2015, 21). Environmental licensing legislation, for example, "was one of the main barriers in the state's attempts to boost investment and allow development of public property by third parties" according to a former Environment Minister (ibid, 23). In April 2012, the EC also noted in its publication "Growth for Greece" that land-use planning and environmental licensing rules were often "obstacles to investment" (ibid).

### *3.2.* In the Name of Job Creation – the Economic Adjustment Programme and Austerity

While Greek unemployment rates has a history of being higher than other EU countries, they reached unprecedented highs after the crisis hit, and were further exacerbated by austerity measures implemented according to the economic adjustment programme (EAP). The EAP was agreed upon in 2010 between the previous PASOK-led Greek government and the Troika in exchange for financial aid provided by Eurozone countries and the IMF (Karamessini 2013) and has had net negative impacts on the labour market as well as individual workers.

Unemployment rates rose in 2008 dramatically from 7.7%, peaking in February 2014 at 28%, before decreasing marginally to 26.1% in November 2014. Youth unemployment rates, which have received a lot of attention in Greece and the EU, and female unemployment rates, which have mostly not been discussed at any policy level, have both been higher than the average even before the crisis. In 2008, youth unemployment stood at 22.1% compared to the overall unemployment rate of 7.7%. In that same year, the unemployment rate for women was 11.4%, more than double the men's rate at 5.1%. The crisis exacerbated these trends. In the third quarter of 2013, the unemployment rate of job seekers aged 15-24 had reached 57.2%, while the rate for those aged 25-29 was 43.8% (Antonopoulos; 2014). Overall youth unemployment was at the staggering high of 49.80% in November 2014 (OECD 2014). In the third quarter of 2013, when the overall unemployment rate was around 27.4%, the women's rate was at 31.4% while the men's rate was 24.4%, even though the hardest hit sectors in Greece were male-intensive (Antonopoulos 2014). It is notable that female youth unemployment is significantly higher than male youth unemployment but that in fact, as shown in Figure 6, "women's opportunity to find gainful employment across all age groups is bleaker than men's..." (ibid; Figure 2.8 p26). Long-term unemployment, which increased from 49% to 71% between Q4 2007 and Q1 2014 (OECD 2014) show similar gender polarized trajectories. Studies show that even if the economy were to return to pre-crisis growth, averaging around 4% per year, it would take 14 years for unemployment to return to pre-crisis levels (ibid).

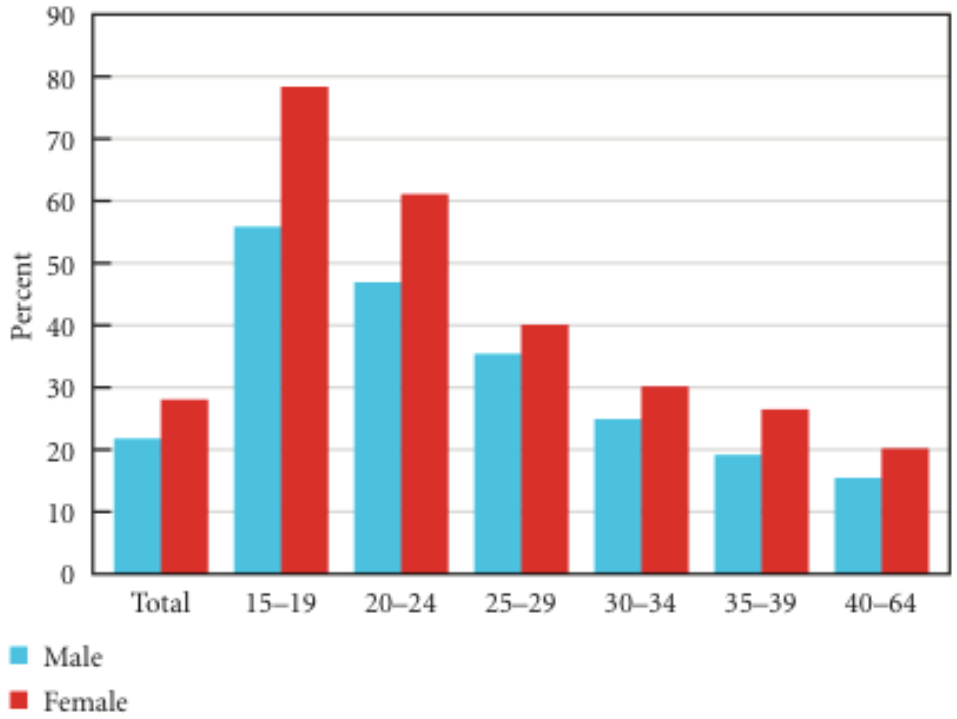


*Figure 6: Unemployment Rates by Age and by Gender, 2012 (in percent) Source: Eurostat, LFS, annual percent average of quarterly data; Antonopoulous et al. 2014*

Karamessini qualifies the EAP as a neoliberal project that seeks its adjustment via reducing workers' incomes and rights, public ownership and the welfare state (Karamessini, 108). The initiatives to induce more labour market flexibilities translate into an effort to "curb workers' resistance to wage reductions and withdrawals of employee rights" (ibid, 110). Wage reduction is achieved largely by attacking on collective bargaining and the gradual weakening of union power as the EAP progresses (ibid). Measures that seek to corrode workers' rights are understood to increase firm competitiveness and therefore lead to more jobs. Wage reductions (see Figure 7) and policies that were introduced to enforce such goals however, such as employer-led flexible working time and "increase in standard working time from 37.5 to 40 hours a week without any rise in pay and a drastic reduction in overtime working" (ibid, 110), did little to stimulate temporary employment but seem to have only increased part-time work at the expense of full-time work; full-time contracts fell from 67% in 2010 to 53% in 2013 (ILO 2014). Expansion of reduced working-hour arrangements happened in parallel to the flexible working time schemes and has resulted in the conversion of full-time contracts into part-time contracts or intermittent employment relations, increasingly without employee consent. Unilateral decisions of employers regarding layoffs increased from 13% in 2010 to 39% in 2012 (ibid, 92-93).

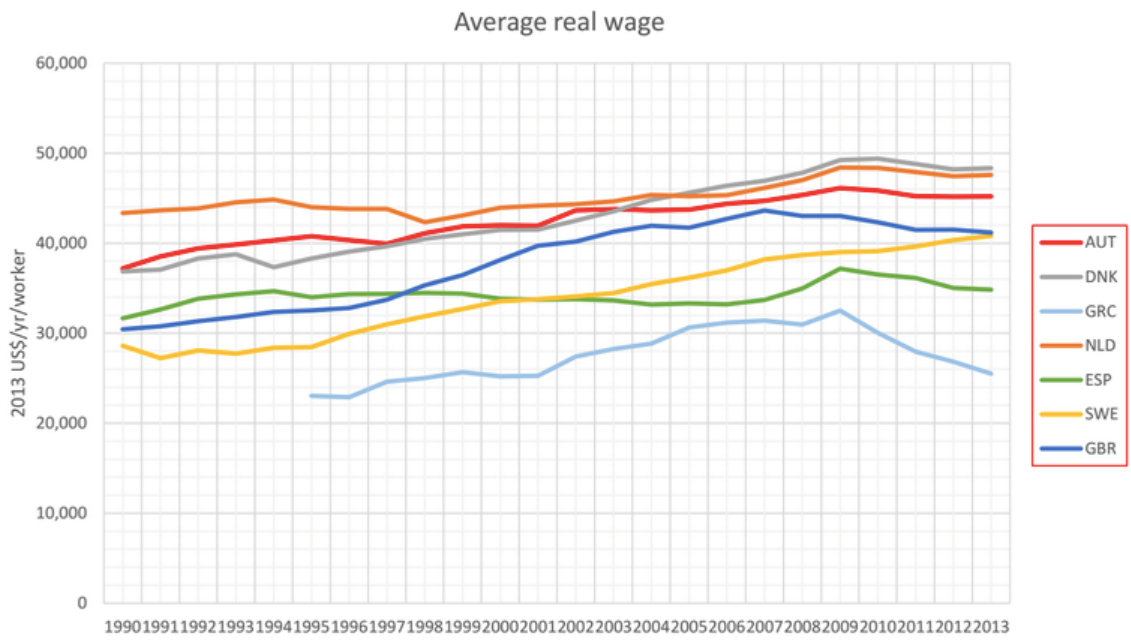


*Figure 7: Average annual wage*

Unemployment and wage reductions have affected immigrants even more harshly than Greek nationals, in contrast to labour conditions prior to the crisis (Cavoundis 2013, 66). Before the crisis, it is estimated that there were over one million foreign immigrants in Greece, primarily from Albania and other Eastern European countries. With the onset of the crisis, (documented) foreign workers in the Greek labour market decreased by 33% between 2009 and 2013 as the economy stalled. In 2013, there were 494 807 documented immigrants in Greece, 73.6 % of whom were considered to be economically active, of which a quarter remain in construction, followed by agriculture, processing industries and domestic housework, which primarily employs female immigrants (EURES 2015). As immigrants must have valid employment to fulfill legal requirements to stay in Greece, there is no documentation of how many illegal immigrants remain in Greece now working in the black market (ibid).

In general, jobs in the service industry are the main types of available jobs in the private sector such as in tourism and catering, salespersons, office workers, hairdressers, financial services workers, plumbers, car mechanics, porters and technicians (ibid).

## 3.3. Social Ripples - Beyond Unemployment

In parallel to directly affecting the Greek people's ability to self-actualize and to earn income for basic subsistence needs, labour market problems as a result of the crisis and austerity have also spilled over into the social sphere. The affects on poverty levels were not immediately visible because relative poverty increased only slightly from 20% in 2009 to 21.3% in 2012.[21] However, if material living standards are compared with not just the national average, but also with people's previous living standards, the increase is more dramatic. This approach "anchors" the poverty line to 60% of the median

[21] When the poverty line is allowed to vary with 60% of the median income, (here, from €570 per month in 2009, to €458 in 2012).

income in 2009, in real terms. Anchored poverty increased by 20% in 2009 to 37% in 2012 (Matsaganis 2013, 10-11).

Since the crisis Greek government spending on social protection and health fell by 18% in real terms, compared to a 14% average increase across OECD countries. Out of 1,054,626 individuals registered as job seekers with the national employment office Manpower Employment Organization (OAED), only 105,694 individuals received unemployment benefits in March 2014. This coverage rate of 10% is down from 35% in the first quarter of 2010 and 28.8% in the same quarter of 2012 and can be seen as a direct result of the enforced austerity measures (ILO 2014, 121).

Squeezes on welfare have also been reflected in healthcare provision. Though Greece enjoyed the highest per capita ratio of doctors in Europe in 2010, with 6.1 per 1000 people, health related public expenditure fell from US$2,036 in 2009 to US$1,535 in 2011 (Matsaganis, 19). Demand shifted from private towards public health-care provisions - admissions to public hospitals increased by 24% between 2009 and 2010, and further increased by 8% in the first half of 2011 (ILO; 2014, 125-6).

In line with this trend there has been a rise in inequality. Similar to relative poverty, inequality in Greek society has not increased dramatically, with the GINI coefficient remaining relatively stable (Mitrako 2014, 29). However, within the first three years of the crisis inequality from work and capital increased as much as in the previous twelve (ibid, 15), a trend exacerbated by Greece's diminishing social transfers. These factors have resulted in a decline in life satisfaction. When asked to rate their general life satisfaction on a scale of 0 to 10, Greeks gave a rating of 4.7, the lowest score in the OECD, where average life satisfaction is 6.6 (OECD Better Life Index). Moreover, Greece also ranks last for subjective well being, measured by the rate of daily positive experiences and feelings, and the absence of negative experiences and feelings. In Greece, only about half (52%) of the people reported having more positive experiences (ibid).

### 3.4. Unsustainable Crisis

As demonstrated in the sections above, the fiscal crisis in Greece has transitioned into a social and environmental crisis, demonstrating myriad of unsustainable features, whether considered on a needs, equity or environmental level.

Referring to the Max-Neef fundamental human needs, those with employment could be said to satisfy subsistence and participation needs, but even many of those people lack protection in the form of reliable social security and healthcare as funding for public programs are reduced in scale and quality or cut altogether. Increasingly unequal relationships between employers and employees also deprive individuals of the need for leisure and freedom, as workers must cave to employer demands to keep the job that provides subsistence and in turn give up time they could spend fulfilling other needs. The unemployed struggle to fulfill their basic subsistence needs and have no time or energy to adequately satisfy their other needs. While debates about employee-led work time reduction stir in other EU

countries, Greeks want to work as much as possible to maintain basic subsistence. As such, Greece's low and declining self-reported happiness is not surprising.

What efforts Greece had made pre-crisis towards obtaining an equitable society has been heavily disrupted by the crisis. From another perspective, the crisis demonstrates the lack of robustness and weakness of Greek equity. Unemployment has affected men and women very differently, with female unemployment, both overall and youth, surpassing the male figure by far. Youth unemployment is particularly worrisome as its impacts can lead to skill erosion, decreasing motivation to find a job and structural unemployment (OECD 2014). Gender inequity in unemployment can also have drastic repercussions for the social fabric. Also interesting to note is that migrants have been much more affected than nationals (Cavoundis 2013, 66), pushing many formerly legal migrants into illegal status in a short period of time, aggravating existing inequalities and intensifying anti-immigrant sentiments amongst Greeks. Such social rifts are highlighted by the protracted recession and brought to the forefront of society by rising support for Golden Dawn, the radical right wing and violently anti-immigrant party (Ellinas 2013, 560). Inequities between human activity and the environment has led to exploitation of the environment for fast cash, which in turn devastates local biodiversity, vegetation as well as its population.

The newly elected left-wing SYRIZA-led government campaigned to victory in January 2015 on promises of enacting a National Reconstruction Plan consisting of four pillars that seem to address individual needs, some dimensions of equity, though quite lacking in environmental policy reform:

1. Confronting the humanitarian crisis
2. Restarting the economy and promoting tax justice
3. Regaining employment
4. Transforming the political system to deepen democracy (SYRIZA 2014)

The first pillar included various handouts and subsidies to those below the poverty line as well as reintroducing a "Christmas bonus" for 1.3 million retirees with low pensions. The second pillar aimed to alleviate tax pressure on the middle class by cutting their property tax and only taxing large properties, reintroducing an annual income tax threshold, and enabling people to pay their tax debts in installments (ibid). The third pillar promised to create 300, 000 jobs and to restore collective bargaining agreements. The fourth pillar is a political one based on "empower[ing] the institutions of representative democracy and creating new institutions of direct democracy" (ibid). While there were many promising policies suggested to improve labour conditions as well as equity, it was environmentally ambiguous.

In April 2015 when SYRIZA's reform program was released many of the campaign promises were diluted or cut in order to secure bailout funds from creditors. Each final point that concludes every policy reform is a quantification of fiscal impacts. Restoring collective bargaining agreements and abolition of regulations that permit mass layoffs are phrased delicately as "include establishing minimum

employment terms" through a national collective labour agreement and start to working to increase the minimum wage and that this would all have "negligible impact". The massive job creation program had disappeared (Government 2015). The Troika did not find the reforms sufficient to unlock bailout funds and negotiations continue.

It is interesting to note that while paid work has been the alleged centrepiece of the Greek crisis narrative, in reality, the goal to generate government surplus and renewed economic growth in order to repay debts comes way before job creation. Well-being of both the Greek populace and its environment are both considered expendable and exploitable in the attempt to return to pre-crisis growth trends. Whether Greece and the Troika can come to agreement on a more sustainable plan to restructure the country remains to be seen. Whatever may happen with Greece and its international creditors, it is clear that abrupt and involuntary economic stagnation is not the equivalent of what some economists have termed sustainable degrowth nor do they result in 'buen vivir' (Martinez-Alier 2009).

## 4. COPING MECHANISMS

In times of crisis, when welfare states dissolve and people are confronted with explicit fundamental uncertainty, individuals derive ways to stay afloat. The most common strategy is to leave the country of crisis in search of a better life.

### 4.1. Emigration

Throughout history Greece has acted as both a source as well as a host of immigrants. Two important waves of mass emigration took place after the formation of the modern Greek state in the early 1830s, one from the late 19th to the early 20th century, and another following World War II (Kasimis & Kassimi 2004). From the early 90s until the fiscal crisis, however, Greece became a receiver of migrants (ibid). In the post-crisis years, Greece's net migration turned negative once again as shown in Figure 8 (OECD 2012; ILO[22]). In 2012, two-thirds of total Greek emigrants moved to another EU-27 country.

[22] "As a result of the economic crisis, an increasing share of the population is leaving Greece. Indeed, the number of people who left the country between 2010 and 2012 increased by almost 30 per cent – rising from 119,985 to 154,435.16. This represented the fourth highest increase among European countries, after Portugal, Italy and Hungary" (ILO 2014, 40).

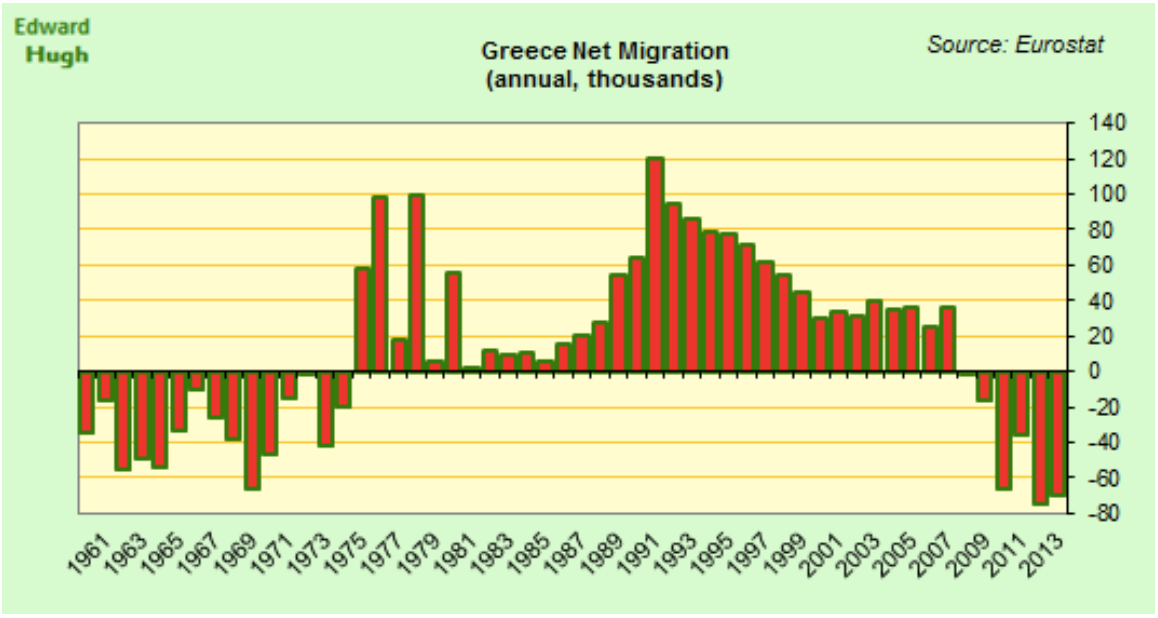


*Figure 8: Greece Net Migration*

At the same time, immigrant inflows and returns also took place, contributing to a unique socio-economic dynamic.

Emigration has been characterized as most significant amongst the young and also the more educated demographics; in many cases, the young happen to also be the more educated. People aged between 24 and 35 years old comprised a third of those who left. 90% of 1000 surveyed Greek emigrants held a university degree, for the most part "in technical subjects such as engineering, IT and mathematics" (ILO 2014, 40). This phenomenon has been characterized as brain drain.

What is worrying about the youth in Greece is that many are neither employed nor in education or training (NEET). "In 2011, the most recent year the OECD has data, 22% of 15-29 year-olds in Greece were NEET compared to 16% in OECD countries as a whole. Among 25-29-year-olds, the population of Greek NEETs was 30% compared to a 20% OECD average and lower only than Turkey's 40%"(ICEF 2014). Such tough job market forecasts along with the massive education cutbacks that the government has implemented as part of austerity measures paint a gloomy picture for Greek youths and may explain their desire to emigrate. "In 2011, the annual Ministry of Education budget for the University of Crete was 17.5 million euros ($22.1 million). In 2012, the budget was cut by 75% and in the following years by a further 15%. Next year there will be yet another cut of 23%" (ibid). The situation was judged to be so dire last year that eight major Greek universities suspended their operations to protest funding cuts. The government had cut their staff allocations by nearly 50% (1,349 personnel). Teachers are also affected by cuts and some also consider better prospects abroad for career as well as subsistence reasons. Their gross salaries have decreased by 17% compared to the OECD average of 2% (ibid).

Media articles have been reporting on the Greek brain drain since 2012. Surveys show that students and professors alike are looking abroad for opportunities and jobs. Doctors have also been reportedly leaving

the country for greener pastures. The Medical Association of Athens (ISA) says that 4000 doctors left Greece over the last three years (2011-2014). Of these 62.5% are skilled professionals who have completed their education but find that the National Healthcare Service (ESY) and the private sector cannot absorb the new qualified doctors (ibid).

"The financial crisis and the lack of planning the education of the required medical staff has led to this dead end. In the past, Greek doctors, would go abroad to further educate themselves. Now they only do this to earn a living. And they are leaving from a country where health levels significantly drop with each passing day," said ISA President George Patoulis. Destination countries include Germany, France, the UK, Scandinavian countries but also further countries such as the US and the UAE (ibid).

General interest of Greeks to emigrate can also be seen from the number of CVs uploaded to EURES, the gateway of European mobility in which public employment agencies (such as the Greek OAED) of the European Economic Area countries participate (Cavounidis 2013). Specifically, in October 2011, more than 20,000 Greeks had posted their CVs on the site, while in November 2010 there were fewer than 11,5000 (ibid).

One study conducted by Deutsche Bank, suggest that fears of brain drain is premature and that emigration, youth or otherwise, could be good for providing relief for the pressurized labour market: "Given the ongoing high unemployment even for qualified young people in the periphery, taking a job abroad is obviously better for the youngsters than inactively staying at home" (Bräuninger 2014). The study suggests that experience studying or working abroad can "boost career opportunities" and that "a substantial number of today's emigrants are likely to move back home when the labour market situation has improved" (ibid). Though the study admits that a "lasting exodus of skills from the southern periphery would entail serious structural problems" and that a net negative migration trend Greece and other South European countries would be among "the most rapidly ageing population on the globe and their workforce would shrink substantially" (ibid).

While emigration in pursuit of employment or better jobs clearly fulfills self-actualization purposes, and from a purely economic perspective, free labour mobility can be seen as "an equilibrating force on labour markets" across growing unemployment disparities in Europe (Jauer et al. 2014). "A high turnover in the labour market may be helpful for potential migrants to find jobs, enabling "outsiders" to compete more successfully for job vacancies with "insiders" (ibid). For Greek nationals who emigrate, social-economic impacts in terms of demographic shifts and in-country skill loss exist.

## 4.2. Agriculture

Amongst Greeks who do not see emigration as a viable or desirable path, there has been a growing "back-to-the-land" movement, especially with regards to the youth. The media has taken to focusing on this movement as a major coping mechanism for Greeks to deal with the high unemployment. Young Greeks have also taken to various media to express their optimism and desire in rebooting the economy

through the Greek countryside; the "Farming on Crisis" video blog won the Arclight Cinemas award in Hollywood and has drawn international attention to the younger generation of Greek farmers (Foodpolitics 2013).

Greece has a strong agricultural culture and history; up until the end of the 1980s, it remained the most agrarian economy in the EEC with flourishing micro and family enterprises in all sectors, including the agricultural sector. Urbanization is a relatively recent phenomenon that occurred in the 1990s and 2000s as the importance of agriculture (and manufacturing) in GDP declined and "production and growth dynamics moved decisively towards tourism, construction, services and shipping" (Karamessini 2013, 98). In 2012, the Greek economy was made up primarily of the service sector (80.6%), industry (16%), with agriculture trailing at 3.4% (CIA 2015). Nevertheless, the Greek agricultural sector is perceived as significant not only because it continues to be a source of employment (12.9% of the labour force in 2013, which is around 500, 000 people) but Greece is also a major producer for the EU, first for cotton and pistachios, second for rice and olives, and third for figs, almonds, tomatoes, watermelons, and fourth for tobacco (CIA 2015; Hellenic Republic 2015).

Greek soil is allegedly some of the most fertile land in the world, where literally anything can grow and in fact, some things can only grow here (Foodpolitics 2013). There are approximately 1.5 million Greeks, about 10% of the population, who wish to return to the land and work in agriculture. A study conducted in 2012 on behalf of the Ministry of Agriculture found that 68% of individuals randomly polled in Thessaloniki and Athens are considering, or preparing, for migration to villages. Over half of these respondents indicated that they are planning to get involved in agriculture (Daudon 2015, 2).

Greek farming has been a major beneficiary of the EU Common Agriculture Policy, receiving, along with Ireland, the largest per capita payments (ECPA 2015). In 2013, Greece received a total of 3017091.8 euros in CAP funds. The CAP has been historically controversial since it makes up a third of the EU budget and had led to over-production as subsidies used to be linked to production volume. Reforms in 2003 has reverted this policy error, decoupling direct subsidies from production volume and focusing more on environmental assessments. The CAP reform 2014-2020 sets the program's objectives as "viable food production, sustainable management of natural resources and climate action and balanced territorial development" (European Commission 2013). In general, the perception is that Greece has positively benefitted from the CAP as it has allowed its agricultural infrastructure to be upgraded, however the focus on output intensification, something the older Greeks know as "more kilos, more money" has had devastating consequences for the Greek environment (Foodpolitics 2013).

Also problematic for Greek farming has been the domestic migration of labour from the rural to the urban centres and the social perception that farming is not a desirable job (ibid). This perception is being reversed by the crisis due to financial but also ideological reasons amongst younger people (Daudon 2015). A study by the Pan-Hellenic Confederation of Agricultural Associations has shown more

promising signs of life in the countryside since the financial crisis hit. It revealed that the farming sector had grown by 32,000 jobs between 2008 and 2010 - mostly filled by Greek nationals (Stolarz 2014).

Interest in farming is resurging, demonstrated by a three-fold increase in applications to schools like the American Farm School in 2011. The school teaches various farming methods including experimental farming but claims to remain dedicated to ecological sustainability. They do also offer an organic farming program. Greek agriculture went into decline when it joined the EU and due to EU subsidies, Greeks decided to either give up farming or outsourced the land to others – mostly immigrants – to farm the land. The hope is that the young people going back to the farms can bring an entrepreneurial spirit that will kick start Greek economy through its land (ibid).[23]

A study conducted by Daudon S & Vergos E (2015) by interviewing new and old Greek farmers, agricultural experts, focus groups and participant observation with results which they documented and analyzed revealed more socio-economic nuances about the "back-to-the-land" movement. While the study confirms that "a wide range of Greeks appear to be considering farming for both economic and ideological reasons", it highlights various nuances and socio-economic details that are not explicit upon first glance. Firstly, it differentiates between those who move to a rural area and those who decide to farm as very distinct decisions (ibid, 4). Secondly, it notes that many who begin farming do not necessarily move to the rural area and instead commute from the cities (ibid, 9). Last but not least, it stresses that most young people who get involved with farming do so because they have family ties to farms and have inherited both land and knowledge from their parents; some of the farms are already operational (ibid, 5). Even with family support, there remain many economic challenges to farming. Many interviewees from the study indicate they have second jobs that add to their farming incomes or consider themselves unemployed and are still waiting for their yield to turn a profit. There is overall frustration at the cut that middlemen and merchants take,[24] and for those truly new to farming dissatisfaction with the lack of information out there, from what crops are suitable for which land to where to find their markets (Foodpolitics 2013; ibid, 6). Aside from the economic need to sustain themselves, many individuals cited the psychological impact of "being close to nature", being "independent" and "their own boss", and a freedom from the "modern jail" of a nine to five office job"

[23] In the rural areas in particular, the role of female domestic workers had great socio-economic ripples; their exploitation enabled Greek women to run core operations in farms, and the Greek men to find better-paid jobs in the cities. In the decade before the crisis, small family Greek farms were almost completely feminized (Papadopoulos; 2013, 211).

[24] The Potato Movement, which allows producers to bypass profiteering middlemen like large grocery chains and to sell directly to the consumer, was a popular scheme with Greek people. It slashed prices and enabled buyers and sellers to connect and build relationships. People have gathered in solidarity to fight a new legislation that has essentially made the Potato Movement illegal.

(Daudon 2014, 8). Experts and some entrepreneurs see a return to more traditional and ecological way of farming characteristic of small-scale farming embedded in Greek history as the way forwards. There is the perception that they will be trailblazers when the economy picks up again, as conventional farming loses favour and organic farming becomes the norm (ibid, 9). The knowledge and preference of transitioning to organic farming had started before the crisis, with a 885% increase between 2000 and 2007, the highest percentage change in all of the EU (Hellenic Republic 2015). Despite this positive development, organic farming remain a small percentage compared to conventional farming methods, reaching 4% of total crop area in 2007 (United Nations).

The environmental impacts of agriculture cannot be ignored in this discussion. While Greek agricultural development has prescribed lower environmental pressures in comparison to other EU countries, efforts towards agricultural intensification, the use of fertilizers and pesticides as well as expansive irrigation has had negative long-term impacts on land, aquifer quality and biodiversity, resulting in erosion, soil salinity. As almost 70% of Greek land comprises of poor soil or forest land, the pressures heaped onto fertile land is exceedingly concerning (Hellenic Republic 2015). “The mechanisation and intensification of agricultural production of the last decades, aiming at the maximisation of efficiency, has led to an increase of pressures on the environment, which in some cases approach the carrying capacity of the ecosystem.” (United Nations) Much of the country's agricultural produce is intensively grown on a limited area of fertile, irrigated lowlands, giving rise to localised environmental pressures. Fertilizer use has decreased while pesticide use has increased. Furthermore, the sector contributes considerably to GHG emissions (ibid).

At the end of ‘Farming on Crisis’ (Foodpolitics 2013), the interviewer Pavlos asks the Minister for Rural Development whether the Greek countryside has the carrying capacity to sustain all 1.5 million Greeks who answered in the survey that they have or want to begin farming. The Minister says it is not a matter of resources but of human willingness to transfer labour to the countryside; it is possible to farm with less fertilizer and pesticide and no irrigation. While this may be true, there certainly will need to be the right policies in place to ensure that sustainable farming methods are applied if this counter-urbanization is really to take place. The crisis and the unemployment that it has unleashed on the urban centres as well as industrial and construction sectors is pushing the unemployed back to the land – for the time being, the land can provide both a basic sustenance in the form of food, a sense of fulfillment and self-actualization for the individual, as well as spiritual fulfillment as the people live closer to the land and nature. Whether biophysical limits and equity requirements will be respected is a matter of policy.

### 4.3. Sharing Economy

Greece’s sharing economy has existed far longer than the crisis, perhaps due to its long history of small and family networked enterprises as well as its high self-employment figures. The Greek shadow

economy[25], of which the sharing economy makes up only a small portion, was estimated at 25% of GDP in 2012, though methodology to provide such figures is contested.[26] Greek hoteliers estimated that the national economy "lost more than €1 billion in the form of unpaid tax and social insurance on behalf of property owners" in 2014 but this is only referring to the sharing economy within the tourism and hospitality sector (GRReporter). As with most informal institutions, there is no official quantifiable statistic to measure it.

Advocates of the sharing economy portray it as "an economy based on 'access over ownership' and asset utilization. At a basic level, sharing (rather than owning) is more economically efficient, more environmentally sustainable, and more social" (Rinne 2015). Rinne, an expert on the sharing economy, has said that it is a mistake to see the Greek sharing economy as a reaction to the crisis and that rather "after decades of overconsumption people are looking for more sustainable patterns of economic behaviour" (GRReporter 2014). While this may be the case for some, factors such as "decreased consumer trust in the corporate world as a result of the financial and economic crisis," rising unemployment rates, and the decreasing purchasing power of consumers, also contribute (Dervojeda 2013, 2).

On the back-end, this phenomenon is tightly connected to the growing entrepreneurship amongst Greeks. As many firms shut down amidst the crisis, many new firms have surfaced. According to government figures, more than 41,000 new companies were formed in Greece last year (Kitsantonis 2014). While many of these companies have conventional business models of direct sales to consumers,[27] many are also venturing into the sharing economy. International sharing platforms such as AirBnb and Uber are both well-known and used. AirBnb's popularity is supported by the pre-existing condition that 80% of Greeks own their own homes (Rinne 2014 Guardian). The local sweetheart in Greece however, is Cookisto, which has followed in the footsteps of the Dutch social enterprise Shareyourmeal, an online platform that enables people to subscribe and buy meals from home cooks (Kitsantonis 2014).

Start-ups such as Cookisto employ a small number of people, between 3 and 20, usually under the age of 35 (ibid, 8). These firms generate some new jobs through direct hiring but also contribute indirectly to job creation by giving individuals the opportunity to become self-employed by commercialising a pre-existing skill or resource. In Cookisto's example, an unemployed person who is good at cooking can

[25] The shadow economy is defined by the European Commission as "those economic activities and the income derivedthereof that circumvent or avoid government regulation or taxation" (European Commission 2012)

[26] "Undeclared work can be measured both directly and indirectly. Indirect methods are based on the comparison of macroeconomic aggregates (such as national accounts, electricity consumption, cash transactions). Indirect (especially monetary) methods often over-estimate the level of undeclared work and say little about its socio-economic characteristics. Direct methods, on the contrary, are based on statistical surveys and have advantages in terms of comparability and detail, but tend to
under-report the extent of undeclared work" (COM (2007) as cited in European Commission 2012).

[27] It is interesting to note that most of them are food or clothing retailers (NYT), providing goods that are necessary for subsistence needs.

easily offer to share their meals for a reasonable fee (ibid). Over a period of several months in 2013 Cookisto gained 12000 users (ibid). It would appear from news coverage that the cooks participating in Cookisto are either housewives or unemployed women seeking new streams of fulfillment and income (Skarlatos 2013;CNN 2013). These women describe a sense of self-rejuvenation and happiness to be able to contribute to other people's lives while making some income (ibid). At the same time, users benefit from lower cost quality food and a greater sense of community. The benefits of the sharing economy are quite clear: the barrier to entry is low, one does not require tremendous capital investments as they can use existing resources, whether it is a personal skill or property, and the returns to investment can be immediate. As of 2012, Cookisto itself was not making any profits and is funded through an independent investor (CNN 2013; Kitsantonis 2014).

The benefits of the sharing economy enable it to directly compete with traditional product service providers, meaning a loss of market share and jobs for some industries (Dervojeda 2013). Overall, the sharing economy's net consequence on jobs remains ambiguous (ibid). In Greece, the formal industries most impacted are the hospitality and tourism sectors, which are also the country's primary contributor to GDP. The Hellenic Chamber of Hotels (HCH 2015) was so concerned it commissioned a third party agency to research sharing economy trends related to its emergence and expansion. The study was then presented to relevant government representatives and industry members, highlighting key concerns including taxation – conventional firms pay various taxes while beneficiaries of the sharing economy do not; licensing and certification – conventional firms acquire licenses and certificates for properties as well as services while the sharing economy evades relevant laws; safety and security – workers engaged in the sharing economy are not protected by legal working contracts and therefore unable to benefit from minimum wages, specific working hours, and social welfare, as well as zoning – those engaged in the sharing economy are not complying with existing zoning laws (ibid). While the study largely illustrates a traditional sector's attempt to set up a barrier to entry by a competing force, the study raises some interesting points about work in the sharing economy that may prove to be unsustainable – this will be addressed in the next section.

At the World Economic Forum in Davos in January, sharing economy expert Rinne (2015) described her presentation on the sharing economy and the future of sustainable tourism to Greek government and hoteliers as "awkward" (Rinne 2015). Yet, Rinne found herself amongst positive press and optimistic meetings with Greek city leaders the next day (ibid). Public reception aside, the sharing economy is a growing niche in Greek society because it is a way towards employment and self-actualization. The people's withdrawal from formal institutions is a reaction to the distrust that the crisis and the entire politico-economic atmosphere had fosters; policymakers must understand and work with this phenomenon instead of against it.

## 5. Grassroots Coping – Problems, Ambiguities and Opportunities

The following section will analyze each of the three coping mechanisms with regards to the dimensions of sustainable work, needs, equity and the environment, as laid out in the theoretical framework.

### 5.1. Emigration

It is clear that Greek people emigrate to seek jobs and income, in other words they seek to fulfill the existential category of 'having' food, shelter, work to fulfill subsistence needs. Through such a channel, they hope that they will also achieve other needs as well, such as creativity, identity, and freedom. Thus, in the best-case scenario, emigration is hoped to be a synergic satisfier of needs, satisfying more than one need at the same time. This could be a situation where an individual moves to a new location, integrates well, perhaps moves his/her family there subsequently, and essentially starts a new life in a new country. It could also present itself in Bräuninger (2014)'s hypothetical scenario, where the individual moves abroad to gain important experience and skills, and returns to Greece upon Greek labour market recovery. However, due to the broad and complex nature of emigration and the fact it is not one single act, the success of emigrating depends on myriad other actions, complicating anyone's ability to predict whether emigrating can satisfy Greek emigrants' needs adequately. In the worst case scenario, for example if the emigrant loses the job she/he had found elsewhere, emigration can become a pseudo-satisfier, providing a false impression of satisfying subsistence needs but then impairing that need in the long-run. There can also be other cases where emigration can become an inhibiting satisfier, where it satisfies the individual's subsistence needs but impairs the satisfaction of other needs such as affection, if he/she is separated from loved ones, identity, in case of not being able to integrate into the new country or if he/she faces discrimination due to being a newcomer, and protection, if social security benefits as a newcomer are not well-established in the host country. These scenarios can all result in the individual's return to Greece. However, if the situation in Greece does not allow the return for any reason, it may result in long-term life dissatisfaction for the individual.

On an equity dimension, access to emigration is more available to the young and those that are more educated. While these groups may benefit personally by coping with this mechanism, the social impact on Greek society can lead to both short-term and long-term inequities. The departure of youth en masse not only endangers Greece's ability to rebuild, contribute to social dilemmas of ageing populations but also decreases the people's sense of hope for the future. The departure of the more educated, in particular of certain professions such as doctors and teachers, not only deprive Greek citizens of the access to quality education and healthcare, but also deprive future generations of domestic training and expertise.

Emigration can be said to have negligible impact on the environment on aggregate, as it merely shifts a certain population, its consumption and waste from one country to another. Although for those cases where emigration acts as an inhibiting satisfier due to the individual's distance from family, the increased transport as migrants travel to and fro from their new home to their old to visit loved ones will increase emissions from mobility, especially if the commute is taken in the form of cheap flights.

The coping mechanism of emigration, while possibly promising for certain individuals, remains ambiguous for others in terms of fulfilling individual needs. On the social equity front, emigration is neither equitable in terms of the population's access to it nor in terms of its impact to Greek society. Environmental effects are negligible to negative. Greek policymakers should strive to mitigate its populations' use of this coping mechanism by working to create favourable working environments both in terms of the labour market as well as office working conditions. SYRIZA's labour reforms are heading in the right direction though there is little effort to incorporate biophysical limits into its labour reforms. As seen in other case studies in this series, countries that have developed based on a "jobs first, environment later" path have not proven to be sustainable in the long-run. As a starting point, Greece should focus on working with and collaborating with grassroots coping mechanisms that are focused within Greece, such as a return to agriculture and the sharing economy, which will be addressed below.

## 5.2. Return-to-the-land

The incentive for Greeks to return to agriculture is again a desire to seek jobs and income. However, from an income perspective, farming is an unstable satisfier for even the profitable farms. However, it qualifies as a synergistic satisfier for needs – fulfilling subsistence needs - in terms of having food and work and being physically and mentally healthy, leisure and affection needs - as it provides interaction and relationships with landscapes and nature, creation needs – as it is a sector where there are opportunities to invent, build, design be imaginative and innovative, and the need to have an identity – as it gives people a clear purpose, a place to root oneself and to grow with the farm.

In the recent past, Greece's countryside had very little equity and served as a breeding ground for social inequalities between men and women, Greeks and immigrants as well as humans and nature. What needs to be addressed in the current back-to-the-land phenomena is a lack of equity between people who have inherited land from their families and those who are trying to enter the sector as newcomers. The tools and information that are accessible to newcomers are insufficient and programs such as the Young Farmer's Program are not really accessible to those without farms. Not everyone has the monetary means to access schools such as the American Farming School either. The government can improve the gap in equity by acting as a provider of agricultural information, preferably with the help of both experts as well as experienced farmers, to share and spread sustainable farming knowledge – from what are the best crops to grow, when to grow them, how much is sustainable in a certain area, how farmers can find their markets. If funds prevent a widespread program at the moment, it should still be feasible to provide information sharing platforms that would connect farmers across the board. As numerous sources indicated, the Internet has myriad information already, it is perhaps more a research exercise to bring the relevant information to the right people.

Last but not least, biophysical limits must be accounted for through policy. A risk of this synergistic satisfier being over-utilized would threaten the effectiveness of the satisfier altogether. If the natural environment degrades due to excess use and overwhelming of the natural capacity the fundamental

conditions necessary for agriculture to take place would be affected, in turn harming the population whose livelihoods have come to depend on it. Environmental assessment as well as prudence is required to avoid surpassing carrying capacity of the land to avoid further irrigation and land degradation problems.

## 5.3. Sharing economy

While some have portrayed the sharing economy as a coping mechanism to satisfy individual subsistence needs in times of hardship through additional monetary income, others see it as a phenomenon that satisfies other needs such as participation by interacting with neighbours, community members or fellow citizens. Kallis (2014) has argued that much of the sharing economy is a rental economy where profit is the ultimate goal and there is little service exchange and little community building or participatory social activity. While this may be true for some cases such as when entire villas are rented out or where professional drivers are hired, there are also cases where the service provider share the same space or experience with the service receiver despite there being monetary exchange. In those cases, both income and participation needs are met. What is perhaps the greatest potential for the sharing economy is that participants have the possibility to decide how they wish to make use of it. If someone wants to make it a pure monetary exchange that is possible; however it is also very possible to exchange much more than money – for example, stories, cultures, experiences can all be part of the exchange.

From a social equity perspective, the sharing economy in its current form presents various problems. The critique about a lack of social safety net for the workers in this informal economy does not only come from competitors in the traditional industries but also from scholars such as Kallis (2014), who have argued that "entire professions...are passing in this way into a new black economy – unregulated, tax free and uninsured...And instead of (or alongside) the much-touted socialization and community, the result is the commodification of the final shreds of social life that had remained outside the economy." Considering the lack of alternatives facing unemployed Greeks, it is understandable why so the sharing economy is booming. They cannot find the social safety net and equitable working conditions elsewhere, so while the sharing economy has its shortcomings, it at least provides subsistence income and a sense of participation in something greater. Furthermore, for some it also provides part-time work, flexible working hours and self-employment.

There is much room for policymakers to play a role in terms of ensuring equity for workers in the sharing economy, but it is important to keep in mind the reasons why many have joined the sharing economy. If people perceive new legislations as depriving them of a channel to earn subsistence income there will be resistance and skepticism. Kallis (2014) suggests that the sharing economy should be treated, regulated, zoned and taxed as a rental economy, with exemptions made for those who do not use it professionally or do not profit monetarily from their ventures. He argues that the distinction between profiteers and sharers will be easy to make as the sharing platform websites document everything:

frequency, duration, and value service. While his recommendations sound straightforward, they may be much more difficult to implement.

Another equity concern for the sharing economy is that it is transitioning reproductive work from the unpaid sphere into the paid. This phenomenon is not really new and much of reproductive labour has already gone through this process. However, as can be seen from the Cookisto example, a lot of this reproductive labour remains fulfilled almost exclusively by women. Something optimistic is however the changing structural dynamic the sharing economy presents in contrast to the traditional industries. The sharing economy decentralizes power from the corporations and enables households to take part in that economy. While middlemen such as AirBnb definitely profit from the process, the possibility of small entrepreneurs to break into the market the way Cookisto did is made a lot easier than with traditional sectors.

From a biophysical limits viewpoint, the sharing economy remains ambiguous. Kallis (2014) argues that the consumption model it proposes mobilizing and utilizing everything and thus maintaining an unsustainable consumption model. Zervas et al. (2014) argue in their study that the sharing economy acts as more than providing imperfect substitutes for existing products and services, but instead generate demand that previously did not exist through the supply of new products and services. Using their empirical studies on AirBnb, they conclude that inexpensive accommodations leads to an increase in travel and tourism spend overall and therefore also job creation (ibid). From an environmental perspective, this does not sound very promising and one is inclined to agree with Kallis' evaluation. However, the sharing economy's encouragement of the use and reuse of existing materials and infrastructure does work towards eliminating the need for new constructions. This is evident from the hospitality and tourism sector's protest in Greece. The key perhaps lies in shaping what the new consumption demands will be – will they be material or immaterial? Tourism will not cease to exist but how can it change to minimize planetary impact?

The sharing economy is no silver bullet to satisfy individual needs or to solve social equity and environmental problems. At best it can be viewed as a transitional phase, an organic grassroots development in reaction to destructive economic forces that people have embraced in an effort to cope. It can be seen as a window of opportunity for sustainable work because it brings about a fundamental change in consumption patterns and the way with which people conceptualize consumption (Zervas et al. 2014). One could argue that the sharing economy embodies Schumpeter's creative destruction process, gradually destroying the old economic models while creating new versions (Schumpeter 1942). Policymakers can acknowledge and embrace this change and design new legal frameworks that reflect the changing labour and consumption patterns or remain stagnant and risk evasion. It could also be interesting for city governments to investigate ways to participate in the sharing economy and therefore have more control over its future direction. Rinne (2014) suggests cities have unused assets that can be shared, whether this is to be for revenue-generation or public benefit may be decided on a case-by-case situation.

## 6. Conclusion

The crisis has led to devastating consequences for the Greek labour market and economy, which has in turn also translated into equally devastating outcomes for society and the environment. Environmental progress was halted and then shelved, some policies even reversed to attract investment and fast money. The labour market, not without inequities prior to the crisis, essentially crumbled and then further deteriorated under austerity measures. Equity gaps between gender, age groups and nationals and immigrants became exacerbated in the climate of unemployment and wage reduction.

Distrustful of the Greek government and skeptical of the effectiveness of EU aid, the Greek people have found coping mechanisms to satisfy their fundamental needs. This paper has evaluated three of the coping mechanisms – namely, emigration, a return to farming as well as the sharing economy. While all of the aforementioned provide some form of income and thus satisfy subsistence needs, they are unable to fulfill all of the Max Neef fundamental needs and their effects on social equity and the environment are ambiguous at best. However, agriculture and the sharing economy, while not the panacea to achieving sustainable work and society, offer interesting opportunities of change for Greece. Agriculture was historically important for the Greek economy; economic development and urbanization has rendered it irrelevant for Greek youth but now there is renewed interest. It is not a sector that can absorb all of the labour force and should not be used as a substitute for the welfare state, but it holds sustainable work possibilities. The sharing economy is a global trend that has found growing significance in Greece – and it is changing labour and consumption patterns. Under its current guise it provides both benefits and shortcomings, but as it evolves, opportunities also present themselves. Policy makers should take note of, investigate, evaluate, become involved with, participate, and work with the people who are already working within these sectors to develop new frameworks that can foster sustainable elements and filter out the unsustainable.

The Greek socio-economic and political state is one of evolving complexity. Money and debt remains at centre stage of this tragi-comedy. Perhaps it would be helpful for policy makers to take a step back and assess next steps from the people's perspective. What has the crisis done to their lives? How are they coping? It is not just fiscal sustainability that is at stake and deserving of attention but individual needs, social equity and environmental well-being. As people cope with the crisis, there are opportunities for Greece to look towards a more sustainable future, society and work. The process however, should not be conventionally top-down but should also look to people's grassroots coping to find existing sustainable directions and to build upon them.

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# V. Towards sustainable work in the Netherlands[28]

How can the Netherlands achieve 'sustainable work' maintaining high standards of well-being and elevating environmental quality?

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[28] This case study has been converted into a Master thesis for the completion of the M.Sc. in Socio-Ecological Economics and Policy at the Wirtschaftsuniversität Wien. After the submission of the Master thesis, the case study has been adjusted accordingly. In case of questions or concerns, the author can be reached under the following e-mail address: bernhardt.da@gmail.com

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# 1. Introduction

This case study focuses on the feasibility of achieving 'sustainable work' in the Netherlands. It explores the reasons behind the current imbalance between levels of well-being and environmental quality in the Netherlands. The Netherlands scores high on indicators relating to social well-being. On environmental indicators, however, the Netherlands scores comparatively low. The compatibility of high social standards and high environmental standards are necessary for a sustainable society. Work is a multi-dimensional aspect within our society where the emphasis lies on the monetary value of paid work that in particular holds the overhaul. A reconceptualization of work towards 'sustainable work' is thus needed where work is seen as an anthropocentric mediating process between nature and human beings. The reproductive features of both nature and human beings are of utter importance herein. A focus will therefore lie on the identification of the satisfaction of human needs, the ensuring of an equitable society and the respecting of our biophysical limits.

This case study shall evolve around the following research question:

*How can the Netherlands achieve 'sustainable work' maintaining high standards of well-being and elevating environmental quality?*

The notion of well-being is explained and illustrated in the case of the Netherlands in part 1. Several global well-being indicators are explored. Part 2. provides an overview of the Dutch labour market. It appears that the Dutch work the fewest hours when compared to other high income countries. Part 3. examines the current environmental situation in the Netherlands. It appears that the Netherlands, despite its high international rankings on social indicators, scores concurrently low when it comes to the environment. As a globally competitive exporting country due to its beneficial geographic location, it currently uses up high amounts of energy that consequently contributes to high $CO^2$ emissions. The final part of this case study links the aforementioned elements to the common theoretical framework and will answer the research question.

## 1.1. Being Well in the Dutch Society

The Oxford Dictionary of English (2010) defines well-being as follows: "The state of being comfortable, healthy or happy." There are three concepts here: (1) comfortable (2) healthy and (3) happy. When adhering to this meaning, the first concept is reasonably straightforward as one can experience a 'comfortable' level of being without experiencing stress or tension. The second one is viable to measure or assess (at least to a certain extent) as one can be physically healthy by having no imminent individual physical threats that limit existence or satisfying ones needs and desires. Hodgson (2012, p. 177) states even that: "Health is an objective, universal need, irrespective of whether it is also a want". The latter, however, is a value-laden concept namely that happiness is a subjective concept that is not facile to measure. It appears a difficult exercise to adequately measure well-being on individual, national and international levels (Common & Stagl, 2005; Costanza et al., 2015; Morse & Bell, 2008). A high variety of attempts towards an adequate measurement mechanism of well-being has been on-going for years resulting into a substantial body of research within the social sciences (Costanza et al., 2015).

### 1.1.1. Measurements of social well-being

### 1.1.2. The Gross Domestic Product (GDP)

Despite the growing body of research on QOL and well-being, the most commonly used proxy to well-being is the GDP of a country (Jackson, 2009). GDP is a representation of all goods and services that are produced in a country over a period of time, usually a year, that use international standards as a calculating benchmark (OECD, 2008, p. 238). Government spending, households and investment is taken as a proxy for utility i.e. happiness or satisfaction (Jackson, 2009). By taking GDP as the main point of reference over time, the measuring of growth through market exchanges is facilitated. In present-day assessments, GDP per capita is often taken to measure the well-being of a country, i.e. economic growth is the dominant measuring tool to assess well-being.

### 1.1.3. The Index of Sustainable Economic Welfare (ISEW), the Genuine Progress Indicator (GPI) and a Simplified Index of Sustainable Welfare (SISEW) study of the Netherlands

The ISEW indicator was developed by Daly and Cobb (1989) and is based on previous work by Nordhaus and Tobin (1972) who first developed the measure of economic welfare (MEW). The ISEW envisioned to further incorporate issues like the environment and sustainability and later got translated into the General Progress Indicator (GPI). The GPI added more components to assess human welfare such as the valuation of volunteering work, loss of leisure time and overwork, underemployment, unemployment to name just a few.

What the ISEW/GPI have presented for numerous countries worldwide is that economic welfare at a certain point, is not influenced by growth in GDP. This is also referred to as the 'threshold-hypothesis' (Max-Neef et al.,1995). This hypothesis furthermore holds that "for every society there seems to be a period in which economic growth (as conventionally measured) brings about an improvement in the quality of life, but only up to a point – the threshold point – beyond which, if there is more economic growth, quality of life may begin to deteriorate" (*Ibid.*, p. 117).

A study conducted by Bleys (2007) has attempted to test and apply the ISEW to the Netherlands for the period 1971 - 2004. More specifically, this study has applied an adjusted version of the ISEW. The Simplified Index of Sustainable Economic Welfare (SISEW) assesses fewer items than the ISEW. Three different versions (SISEW1, 2 and 3) are calculated including and excluding particular items from the ISEW.

The preliminary results of the SISEW study on the Netherlands are plotted against GDP as is shown in Figure 9. Among the main preliminary findings of this study is that the GDP per capita has almost continuously increased between 1971 and 2004 whereas the level of economic welfare did not heavily fluctuate during this period of time. In fact, the levels from all three versions of the SISEW that can be observed between 1971 and 2004 in terms of economic welfare, are more or less the same. Between 1975 and 1987 a relative period of decline can be observed, with a steep decline between 1984 and 1987, followed by growth of economic welfare in due course. Only SISEW3 deviates slightly from SISEW1

and SISEW2 in the period between 1995 and 2000 due to a declining net international investment position of the Netherlands during that time.

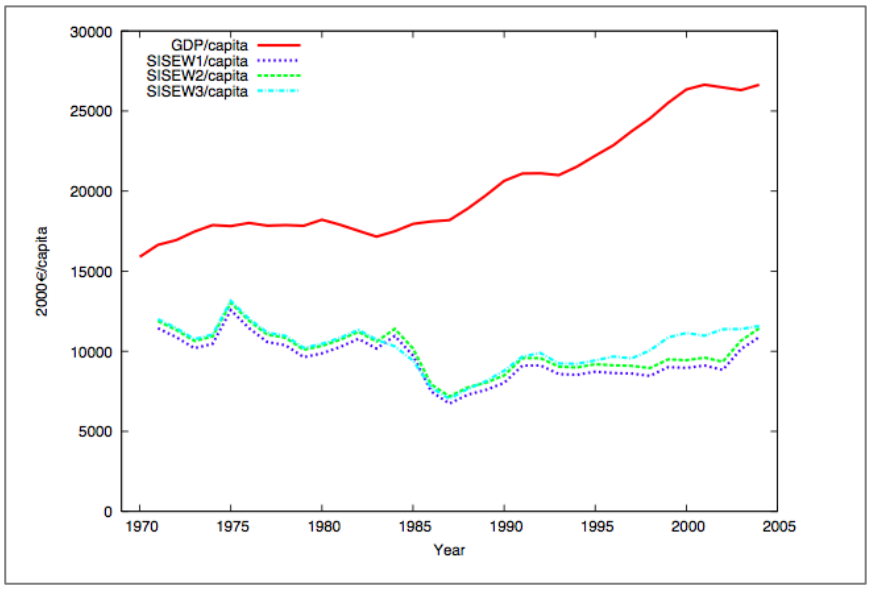


*Figure 9: The SISEW1, 2 and 3 version for the Netherlands plotted against GDP (Source: Bleys, 2007, p. 22)*

Furthermore, a conclusion drawn from the SISEW data is that the 'threshold hypothesis' does not hold for the Netherlands. The SISEW measurements show that GDP has grown steadily in the observed time frame whereas economic welfare has not necessarily been negatively impacted or "deteriorated" as Max-Neef (1995) argues. Bleys explains furthermore that the growth rates from both the SISEW and ISEW substantially differ and that GDP is not an accurate proxy to measure economic welfare. For a more concise outline on the methodology, results and the proposed adjustments of this study consult Bleys (2007).

### 1.1.4. The Human Development Index (HDI) and the Netherlands

The Human Development Index (HDI) is a measurement mechanism developed by the UNDP to assess human well-being. It also refutes the assessment of such development by economic growth and GDP alone, but accepts the importance of economic activity to human well-being. The HDI has three dimensions where it seeks to assess the leading of a long and healthy life, being knowledgeable, and enjoying a decent standard of living. Life expectancy is taken as a proxy for measuring the leading of a long and healthy life. Being knowledgeable is measured by the means of the years the adult population of 25 years and older receive education within a life-time as well as the amount of years school children receive and are expected to receive. The Gross National Income (GNI) per capita converted by purchasing power parity expressed in international dollars measures the standard of living. For a more elaborate explanation consult the latest report (UNDP, 2014).

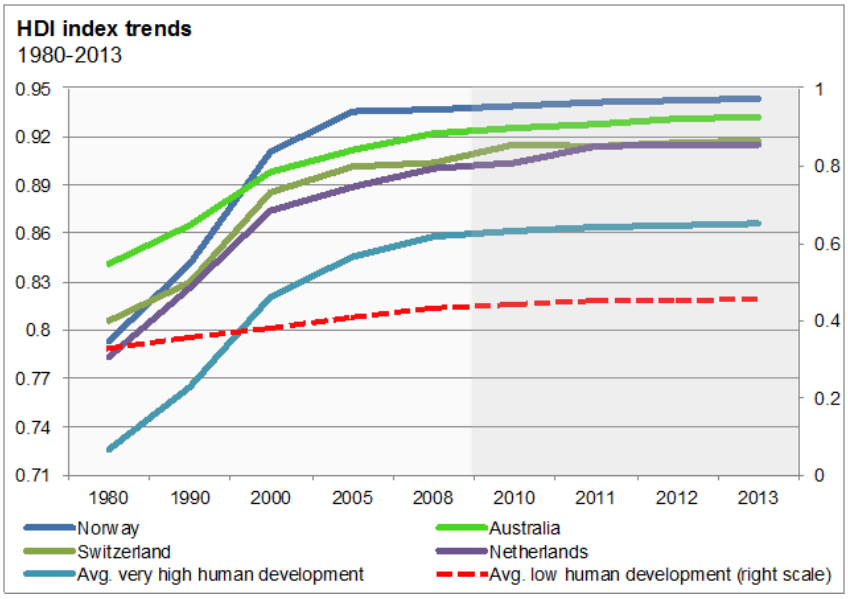


*Figure 10: HDI index trends (1980-2013) (data: UNDP, 2015)*

The Netherlands is ranked 4th in the world, just after Norway, Australia and Switzerland, out of a total of 187 countries assessed. The Dutch value of HDI has furthermore expanded from 0.78 in 1980 to 0.92 in 2013, an increase of 16.9% in total or a rise of almost 0.5% per year. Figure 10 furthermore shows that the Netherlands is considerably far above the average low human development group and relatively far above the average of the very high human development group. An observation can thus indeed be that the Netherlands enjoys high-levels of well-being.

### 1.1.5. The Better Life Index (BLI) and the Netherlands

The Better Life Index (BLI) is a measurement mechanism developed by the OECD. It "aims to involve citizens in the debate on measuring the well-being of societies and to empower them to become more informed and engaged in the policy-making process that shapes all our lives" (OECD, 2015a). There are a total of 11 topics that are furthermore based on one to three indicators. These topics consist of: income and wealth, job earnings, housing, health status, work and life, education and skills, social connections/community, civic engagement, environmental quality, personal security/safety, and life satisfaction (subjective well-being). For a further elaborate explanation on the applied methodology consult OECD (2015b). A particular noteworthy feature is the fact that the BLI includes the environment by linking this to well-being.

The Netherlands scores high and mostly above average in income and wealth, jobs and earnings, housing, work-life balance, education and skills, health status, safety, social connections and subjective well-being. However, environmental performance expressed in particle matters in the atmosphere are at a concerning level. A few specific peculiarities from the BLI analysis (OECD, 2015a) related to the Netherlands are that among others things there exists a considerably large gap in income between the poor and the rich. What was learned from the BLI is that the bottom 20%, i.e. the lowest income groups, earn 4 times less than the top 20% highest income groups. Another notable feature is the fact that under the topic of civil engagement, the voter turnout for the top 20% of the population, again the higher

earners with a possible higher social and economic status, is an estimated 84% whereas for the bottom 20% it is an estimated 65% voters turnout. Appendix A gives an overview of the overall scores of the Netherlands in the BLI in comparison to the OECD average.

### 1.1.6. The Happy Planet Index (HPI) and the Netherlands

The London-based research institute, the New Economic Foundation (nef), developed the Happy Planet Index (HPI) to unveil why economic growth is not intended to induce human well-being. The main focus is sustainable well-being for all inhabitants of nations at this present time as well as those in the future (NEF, 2012). The nef uses a different approach by incorporating 'sustainable' into the well-being discourse. The approach in particular is to study how levels of well-being are achieved and what environmental impact it has during that process. Three components define the HPI that are translated into the following formula:

$$Happy\ Planet\ Index\ \approx\ \frac{Experienced\ well-being\ x\ Life\ expectancy}{Ecological\ Footprint}$$

The three concepts used to calculate the HPI are (1) experienced well-being, (2) life expectancy and (3) the ecological footprint.

The Netherlands scores mediocre in the last HPI assessment report (NEF, 2012). Out of the assessed 151 countries in this report, the Netherlands comes in 67$^{th}$ place, a considerably low place if compared to the HDI. Table 2 gives an overview of the top 3 countries with the highest HPI scores namely Costa Rica, Vietnam and Columbia. For comparative reasons, the top 3 countries that scored highest in the HDI are used as a benchmark including the Netherlands.

*Table 2: HPI scores top 3 highest scores compared to the Netherlands (source: NEF, 2012)*

| | | Life Expectancy | Experienced Well-being | Footprint | Happy Planet Index |
|---|---|---|---|---|---|
| 1 | Cost Rica | 79,3 | 7,3 | 2,5 | 64 |
| 2 | Vietnam | 75,2 | 5,8 | 1,4 | 60,4 |
| 3 | Colombia | 73,7 | 6,4 | 1,8 | 58,8 |
| 29 | Norway | 81,1 | 7,6 | 4,8 | 51,4 |
| 34 | Switzerland | 82,3 | 7,5 | 5 | 50,3 |
| 67 | Netherlands | 80,7 | 7,5 | 6,3 | 43,1 |
| 76 | Australia | 89,9 | 7,4 | 6,7 | 42 |

Very good
Good
Mediocre
Poor
Very poor

What can be observed is that the Netherlands and the HDI top 3 all seem to do very poorly on the Ecological Footprint indicator (colour coding titles adjusted for this case study). This implies that the environmental situation of these countries is concerning. In the overall score is also put in perspective. From the HDI top 3, Australia (HDI ranked second) has an even lower score than the Netherlands. Switzerland and Norway are not far apart yet not close to the top ten nor top 20 best scoring countries. Noteworthy is that the top 3 countries on the HPI are all not high-income countries.

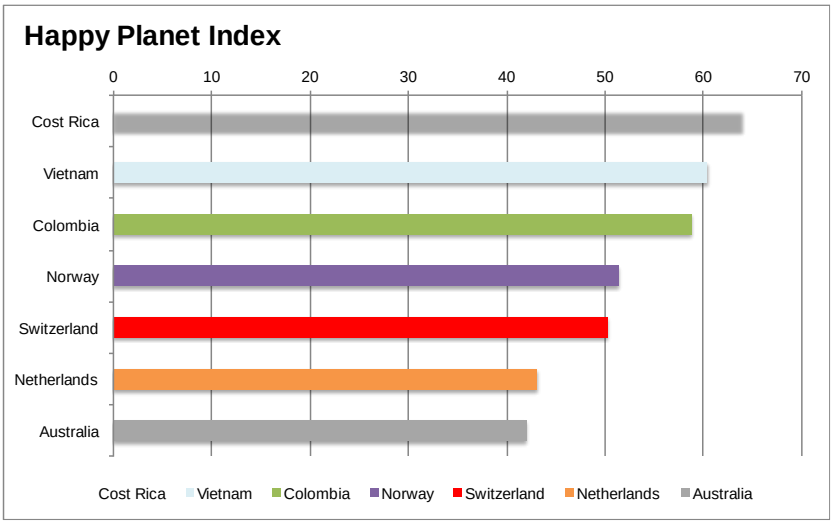


*Figure 11: HPI top 3 countries compared to the Netherlands + top 3 from HDI (Data: NEF, 2012).*

The score on experienced well-being was 7.5/10 placing the Netherlands 5th out of the assessed 151 countries. Life expectancy in the Netherlands is at an average of 80.7 years old, ranking the Netherlands 15th. The ecological footprint is on 6.34 global hectares per capita meaning that 2.5 additional planets are needed if all would live 'the Dutch lifestyle'. The Netherlands comes in on the 139th place out of 151 countries. A conclusion drawn from this indicator is that the Netherlands has relatively high levels of well-being but rather poor environmental quality.

### 1.1.7. The Gini coefficient and inequality in the Netherlands

The Gini coefficient is a mean that measures inequalities related to income within a country (OECD, 2008, p. 228). When a value of 0 is persistent, then this implies that there exists perfect equality, i.e. everyone earns the same income. A value of 1 implies high levels of inequality, i.e. one person holds all the income whereas the rest has nothing. The most recent Gini coefficient for the Netherlands is 0.28 in 2013. Figure 12 illustrates an example to the Gini coefficient of equalised disposable income of the Netherlands in comparison to Austria, Sweden and the EU27.

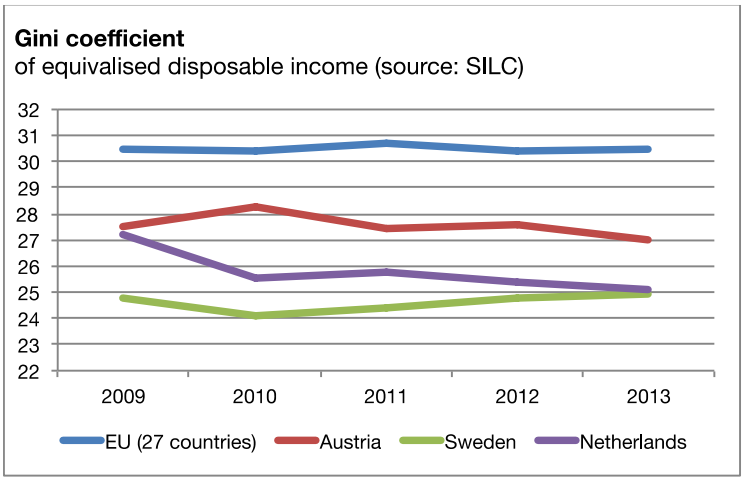


*Figure 12: Gini coefficient of equalised disposable income of the Netherlands compared to Austria, Sweden and the EU27*

According to the OECD (2015c), men in the Netherlands earn 20.5% more than women. The income gap between poor and rich, as was mentioned in the discussion of the findings from the BLI above, is furthermore also striking as the top 20% earns four times more than the bottom 20%.

The Poverty Survey of 2014 by the Social Cultural Institute (*Sociaal Cultureel Planbureau: hereafter SCP)* and Statistics Netherlands (*Centraal Bureau voor de Statistiek:* hereafter CBS) (SCP & CBS, 2014) furthermore indicates that the levels of poverty have risen over the last years but might have reached their peak. It seems that more households are struggling to make ends meet. According to this report, 1.3 million people currently live in poverty; that entails 664.000 households. One out of nine children lives in poverty meaning around tens of thousands children are hungry on a daily basis without enough nutrition.

## 2. Development of the Dutch labour market into the first part-time economy in the world

The Netherlands discovered natural gas reserves in the North Sea in the late 1950s that gave a boost to the Dutch economy. Among other things, this resulted into a number of years where the Netherlands enjoyed a period of almost full employment in the 1960s (De Beer, van der Meer, Van Ruysseveldt, & Wielers, 2006). The oil crisis of 1973 gradually brought an end to this. Unemployment doubled from 5% to 10% in the period between 1974 and the early 1980s. The public debt went up and the national deficit went up from 4% in 1977 to over 10% in 1982 (Looise, van Riemsdijk, & de Lange, 1998). In 1979 the Netherlands entered into a deep economic recession. As a result the government made it one of its main goals to counter this growing number of unemployed citizens in striving towards a level of full employment. It called for measures to make the labour market and the accompanying agreements more flexible (Schettkat & Reijnders, 2000).

### 2.1. Towards a more flexible labour market

The work norm in the late 1960s was still relatively high, about 45 hours a week. The system around labour policy used to be rather rigid and there was little room for flexibility due to the strong lobbying from unions (Looise et al., 1998; Schettkat & Reijnders, 2000). Labour unions in the Netherlands up until today play an important bargaining role in decision-making around labour policies. Over 80 per cent of employees are covered by collective agreements (Visser, Wilthagen, Beltzer, & Koot-van der Putte, 2004).

The socioeconomic transformative agreement, namely the ´Wassenaar Agreement´ of November 1982, instigated a structural amelioration of the distribution of employment aiming at a compromise between employers and employees, facilitated by labour unions and the government to reach consensus on wage moderation and a reallocation of working hours (Plantenga, 2002; Schettkat & Reijnders, 2000; Visser et al., 2004). Such measures were necessary in order to counter rising unemployment and to combat inflation. Reducing working hours stood central to this transformation but in parallel sparked an unintended demand for part-time employment and more flexible jobs (Visser et al., 2004). The measures

proved to have a positive effect, and resulted in the "Polder model", a unique form of co-operative decision-making based on consensus despite existing differences among the government, employees and employers on the implementation of policies (PBL, 2013a; Plantenga, 2002).

The Polder model consequently led to a period referred to as "the Dutch miracle". This signifies a period of rise in economic growth and labour participation, a miracle praised in the eyes of the international community. The government succeeded in making part-time employment more attractive by changing policies that previously have led to obstructions for part-time employment to become a viable alternative to full-time employment. Gradually the 40-hour norm was reduced to 38-hours and the Dutch employment policy ultimately started to evolve around part-time employment (Plantenga, 2002) and the work-life balance. The majority of the Dutch labour force today is employed in large part-time jobs where women work an average of 26.4 hours a week and men 37.6 hours a week.

The Working Hours Adjustment Act (*Wet Aanpassing Arbeidsduur: WAA)* as part of the Work and Care Framework Act (*Wet Arbeid en Zorg)* was introduced in 2000. It enables workers to choose their work hours and thus making it a legal right to be able to work in part-time employment (Visser et al., 2004). Workers are legally allowed to ask their employer for shorter (as well as longer) working hours; all requests must be properly considered. An existing employment contract can therefore be altered on unilateral terms (*Ibid.*) Such protective measures have transformed part-time employment into a conventional form of employment in the Netherlands (Portegijs & Keuzenkamp, 2008; Visser et al., 2004) removing some of the formerly negative and ´atypical´ character of part-time employment (Plantenga, 2002).

The low average working hours in the Netherlands are observed in Figure 13 since 1995 compared to other European countries. One can observe that a slow trend is occurring where, gradually, other countries – especially Austria – are also starting to work less.

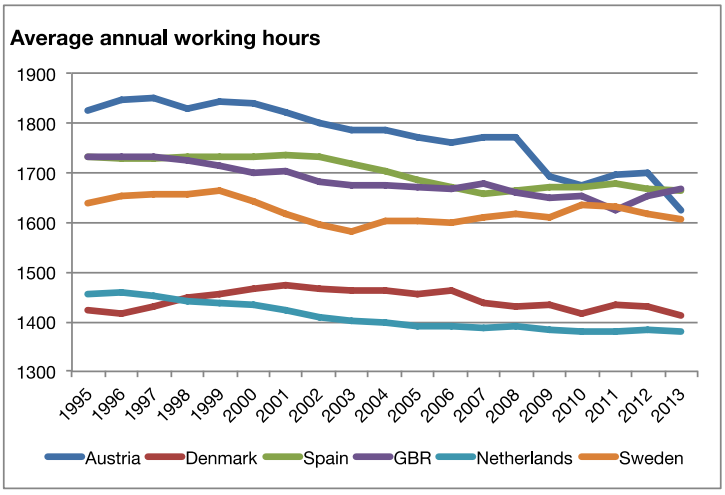


*Figure 13: Average annual working hours in the Netherlands compared to five EU countries (indices 1995-2013)*

The contemporary supply of labour has significantly increased since the 1980s when a lot of women, and young people entered the labour force in the Netherlands. A common phenomenon in developed

countries that went hand-in-hand with a shift towards a more service-based economy (Higgins, Duxbury, & Johnson, 2000; Visser, 2002). In fact, the service sector makes up 74.4 % of the Dutch economy that employs over 80% of the working population (CIA, 2015). More so, the influx of workers (mainly women and young people) was furthermore facilitated by the measured taken by the government to make part-time employment attractive as well as available.

Female participation in the labour force in the Netherlands was only marginal until the late 1970s, in fact at one of the lowest rates in Europe (Visser 2002). Figure 14 shows the share of men and women that participate in the labour force.

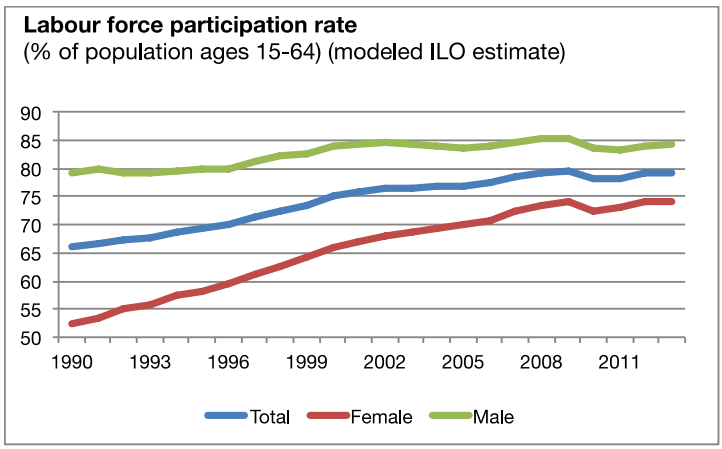


*Figure 14: Labour force participation rate in the Netherlands (indices 1990-2011) (Source: World Bank, 2015)*

In 2009 there were almost 3 million people working in part-time jobs, almost double compared to 1996 (Hupkes, 2012). The European average in 2014 for example lies around 20.5 % in contrast to the Netherlands where in 2014, 50.6% of the labour force was working part time (Eurostat, 2015). Close to 70% of Dutch women participate in paid work in contrast to a mere 30% in 1985 (Noback, 2012). Between 1998 and 2013 the labour participation rate amongst women rose by 13.9%, whereas that of men has remained constant at around 78% (CBS, 2014). The Dutch are 'champions' when it comes to part-time work and have been referred to as "the only part-time economy in the world, with a finger in the dyke of unemployment" (Freeman, 1998). Figure 15 shows that the Netherlands is far beyond other nations when it comes to working in part-time employment.

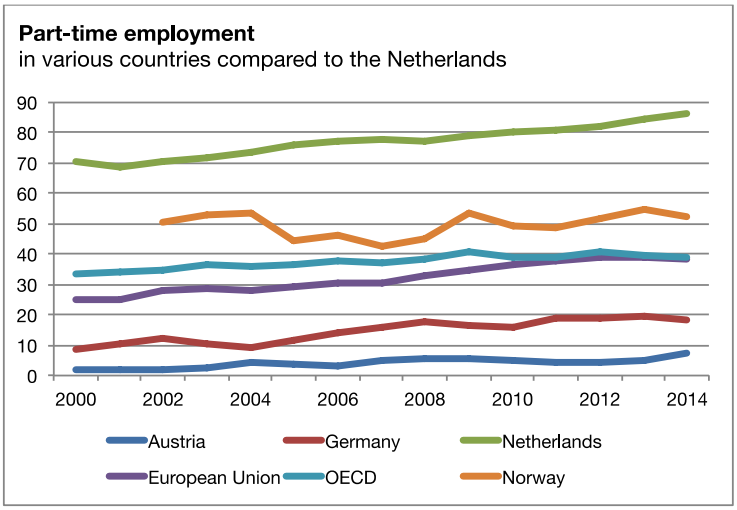


*Figure 15: Part-time employment in the Netherlands compared to various countries and the EU and OECD average*

Currently 20.7% of employed men work fewer than 35 hours a week with 75.3% of women working in part-time employment. Women work 26.4 hours a week on average compared to 37.6 hours by men. Close to three-quarters of women in paid labour holding a job of one or more hours a week, works part-time. It is mostly the higher educated women that on average work 28 hours or more a week (Moonen, 2014).

## 2.2. Contentment with hours worked and reasons for working part-time

Various studies (Josten & De Boer, 2015; Merens & van den Brakel, 2014; Moonen, 2014; Vlasblom, Van Echtelt, & De Voogd-Hamelink, 2015) showed that the Dutch, overall, appear content with the amount of hours worked. Moonen (2014) presents that over three quarters of all employees are satisfied with the work they do as well as their working conditions. Overall people with a higher education tend to be more satisfied than those with lower educational attainments. Managers in particular seem the happiest. Merens & van den Brakel (2014) showed that women in particular value the personal development and social utilities that work brings.

According to Vlasblom et al. (2015) only 8% of the working population holds the desire to work more in contrast to 6% that would prefer to work less, this would mean that fewer people would work full-time and more people in larger part-time jobs. If all employees were able to work the amount of hours they would like, there would be more individuals working in large part-time employment and less in full-time employment (*Ibid.*).

Booth and Van Ours (2010) conducteda study on the relationship between working in part-time employment and life-satisfaction in addition to job satisfaction and the number of hours that employees would prefer to work in the Netherlands. At first, they held the premise that part-time work could possibly lead to women working full-time, i.e. part-time work would merely be a transitional phase. However this is not the case as part-time employment seems to be what most Dutch women want. Their main result holds that "partnered women in part-time work in the Netherlands have high levels of job satisfaction, a low desire to change their working hours, and they live in partnerships in which household

production is highly gendered". In the Dutch case it can be said: "socio-economic circumstances, collective norms and individual preferences have thus worked together generating the Dutch part-time economy, with its specific mixture of opportunities and restrictions" (Plantenga, 2002).

### 2.3. Unpaid work and the transition from welfare state to participatory state

It is estimated that several million people in the Netherlands provide informal care in their near environment, most of which are women. In 2012, 23% of informal carers were women in contrast to 13% of men (Josten & De Boer, 2015). The biggest group is women of 45 years and over that are employed in smaller part-time jobs of 28 hours or less per week. A reduction in free time is among the bigger trade-offs of providing informal care. Health complaints and reduction in paid working hours may be consequential (*Ibid.*).

An annual research project *Giving in the Netherlands* studies volunteering in the Netherlands. The most recent study (Bekker, de Wit, Hoolwerf, & Boezeman, 2015) among other things found that two in five Dutch people volunteer from time to time. In 2014, 37% of the population volunteered at least once for a civil society organisation (CSO) and spending on average 18 hours per month providing services free of charge. This number has slightly decreased though over the past few years, as in 2011 for example 41% of the population volunteered at least once for a CSO. The Netherlands furthermore scores high compared to other EU countries when it comes to engaging in volunteering activities (TNS Opinion & Social, 2011).

More recent, there exist the possible conflicting reconciliation between paid and unpaid work (Delsen, 2012; Josten & De Boer, 2015; Merens & van den Brakel, 2014). The costs of care work within the Dutch welfare system are rising due to the ageing population. In order to compensate for these costs, the Dutch government is campaigning to change towards a more 'participatory state' (Delsen, 2012), where citizens are motivated to provide more informal care to family members and other members within their near societal circles that are dealing with impairments (Josten & De Boer, 2015). In other words, citizens are expected to participate more in society – a vision towards a shift towards 'the participation society'. Informal care is unequally divided at the moment. Women that for the biggest part provide for this informal care, often at the expensive of leisure time (Merens & van den Brakel, 2014).

The ageing population will ultimately lead to a high number of elderly people leaving the workforce and therefore the Dutch government envisions the current labour participation to increase to ensure the situation remains stable or at least not at the expense of public finances. For example, the retirement age (Algemene Ouderdoms Wet: AOW) will go up from 65 to 67, something that will happen sooner than previously expected namely in 2021 instead of 2025 to ease the stress of the public expenditure system (Vlasblom et al., 2015).

## 3. The Netherlands and the Environment

The effects climate change will have on the Netherlands will be detrimental. The country is situated for almost 30% below sea level. Rising temperatures would result in rising sea- and river levels increasing

the risk of flooding, loss of coastal areas, biodiversity loss, heavy rainfall, new diseases, heat waves and drought (IenM, 2014; KNMI, 2014).

As is currently the case, dams and dykes protect land through sophisticated technical expertise that the Dutch have mastered for centuries that has furthermore become a famous trademark worldwide out of necessity (PBL, 2013a). Climate change may jeopardise the current coping mechanisms and adaptation measures (KNMI, 2014). Various policies, have been an active on-going process of constant amelioration of the environmental quality in the Netherlands (VROM, 2001). The Dutch water policy, for example, is one of such policies that call for granting waterways more room to prevent flooding, e.g. the expansion of riverbeds (VROM, 2004).

## 3.1. Slacking off: no longer the first in line

Environmental planning in the Netherlands has a long history that is mainly related to the never-ending battle against the water (Maas, Kruitwagen, & Van Gerwen, 2012). Even though being a small country consisting of over 16.5 million people on a land area of only 41 530 km2, it has always been a large international trading and predominantly exporting country (Tukker, Bulavskaya, Giljum, & Koning, 2014). The Netherlands has a very high population density, 500 inhabitants per km² in addition to high levels of urbanisation, which is an obvious contributing factor to environmental pressure (OECD, 2015d).

Environmental awareness and the importance of the environment became a broadly discussed issue in the second part of the 20th Century (PBL, 2013a). Severe smog around industrial sites was a common phenomenon in the 1970s for example. Acidification, highly polluted canals and ditches, contaminated soil caused by the livestock industry emitting large amounts of nitrogen and phosphate were also among the visible problems of pollution (Bressers & Plettenburg, 1995). The government started to take measures against the visibility and tangibility of the environmental problems. Policy measures against soil, water and air pollution have been proven considerably successful, as the direct visible environment has indeed improved and the overall picture appears under control. However, 'the environmental problem' has not disappeared (*Ibid.)*. Persisting problems remain, where the Netherlands is, among other countries, a major source of environmental pollution on an international level (Bressers & Plettenburg, 1995).

In the 1990s the prevalent policies around the environment were praised and looked upon worldwide and even became an innovative export product (Bressers & Plettenburg, 1995; PBL, 2013a). Today, however, several studies (PBL, 2013a, 2013b) have already identified that the Netherlands needs to step up its efforts towards green innovation to remain competitive on the global stage as well as to ensure a sustainable future for generations to come. The Netherlands has made considerable efforts towards the

'greening of the economy'[30] and was the first to install the green indicators that were suggested by the OECD towards the establishment of a 'Green Economy', an initiative led by the United Nations Environment Programme (UNEP) (CBS, 2013).

Countries like Germany and Denmark are frontrunners when it comes to green initiatives, renewable energy resources and green innovation among other things (PBL, 2013b). The Netherlands particularly lags behind on the overall green innovation front, which arguably might jeopardise the current strong competitive position it holds on the global export market (*Ibid.*). On the other hand, waste processing is a highly developed sector and the Netherlands appears an international pioneer in recycling. In fact, currently close to 90% of all the waste generated within the country is being recycled against the 40% average in Europe (*Ibid.*). This has been made possible through a strong waste policy and the introduction of taxes on recyclable or combustible waste together with advanced technologies and expertise in the field of collecting and processing of waste. Additionally, the Netherlands successfully managed to introduce green taxation schemes (CBS, 2013).

## 3.2. The low scores on environmental indicators

The Netherlands scores comparatively high on global indicators that assess individual and social well-being. When it comes to the environment, however, the Netherlands scores relatively low.

## 3.3. Better Life Index (BLI)

An already distinct feature of the BLI by the OECD is that it includes environmental indicators. One of their 11 topics is the environment with a quantitative component: air pollution and a qualitative component: the satisfaction of the water quality amongst citizens (OECD, 2015b). Air pollution is measured by PM10. This is a minuscule particle matter that can be dangerous for human health when inhaled. The WHO has set a limit to 20.0 micrograms per cubic meter. The Netherlands measures on average 30.0 micrograms per cubic meter in urban areas, which is 9.9 micrograms above the OECD average of 20.1 micrograms per cubic meter (OECD, 2015c). A conclusion that can be drawn thus, is that this is a concerning high difference. On the other hand, from the qualitative analysis it revealed that satisfaction with the water quality in the Netherlands is at 95% (*Ibid.*).

## 3.4. Ecological Footprint

The Happy Planet Index (HPI) gives the Netherlands a meagre score on the environment, namely a 5.1 out of 10 (NEF, 2012). The indicator the HPI uses is the Ecological Footprint of nations, an accounting system that was first designed by Wackernagel & Rees (1996) that provides the framework for the calculation of different area units in relation to biophysical impact. Footprint accounting aspires to measure "human appropriation of ecosystem product and services in terms of the amount of

[30] Greening the economy refers to a commitment of shifting economic activity towards a more sustainable dynamic where economic growth is promoted whilst at the same time pollution is reduced, resources are efficiently used and natural assets are maintained (CBS, 2013)

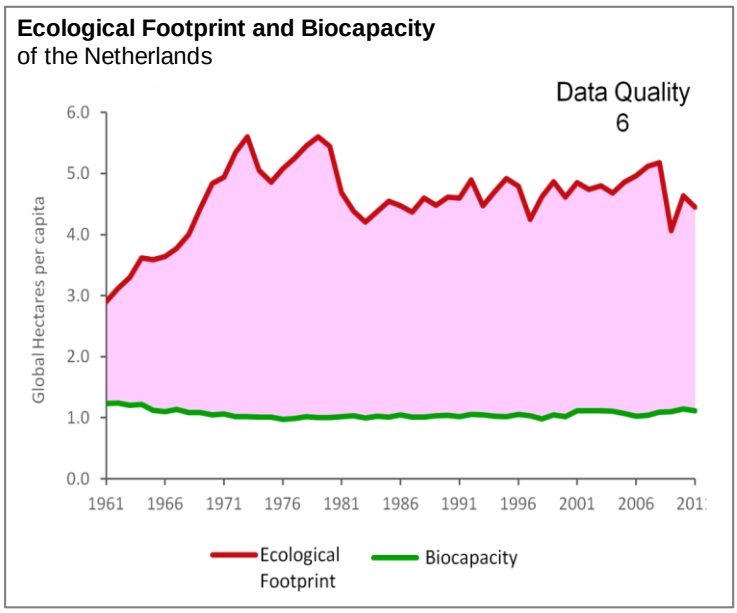


*Figure 16: Ecological Footprint and biocapacity per capita of the Netherlands since 1961. Data quality "6" refers to the highest accuracy of the reliability of the available data used for calculating this national outcome. (Source: www.footprintnetwork.org)*

bioproductive land and sea area [is] needed to supply these products and services" (Stagl, 2014, p. 175). The current biocapacity per capita, that is how much the Earth can safely operate and replenish, is 1.1 global hectares. The amount the average Dutch citizen uses is 4.5 global hectares in 2011, which is a 3.3 deficit of the 'allowed' amount that somewhat guarantees a safe operating space (see Figure 16).

## 3.5. Energy consumption

The Netherlands is a signatory of the United Nations Framework Convention on Climate Change (UNFCCC) since 1993 and was one the first to ratify the Kyoto Protocol in 2005. The National Climate Policy Implementation Plan (NCPIP) furthermore supports the Netherlands' climate policy through the Kyoto mechanisms and through domestic policies and measures. The Netherlands has made some efforts to meet the commitments set by the Kyoto Protocol, namely to reduce emissions by 6% with the base year 1990 (VROM, 2004). However, according to the CBS (2015), emissions have gone up again in the first quarter of 2015 by 8.1 % in comparison to the same period in 2014. At the moment, the Netherlands is highly dependent on fossil fuels at about 95 % of the total energy consumption. There has furthermore been an increase in the usage of cheap coal since 2010 that contributes to increasing $CO^2$ emissions. The international demand for natural gas has dropped and there is a growing public resistance to the extraction of the gas as it causes local earthquakes.

The renewable energy sector as such is only slowly developing with a rather low share in total of about 4.4 % in 2012 compared to 3.8% in 2010 (see Figure 17). The Netherlands furthermore holds the ambition to become less dependent on fossil fuels and to broaden the focus on renewables.

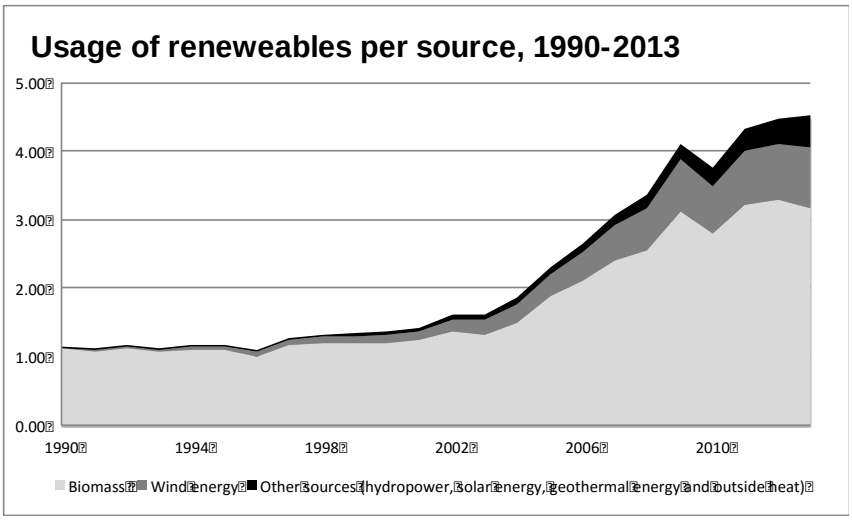


*Figure 17: Share of renewables per source in the Netherlands. (Data: CBS, 2015)*

In fact, the aim is to have 16% of the domestic energy consumption generated from renewable energy by 2020 (PBL, 2013a). In Figure 18 the trend in electricity production per carrier can be observed. The consumption of coal is going up whereas the natural gas is going down. Renewables as a carrier hoovers just above 10%. With the government's ambition to become less fossil fuel dependent by 2020, the renewable energy sector will need a strong boost.

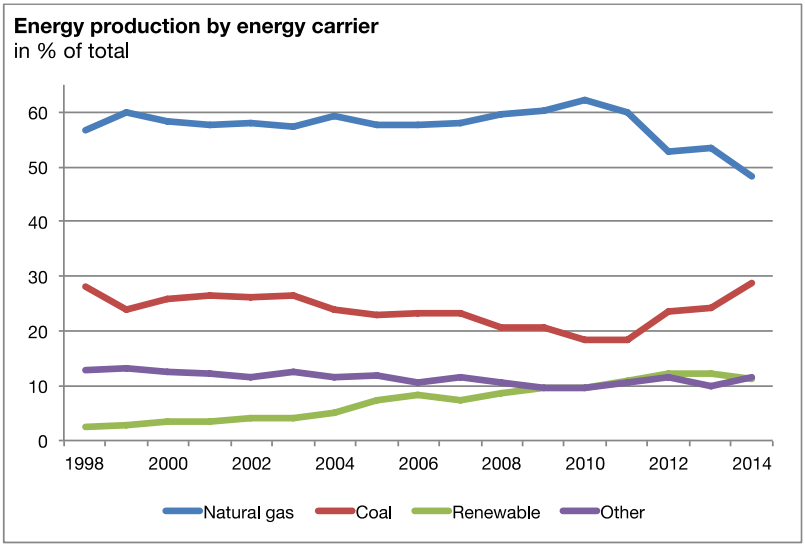


*Figure 18: Energy production by energy carrier (Data: CBS, 2015)*

The Netherlands has an open economy, meaning that it is a high net importer as well as a high net exporter of goods. The geographical location plays a major role in this making the Netherlands a gateway to the European mainland through the Rotterdam harbour and the connecting Dutch delta region. The export sector is a big contributor to high $CO^2$ emissions and furthermore relies heavily on energy and material consumption (PBL, 2013b). The chemistry sector is a large component of the Dutch economy and as well as one of the largest energy consumers.

## 3.6. Decoupling GHG emissions from GDP growth

An alleged development in the Netherlands in terms of ameliorating the current environmental situation is that of 'decoupling'. Decoupling refers to a situation where environmental impact has been reduced (decoupled) from a situation where GDP continuous to grow (CBS, 2013). In other words, decoupling is increasing the level of efficiency of energy and materials (material throughput) in economic production (economic output) (Jackson, 2009).

A distinction is furthermore made between relative and absolute decoupling. Relative decoupling according to Jackson (2009) is "doing more with less". This would mean that the economy could continue to grow whilst simultaneously environmental pressure declines because of efficiency improvements. Absolute decoupling is a situation where economic growth is completely obsolete from environment damage.

Decoupling is becoming a conventional desirability within the 'Green Growth' discourse towards an answer of a supposedly positive development of a country's environmental impact. However, there are a number of aspects that are not accounted for, which contributes to a different picture, making the notion of decoupling a disputed topic (Davis & Caldeira, 2010; Jackson, 2009; Peters, Minx, Weber, & Edenhofer, 2011). A lot of industrialised countries, including the Netherlands, have outsourced their major polluting manufacturing industries to developing countries, where environmental regulations are often poor and workers rights are not warranted resulting into miserable working conditions and low wages. This makes it look as if environmental impacts have gone down whereas in reality this is not the case. Davis & Caldeira (2010) refer to this practice as a "strong carbon leakage" where carbon is "exported" across borders. Continuous economic expansion and the consumer goods that are destined for the West are furthermore at the nucleus of the intensity of carbon emissions, what Davis & Caldeira (2010) refer to as "weak carbon leakage".

## 3.7. The problem with decoupling: direct and indirect consumption

It has proven a difficult task to gather accurate data for calculations that efficaciously display and include the environmental pressures that are generated abroad through the trade of products, i.e. emissions embodied in trade (EET). Often the accounting system for emissions is territorially based and fails to sufficiently connect and identify the link between production and consumption-side accounting (Peters et al., 2011). The problem outlined in several studies (Davis & Caldeira, 2010; Peters et al., 2011; Wiedmann et al., 2013) is the actual acknowledgement that within the most dominantly communicated 'green progress' of developed countries, the actual level of emissions often does not include such EET calculations. Additional indicators are of importance too when assessing decoupling, these include for example water use, land use and energy use along the production line.

## 3.8. Material Flow Analysis

The tracking of resources is often done through Material Flow Analysis (MFA, also known as Material Flow Accounting). MFA as a concept only covers material flows, i.e. relating to the turnover of mass

during a certain period of time which is usually about one year. MFA is furthermore based on the premise that "primary resources form the material basis of all human activities, including production and consumption of goods and services (Dittrich, Giljum, Lutter, & Polzin, 2012, p. 9). Thus the idea is that the manufactured and consumed materials that are pulled out of the biophysical world end up in the socio-economic system. What MFA thus aspires is to express economic activity into physical terms (Fischer-Kowalski et al., 2011). MFA does not capture the amount of stock in itself but merely the input, output and change in stock at the level of aggregation (Dittrich et al., 2012).

Domestic Material Consumption is one MFA-indicator that is currently used most widely in policy processes as it "has a high environmental relevance as an indicator of potential environmental pressure on the domestic territory" (Giljum, Dittrich, Lieber, & Lutter, 2014, p. 322). DMC covers, however, merely the input side of the flow of used materials within a domestic economy. These used materials are then discharged back into the environment through either waste or emissions or held up into a nations' physical stock with the high likelihood of future waste and emission flows (Campanale & Femia, 2013).

Thus the DMC indicator falls flat when it comes to incorporating "global material flows related to final consumption in a country or region, as indirect (or embodied) materials of imported (and exported) products are not considered" (Giljum et al., 2014, p. 322). This can also include excluded, unused material extraction. This is then in turn conflicting or even misleading in terms of decoupling as it may portray a positive picture of reduction in actual material consumption, for example, within countries when applying the DMC indicator only. It very well may be that such countries have outsourced their intensive activities in production and extraction of materials, to another country where regulations are less strict (*Ibid.*). Additional or even other MFA indicators are therefore needed in order to sustain proper analyses and capture otherwise unaccounted for material flows. The existing analysis of the Global Resource Footprint by Tukker et al. (2014) only gives a number of country-specific data for the year 2007 (see Appendix B for an overview of the Netherlands). Over the past decade it has become eminent that the collection and availability of data is vast in numbers. However, the processing of such data related to this topic has become a timely and costly process.

## 3.9. Decoupling in the Netherlands

What can be observed in the Netherlands is (slight) absolute decoupling. In Figure 19 for instance it is shown that the Netherlands has relatively decoupled GDP from environmental impact. Included in this graph are the environmental impacts per environmental theme and the international targets set for the Netherlands in terms of reduction in the Kyoto Protocol. However, GHGs have remained stable, indicating that only relative decoupling has taken place. The direct emissions by households are excluded here however.

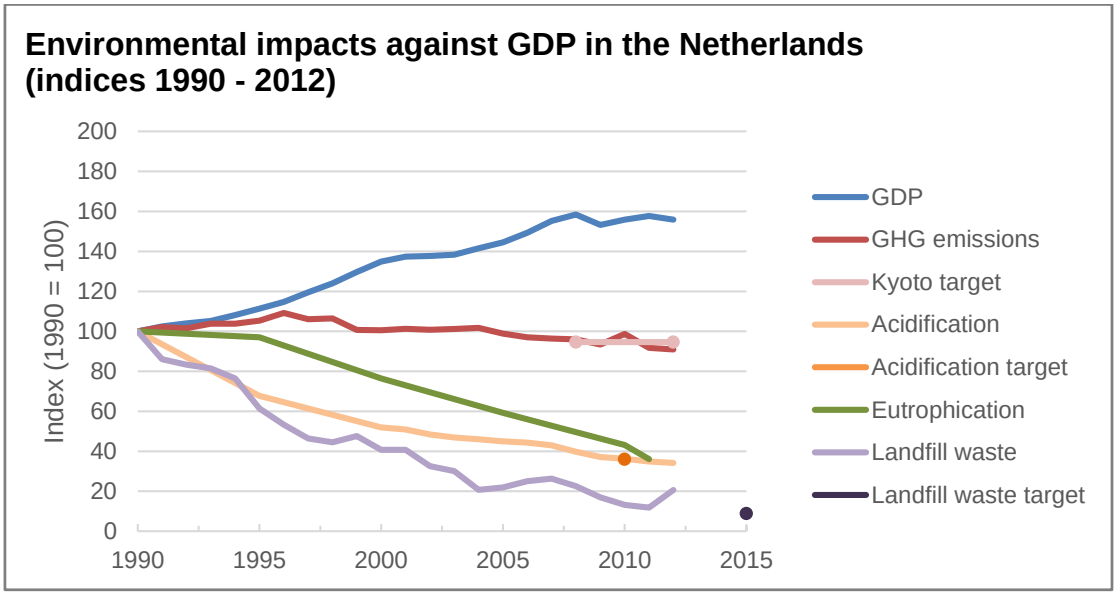


*Figure 19: Greenhouse gas emissions and GDP (Data: CBS, PBL, Wageningen UR (2013) retrieved from www.clo.nl/nl016206)*

The carbon footprint looks at the emissions in relation to the complicated global supply chain, acknowledging the emissions embodied in trade (EET), i.e. GHGs that are emitted abroad through imported material goods for domestic consumption. The balance between domestic production and consumption is furthermore called emissions trade balance. However, it should be noted this is subject to uncertainty due to the difficulty of gathering accurate data. In terms of consumption-based GHGs, the Netherlands has slightly decreased these by almost 4% between 2003 and 2009 (CBS, 2013).

When looking at decoupling in terms of material consumption (Figure 20) for the years 1980 - 2010 (time range for which data has been available), the Netherlands achieved a *relative decoupling* increasing the ratio of generated GDP per unit of material consumed from about 1657 US$/t to 2761 US$/t. However, in absolute terms the Netherlands has not decreased its material consumption and thus not achieved an *absolute decoupling.* This despite the fact that the level of consumption has remained almost steady over the time range. It only slightly increased from about 211 million tons to about 247 million tons.

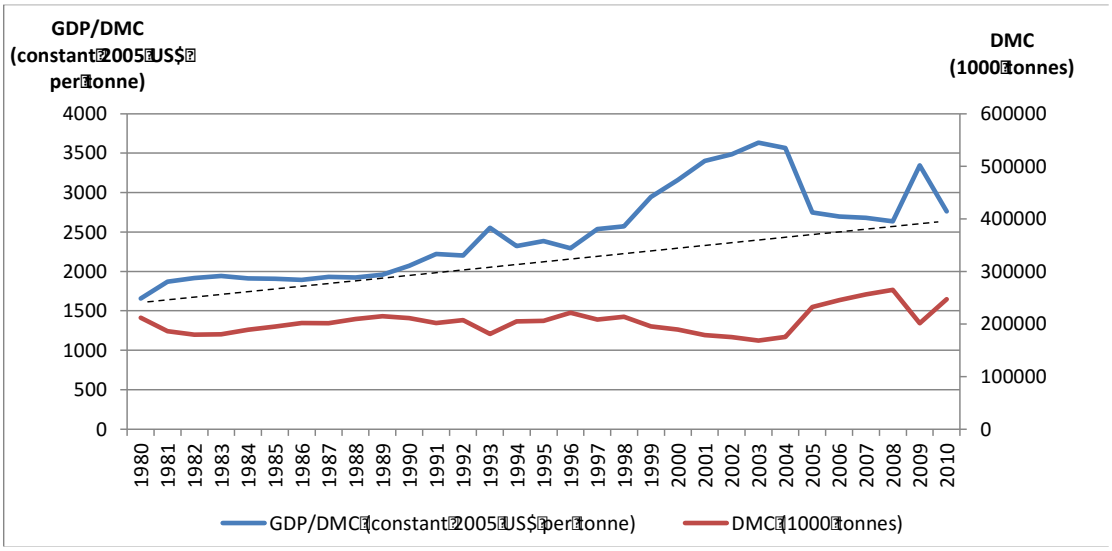


*Figure 20: Resource efficiency and absolute consumption of materials in the Netherlands, 1980-2010 (GDP/DMC and absolute DMC) (Data: materialflows.net (SERI/WU, 2015))*

When looking at Figure 21, it can be observed that population growth has remained steady, economic growth has been substantial and material intensity and consumption levels have gone done.

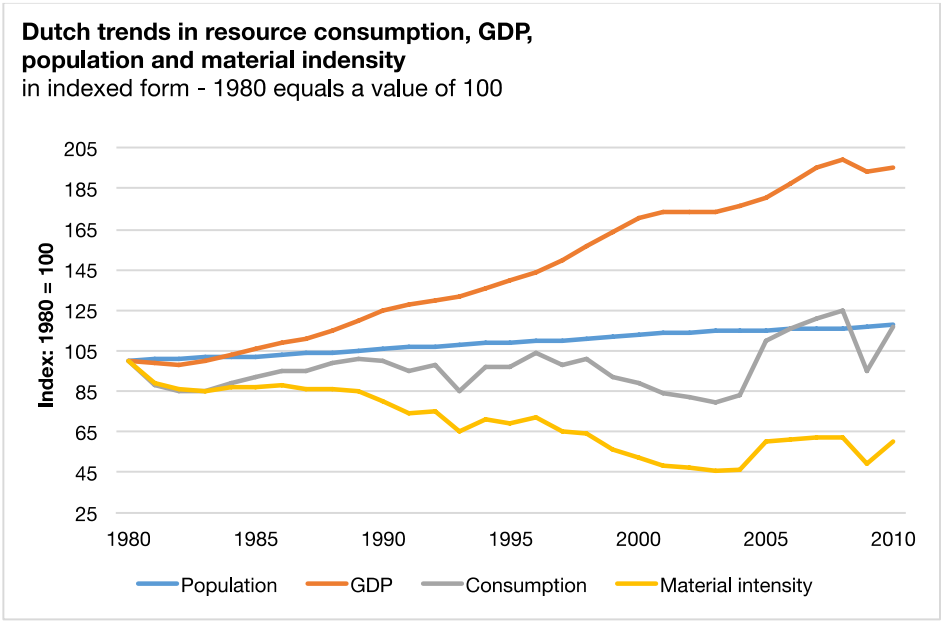


*Figure 21: Dutch trends in resource consumption, GDP, population, and material intensity in indexed form – 1980 equals a value of 100 (Data: OECD/SERI/WU Wien (2015))*

However, the DMC indicator does not include the indirect material flows, which have been necessary to produce imported goods. For such an analysis the material footprint of a country has to be applied. Time series for such footprints are not available, but data on the country-level was published for the year 2007 (Tukker et al., 2014). As the Netherlands are a main net-importing country of goods, it can be assumed, that there is a significant material footprint embedded in their imported products.

# 4. Synthesis & Discussion

This case study has provided a literature review and secondary data analysis on the current state of well-being, the part-time economy and the current environmental situation in the Netherlands. In this part the case of sustainable work in the Netherlands will be related to the common theoretical framework.

## 4.1. The satisfaction of human needs within the Dutch society

Needs are satisfied through the complimentary satisfiers that are existentially characterised as *beings, doings, havings* and interaction and complimented by axiological human needs, or the things we value namely: *subsistence, protection, affection, understanding, participation, creation, leisure, identity and freedom* (see chapter 1). The way in which Cruz et al. (2009) characterise 'work' is mainly as a having (where it satisfies the need for subsistence, protection, participation, creation and identity) and also as a doing (where it satisfies subsistence and creation). Work in relation to being, they argue, only satisfies protection. Simultaneously, they note that the need for protection and affection is being satisfied by the notion of "taking care of". A simplification in their theory can be identified in that unpaid work is undervalued, an argument sustained by Biesecker & Hofmeister (2010). This undervaluation is a sore aspect when it comes to the change a society takes in caring for its citizens and in furthermore applying 'sustainable work' as such.

To begin with, what has become evident in the preceding chapters is that the Netherlands enjoys an overall high quality of life, which may imply that needs are 'sufficiently' being satisfied. The way in which these needs are satisfied and whether there exist a fair balance between all members of the Dutch society in terms of satisfying human needs is difficult to assess. On the one hand, the studied indicators in chapter 2 have given an overall positive picture of the state of well-being in the Netherlands. A point of weariness remains, however, what kinds of satisfiers are used to satisfy those needs and how these imperil or promote sustainable pathways. In the initial framework of needs (Cruz, Stahel, & Max-Neef, 2009; Max-Neef, Elizalde, & Hopenhayn, 1991; Max-Neef, 1992) it is outlined that needs do not change over time, what does change are the satisfiers. The changing thus of satisfiers to satisfy needs, that currently appear unsustainable, might be key towards a sustainable society.

The change from welfare state to participation state might imperil or promote the satisfaction of human needs to a certain extent. Unpaid work, and in particular, the provision of informal care work is becoming more apparent within Dutch society. This is to a degree due to the rising costs of the welfare state and the ageing working population. For example, human needs are being met by the provision of care (a subsistence need) from the point of view that the receiver gets personalised care from a familiar relative or friend (the need for protection as well as affection). The carer, however, might have to a certain extent trade off time (temporal freedom) otherwise devoted to work or other unpaid activities allocated (e.g. the decreasing number of volunteers in the Netherlands due to informal caring duties see: (Bekker et al., 2015)) within his or her immediate household. This in turn might lead to a conflicting work-life balance. Ultimately, such changes might lead to counter desirable effects for the provider of care. Various literature (Bekker et al., 2015; Josten & De Boer, 2015; Merens & van den Brakel, 2014;

Vlasblom et al., 2015), has already identified this trend occurring in the Netherlands where time is being compromised to 'give back' in the immediate environment.

Secondly, the cutting down on funding in various sectors like healthcare (a satisfier for subsistence and protection) but also on education (a satisfier for understanding), might lead to the deterioration of the current quality of life enjoyed. It could be the case that the Netherlands has reached such an admirable quality of life due to the excellent access to education and provision of health as well as the comparatively low amount of working hours. The Netherlands showed for example in the Eurofound (2013) quality of life survey, that people have low levels of tiredness and high levels of work-life balance. This might be explained through the availability of 'more time' to freely allocate this 'extra time' to other activities that give satisfaction and thus satisfy needs. For example the need to participate or the need for idleness can be expanded due to the availability of time. The flexible labour policies and the availability of decent part-time employment also facilitate such flourishing.

## 4.2. Ensuring equity among all members of the Dutch society and beyond

The Netherlands in general belongs to one of the high-income countries with a GINI-coefficient of 0.29309 in 2012 (OECD, 2015c). Whilst income is relatively equally distributed, wealth inequality is rather high from an international perspective (WRR, 2014). Over half of the total wealth (61%) in the Netherlands belongs to the wealthiest 10%. Shockingly, a rounded off 1% of the total wealth is held by the lowest 60% of the Dutch population. The groups in the middle are better accommodated by the current welfare state but do not possess much of the wealth. The Netherlands is also currently experiencing an increase in poverty levels. What can be concluded from this is that the gap between the most privileged and most deprived within the Dutch society is widening which imperils movement towards the construct of sustainable work. Sustainable work and a sustainable society cannot be realised if this gap continues to grow.

Gender equality has been comparably high in the Netherlands and is furthermore enshrined in the constitution. The 'combination model' is part of the equal opportunity policy under the polder model (Plantenga, 2002). In the 'combining society' the labour supply is more diverse, i.e. participation within the society is varied in terms of combining work and care tasks, combining paid labour with studying on the side but also allocation of time in more than one job (Josten & De Boer, 2015).

At the moment it is argued that the potential of highly educated (partnered) women often with small children is not maximised due to high part-time labour market participation (more than 70% of Dutch women work in part-time employment). Nevertheless, not much emphasis seems to be put on the reduction in working time for men. What is not mentioned, however, is the fact that traditionally it is still mostly women that provide unpaid (reproductive) work that is often not accounted for in the mainstream economic analysis (Biesecker & Hofmeister, 2010). There appears to be a conflict between the equal division of paid and unpaid labour between women and men. The one-and-a-half earner model is currently the norm, where the woman is clearly not the main breadwinner. Fraser (1997) advocates

for a ´redesigning of institutions´ in post-industrial societies where both women and men are, indeed, given the equal opportunity to be a breadwinner as well as a caregiver.

The shift towards a participatory society would mean that the one-and-a-half earner model is to be substituted for a new kind of model. I will call this the "three-quarters-times-two-model" or "TQTT-model" in short. The TQTT-model would allow for women and men to have the opportunity to both work in part-time employment and divide the unpaid work equally. This will give women the opportunity to reach their 'full potential' as was mentioned by the government for promoting an increase in working hours of women. This might result into more women in higher-up positions as the male-dominated culture of full-timers may free the way to a more balanced and less-competitive working atmosphere. It would also mean that women can become more capable of being financially independent of men, something that is also still lacking and thus causing a gender imbalance. I would argue that this TQTT-model, indeed, could be an option for both women and men to become congruous members of society. A balanced model could indeed be the way forward to achieve sustainable work. For example, if there would be a harmonisation of the current 'imbalance' in working hours between men and women, what would this look like? Currently, the average working hours of women are 26.4 hours per week in contrast to 37.6 hours for men. Together this would make 64 hours a week. Divided by two makes 32 hours per week, which is also classified as a 'large part-time job'. This would mean that women would have to, approximately, start working 5.5 more hours a week, almost a full working day. Men would approximately work 5.5 hours less.

However, this could contravene with the other two dimensions of this theoretical framework and sustainable work in particular. First, the TQTT-model would still undervalue unpaid work, such as informal care work, volunteering and domestic chores that might 'lack in priority' due to paid work. The emphasis is thus still on paid work, i.e. the same amount of hours of work towards economic input but divided by two individuals. Furthermore, a 75/75 deal, depending on the amount of hours and the alleged increase of combined income could furthermore pose a threat to our biophysical limits as it may result into more resource-intensive activities and consumption patterns.

To continue, there does not appear to exist a desire of increasing working hours in the Netherlands, especially not among women (Booth & van Ours, 2010; Hupkes, 2012). It appears a luxury rather than anything else that the Netherlands currently enjoys status of being the 'first part-time economy in the world' (Freeman, 1998). Work, as a synergic satisfier, could assists towards a transcending level of the satisfaction of needs, as it simultaneously satisfies multiple needs. The harmonisation between paid and unpaid employment calls for a revaluation of both. I would argue against the conventional 40-hour work norm as this does seem to correlate with lower and even negative levels of self-reported life satisfaction (Booth & van Ours, 2010; Golden & Wiens-Tuers, 2006; OECD, 2015a). A 21-hour workweek as put forward by the nef (Coote, Franklin, & Simms, 2010) provides an attractive idea to. Or towards a level in between that enables individuals to satisfy needs in the three contexts of: 1) individual needs (Eigenwelt); 2) needs within society (Mitwelt) and; 3) needs related to the environment (Umwelt) (Cruz

et al., 2009). All three levels furthermore relate back to the three dimensions identified in this framework that form the basis of sustainable work.

## 4.3. Respecting biophysical limits in the Netherlands and beyond

For many centuries the Netherlands has sought for creative solutions to interact with nature. Land has been reclaimed from the sea and sophisticated know-how in delta technology is internationally appraised. However, climate change will have grave consequences for the Netherlands. Rising temperatures will result into rising sea-levels. Consequently, inaction will endanger a large part of the country due to the positioning under the sea-level.

Even though the country has become considerably more productive, and hours of work have dropped significantly since the 1980s, environmental impact is still high. Most GHGs have decreased but $CO^2$ emissions remain high. Absolute decoupling can indeed be observed when looked at certain indicators. However, the emissions embedded in trade are often difficult to measure as there is up until today a lack of data to adequately analyse the actual environmental impact hereof. A lot of polluting industries have furthermore been shifted abroad thus 'exporting' the emissions. Cheaper production costs and weak environmental policies in poorer countries furthermore lead to growing consumer demand in the richer countries.

The increase of consumption ineptly is aligned with improved standards of living (Jackson, Jager, & Stagl, 2004). The problem with consumption today is that material goods are often treated as satisfiers but in reality these are pseudo-satisfiers and destructors creating false wants and desires leading to a feeling of insatiability (*Ibid.*). "The question of the quality of life is overshadowed by our obsession to increase productivity" (Max-Neef et al., p. 25). Max-Neef argues that the artefacts that the industrial capitalist countries produce have become an end in itself. He believes it does not make any sense as this would mean that artefacts (i.e. economic goods) have overhauled life whereas life should overhaul artefacts. The theoretical challenge, as he puts it, lies therefore between needs, satisfiers and (economic) goods that are of critical for understanding how these should interact. The interactions between these needs, satisfiers and economic goods have the ultimate goal of fully and consistently satisfy fundamental human needs. The conditioning thereof needs to be traced back to the creation and reflection processes in order to change them towards this goal.

Neither rising income nor accumulation of materialistic goods has proven to continuously increase levels of happiness (Easterlin, 2003). A curtailment of consumption (Røpke, 1999) is therefore needed to respect our biophysical limits and assure humanity can live within a safe operating space. Quality of life should be opted for instead of quantity of material goods (Schor, 2005). This should be aspired on a national level as well as on an international level. Ideally, sustainable lifestyles would entail moving away from resource intensive activities.

Various scholars (see for example: Antal, 2014; Coote et al., 2010; Kallis et al., 2013; Schor, 2005) have touched upon the possible relationship between working time reduction (WTR) and environmental

impact. Kallis et al. (2013) bring forward the debate regarding degrowth in that WTR might be a possibility to ease out of the ecological-economic crisis. They argue that in this manner three objectives could be achieved. First, more people would have the opportunity to work who actually would like to work. Secondly, people that are working and would desire to work less to invest more time in any leisure or care activities would be able to fulfil this wish. And third, people in unsatisfying positions could be granted the opportunity to engage in alternative, and possibly less environmentally demanding, activities. It furthermore could open up access to goods and services in a more equitable way. Their main starting point targets poor and middle-class people in an effort to improve their lives and increase their equitable participation in society. However, up until today the research field is still falling short on empirical studies that could unveil the probable link. Despite the common argument made both by Schor (2005) and Kallis et al. (2013) that a reduction in working hours could generate more time for leisure and other activities, this has not necessarily been held true for the Netherlands.

To sum it up, this case study has provided an analysis of the current situation in the Netherlands regarding the levels of well-being and the quality of the environment. Work is identified as a mediator between these two concepts. This case study has furthermore evolved around the following research question:

*How can the Netherlands achieve 'sustainable work' maintaining high standards of well-being and elevating environmental quality?*

From this present case study research on the Netherlands, it has not become illustrious that fewer working hours result into a positive environmental impact per se. The Netherlands is still a high consumer of resources due to the exporting industry as well as high consumption levels of households. The case of the Netherlands that has been presented here shows that the conventional economic rational still prevails where the economy is treated as superior to the environment. The recognition of a different worldview where the human economy is seen as being embedded in society that itself is embedded within the Earth System, is needed to foster a socio-ecological transition to overcome the socio-ecological crisis. Work, and more specifically sustainable work, could work as a mediator between the two realms. The Netherlands could only achieve sustainable work if all three features of the common theoretical framework are met, i.e. satisfying of human needs, ensuring equity among all members of society and respecting our biophysical limits.

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# 6. ANNEX A: BLI scores for the Netherlands compared to OECD average

| Topic | Netherlands | Score (1-10) | OECD average |
|---|---|---|---|
| ***Income*** | | ***5.4*** | |
| Household net-adjusted disposable income per capita per year | USD 27 888 | | USD 25 908 |
| Household net financial wealth | USD 77 961 | | USD |
| ***Jobs*** | | ***8.2*** | |
| Employment rate (% of total working force between 15 - 64 in paid labour) | - 74% total<br>- 79% men<br>- 70% women | | - 65% total<br>- 73% men<br>- 58% women |
| Long term unemployment rate | 2.4% | | 2.79% |
| Average gross annual earnings full-time | USD 47 590 | | USD 36 118 |
| Job/Employment security | 4.5% | | 5.4% |
| ***Housing*** | | ***7.2*** | |
| Rooms per person | 2 | | 1.8 |
| Dwellings without basic facilities | 0% | | 2.4% |
| Housing Expenditure | 19% | | 18% |
| ***Work-life balance*** | | ***8.8*** | |
| Employees working very long hours (50+ hours p/w) | 0.5% | | 13% |
| Time devoted to leisure and personal care (number of hours (minutes) per day) | (est.) 15.44 | | 14.99 |
| ***Education*** | | ***7.6*** | |
| Education attainment | 73% | | 75% |
| Student's cognitive skills | 509 | | 497 |
| Expected years in education | 18.7 | | 17.7 |
| ***Social connections/community*** | | ***7.6*** | |
| Social network support | 90% | | 88% |
| ***Civic engagement*** | | ***5.1*** | |
| Consultation and rule-making (average score) | 6.1 | | 7.3 |
| Voter turnout | 75% | | 68% |
| ***Health*** | | ***8.0*** | |
| Life expectancy | 81.2 years old | | 79.6 years old |
| Self-reported health (the higher the healthier) | 76% | | 68% |
| Environmental | | | |
| Air pollution (in micrograms per cubic metres) | 30 | | 20.1 |
| Satisfaction with water quality | 92% | | 81% |
| ***Safety*** | | ***8.3*** | |
| Homicide rate | 0.9 murders per 100 000 inhabitants | | 4.0 murders per 100 000 inhabitants |
| Self-reported victimisation | 4.88 % | | 3.9% |
| ***Life satisfaction (Subjective well-being)*** | | ***9.3*** | |
| Life satisfaction (general satisfaction with life on a scale from 0 to 10) | 7.3 | | 6.6 |

(Data: OECD Better Life Index 2015)

# 7. ANNEX B: Resource Footprint of the Netherlands

## Netherlands

Population: 16 381 696 | Land area: 41 530 km² | GDP: 571 008 Mil. €

The Netherlands are among the world's leading exporting countries. However, in terms of the resources and environmental impact embodied in their products, the Netherlands are a net importer. This coupled with the high standard of living, explains its high environmental footprint per capita. However, the low footprint per GDP highlights the environmental efficiency of the economy. This fact is noteworthy given the high dependence of the economy on crude petroleum and its mainly fossil fuel based energy production.

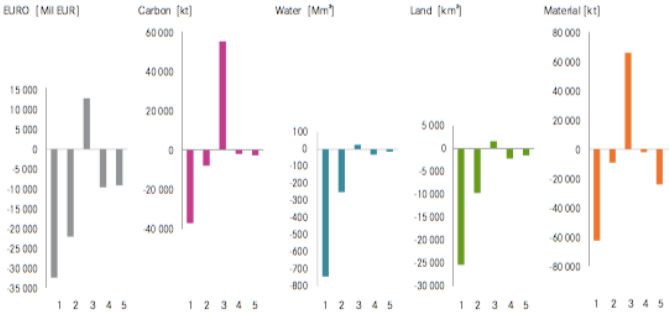
### FOOTPRINTS

| | Carbon | Water | Land | Material |
|---|---|---|---|---|
| per country | 274 897 kt | 8 605 Mm³ | 510 065 km² | 419 537 kt |
| per capita | 16 781 kg | 525 m³ | 0.031 km² | 25 610 kg |

### NET TRADE


### TRADE FLOWS BY PRODUCT

Shown below are the net trade of products imported/exported to/from a country (imports minus exports) – the products include products for both further processing into more advanced goods/services (that may be later exported) and for final consumption. Environmental impacts are shown for the complete up-stream international supply chain of each product.




1 Plastics, basic
2 Wholesale trade and commission trade services, except of motor vehicles and motorcycles
3 Crude petroleum and services related to crude oil extraction, excluding surveying
4 Retail trade services, except of motor vehicles and motorcycles; repair services of personal and household goods
5 Natural gas and services related to natural gas extraction, excluding surveying

### RANKING

World average per capita

| Carbon | Water | Land | Material |
|---|---|---|---|
| 10 Austria | 8 Denmark | 9 Latvia | 14 Estonia |
| 11 Netherlands | 9 Netherlands | 10 Netherlands | 15 Netherlands |
| 12 United Kingdom | 10 Canada | 11 Brazil | 16 Spain |

### KEY INDICATORS

| KEY INDICATORS | Carbon | Water | Land | Material | GDP | Population |
|---|---|---|---|---|---|---|
| Resource footprints per € GDP | 0.481 kt/Mil € | 0.015 Mm³/Mil € | 0,893 km²/Mil € | 0,735 kt/Mil € | | |
| Per capita footprints relative to world average | 2.93 | 2.10 | 2.35 | 2.59 | | |
| Contribution to global total | 0.72 % | 0.52 % | 0.58 % | 0.64 % | 1.40 % | 0.25 % |
| World total | 37.97 Gt | 1 660 560 Mm³ | 88 031 435 km² | 65 627 314 kt | 40 744 556 Mil € | 6 638 184 044 |
| World average per capita | 5 721 kg/cap | 250 m³/cap | 0.013 km²/cap | 9 886 kg/cap | | |

(Tukker et al., 2014)

# VI. Environmental, social and economic unsustainability in Spain before and during the 2008 crisis

## A study on the socio-ecological consequences of the Spanish economic development model and the policies implemented during the crisis

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## 1. Introduction

After more than seven years of pronounced economic recession that turned into a strong social and political crisis, Spain is in an urgent need of radical transformations in all those levels. With more than 28% of the population at risk of poverty and a rate of unemployment affecting about a quarter of the labour force (EAPN-España, 2015; Instituto Nacional de Estadística, 2015a), the Spanish economic and social welfare model has consistently demonstrated its incapacity to guarantee the well-being of the population in moments of stress. Embedded in a context of European integration and international competition, the development model Spain has followed for the last three decades has proved to be extremely unsustainable from an economic, social and ecological point of view. Considering the satisfaction of individuals' needs and social equity, this Southern European country always maintained high levels of social exclusion and income inequality in comparison with the rest of the Union; levels that have sharply risen with the crisis. If environmental indicators are also taken into account, it can be claimed that the unsustainability of the Spanish society is complete according to our definition[32]. Now that the mirage of high and long-lasting growth fed by the housing bubble has vanished, it is time to look at the imbalances of the Spanish economy and identify the mechanisms that originated them. This study aims to point out the multi-dimensional characteristics of the Spanish unsustainable economic system prior to 2008 and how the management of the crisis has enhanced those trends. Especially with regards to social well-being indicators, Spain represents a paradigmatic case of the negative social and ecological consequences of unsustainable economic de-growth (Kallis, 2011). It is thus an interesting counter-case study in this series of researches on sustainable work across Europe.

With almost 6 million people unemployed and 60% of them being in this situation for over a year (Rica and Anghel, 2014), economic recovery and employment creation are the topics that have centred the Spanish domestic political discourse and academic debate for the last half decade. The credit crunch resulting from the 2008 financial crisis, the sharp reduction of public expenditure and the substantial tax rise make altogether an ideal combination to depress the domestic demand, a crucial component of the vicious circle that characterises every economic crisis. As it is well known, the fiscal consolidation that Spanish economic policies have targeted for the last five years are derived from the pressure European institutions and international organisations (mainly the International Monetary Fund) are putting on Southern European countries in order to facilitate them the credit they demand. Since public debt has almost tripled in Spain compared to the levels prior to the crisis and public deficit has stayed considerably higher than the 3% allowed by the European Stability and Growth Pact[33], the relationships with European institutions became tenser as public budget cuts were recommended and austerity measures hardened. The economic debate currently swings between how to make the economy grow

[32] The description of the requirements of a sustainable society can be found in the initial theoretical framework of this report.
[33] Official approval of the pact can be found at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802%2801%29:EN:HTML. Public debt and deficit data can be found in the Appendix.

and thus create employment, and how to manage the increasing public debt given the restrictions imposed by the membership to the Euro. Economic and political approaches to the topic can be broadly categorised in two groups: those that see the fiscal consolidation as a necessary step towards the necessary reforms that will foster Spanish competitiveness and efficiency, recover the credibility in the financial markets and eventually attract more investment (FEDEA, 2009; Llanos Ramos, 2009); and those in favour of expansionary policies where fostering the domestic demand is the priority to create a positive cycle of demand-driven growth (Torres López, 2009; Uxó González, 2010).

The last 5 years have proved that austerity policies were not successful in reducing the public debt, creating economic growth and fostering employment creation. It is quite evident that this strategy is not helping to improve the country's social situation and thus a turn in the fiscal policies is urgently needed in order to alleviate the emergency and generate the holy growth that all economists call for (Rodríguez Ortiz, 2011). However, it is important to point out that a standard Keynesian policy package will not serve to overcome the other major problem that the Spain faces, that is the ecological crisis. As it has been criticised by Martínez-Alier (Martínez-Alier, 2011), these approaches tend to leave out of the analysis the biophysical dimension of economic activities and neglect the negative environmental consequences of growth to a great extent. Miklós Antal (Antal, 2014b) makes an exercise of special interest for this discussion in his review of the literature on the relationship between growth, ecological damage and unemployment. He shows that, on the one hand there exists a strong positive correlation between economic growth and environmental degradation, whereas on the other hand there is a negative correlation between the lack of growth and the creation of employment. This means that, in the policy sphere, economic growth is understood as a precondition to reduce unemployment and thus social well-being goals are incompatible with strong environmental commitments.

This ecological macroeconomics dilemma is of high relevance to the Spanish case. One could argue that in this moment the country is in desperate need of GDP growth so it can reduce unemployment, thus implying that environmental goals should be sacrificed until the situation is improved. Nevertheless, this argument should be carefully considered due to its great implications for the development pathway of the country. To start with, even in the times of high economic growth and prosperity, levels of poverty and unemployment always stayed remarkably high in comparison with the rest of Europe, as the section 2.2 of this study details. From an environmental perspective, section 2.3 demonstrates how resource use has clearly been coupled to economic growth over the last decades and even during the years of economic recession the environmental indicators did not improve to the same extent as the GDP fall. Bearing in mind that the Spanish economic model is highly inefficient in environmental terms on the one hand, and does not successfully manage to cover population's needs on the other, the dilemma presented before loses its relevance since both relationships present strong differences in the Spanish case. Given the structural incapacity of the domestic economy to avoid poverty and inequality and its

strong dependency on resource use, returning to the pre-crisis pathway is not an option and new strategies towards a sustainable society are needed.

Therefore, the major challenge the country is facing at the moment is the creation of an alternative development model that ensures people's well-being within the environmental limits while, at the same time, the tights with the rest of the European Union are maintained with the implications this has for domestic policies. However, this research does not aim at studying how this complex equilibrium could take place, but rather at depicting the different ways in which unsustainability takes place in Spain and how the management of the crisis has contributed to expand those trends. As part of a set of case studies on sustainable work in different European countries, the present work elaborates on how unsustainable the organization of work was in Spain in the years before the crisis and how the economic and labour policies adopted during the crisis did not contribute to an improvement of the situation. Part 1 describes the economic, social and environmental situation in Spain before 2008 with a focus on the employment structure of the country, whereas the subsequent part describes the impacts of the crisis in all these three dimensions in connection to the policies that have been adopted in those years. Last section discusses the two previous parts and draws some conclusions at the light of the prospects of change the country is recently experiencing.

## 2. Part 1: The ecologically and socially unsustainable economy

As it is described in the theoretical framework that introduces this set of case studies, sustainable work is understood as "work that enables and supports a sustainable society". From this holistic approach, it is only possible to analyse the sustainability of work in Spain by looking at the aspects that define a sustainable society and describe the ways in which the Spanish case deviates from the ideal situation. The definition of the sustainable society is articulated around three major concepts. Firstly, a sustainable society must ensure the satisfaction of individuals' needs as understood by the Max-Neef needs theory, where all persons in all societies have a limited number of needs that can be fulfilled by different satisfiers (Max-Neef, 1991). Secondly, equity among individuals should be guaranteed, meaning that all members of the society should have the same rights and duties and there are no structural inequalities that prevent certain individuals to fully develop their lives. Thirdly, these two previous conditions should be fulfilled within the biophysical boundaries in a way that nature's bio-capacity is maintained.

With regards to work, it is clear that a sustainable organisation of labour in the broad sense would have an enormous impact on the sustainability of society as a whole. Work, as a synergic satisfier[34], is one of the most relevant needs satisfiers in our societies and therefore is a crucial component to guarantee the well-being of the population. Needs of subsistence, identity or participation can be satisfied by working in a conventional paid job, but also other needs such as affection or protection are partly covered by other types of unconventional, reproductive work. It is necessary to highlight that work is understood

[34] A synergic satisfier is a type of satisfier that manages to simultaneously fulfill different needs at the same time.

here in a broader way than simply paid labour. As it is detailed in the framework, the idea of (re)productivity developed by Adelheid Biesecker and Sabine Hofmeister becomes of high use here due to its emphasis on the relevance of (re)productive human labour as well as nature's (re)productivity for all processes that serve to guarantee the functioning of our societies (Biesecker and Hofmeister, 2010a). From this approach, all human productive and reproductive work, that is generally identified with paid and unpaid work, together with nature's productive capacity serve as the basic input to generate all the goods and services that society as a whole needs to reproduce itself. The combination of the needs theory and Biesecker's (re)productivity concept constitute a solid theoretical framework that allows to analyse work in modern societies in many different dimensions.

Looking at the Spanish economy from this perspective, this entire section is devoted to show the ways in which the economic model in Spain did not succeed in guaranteeing individual needs, ensuring equity and maintaining the bio-capacity of the territory. Due to the relevance of the economy in the configuration of the sustainable society, the first subsection introduces the economic situation of the country from the 1980s until now and shows its major imbalances in economic terms. In Western countries paid work supposes a key satisfier of subsistence needs, condition that demands a profound observation of the employment structure of a country and the labour markets in order to understand how it contributes to enhance population's well-being. This analysis will be performed in subsection two, which studies how the needs of the Spanish population were unmet in the years prior to the crisis by focusing on poverty and social exclusion indicators. This part also elaborates on the relationship between paid labour and poverty, and also on the unequal gender division of reproductive and productive labour, including the discrimination women suffer in the labour markets. Subsection three shows in different ways how distant the country's development model was from being ecologically sustainable, making special emphasis on the negative impacts of the real estate bubble on the environment.

## 2.1. Economic situation before the crisis

When Spain entered the European Union in 1986, its economy was considerably backward in comparison to European standards. Starting from an income per capita that was around 71% of the EU-15 average and relatively moderate growth rates, the country rapidly expanded in the following two decades and to a certain extent converged with the rest of the Union in terms of economic growth. Except for the years of economic recession in the beginning of the 1990s where unemployment rose above 24%[35] and GDP shrank by 1% (Instituto Nacional de Estadística, 2008; Real Instituto Elcano et al., 2006), Spain continuously grew above European averages in the 20 years between 1985-2005. By then end of these two decades, its GDP per capita had tripled, reducing by almost 20 percent points its difference to Europe's mean and situating the country's economy among the biggest ones in the continent (Real Instituto Elcano et al., 2006). The period that followed the 1993 crisis and lasted until

[35] It is important to mention here that the Spanish Statistical Office changed the method for calculating the unemployment rate in 2001, and therefore this figure could be overestimated in comparison to the new calculations. Real Instituto Elcano et al. (2006) calculate that unemployment peaked in 18.8% in 1994.

2007 is referred to as the most successful era in recent Spanish economic history. During this time, GDP grew at an average pace of 3.8% per year, real wages rose by 4% (Puente and Galán, 2014) and foreign investment increased from around 4,000 billion euros in 1995 to 40,000 billion by the mid-2000s (Real Instituto Elcano et al., 2006). Although it is known that an important part of this "Spanish miracle" was fostered by a construction bubble and numerous studies strongly emphasize the imbalances that were accumulated over these years (European Commission, 2014; León Lázaro, 2014; Llanos Ramos, 2009); 7.8 million jobs were created in this period and unemployment was substantially reduced to 8% by 2007 (Instituto Nacional de Estadística, 2008).

Looking more closely to the economy and uncovering these imbalances that later contributed to the strong impact of the crisis, a relevant characteristic of the Spanish economy in comparison to the rest of Europe is its strong negative trade balance. External trade rapidly increased after the entry in the single market, and this rise was characterised by a supremacy of imports over exports by around 30% in the 1990s, rising to almost 50% in the years just before the crisis (consult figure 3 of the appendix on Spain). Spanish net exports are products from the transport industry, agricultural goods (mostly vegetables and oils) and some type of textiles and construction materials; whereas most important net imports are chemical and mineral products, plastics, machinery and electric devices (INE, 2015). (Luengo Escalonilla and Álvarez Peralta, 2009) (2009) describe how industries with a higher technological component stagnated and lost substantial market share after the entry into the single market, making the Spanish economy specialise in lower-value added products. They claim that this effect was mainly due to the incapacity of the country's industry to adapt to the more competitive European environment, with only the car industry and other less innovative and technologized sectors maintaining their comparative advantage ((Luengo Escalonilla and Álvarez Peralta, 2009) 2009).

Regarding its economic structure, Spain now is a service economy with more than 60% of annual GDP being generated in this sector in the years before the crisis and employing around 65% of the work force. As is internationally well-known, tourism plays a major role in the economy and, according to the special tourism accounts of the Spanish Statistical Office, generates around 10% of the gross domestic product and giving jobs to more than two million people (around 12% of all workers). Looking at the Spanish industry, the hypothesis previously presented on the how Spain was forced to de-industrialised after its entry in the European Union due to the stronger international competition is also supported by the Foessa report. This report claims that in the 1960s and 1970s unemployment was only 5%, and it is due to the industrial re-conversion that was needed in order to access the Union that most employment in this sector was destroyed, making unemployment grow above 20% between 1984 and 1986 (Fundación FOESSA, 2014). The low profile of the Spanish industry was perpetuated and although in the 2000s the amount of employees in this sector was kept relatively constant during this decade and the sector increased its volume, its share on the GDP fell by almost 5 percent points between 1995 and 2008.

Considering now the agricultural sector, is similar to any other Western economy although it is slightly above the European mean: it gives employment to around a million people and supposes a 5% share of GDP. We need to turn to look at the construction sector in order to understand the major difference between Spain and its European neighbours. In 1995, this area of the economy gave employment to 1.25 million people and represented around 8% of the GDP, a figure that was already substantially higher than the 5% European average. By 2007, this sector had almost tripled its volume, doubled the amount of employees and was contributing almost 10.4% of the domestic value added in 2006[36].

### 2.1.1. The real estate bubble

The accelerated growth of the construction sector was the result of an immense housing bubble that rapidly inflated for more than a decade and dramatically burst in 2007 as a consequence of the international financial crisis. Óscar Carpintero claims that this bubble was nothing new to the Spanish economy, which had been fuelling its growth by a series of real estate booms for the last forty years (Ó. Carpintero, 2015). Experts on this topic such as José Manuel Naredo or Gonzalo Bernardos Domínguez attribute the origins of this bubble to a number of structural causes, some transitory causes and even to economic "luck" (Bernardos Domínguez, 2009, p. 132). (Naredo, 2009) considers that the Spanish property-based housing system and the historical support this sector has received from public institutions are relevant aspects that influence the behaviour of this sector (Naredo, 2009, p. 121). Spain is one of the countries in Europe where the percentage of families that own their main residence is the highest – around 80% of the total – and where there are less public houses for social renting – an exiguous 2% of the total households in 2006 (Inurrieta Beruete, 2007). This situation is derived from the public and private support towards house purchasing, and also from the generalised perception of real estate as "shelter assets" that never lose their price and thus always are a safe investment for all sort of households (Bernardos Domínguez, 2009, p. 28).

These characteristics of the Spanish housing market are very influential in the creation of speculative bubbles, but the expansion of the 1998-2007 bubble was also derived from other circumstantial causes. Bernardos Domínguez determines such causes to be: the favourable macroeconomic situation, the extremely beneficial credit conditions for borrowers, the positive consequences of the entry into the Euro and the massive influx of immigrants in this period (ibid, p.24). The cycle of economic expansion in Europe financed Spain's negative balance of payments – which amounted to 6.5% of the GDP in 2005 – together with the fierce competition between Spanish banks and the expansionary policies of the European Central Bank, all contributed to generate an abnormal supply of credit at extremely low interest rates. The entry in the Euro and the loss of monetary sovereignty contributed to expand the bubble since real interest rates became negative between 2002 and 2006. This situation favoured the rise of families' debt due to the easiness to contract mortgages, doubling the ratio of household debt to

[36] For further information on the statistics of the distribution of GDP and employment across sectors please refer to the Appendix.

available income in this period (ibid, p.31-32). It has been calculated that between 60% and 70% of the total credit given to the private sector in those years was connected to the expansion of the bubble (FEDEA, 2009, p. 35), although most of the credit did not go to families' debt but rather to construction companies and real estate agencies (Naredo 2009, p.122). In order to complete this picture it is necessary to mention the entry of almost 4 million immigrants in the country in a period of 7 years, a phenomenon that also increased the demand for apartments and supposed a major increase in the low-skilled and cheap workforce that was building the houses (Bernardos Domínguez, 2009, p. 33).

With all those different factors feeding the construction sector, around 5.7 million houses were built in this period. Only in the year 2006 almost a million houses were started, a number that largely exceeds the amount of houses built in Germany and France together in that year (Carpintero 2015, p.51). Even if population growth is taken into account, the drastic increase in the amount of houses makes the country have one of the highest ratio of houses per inhabitant in the world (ibid, p.50). However, the 30% increase in the housing supply did not bring a fall in the price of houses but was rather accompanied by a 190% increase (FEDEA 2009, p.29). What is more dramatic, the overpricing of housing assets derived from the speculation implied that the families that run into debt to finance the purchase of their houses signed contracts by a higher value than what the house was actually worth. This overstatement of assets' prices generated a situation where families pay the surplus value to the banks, thus transferring an important part of the costs of the bubble and the crisis to the already precarious households (Naredo 2009, p.126).

Looking at the evolution of the economy in the last decades with these evidences, it is clear that the burst of the bubble and the consequent extension to the rest of the country was unavoidable. The following section depicts how the economic transformation Spain experienced in this period influenced the living conditions of the population.

## 2.2. Social well-being and employment

Although Spain moved from being a middle-income to a high-income country in the period from the 1970s until now, social welfare indicators did not rise at the same pace as the economic ones. As the comprehensive seventh report on exclusion and social development written by the FOESSA foundation thoroughly explains, poverty, social exclusion and inequality are endemic characteristics of the Spanish society (Fundación FOESSA, 2014). While income inequality and poverty were substantially reduced during those years, especially in the 1970s and the 1980s, it is important to bear in mind that Spain also was the industrialised country with the highest inequality in the 1960s (ibid, p.70). The redistributive process de-accelerated in the 1990s due to the economic crisis, and it did not continue at the same pace during the 2000s despite high economic growth rates. In the decade before the current crisis, Spain still was one of the countries with the highest income inequality, having a Gini coefficient of three points above the EU-15 average and a poverty rate affecting 23.3% of the population (EAPN-España, 2015). Other social welfare indicators such as the human development index or the SEN indicator, which is

also a measure of inequality, also confirm this trend and situate the country in the lower part of Europe. Although these measures improved in the period of growth, still remained considerably below the European average and only life expectancy and the self-reported happiness where, respectively, above the mean and converging to it during the 2000s[37]. It is also very important to remark that the country has very strong regional differences across its territory, with rates of poverty and unemployment in Andalusia or the Canary Islands doubling those of the Basque Country or Navarra.

The FOESSA report attributes the persistent social inequity in Spain to three main factors. Firstly, the high vulnerability of households to poverty and exclusion; in the second place, the instability of economic growth and its volatility in the creation of employment; and finally, the insufficient consolidation of the welfare state (Fundación FOESSA, 2014, p. 107). The relative weakness of the Spanish welfare state in comparison to European averages is of little novelty in the academic sphere. Specialists on the topic such as Vicenç Navarro have consistently shown over the last decades how the Spanish welfare state clearly lags behind Europe in terms of per capita public expenditure on social protection and on fiscal pressure as a percentage of GDP (Navarro, 2009). Tax pressure is considered to be not progressive enough and the redistributive effect resulting from taxes on income and income transfers is half than in other countries such as Germany or the United Kingdom (Fundación FOESSA, 2014; Valle et al., 2013). This low profile fiscal system does not however mean that the black market is smaller than European averages, as economic theory would suggest. Those activities used to weigh around 18% percent of the total economy in the pre-crisis years, meaning that a lower tax burden did not successfully stimulate the informal sector to regularise its transactions (Sardá and GESTHA, 2014).

The Spanish welfare system tends to be analysed together with the rest of Southern European countries: Italy, Greece and Portugal. These four countries are generally typified as a combination between the liberal welfare model and the corporatist or conservative model according to the Esping-Andersen classification (Culfaz, 2014). They are characterised by a lower degree of social protection that is compensated by the central role of the family or "familiarism", a phenomenon also associated with the persistence of traditional gender attitudes where women have a considerably smaller participation in the workforce (Grau-Grau, 2013). In Spain, public expenditure on social affairs was the second lowest of the group in 1996, and 13 years later it had managed to be the last one of these four countries and rank at the very bottom of Europe (Culfaz, 2014). The centrality of the families in the social care system has a strong cultural component, but it is also determined by the incapacity of single individuals to earn their living and the design of social policies. It has been studied that social protection policies do not sufficiently protect and support women to escape from their roles of caretakers as mothers and wives and therefore contribute to perpetuate this pattern (ibid, p.114). Regarding this point, it is important to highlight how single-parent families and young people have evolved towards higher poverty risk profiles during the last two decades. This effect is mostly derived from the non-existent policies targeting single

[37] Please refer to the appendix I to consult those statistics.

parents and the lack of protection towards young people, a group that has always suffered from very high unemployment rates and risk of poverty (Fundación FOESSA 2014: 42 and 79).

Turning now to look at work as a relevant needs satisfier of and relevant condition to prevent social exclusion, there are many ways in which the Spanish employment structure was not socially sustainable in the years before the crisis. As mentioned in the previous subsection, the country maintained very high unemployment levels since the 1980s that also rose very sharply in moments of crisis. It is only in the years of very high growth when this rate is substantially reduced, although it never fell below 8% (Instituto Nacional de Estadística, 2008). This shows that on the one hand, Spain has a very high rate of structural unemployment and on the other hand, unemployment is very sensitive to economic recessions whereas it is not reduced equally fast when GDP is growing. This effect is generally attributed to the lack of competitiveness of the economy at the international level and its tendency to expand in sectors with a high cyclical component, such as tourism and construction (Fundación FOESSA 2014: 67). The most striking fact of the years of the expansion is that rates of poverty and exclusion were not reduced proportionally to the increase in the participation in the labour force and the bigger employed population[38], meaning that the new employment created did not sufficiently contribute to increase the population's well-being. Let us now focus on the features of the Spanish labour market to explain this fact.

Spain is characterised by having very high indices of income inequality and a one of the biggest share of employment in low-income and precarious jobs in Europe (Fundación Alternativas, 2013). This is derived from the fact that a very large part of the population is employed in sectors with low qualification requirements such as transports, tourism, commerce or construction where salaries tend to be in the lower deciles of the distribution (ibid, p.84). This high incidence of low wages creates a situation where a relevant part of the working population lives below the poverty line. Those called the "working poor" always captured more than 10% of the workforce, with a much higher proportion of women and younger people affected by this type of jobs (Fundación Alternativas, 2013; Recio Andreu, 2006). The important share of the population employed in low value-added sectors is nevertheless not complemented by an extensive number of positions with highly qualified employees. Although Spain is the country in Europe with the biggest proportion of university graduates among its young population (FEDEA, 2009), it did not manage to generate enough employment in high-skilled positions with strong innovation and technical components unlike other European countries (Fundación FOESSA 2014, p.295). This deficiency generates a scenario where being over-qualified for the work performed is very common, with around 30% of workers declaring to be more skilled than what their job demands. We find the younger population especially affected by this problem as well as women, which have jobs under their qualifications 10% more often than men (ibid, p.286).

[38] Participation in the labour force increased by 6 million in this period (35% rise) and pulled the workforce rate up to 60% of the population in working age (León Lázaro, 2014).

The high incidence of poverty among workers is also attributed to the precariousness derived from the high proportion of temporary contracts in the labour market, which amounted to 30% of all contracts before the crisis (Instituto Nacional de Estadística, 2008). Those contracts do not provide the worker with any protection against dismissal and pay very little contributions to the social security. They leave those workers highly vulnerable to the demands of the employer and without the necessary social security contributions that will guarantee their unemployment benefits and retirement pensions (Ortíz García, 2013). In the year 2007 more than 40% of the workers with high and moderate levels of social exclusion had this type of contract, a form of employment that is predominantly used to hire young people (Fundación FOESSA, 2014), p.205).

Regarding the length of the labour day, the report on working time performed by researchers of the 1st of May foundation claim that the amount of hours the Spanish spend at work is one of the highest ones in Europe (Aragón Medina et al., 2012). The small proportion of part-time jobs (only 10% of the total) explains this fact as well as the high number of people employed in commerce, hotels and restaurants where the effective working week exceeds 40 hours (ibid, p.27). In 2005, the average working week for all employees was 39.2 hours, a figure coming from the 42.2 hours that full time workers were spending at work as opposed to the 18.9 hours of part time jobs. It is also relevant to point out that part-time positions are generally performed by people who could not find themselves a full-time job, since only 12% of these type of employees are happy with their working hours (Aragón Medina et al., 2012). Three quarters of those contracts are done by women, meaning that women are under employed on a much higher proportion than men.

Gender discrimination in the labour market happens in a variety of ways: women participate on the workforce 20% less than men, work less hours per year and suffer a wage gap that was around 20% in the last decades (Bote Álvarez-Carrasco and Cabezas Ares, 2012; Instituto Nacional de Estadística, 2008). The gender wage gap ranks among the highest in Europe when it comes to part-time jobs, an effect given by the feminization of poorly paid activities but also due to simple discrimination seen in the lower wages women receive for performing the same task as men (UGT, 2015). Looking at reproductive non-paid labour, a strong feminisation of these tasks can still be appreciated in Spain. Women spend on average between two and three times more hours doing this type of work, which supposed around 6 hours per day for women in the decade of the 2000 as opposed to the 2.3 hours men spent (Rodríguez Menéndez, 2008). These two dynamics generate a situation of double discrimination of women in the work sphere and make the organisation of work highly unequal. On the one hand they suffer discrimination in the distribution of paid work and their work is less paid and less recognised, and on the other they are the main performers of reproductive, unpaid work.

It is therefore evident that the employment structure of the country is far away from fostering social sustainability due to a wide variety of economic, governmental and cultural causes. As Carlos Pietro et al. conclude in their book on the quality of employment in Spain, it is not only labour legislation or

changes in the production model that need to be enforced, but a radical transformation of the employment regime is necessary in order to achieve acceptable levels of social well-being (Pietro et al., 2009).

## 2.3. Environmental dimension

Coming now to analyse Spain from an ecological perspective, it can be clearly seen that the economy did not grow in an environmentally sound way. The country followed the standard development model of Western economies, where resource consumption exponentially increases with the economic growth (Dittrich et al., 2012b). However, those nations are presenting some signs of the so-called relative decoupling – resource use does not increase at the same pace as to GDP growth – whereas those resource efficiency gains cannot be yet appreciated in Spain (ibid, p.48). This subsection describes the evolution of the metabolism of the Spanish economy in the last half century and also details the environmental impacts of the recent real estate expansion.

The book written by Carpintero (Carpintero, 2005) on the metabolism of the Spanish economy in the period 1955-2000 exhaustively presents the change the country experienced in the way it makes use of environmental resources. It shows that the country moved from a typical agrarian profile, where more than 60% of its resource consumption was from biotic origin and was thus renewable, to an industrialised economy where almost 90% of the materials used are abiotic (Carpintero, 2005). This strong transition on its metabolic profile is determined by the increase in the use of non-renewable energy sources, a process that took place world-wide due to the extensive use of fossil fuels and the growth of the global economy. In the years between 1955 and 2007, the Spanish population grew from 28 million people to more than 44 million, but the direct material inputs increased 8.7 times, raising more than fourfold the per capita material requirements (Ó. (director) Carpintero, 2015). Infante-Amate et al. (Infante-Amate et al., 2015) also corroborate this picture of transformation and, according to their database, the domestic material consumption rose from 4.1 tons per capita in 1950 to 16.3 by the year 2000.

As mentioned, this sharp increase in resource use is common to all industrialised economies, but the Spanish case differs from most European countries on the low resource efficiency its domestic production has. It is showed in (González Martínez et al., 2010; Infante-Amate et al., 2015)that no signs of an environmental Kuznets curve[39] took place at any point in the last decades, meaning that economic growth has always been accompanied by proportional increases in the use of materials. Spanish economic growth was not only tightly coupled with the use of resources, but also more reliant on them than the average European country. Carpintero (2015) estimates that the intensity on materials used in

[39] The EKC (Environmental Kuznets Curve) is the name that is given to the inverted U graph between GDP growth and environmental degradation that should be observed in the development of countries. It holds that, although initial phases of economic growth generate very high pollution and demand a lot of resources, later stages of development do not require so many natural inputs and at some point those will decrease a lot while the economy keeps growing. It is derived from the phenomenon studied by Simon Kuznets in the 1950s on the relationship between income inequality and GDP growth (Kuznets, 1955).

relation to the value added actually rose between 12 and 15% in the years between 1996 and 2007, thus generating an efficiency loose rather than gain (Ó. (director) Carpintero, 2015). This effect is highly correlated with the real state bubble, whose tremendous environmental consequences will be also discussed in this section.

Looking now at the same reality but from a different point of view, the evolution of carbon dioxide and greenhouse gases emissions presents a similar picture than that of material use. According to the latest report of the Observatory of Sustainability in Spain, the amount GHGs released to the atmosphere increased by half in the period 1990-2007 whereas the EU-15 area actually reduced their emissions in this period by more than 10% (Observatorio de la Sostenibilidad, 2014, p. 53). The per capita carbon footprint of the country was on the 24$^{th}$ place at world levels in 2007, whereas the water footprint ranked among the highest (6$^{th}$ position) due to the dry climate that characterises most of the territory in the peninsula and the islands (Tukker et al., 2014). The footprint indicators not only account for the resources that were directly extracted and disposed in the production process in Spain, but they also account for those that were needed in the production of the goods the country imported. These indicators are nowadays considered to be the most refined way of estimating the full environmental pressure of a country's consumption patterns since they consider the total upstream requirements (Bruckner et al., 2012a). Considering that the per capita material footprint of Spain in 2007 was more 1.5 times bigger the world average and was at the 16$^{th}$ position (Tukker et al., 2014, p. 66), it can be claimed that the economic development of the country was not happening in a sustainable manner.

One of the biggest causes of the rapid increase in material use in Spain was the boundless activity of the construction sector. As one can imagine, building houses across all the Spanish territory did not prove to be very environmentally friendly, especially if most of the buildings were constructed because of speculative aims rather than households' wish. The 1.7 million houses that are nowadays empty, being 500,000 of them completely new buildings (Observatorio de la Sostenibilidad, 2014, p. 48), proves that they were not made due to demographic reasons. These millions of houses that were started – and many of them never finished – generated the biggest flow of construction materials the country had ever witnessed. Carpintero (2015) estimates that during the entire period of the bubble, the national production of concrete would have been sufficient to cover the entire Spanish territory with more than a ton of cement per hectare and four of concrete (ibid, p.52). In 1995, 225 million tons of non-metallic minerals were yearly extracted for construction purposes, whereas this figure had rose to almost 600Mt by 2007. This study also underlines how the changes in land use have radically changed the Spanish landscape, with 54% more hectares of occupied/urbanised land in 2005 than in 1987. In cases of big metropolitan areas such as the province of Madrid, this type of land covers 20% of the total surface. It is also important to underline that most of the construction works were done in areas with high population density, thus expanding the already high resource footprint of the four urban areas[40] that

[40] Madrid, Barcelona, Seville and Valencia

concentrate 35% of the total population in less than 1% of the territory (ibid, p.54). (Sastre et al., 2015) show how these areas are net importers of material resources whereas peripheral and more rural regions such as Galicia or Asturias are the main extractors of resources that are later exported to the rest of the country.

The picture of abuse of resources and environmental degradation is thus complete. It is clear that the Spanish economy did not contribute to mitigate climate change through the reduction of emissions or to preserve endangered ecosystems by slowing down the throughput of energy and materials. Around 31% of the species or subspecies in the country are in risk of extinction, and the policies that the different governments have adopted to alleviate this situation do not seem to have the strength needed (Observatorio de la Sostenibilidad, 2014, p. 74). The next section dives into the impacts the current crisis had for the country at different levels and how public policies interact in this process.

## 3. Part 2: Multidimensional crisis and policy responses

It has been showed how socially unequal, economically volatile and environmentally unsustainable Spain was before the current economic crisis. Let us focus now on the major changes the country experienced since 2007 until now from this multi-dimensional approach by depicting the policy management of the crisis as well as its effects on the population.

### 3.1. Crisis development and austerity policies

The international financial crisis starting in the United States in autumn 2007 did not affect Spain in the same way it did on the rest of Europe. To start with, Spanish banks were less involved in the net of "toxic assets" connected to the American subprime mortgages, which meant that they were not impacted very hard by the initial wave of financial institutions bankrupts (Naredo, 2009, p. 120). On the contrary and as it has been showed, the Spanish financial market was saturated with domestic low-quality debt related to the construction of our own real estate bubble. When the complex system of connections between national and international bank loans was interrupted due to the sudden break of European finances, it took little more than a year to make the entire "brick bubble" burst. This is the reason why in 2008 the Spanish economy kept growing at 1.1% despite the European downturn context. It is in the last quarter of this year when the unemployment rate goes above 10% and the economy starts the deep recession whose effects are still very visible more than six years later. This was year in which the construction sector began its dramatic freefall: the monetary volume of its activities decreased by 7.6% in 2009 and by 14.5% in 2010; the amount of people it employed fell from 2.7 million in 2007 to only 1 million by 2013; and by 2010 the number of houses built was reduced to almost a tenth of 2006 figures (Ó. Carpintero, 2015). The Spanish economy shrank by 3.6% in 2009 and by the year 2013 it was 7.6% smaller than before the crisis. The unemployed population increased by 2 additional million in the non-construction sectors, generating a total of 6 million people in this situation. The unemployment thus rose up to 27% for the entire country and 57% for the young, the largest figures of this sort in Europe after Greece (Eurostat 2015).

Given the quick deterioration of the economic situation and following the path most EU Member States pursued when the crisis first stroke, the Spanish government designed a package of expansionary policies in November 2008 to prevent the spreading of the crisis. The so-called "Plan E" consisted of a series of economic stimulus measures representing the traditional Keynesian approach. Around 8 billion euros were devoted to the creation of jobs in public construction works during 2009 and 2010 and 2.8 additional billions were assigned for research and innovation in the car industry and the improvement of energy and hydraulic facilities among other projects (El País, 2008). The plan was put into place during 2009, and some authors such as Ramos Llanos (Llanos Ramos, 2009) claim that this set of policies was the major source of the sharp public deficit increase the country experienced in that year. Public accounts evolved from a 2% of GDP fiscal surplus in 2007 to a 11% deficit in 2009, the second largest deficit in the Union after Ireland (Monastiriotis et al., 2013, p. 23). This effect was not only due to the expansionary policies but mostly given by the sharp reduction of tax revenues derived from the fall of the economic activity, which were among the highest in the EU (ibid). Monastiriotis et al. show that the deficit problem did not come from high Spanish public expenditure since, as mentioned in the previous part, this country had lower public spending as percentage of GDP than the European average.

The fast increase of the Spanish public deficit and the consequent rise it supposed for public debt pressed the alarm of the European Commission and international credit institutions as the International Monetary Fund, which began to strongly advise the government against any further expansionary policies (Ekaizer, 2012). The financial difficulties the Greek government was experiencing by the beginning of 2010 together with the increasing pressure financial markets were putting on public debt auctions created a tense European environment where fiscal consolidation discourses gained strength. Ernesto Ekaizer (ibid) shows how the two above mentioned institutions together with the European Central bank – the triad so-called "Troika" – strongly pressed the Spanish government for restructuring the public accounts. This strain generated results and in May 2010 the socialist president Jose Luis Rodríguez Zapatero makes the major political shift of his second term of office by announcing a 15,000 million euros cut in public expenditure (El País, 2008). From that moment on, the economic policies of the country mainly addressed the reduction of the deficit, a path continued and reinforced by the conservative government that won the November 2011 national elections.

The rapid and almost unannounced reform of the article 135 of the Spanish constitution in September 2011 clearly exemplifies the pressure the government received from financial markets and those international institutions. This reform states that all public accounts have to respect the principle of budgetary stability as agreed in European treaties and that the payment of public debt has absolute priority in the design of the national budget expenditure. In line with this well-defined target, the last 4 years have witnessed a continuous string of expenditure cuts and tax raises that managed to almost halve public deficit to 5.8% of the GDP (Eurostat, 2015b). Although it is hard to estimate the impacts of the fiscal adjustments on the economy, it has been calculated that the cuts on public spending amounted to

1.8% of the GDP in 2010 and 1.7% in 2012, whereas the tax raises supposed 1.7% and 2.2% respectively (Monastiriotis et al., 2013, p. 24). Most of the reductions in the expenditure side were done on public employees' wages, education and health investment, pharmaceutic costs, unemployment benefits and social protection aids. On the revenue side the value added tax was raised from 16% to 21%, a supplementary levy on personal income tax was imposed, corporate profit deductions were abolished and the wealth tax was reintroduced (ibid).

Regarding the strategy to address the high unemployment levels, the main measures both governments implemented aimed to increase the flexibility of the Spanish labour market. The discussion around the rigidity of Spanish labour law has a long history in the country and has always been a central topic in the half a hundred labour reforms the country has experienced since the year 1980 (Fundación 1° de Mayo, 2012). As mentioned in the previous section, the labour market in Spain is characterised by its large proportion of temporary workers in contrast with workers hired under an open-ended contract that enjoy a high protection against dismissal. Labour economists refer to this situation as the "dualism" of the labour market and many of them advocate for a reduction in the supposed rigidity of open-end contracts in order to facilitate companies' staff search and thus generate more employment (FEDEA, 2009, p. 44; Valle et al., 2013). According to this argumentation, the last two labour reforms enacted during the crisis – the Real Decreto-ley 10/2010 and the Real Decreto-ley 3/2012 – have reduced the compensation to indefinite employees in case of dismissal and tried to reduce the differences between temporary and open-ended contracts. These two laws also addressed how to reduce temporary contracts by introducing some conditions that would supposedly encourage employers to hire their workers on a longer term basis, with special regulations for young people (Garcia Serrano, 2011; Ortíz García, 2013).

It is important to remark that the whole flexibility debate in Spain is centred on the benefits and rights contracts entail and that the flexibility at the work place is not sufficiently addressed. Internal flexibility within the company is clearly insufficient, with 93% of employees claiming that they do not have a say in deciding the length of the working day and a decreasing relevance of collective agreements in internal re-structuration processes (Aragón Medina et al., 2012). The high internal rigidity is also a cause of the external flexibility, meaning that the labour market adjusts by firing rather than bargaining between both parts. The lack of successful negotiations between employers and employees creates a situation where firing becomes the simplest response to a crisis environment, as the several recessions and high unemployment increases have demonstrated (Garcia Serrano, 2011). The combination of these two factors is what makes temporary contracts to be so spread, since they do not involve almost any dismissal costs and serve to adjust to output changes rather than internal collective negotiations.

It is therefore natural that labour reforms targeted the reduction of those rigidities and aimed at transforming the dynamics of the labour market in the moment when employment was most urgently demanded. The following subsection briefly analyses whether they succeeded at their goal within the context of crisis and austerity crisis.

## 3.2. Social consequences of the crisis and governmental response

Despite of the highly positive messages of recovery the Rajoy administration has delivered for the last year (La Razón, 2015), it is clear that the economic situation is still not as buoyant as the government would like it to be. Although unemployment has fallen to 23.78% by the first trimester of 2015 (Instituto Nacional de Estadística, 2015a), it is important to mention that this effect is largely due to the effect of emigration. According to INE data, between 2012 and 2014 more than 500,000 young people have fled the country, which adds up to the more than 700,000 that already moved abroad in the period 2009-2012 (eldiario.es, 2015). This great emigration movement also covers those workers that entered the country in the years of the expansion and decided to return to their nation of origin once the crisis stroke. This phenomenon explains why the unemployment rate has been reduced whereas the number of people employed has barely risen, staying fairly constant over the last year at 17.4 million workers (Instituto Nacional de Estadística, 2015a).

Regarding the austerity measures, (Lopez Prol, 2013) shows that Spanish public debt and deficit are not a cause of the crisis but rather the consequence of it and thus this fiscal strategy was not appropriate in such a context. Although fiscal austerity has considerably reduced the fiscal deficit although Spanish public debt has risen from 39% of the GDP in 2008 to virtually 100% by 2014 (Eurostat 2015). As (Rodríguez Ortiz, 2011) defends, applying a fiscal consolidation in a moment of economic recession cannot be effective at neither getting the country out of the crisis nor at reducing the public debt. As the expenses on interest rates rise as a result of the growing amount of debt – in Spain they rose by 70% between 2009 and 2013 (Monastiriotis et al., 2013, p. 24) –, the deficit becomes larger and more debt needs to be sold in order to finance the unbalanced government accounts. At the same time, the growing amount of debt together with the high interest rates create a situation where an important part of the new debt is issued to pay only interest rates (Rodríguez Ortiz, 2011). It is thus evident that the debt and deficit crisis will not be solved if the recession continues.

With respect to the social effects of the budgetary cuts, Jorge Uxó González calculated in 2010 the "sacrifice ratio" of the expenditure cuts announced in May 2010 in the Spanish economy. In his estimations, he predicted that the Spanish unemployed population would increase by 100,000 people in 2010 and by 200,000 in 2011. He calculated the sacrifice ration to be 2.1, meaning that for each deficit point that is reduced, the unemployment rate will rise more than twice (Uxó González, 2010, p. 426). What happened in reality was much more striking: unemployment affected around 400,000 more people in 2010 and almost 700,000 in 2011, the unemployment rate rose 8 percent points whereas de deficit was only reduced by 2% (Instituto Nacional de Estadística, 2013). The magnitude of the shock was much bigger than what one could have possibly imagined, but this did not prevent the government elected in 2011 to continue with the fiscal consolidation policies.

Briefly considering now the impacts of the labour reforms on the labour market, their effectiveness has been challenged by many authors (Garcia Serrano, 2011; López Terrada, 2013; Ortíz García, 2013). Although it is always hard to assess the impact of policies in the short term, those authors agree that they did not correctly address the main problems existing in Spanish labour law. Carlos García compares the RDL 10/2010 with the labour reforms done during the 1990s crisis, which also focused on changing the structure of the labour market by addressing the issue of temporary contracts. He concludes that the 2010 reform approached too timidly the reduction of the labour market' dualism and did not supposed a sufficient transformation in this field (García Serrano 2011, p.174). Pilar Ortiz claims that the RDL 3/2012 – the law the conservative government passed – failed at solving the flexibility and temporary problems due to the rush in which this law was designed (2013, p.159). She defends that the reform did not appropriately address flexibility since the employer has increased powers in the negotiation of the working conditions and thus workers' vulnerability was increased (p.160). From her point of view, the law only proposes measures to deal with the consequences of precarious employment and the structural causes are not considered carefully enough, a vision that is also supported by Eva López Terrada (2013). This latter author emphasises that the newest law introduced changes in temporary contracts that are similar to those existing in other European countries, but does not provide enough mechanisms to reduce the "endemic" temporality in Spain and protect sufficiently workers' rights (López Terrada 2013, p.55).

These studies therefore conclude that the policies adopted by these two governments have not properly addressed the emergency situation and they failed in creating a more dynamic labour market that organises paid work in a better manner. Looking at the consequences of the crisis on employment from a sustainable work perspective, it is clear that living conditions of all workers significantly worsened. María Arnal, Lucila Finkel and Pilar Parra carried out a qualitative methods research about the impacts of the crisis on employment and poverty, and they confirm that the crisis has generated an increasing process of destabilisation, vulnerability and precariousness in the labour market. They claim that the employment crisis has affected and destabilised a large part of the population that previously had stable labour conditions, as well as supposing a new impact on the already existing precarious labour force, which is currently experienced a "second destabilisation" (Arnal et al., 2013, p. 306). The study conducted by Marc Grau-Grau also contributes to define the situation Spanish workers are suffering in the age of austerity with regards to the conciliation of family and work. He establishes that the working population now experiences much higher levels of stress and lower degrees of autonomy and flexibility, which all contribute to enlarge the work-family conflicts that already characterised the Spanish society (Grau-Grau, 2013). The proportion of workers in risk of poverty and social exclusion has considerably increased given the strong reduction in salaries: wages are 13% lower on average in 2013 than they were in 2009, and 14% of workers are in risk of poverty (Instituto Nacional de Estadística, 2015b). Regarding the unemployed population, in 2015 almost 1.8 million households – 10% of all families – have all their members unemployed, a situation that is specially dramatic with respect to children (Instituto Nacional

de Estadística, 2015a). At the moment, Spain has one of the highest infant poverty rates in Europe: 29.2 % of the population under 16 lives below the poverty line (Instituto Nacional de Estadística 2015a).

As Part 1 described, the Spanish welfare system already presented many deficiencies in supporting the population in risk of exclusion, trend that has been magnified by the fiscal austerity measures. The processes of social exclusion became more intense over the last seven years and the social fracture has been enlarged by 45%, meaning that only 1 out of 3 persons in Spain is free of all the 35 exclusion problems identified (Fundación FOESSA, 2014, p. 154). The impact of the cuts on public expenses on the well-being of the population is highly tangible when observing measures such as the reduction of the benefits to the unemployed. The reduction of this subsidy done in July 2012 implied that two years later 40% of the jobless did not have any sort of monetary aid from the State (CCOO, 2012). This lack of governmental protection has direct consequences on poverty: the social exclusion index is fourfold higher for households that have their main breadwinner unemployed than when this person has a job (Fundación FOESSA 2014, p.194). The reduced state support has generated a much higher pressure on the family as a traditional solidarity resource. As a result of the crisis they became the fundamental cushioning of the effects of unemployment and poverty, but it has been showed how this social institution is showing strong exhaustion symptoms due to the length and strength of the downturn (ibid, p.2013). Income inequality has also been enlarged by the crisis, since the Gini coefficient has increased to almost 0.37 in 2012 and wealth inequality is also 20% higher than in 2008 (EAPN-España, 2015).

All those indicators point to a single conclusion: the crisis has strongly expanded the unsustainability of the Spanish society and the austerity measures are contributing to augment this effect. If policies do not change, there is a high risk that social inequity and poverty become chronic in the country.

## 4. Conclusion and discussion

Once the complete analysis of the situation of Spain in the last decades has been performed, one can plainly say that work in this country is anything but sustainable. Work is clearly not organised in a way that enables and supports a sustainable society since not all people's needs are satisfied, equity is not fulfilled and the country is far beyond planetary boundaries. It has been showed how during the years of economic expansion indicators of poverty and inequality were always comparatively higher than the rest of Europe, a trend that has sharply increased with the current crisis. Paid work was never close to satisfy the number of jobs the population demanded – even though the construction sector grew so disproportionately – and the Spanish welfare state did not appropriately dealt with the division between productive and reproductive work. The presence of a semi-corporatist and semi-liberal welfare state leaves a very high share of the reproductive work to the family sphere and does not provide households with the necessary support to appropriately balance productive and reproductive work. Women are generally overemployed with the double burden of work in the public as well as in the domestic sphere. This creates a very unsustainable situation since Spain has one of the lowest rates of part time jobs in Europe and thus conciliation between family and work is harder to achieve; but also because the direct

public aid to families is reduced and almost not recognition is given to caregivers and reproductive work in general (Fundación FOESSA 2014).

By looking at the performance of the Spanish economy for the last decades, we can be deduce that it did not develop in a sustainable manner at all. As mentioned, the productive activities of the country never managed to create enough employment, an effect that is attributed to the small industrial capacity derived from the incapacity of the economy to adapt to the international competition environment. This situation contributed to the creation of a construction bubble in order to allocate the existing resources and reduce the unemployment rate. However, this bubble turned out to be the biggest social, ecological and economic absurdity the country ever experienced; and its consequences have proved to be catastrophic in all ways.

The development model the country adopted was extremely vulnerable, socially unequal and highly inefficient in ecological terms. The fact that a relevant share of the workforce was employed in highly resource intensive sectors defined an economy that demanded excessively high amounts of resources in order to sustain growth and employment levels. Returning to the questions that were posed in the introduction, Spain has an urgent need to transform the organisation of work in production processes in a way that environmental degradation is minimised. The combination of the crisis with austerity policies have had moderately positive effects on the environment due to the fall in resource use and emissions (Ó. Carpintero, 2015; Observatorio de la Sostenibilidad, 2014). Due to the enormous ecological impacts the previous growth model had, it is not possible to claim that expansionary policies would simply be the solution to all economic, social and environmental problems in the country. It is indeed compelling to redefine our social welfare state so it can be adapted to the dynamics and challenges of the 21$^{st}$ century, meaning that the sustainability of society is to be put at the core.

The policy measures adopted during the crisis clearly failed to prevent the larger expansion of the recession and the drastic fall in the living standards of the population. With poverty and inequality rates similar to those the country had in the 1970s, the Spanish society is experiencing an enormous regression that takes it far away from the sustainability standards this study proposes. Policies regarding the redistribution of work and the reduction of the working time would be of help if designed in a way that permit more people to access jobs and also reduce the high duration of the working time Spain has with respect to Europe. Although the effects of working time reduction on the environment are contested (Kallis et al., 2013b), those policies can potentially reduce ecological damages by the reduction in consumption and the increase in leisure time. What is nevertheless clear is that those policies would have strong positive effects on the conciliation of productive and reproductive work. As the case study on the Netherlands of this report shows, a smaller working day has strong positive effects at family levels and thus in the overall well-being of the population.

Proposals related to the creation of green jobs such as those made by the Sustainability Observatory or Comisiones Obreras, the biggest trade union in the country, also have great potentialities in shifting

production towards less resource intense activities and increasing the relevance of renewable energies in the economy (Fundación Biodiversidad and OSE, 2010; Rivera Alejo and Martín Murillo, 2014). The ongoing debate on a universal basic income that some political parties have included in their programs (Podemos and Equo) also supposes a major step towards an integral transformation of the way in which work is organised in society and how could the satisfaction of needs be less dependent on paid labour. Although the impact those policies would have is never certain it is not possible to guarantee their success, what is sure is that the existing dynamics are highly unsustainable and they need to be drastically changed. If a socio-ecological transformation is to take place in Spain, work is a central component that will need to be addressed. This study has merely pointed at the major aspects that generate the existing unsustainability of the Spanish society, hoping that future policies will seek to escape from those trends and foster sustainable work.

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## 6. ANNEX 1: Figures on Spain

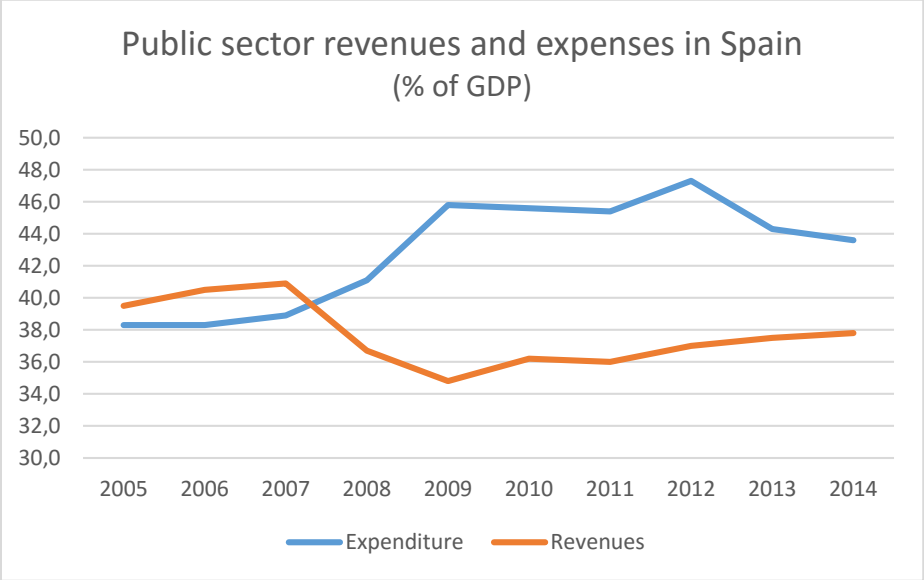


*Figure 22:Spain: Public sector revenues and expenses in Spain (% of GDP) (Source: Eurostat 2015)*

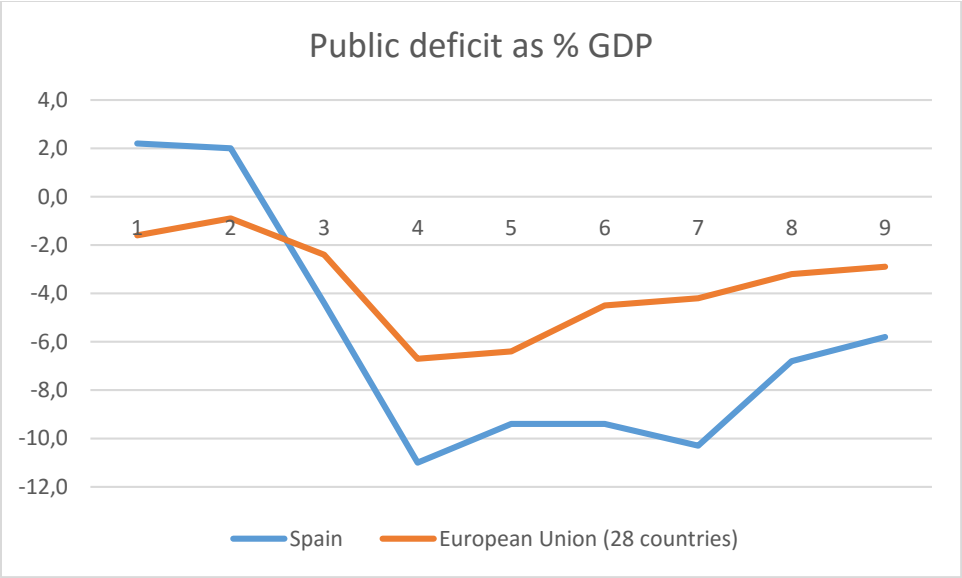


*Figure 23: Spain: Public deficit as % GDP (Source: Eurostat, 2015)*

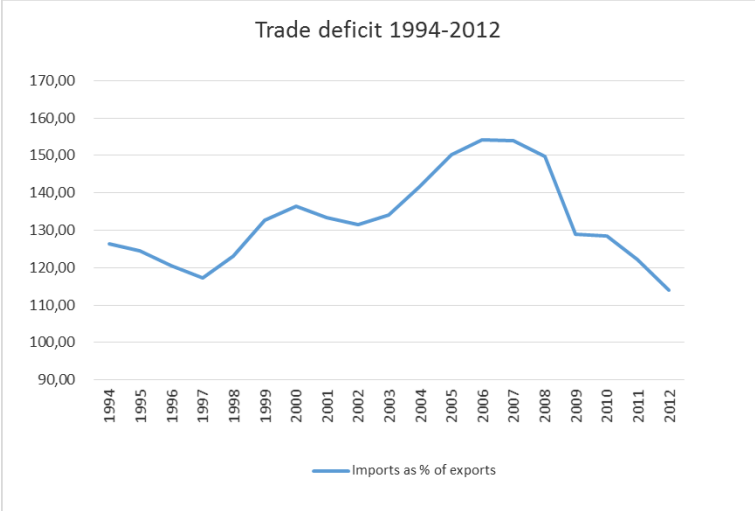


*Figure 24: Spain: Trade deficit 1994-2012 (Source: INE 2015)*

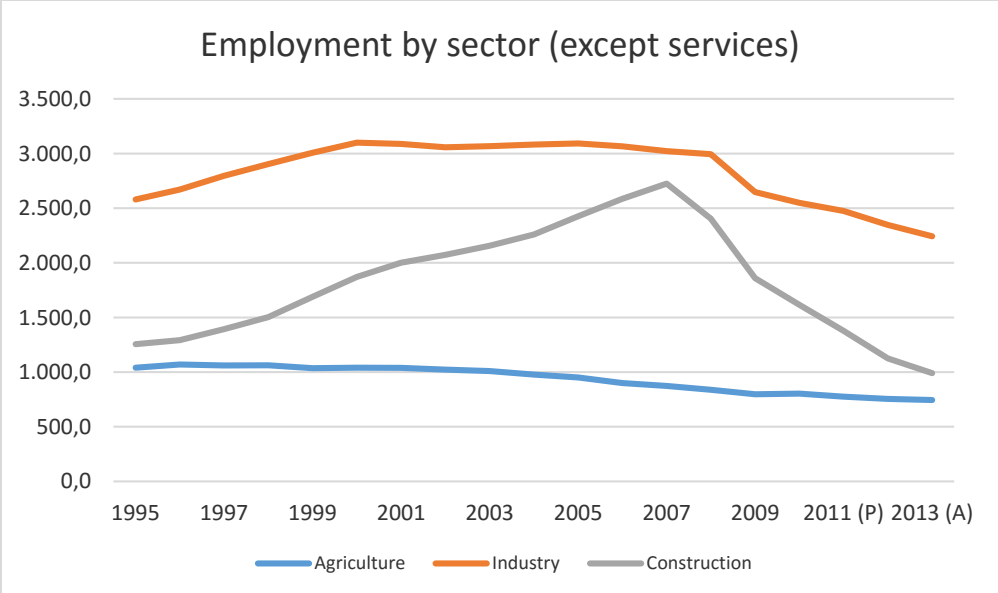


*Figure 25: Spain: Employment by sector (except services)*

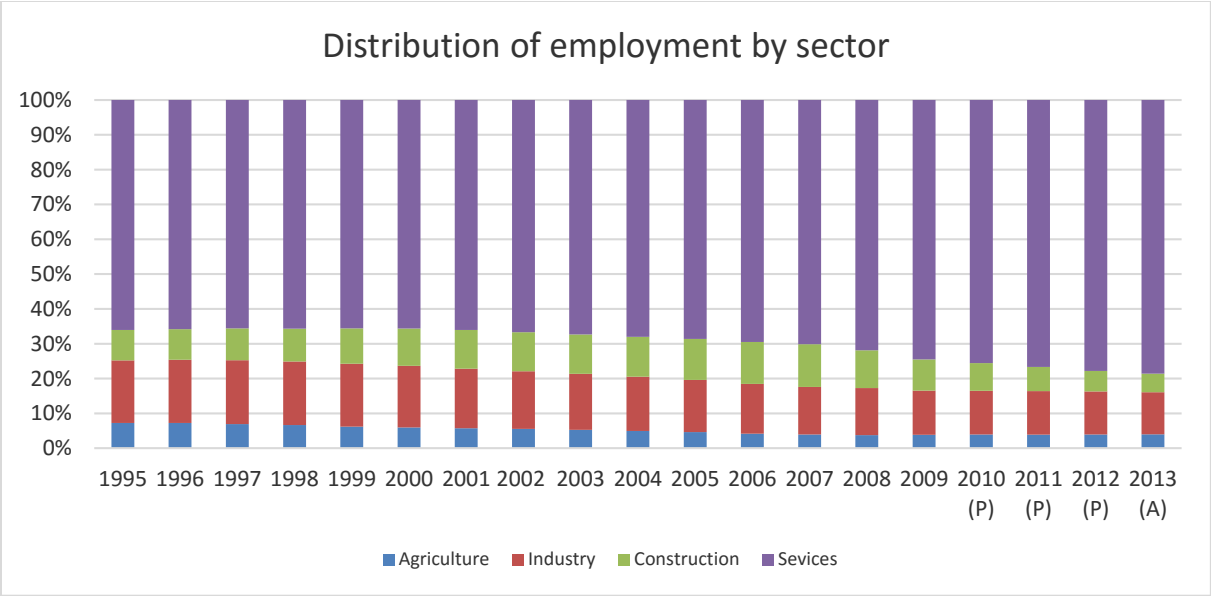


*Figure 26: Spain: Distribution of employment by sector*


*Figure 27: Spain: GDP growth at market prices (source: INE 2015)*

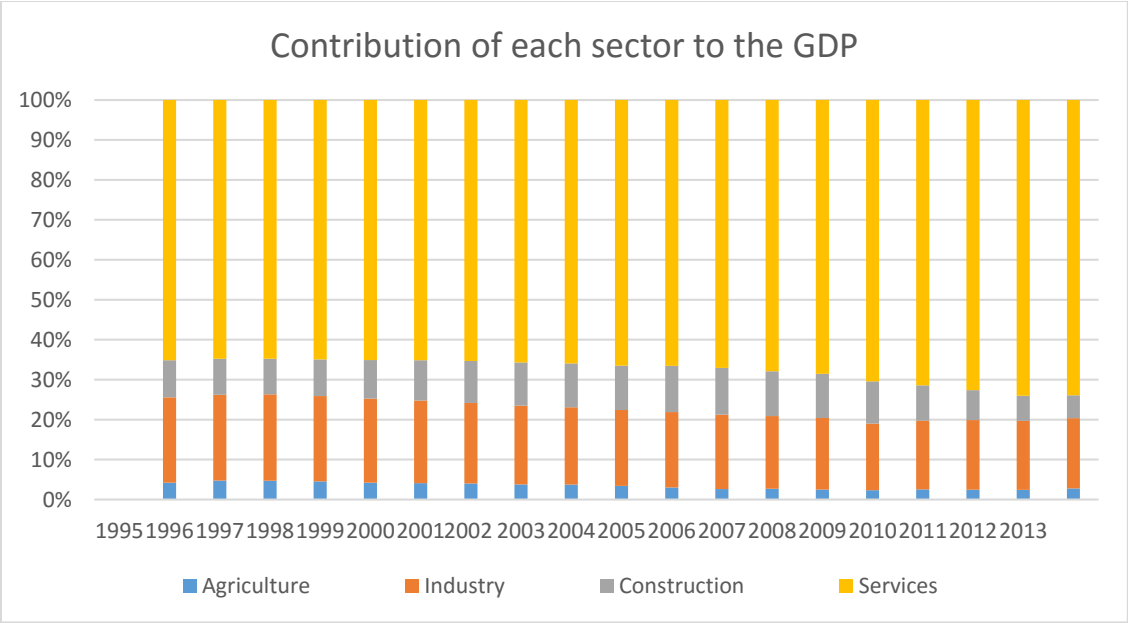


*Figure 28: Spain: Contribution of each sector to the GDP (Source: INE 2015)*


*Figure 29: Spain: Construction sector growth at market prices*

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# VII. Climate and labour market policies in Sweden

## Identifying social-ecological implications

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## 1. Introduction

This case study discusses Sweden in the context of work and climate change in the last 25 years. Historically, Sweden successfully combined equity and efficiency until 1990. It also has high carbon taxation in place. More recently, however, it lacks ambition in both contexts. (Anxo, 2013; Anxo and Niklasson, 2006; OECD, 2014b; Vail, 2008). This report relates current goals, policies and developments to discuss whether Sweden can serve as a best-case example for sustainable work.

Concerning the environment, this report is limited to greenhouse gas emissions[42] (GHG) and discusses emissions from consumption and production. As presented in the general framework, sustainable work is defined as a mediation process between humans and the environment that satisfies fundamental needs in an equitable society that operates within the planetary boundaries. The general framework discusses in detail relationships between individual human needs, equity and the environment. A focus will be on 'having' work vs. 'having access' to the returns from work; approaches to social cohesion that are not centred around paid work; inequality; and working time.

Sweden is an interesting case that receives a lot of international attention. Recently, however, also for its declining ambitions. Work policies in Sweden have historically been renowned for sustaining high employment rates and assuring low unemployment rates by re-educating the unemployed to find better jobs. Furthermore, they have successfully realised equality between genders as well as narrowing the income gap. All this through activating labour market policies (ALMP). Concerning the environment, Sweden was one of the first countries to implement a carbon tax and has been the biggest overachiever of the Kyoto goal respective for the country. At the same time, a shift in ambitions away from sustainable work towards workfare and inland environmental policies towards exporting environmental policies is taking place.

Both the decline in labour market performance and a start of ambitious environmental policies took place in the early 1990s. Since then the Swedish Government implemented a set of policies, in part as a reaction to this situation, but also independently of its economic performance. Illustrative examples addressed in this case study include the introduction of the carbon tax in 1991, the economic crises in 1990 and 2008, the ongoing decentralisation of unions since 1990, the changes in the Swedish welfare state model, and the introduction of the generational goal in 2010.

In the first section of the report, I outline the positions of the respective ministries and unions in the contexts of work and environment. In the second section, I discuss current environmental policies and the situation of carbon emissions in Sweden in detail. In the third section, I elaborate on the situation of

[42] If not mentioned differently, this report covers the following six greenhouse gas emissions: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride ($SF_6$) expressed in carbon dioxide (or $CO_2$) equivalents

the Swedish labour market and welfare state. Finally, the last section discusses linkages between the two areas.

## 2. Actors & policies in the context of environment and work

This section discusses actors and their perspectives on work and environment. Besides the respective ministries, I discuss employee and employers representations for their strong influence on work in Sweden.

### 2.1. The ministry of employment

According to their homepage, the Ministry of Employment is concerned with labour market policies, working life and integration (Ministry of Employment, 2015a). Labour market policies, should create a "community and belonging" and a "cohesion in Sweden that more women and men find jobs" through "high levels of employment and low unemployment" (Ministry of Employment, 2015b). The domain of working life is concerned workplace related issues, while integration addresses migration and asylum policies. Work policies, or better increasing employment and decreasing unemployment is therefore concerned with the goals of strengthening social cohesion by integration of migrants and creating equality between genders[43]. Environmental policies are not addressed; neither in terms of implications of environmental policies on the job market nor potential labour market policies to mitigate climate change.

### 2.2. Employee and employers representations

Apart from the ministry of employment, industrial relations play a important role for labour markets in Sweden (see *Figure 37*). In 2013 unionisation remains at 68% well above OECD average (16.86%), however declined significantly since 2000, due to changes in labour market institutions as elaborated bellow.

Bargaining structures have changed several times since 1991 but have stabilised after 2005. In terms of coordination, wage-setting ranks on level four out of five in the ICTWSS[44], meaning, it is highly coordinated. Although the government intervened in labour markets policies particularly after the crisis in 1990s, since 2000 it only provided an institutional framework for bargaining. Also during the economic crisis in 2008, labour market interventions were built on agreements between employee and employers representation without government interventions (Anxo, 2013).

The level of organisation shifted from centralised (level five in the ICTWSS) to industrial bargaining (level four in the ICTWSS) in the 1990s. The shift origins in the decline of the solidarity wage principle[45]. High productivity blue collar workers contested the principle in the 1970s, because they had

[43] Work place policies though relevant are beyond the scope of this report and hence are not addressed in the following.
[44] Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (http://www.uva-aias.net/208)
[45] The solidarity wage principle integrates two principles. First is to achieve fair wages – addressing the same pay for work of equal value, and second a balanced wages structure – meaning that individuals income should not drift away from each other too far (Meidner, 1994). The

not been compensated according to their productivity increases. Since then opinion polls among employees show their interest for decentralised industry level negotiations (Locke and Thelen, 1995) and the influence of the LO[46] declined, whose identity up to now includes the solidarity wage principle (ibid.). The shift to industry level bargaining and wage-setting finally took place in the aftermath of the economic crisis in the 1990s.

Since then industry level representations led wage-negotiations. Among the most important workers' representations are TCO[47], the union for professional and qualified employees (1.2 million members), SACO[48], the union of university graduates (650000 members) and finally Arbetsgivarverket, the representation of Government employees. On the side of employers, SN[49] represents enterprises and SKL represents local and regional authorities.

The links between trade unions and climate change are far from obvious, nevertheless, both LO and TCO address climate change. LO (2013)[50] discusses climate change on their homepage and TCO (2009) published a climate program in 2009. On their homepage LO supports the "*Swedish climate target of zero net greenhouse gas emissions by 2050*". Therefore "*a new power generation and intensification of efficiency"* is necessary, which should be based "*completely […] on renewables*". To do so, additional research, investments in public transport, electric vehicles, and "*some new investment in nuclear power*" are required. Furthermore, climate change "*requires international solidarity […] where the rich countries take greater responsibility*" (LO, 2013).

In their climate program TCO (2009) argues for a green growth strategy that employs the Swedish "c*omparative advantage in knowledge-intensive production, real capital intensive and highly mechanized process industry and production based on Swedish natural resources*". "*[P]olitical decision […] on the national level" should enforce the strategy, but also "collective bargaining […] should be used*". Goals include "*greener jobs, and new green jobs*"; "*efficient energy use*"; a shift to public transport and trains, instead of planes; and development of the needed skills through education. Beyond the Swedish territory, Sweden should get active in the context of the EU and the WTO. Besides policy recommendations, TCO also collaborates with the Swedish Society of Nature Conservation to save energy internally. Unfortunately, no further details are available with regard to their internal efforts, in particular to the ways the TCO addresses climate change in collective agreements.

Svenskt Naringsliv, the biggest employer representation, devotes one section of their homepage to "*Environment, Energy & Climate*". They argue that the environmental debate should not focus on

principle was one out of three pillars of the Swedish labour market model. The other two were restrictive fiscal policy and activating labour market policies (Anxo and Niklasson, 2006).

[46] Landsorganisationen i Sverige: the umbrella organization of the Swedish workers representation

[47] Tjänstemännens Centralorganisation

[48] Sveriges akademikers centralorganisation

[49] Svenskt Näringsliv

[50] The report is in Swedish; hence the author is responsible for the translations, this makes it also difficult to provide page numbers of the respective quotes.

"*additional higher taxes and fees*" but on "*future-oriented environmental policy through growth*". The focus on environmental policy should be on efficiency and innovation; both reached by "*less red tape, simpler rules*", therefore "*long-term policy signals […] are prerequisite*" (SN, 2015).

The three examples provide a glimpse on the views of employee and employer representations on climate change policies. While both sides of industrial relations argue for a green growth strategy, the employee representation argues in favour of a stronger role in regulations, in particular through the state and collective bargaining. The employers representation favour a free-market strategy that allows businesses to innovate. Without going into detail on their policy strategies, as will be discussed in the next section, a green growth strategy appears contradictory in light of the goals and developments of Swedish environmental policy.

## 2.3. Environmental goals and policy making in Sweden

Since 2010, the generational goal has guided environmental policy making in Sweden. Before that, sustainable development[51] was at the core of environmental policy making in Sweden. To fulfil its climate change target Sweden introduced in 1991 a carbon tax that was reformed it twice in 2000 and in 2008. In the following sections, I first discuss the goals of Swedish policy making and then outline the respective policies designed to reduce $CO_2$ Emissions.

### 2.3.1. Goals and strategies in environmental policy making since 1990

Before the introduction of the generational goal, sustainable development was the central guiding principle in Sweden (Vail, 2008). Additionally the Committee on Environmental Objectives outlined three general action strategies as part of the Environmental Code in 2000:

1. Improved efficiency in the energy use
2. Cleaner production processes and recycling
3. Improved environmental management practices (Vail, 2008).

At first 15 but later 16 environmental quality objectives[52] pin down Swedish environmental policy making, the first of these was to reduce climate impact.

Sustainable development and the three respective environmental policy strategies were challenged in 2008, when the SEPA[53] published a report under the title "*The climate impact of Swedish consumption*" (SEPA, 2010). The report questioned the win-win claims that economic growth and resource efficiency can lead to an overall reduction in GHG Emissions, which then took place[54]. Thereby the report caused

[51] As defined by the Brundtland Report (1987)

[52] Reduced Climate Impact; Clean Air; Natural Acidification Only; A Non-Toxic Environment; A Protective Ozone Layer; A Safe Radiation Environment; Zero Eutrophication; Flourishing Lakes and Streams; Good-Quality Groundwater; A Balanced Marine Environment, Flourishing Coastal Areas and Archipelagos; Thriving Wetlands; Sustainable Forests; A Varied Agricultural Landscape; A Magnificent Mountain Landscape; A Good Built Environment; A Rich Diversity of Plant and Animal Life

[53] Swedish Environmental Protection Agency

[54] In terms of absolute decoupling of territorial emissions from economic place, as discussed later in detail.

an emotional public debate, which finally led to the introduction of the generational goal in 2010 by the Swedish parliament.

The generational goal states that "the overall goal of Swedish environmental policy is to hand over the next generation a society in which the major environmental problems in Sweden have been solved without increasing environmental and health problems outside Sweden's borders" (Regeringens proposition, 2010). The generational goal is supplemented with a long-term climate goal of zero net GHG emissions from Sweden in 2050 and a milestone target (due 2020) of a 40% reduction of GHG emissions from industrial activities, 50% energy from renewables, 20% more efficient energy use and 10% renewables in the transport (SEPA, 2015).

The implementation of the generational goal led to a re-orientation of Swedish environmental policy making[55]. In contrast to sustainable development, as interpreted by policy makers earlier, the generational goal requires taking foreign impacts from domestic activities into account. Thus, Sweden has to not only reduce emissions from domestic production, but also emissions embedded in domestic consumption that are emitted in production facilities abroad.

Besides that, the generational goal also has implications for policies that address domestic production. Critics of production-based indicators argue that they do not account for carbon leakage, which describes the phenomenon that industries move from countries with stronger environmental regulations to countries with less regulations (strong leakage); or that GHG intensive goods are, independent of relocations, at the core of economic expansion of middle income countries (Steven J. Davis and Caldeira, 2010). Under the generational goals, hence, reductions in GHG emissions due to changes in the structure of the domestic industry do not count as reduction of GHG emissions anymore. In this sense, a re-allocation of energy intensive industries to Sweden could then be beneficial due to low GHG-intensities of Swedish production facilities.

As a consequence, SEPA extended the three general action strategies and follows (according to Isenhour & Feng (n.d.)) three principles:

1. more ambitious emissions targets and energy efficiency programs;
2. consumer awareness campaigns and voluntary programs designed to improve the efficiency of contemporary consumption patterns and
3. international policy specifically via technological transfer to producer-nations

Although this shift in policy strategies reflects a remarkable change in environmental policy making, scholars criticise SEPA for the lack of ambitions with regard to consumption and its focus on trade related policies. With regard to consumption side policies, the goal does not consider more rigorous

[55] Besides that, the introduction led to the calculation of detailed time-series consumption-based emission data (as discussed later). The calculation itself of the data is a first success of policy making since it allows a more distinct discussion of environmental policies.

policies that go beyond voluntary changes in consumer behaviour, despite the fact that such policies are known for their weak impact. Consequently, current environmental policy making focuses on the third goal, particularly in terms of technological transfers to China. Such transfers should enable less GHG intensive production of goods exported from China to Sweden (Isenhour and Feng, n.d.).

More recently, SEPA (in Nykvist et al. 2013) highlighted the importance of trade related policies to reach the generational goal. Building up on an empirical analysis, they argue that Sweden's environmental performance is of minor importance relative to global environmental developments. Hence, Sweden needs to engage "*proactively and assertively*" (Nykvist et al. 2013) in international negotiations and foster bilateral cooperation as well as voluntary initiatives of non-state actors.

### 2.3.2. A short history of the carbon tax

At the same time, Sweden was a frontrunner in the implementation of a carbon tax in 1991 to reduce the GHG emissions from consumption more effectively. The tax underwent big reforms in 2000 and 2008/9.

In 1991, the implementation of the carbon tax was part of a budget neutral tax reform with the goal to reduce carbon emissions by shifting taxes from energy, labour and capital towards $CO_2$. The reform addressed possible regressive effects by reducing labour taxes for lower income groups (Anxo, 2009). In 1991, the tax accounted for 27 EUR per $tCO_2$ for households; industries paid a lower tax rate of seven EUR per metric ton. Additionally a sulphur tax was implemented which taxed sulphur with 30 SEK per kilogram[56]. The tax was gradually increased to 40 EUR per $tCO_2$ for households and 20 EUR per $tCO_2$ for industries until 1996 (OECD, 2014b). In 2000, a 3 billion EUR tax reform again shifted taxes away from labour towards energy. Over this period, the $CO_2$ tax for household has almost tripled from 40 EUR per $tCO_2$ in 2000, to 114 EUR per $tCO_2$ in 2012. The rate for the industry only increased to 35 EUR per metric ton in 2012. Finally, in 2008/9 the government excluded industries that are part of the EU-ETS from the carbon tax to avoid double taxations. This led to a distinctive reduction of costs of $CO_2$ for the respective industries. Since 1991, tax exemptions for biofuels and biomass were put in place.

In 2014, the tax covered about half of the $CO_2$ emissions in Sweden, while the biggest burden falls on the residential, commercial and public service sector. The effective tax rate on carbon emissions is 79 EUR per metric ton in 2013, which is the sixth highest within the OECD. Sweden succeeded in shifting taxes from labour to energy and thereby corrected wrong price signals. Taxes on energy increased by 41% while taxes on labour declined by 16% between 1995 and 2011. As apparent from the discussion, the implementation of the environmental tax reform took place mostly between 1991 and 2000 and lost momentum recently (OECD, 2014b).

[56] Unfortunately, there were no numbers in EUR available

Besides the carbon tax, Sweden used other instruments including congestions charges, $CO_2$-based vehicle taxes and the renewable electricity certificate system as well as incentives to reduce emissions from waste (CETRiE, 2012; Lindhjem, 2009; OECD, 2014b). A detailed overview is available in *Table 5*.

The current environmental debate reflects these developments with a focus on technological improvements of foreign production facilities and little concern of domestic consumption and production configurations. The developments in Swedish GHG emissions possibly explain this shift.

## 2.4. Climate change performance in Sweden

In reports by the EEA (2014) and the OECD (2014b) Sweden is cited as one of the most successful countries in terms of GHG-emission reductions. These calculations built on GHG emissions from domestic production without accounting for the emission trade balance of Sweden. Davis and Caldeira (2010) calculated that trade accounted for 23% of worldwide $CO_2$ emissions in 2004 and hence $CO_2$ emissions from production or consumption vary distinctively from country to country. For Sweden[57], they find that it was the ninth biggest $CO_2$ per capita importer worldwide with net imports of 4.5 $tCO_2$ per capita. Thus, although Sweden is only the 38$^{th}$ biggest per capita emitter from a production perspective, it is the 20$^{th}$ biggest per capita emitter from a consumption perspective. The following sections discuss the respective developments from a production[58] and later from a consumption[59] perspective.

### 2.4.1. GHG emissions from domestic production

With regard to production side indicators, Sweden has successfully reduced its GHG emissions in the last 25 years. Per capita GHG emissions in Sweden are with 6.05 kilograms below the OECD average of 8.73 kilograms in 2013. The same applies for GHG emissions per GDP, which is with 0.17 kilograms per 1000 dollar almost half of the OECD average (0.32kg). Furthermore, it is the country with the highest over-achievement relative to its Kyoto target set under the EU burden sharing. Although the over-achievement is in part a consequence of Sweden's unambitious goals (a 4% increase to the base year, in difference to an 8% decline in EU-wide average emissions from the base year), Sweden nevertheless reduced its GHG emissions measured with Kyoto standards from 1990 to 2012 by 22.4%. This reduction

[57] The sample differentiated between 96 countries.

[58] Production based emissions account for emissions by the domestic industry in Sweden. The absolute level of GHG emissions hence depends on the total GHG emitted from domestic production. Relative to GDP, the main concern is the GHG-intensity of domestic production (GHG / GDP). The more energy efficient the industry is, the lower is the GHG intensity of domestic production.

[59] Consumption-based indicators account for GHG emissions embedded in domestic consumption. To do so, production based calculations are corrected by imported and exported emissions. Depending on the GHG-trade balance, consumption-based indicators are higher or lower. Such calculations need to account for differing production technologies and the respective GHG-intensities in import countries. Since this requires big effort in data processing, the Statistics Sweden assumed for smaller trade partner their domestic GHG-intensities, while uses the respective GHG-intensities for bigger trade partners (e.g. China) (SEPA, 2013). This potentially leads to an underestimation of imported emissions, for the low GHG-intensity of Swedish production facilities. At the same time Peters at al (2012) find lower per capita emissions in Sweden then SEPA, which reflects the high uncertainty coming with consumption based calculations.

is the third biggest within the EU and has just been outcompeted by Germany and Denmark (EEA, 2014; OECD, 2014b).

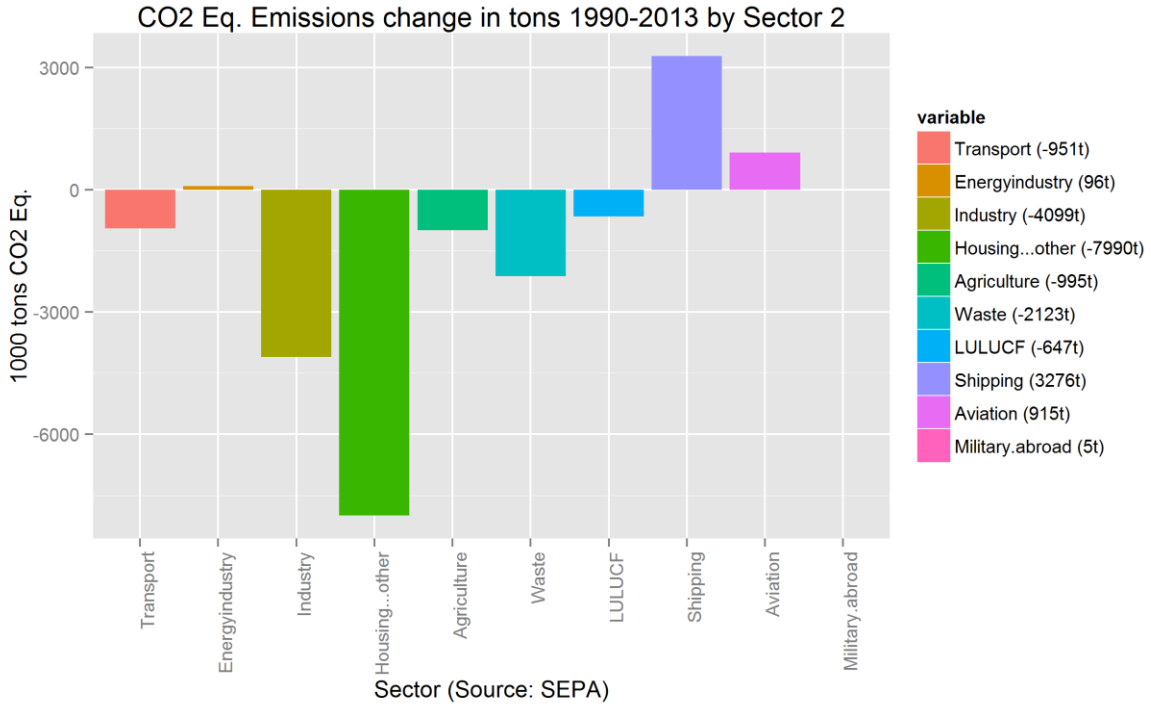


*Figure 30: GHG emissons change by industry 1990-2013*

The most polluting industries (see *Figure 36*) are transport (18504tGHG), productive industries with (14629tGHG) and the energy industry with (10080tGHG). Besides the industries accounted for under the Kyoto protocol, aviation (5539tGHG) and shipping (2269tGHG) are important GHG emitters. The biggest changes are all negative and (see *Figure 30*) occurred in housing (-8000tGHG, -66%), industry (-4000tGHG, -22%) and waste (-2123tGHG, -57%) while in shipping and aviation emissions increased by 900t (68%) and 915t (145%) respectively. Sweden, therefore has been particularly successful in decreasing emissions in sectors which fall under the Kyoto protocol (1990-2012: 22.4%), however if aviation and shipping are included GHG emissions have only been reduced by 13.4% (and not by 22.4%) between 1990 and 2012. Similar dynamics take place in Denmark as highlighted in the respective case study.

The most important electric energy source are nuclear (16688ktoe, 46%), hydro (6788 ktoe, 18.76%), biofuels including waste (11650kteo, 32.2%) and Geothermal including solar (629ktoe, 1.7%) in 2012. Despite the remaining importance of nuclear power, energy provision shifted towards geothermal and solar sources. In 1990 these sources have been neglected and nuclear, hydro and biofuels and waste accounted for 17769ktoe (60%), 6235ktoe (21%) and 5506ktoe (18.5%) respectively (IEA Statistics, 2014). Nevertheless, the energy mix up to now relies heavily on non-renewable energy from nuclear power stations.

To sum up, Sweden succeeded to reduce GHG emissions from domestic production by 22.4% or 13.4%, depending on the applied calculation method. Households, industries and emissions from waste drove the reduction in GHG emissions, while industries that are not part of Kyoto increased their emissions. Finally, Sweden shifted its energy production towards renewable energies, although it remains highly dependent on nuclear power. As discussed above, due to the generational goals, Sweden needs to account for foreign GHG emissions stemming from domestic consumption. Considering these would reveal another picture.

### 2.4.2. GHG Emissions from domestic consumption

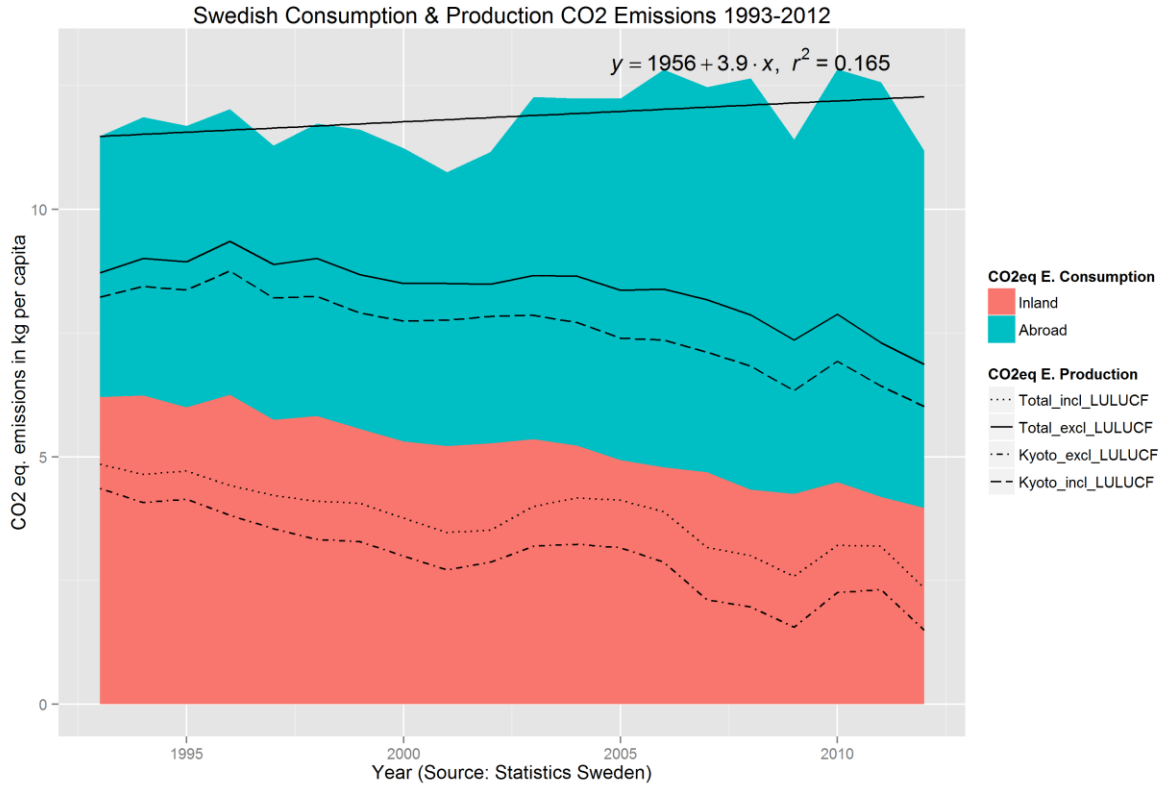


*Figure 31: GHG emissions from Swedish Consumption and Production*

*Figure 31Figure* shows GHG Emissions from consumption of goods produced inland and abroad and production in Sweden from 1993 to 2012[60]. The level of GHG emissions from consumption is with 11.18 tons per capita almost twice as high as the level of emissions from production excluding LULUCF with 6.87 tons per capita in 2012. Even bigger is the difference with regard to measurements, which include LULUCF or follow the Kyoto protocol standard (compare figure). Furthermore, 64% of GHG Emissions of consumption stem from foreign produced goods (7.2 tons per capita) while only 3.97 tGHG per capita are from domestically produced goods.

Over time, the figure shows a slight increase in the trend of GHG emissions stemming from domestic consumption. Although a point measure might suggests that GHG emissions from domestically

[60] Calculated by the Swedish Statistical Office, and available on their homepage www.scb.se

consumed goods decreased slightly (from 11.5 kg per capita in 1990 to 11.2 kg per capita in 2012), this does not account for the strong variation in the data. A trend line, on the other hand shows a slight increase of 0.04 kg per capita annually. The decomposition of domestic consumption in domestic and foreign produced goods shows that particularly emissions from foreign produced goods increased. The share of GHG emissions of domestically consumed but foreign produced goods in 1992 was only 45% while it increased to 64% in 2012.

A decomposition along different consumption goods (*Figure 38*) reveals the same picture for food, housing and transport[61]. Particularly for food, Brinkley (2004) argue that Sweden reduced its $CO_2$ emissions from production in the agricultural sector by a reduction of livestock farming (also compare *Figure 30Figure* ). However, consumption data show that this change did not take place in terms of consumption. While GHG Emissions from domestically consumed but foreign produced goods decreased, GHG emissions from domestically consumed but foreign produced food, transport and housing increased by 90%, 65% and 13% respectively. These three areas, and particularly the dynamics in terms of food production and consumption illustrate the importance of focusing on domestic GHG emissions from consumption, and the limitation of purely production based policies.

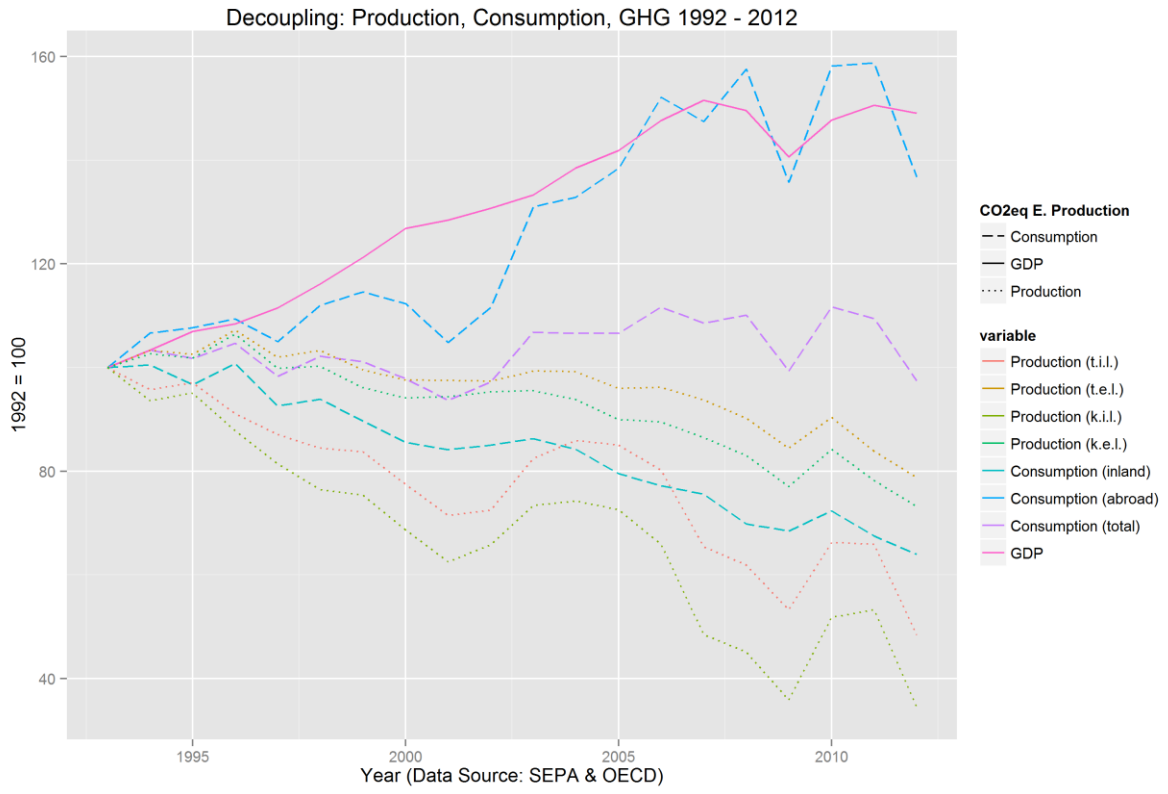


*Figure 32: Decoupling of production and consumption in Sweden, (1992-2012)*

[61] Unfortunately, there is not data for other consumption types available. However, despite the low mobility of these goods in comparison to other goods the effects of trade are evident.

Finally, a comparison between GDP Growth and production and consumption based indicators show that Sweden absolutely decoupled the former from economic growth while the latter only relatively (*Figure 32*). Consumption measures only declined by 3% while production measures declined by 22%, while GDP increased by 50% in the respective period. However, here again the point measure is misleading and the trend in consumption is actually upwards. A decomposition of consumption based indicators shows that GHG emissions from imports run parallel to GDP.

*Table 4* gives a detailed overview on relative and absolute decoupling of economic growth in Sweden between 1993-2012, 1993-2008 and 2009-2012. GDP per capita grew between 1993 and 2012 by 63% in total and 49% per capita. Between 1993 and 2012, Sweden absolutely decoupled GHG emissions in CO2-aequicalents from all production side measures (in terms of all economic activities or only Kyoto industries, as well as including or excluding LULUCF). With regard to consumption, Sweden absolutely decoupled total per capita consumption emissions, as well as emissions from domestic goods, but only relatively decoupled total consumption emissions (although only a small increase of 6.34% can be observed). Finally, foreign consumption emissions decoupled relatively with an increase of 49% and 37%, total and per capita, respectively.

While overall levels of GHG emissions remain high, Sweden successfully reduced its emissions from domestic production. Emissions from consumption still increase slightly, and particularly foreign emissions due to domestic consumption increase distinctively.

### 2.4.3. Conclusions on environmental performance and policy making

Current policy making partly reflects the structure of environmental performance, but neglects the sheer size of the challenge. The IPCC as well as the planetary boundaries concept require 2 tGHG emissions per capita, annually (Nykvist et al., 2013; Pachauri et al., 2014). In light of current annual levels of 11.18 tGHG emissions per capita from consumption and 6.05 tGHG emissions per capita from production, Sweden still needs to reduce annual emissions drastically. The focus on domestic consumption and foreign production reflects the two options Swedish policy making has when accounting for the crowding out of domestic efficiency gains through increasing imports of carbon intensive goods (Isenhour and Feng, n.d.).

The current focus of policymaking is on foreign production, particularly through knowledge transfer. Such a strategy is problematic for at least two reasons. First, the strategy assumes that worldwide absolute decoupling of economic growth from GHG emissions is possible, this however has not been observed up to now (Antal, 2014c; Jackson, 2011). Second, the strategy relies on voluntary actions taken up by major trade partners. Binding enforceable agreements that limit imports of carbon inefficient produced goods through e.g. tariffs are not possible under the WTO. While trade barriers are currently

used by powerful nation states to impose their interest on other countries[62] or protect their industries[63], they are criticised, firstly for their lack in democratic legitimisation as they impose laws on foreign territories and secondly for their post-colonial character in cases of reproduction of historical power relations (Stiglitz, 2007). Hence, whether all Swedish trade partners are willing to reduce GHG embedded in their exported goods voluntarily, remains questionable, particularly in areas where such reduction would translate into economic costs.

As discussed earlier, a reliance on voluntarism is also present with regards to consumers and businesses. Research however shows the limited effectiveness of such strategies on the former, due to path-dependencies of preferences, habits and practices (e.g. Jackson, 2006; Røpke, 1999). Hence, scholars call for more stringent demand side policies, which, additional to pricing mechanism include "hard restrictions on the sale of single use and highly carbon-intensive products to investments in collaborative consumption, sharing economies, repair and redesign industries, and legal protections for product service agreements" (Isenhour and Feng, n.d., p. 8). Despite such calls, environmental policy is increasingly shifting towards voluntarism of trade partners, businesses and consumers.

As outlined in the general framework, work structures individual's life paths, societies and the environment, and hence affects the ways in which individuals satisfy their needs in modern societies. From an economic perspective, furthermore, the limited ability to change foreign production possibly requires a shift from foreign to domestic production (to increases GHG efficiency). As a consequence domestic work practices would need to change dramatically (Räthzel, 2009; Räthzel et al., 2010; Räthzel and Uzzell, 2011). In turn, work policies can amplify or limit the success of environmental policies, but before I go into details concerning links between the two areas, I outline recent developments in the context of work in Sweden.

## 3. The Swedish labour model in the last 20 years

The Swedish labour markets co-evolved with the Swedish approach to social investment, which entailed demographic-, economic- and social development policies. This particular approach led to high growth rates combined with low unemployment rates, high female labour market participation and low income inequality until the crisis hit in 1990 (Anxo, 2013, 2009; Anxo and Niklasson, 2006; Morel et al., 2012; Palme and Cronert, 2015).

The Swedish approach to social investment goes back to Alva and Gunnar Myrdal who argued in the 1930s for a new strategy to address declining fertility rates in Sweden. According to them "quantity and quality of the population was due to socioeconomic hardship caused by industrialisation and urbanisation"(Morel et al., 2012, p. 3). State investments in family and housing support and the "development of quality of care, education, health care and support of women's labour force

[62] e.g. sanction against Russia as a reaction on the Ukrainian war
[63] e.g. agricultural exceptionalism in international agreements

participation" (Morel et al., 2012, p. 4) should address these issues. Investments in the population should furthermore focus on the present, in form of unemployment compensation, and on the future by active labour market policies. Since the 1950s, Rehn-Maidner´s labour market model complemented the Swedish social investment state. The Rhen-Maidner model entailed restrictive fiscal and monetary policies with wage moderation through the solidarity principle and counter cyclical active labour market policies. The combination of the two allowed Sweden to successfully reconcile equality and efficiency (Esping-Andersen, 1990) and to justify social rights based policies by promoting positive economic development (Morel et al., 2012). However, the Swedish approach to social investment needs to be differentiated from the recently emerging 'Third Ways' approach to social investment. The latter has been developed by Anthony Giddens (1999) and emphasizes the "unproductive character of unemployment benefits and similar programs" (Palme and Cronert, 2015, p. 5) , and does not see the (productive) values of such policies (ibid.).

Although the Swedish labour market performance declined in the last 25 years, overall Sweden performed better in 2014 than most of the other countries studied. The overall employment rate (EPRs), as well as female labour market participation (LFPR) are the second highest in the OECD with 74.5% and 76.6% respectively. Working time is by all measures above the EU-28 average. Annual per capita working hours are 786 (*Figure 62 Figure* ), and per worker are 1608 (*Figure 63*). The average duration of a working life (*Figure 64*) is 40.9 years in 2013. The unemployment rate (7.7%) is only slightly beneath the OECD average. As discussed later in detail, unemployment is particularly high for young people (23% youth unemployment) and foreign-born young people in particular (40.5%). With regard to income equality, Sweden is the 9$^{th}$ most equal country in the OECD with a Gini coefficient of disposable income of 0.273 in 2012. The gender wage gap is 15%, only slightly beneath OECD average in 2013. In terms of paid and unpaid work[64], Swedish men and women in the age group between 20-64 work eight hours on an average day, while men work a few minutes more than women in total. Furthermore men, spent about 90 minutes more than women in paid work on an average work day (Statistics Sweden, 2012). However, a historical perspective reveals the extent of the changes in the last 25 years.

## 3.1. Sweden from the economic crisis in 1990 to 2000

The Swedish model faced its first challenge during the economic crises in the 1970s, but particularly changed in the aftermath of the economic crisis in 1990. This was the first employment crises in Sweden that was a consequence of excess demand growth in combination with tight labour markets, which ultimately led to inflationary dynamics. Due to a new political consensus in combination with pressure of international markets, however, Sweden did not devaluate the Swedish krona, as in former crises, but substantially reduced public spending and implemented restrictive fiscal policies. This led to an hereto unknown increase of unemployment and a decrease in public revenues and budget deficits (Anxo and

[64] Unfortunately there is no comparative time-use data available.

Niklasson, 2006). In 1992 Sweden had, due to international pressure, to let the Swedish krona float freely, which depreciated immediately by 20%. To bring down inflation, trade unions accepted to lower wage between 1992 and 1994. High unemployment in combination with reduced payroll taxes furthermore resulted into Sweden back onto the growth path. The consequences of these changes were manifold. On the one hand, a period of high economic performance followed which allowed the Swedish government to halve public debt between 1995 and 2005. However, unemployment stabilised at higher levels and income inequality increased.

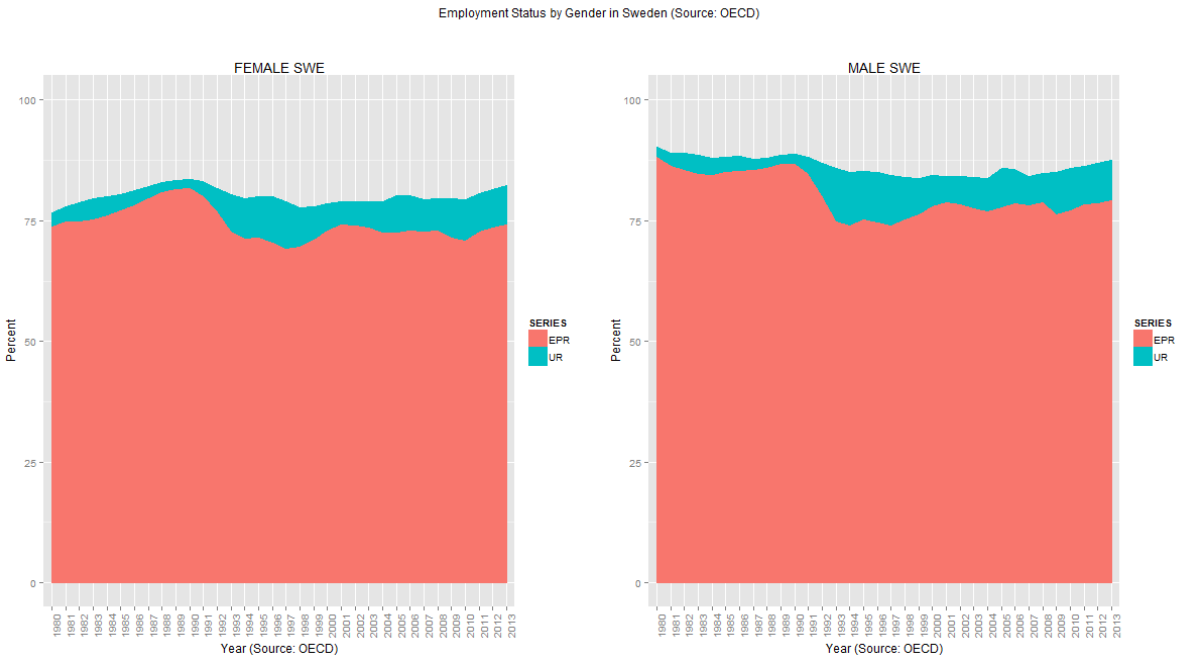


*Figure 33: Employment status by Gender in Sweden 1980-2014*

*Figure 33* show the overall and by gender employment status in Sweden since 1980[65]. The effects of the crises cannot be overstated. While until 1990, the EPR was 84% it dropped to 72% after the crises in the 1994. At the same time unemployment increased from 1.8% in 1990 to 9.5% in 1994.

Particularly interesting are the dynamics in female employment. While until 1990 the LFPR increased from 76% in 1980 to 83% in 1990, it declined to 77.7% in 1994 because of the crises in 1990. However, at the same time the EPR increased from 74% to 82% in 1990, but declined to 71% in 1994. Hence, the drop of the female EPR after the crises did not lead to drop of the LFPR, consequently, female unemployment increased from 1.8% in 1990 to 8% in 1994. In short, while the EPR in 1980 was actually higher than in 1994, female unemployment increased over the same period. Male LFPR declined from 90% in 1980 to 87% in 1990, however, the speed of decline increased due to the crises in 1990 and the

LFPR levelled off at 83% in 1994. At the same time male unemployment increased dramatically during the crises from 2% to 11% in 1994.

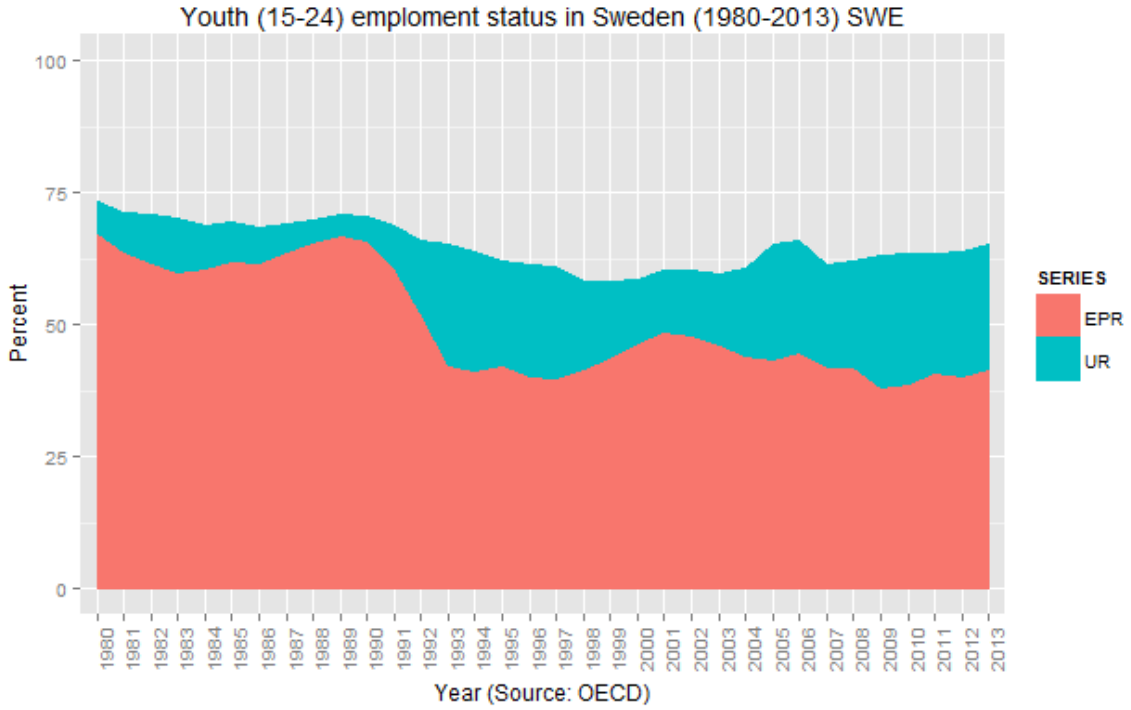


*Figure 34: Youth employment in Sweden*

Finally, the overall youth EPR declined from 67% in 1980, to 66% in 1990, to 41% in 1994, while youth unemployment increased dramatically from 4.6% in 1990, to 22.7% in 1994. Not in one of the four social groups (overall, female, male and youth) employment or unemployment reached before crises levels since then. In 2001, the respective EPRs were 76%, 73%, 78%, and 46%, while the respective unemployment rates were 6.2%, 5.8%, 5.3%, and 11.7%. Over the same period the Gini coefficient of disposable income, a measure income inequality increased from 19.7 in 1983, to 20 in 1990 and 24.2 in 2000 (Figure 41).

## 3.2. Sweden after 2000


*Figure 35: Employment by country of birth in Sweden (2000-2014)*

The reactions of Swedish policy makers on the remaining high unemployment in the early 2000 moved Sweden from the Swedish approach to social investments towards a third way approach in social investment. In terms of unemployment policies, between 2004 and 2007, the Swedish government introduced in-work tax credits to strengthen the incentives to work for low-income earners and reduce the marginal tax of high-income earners[66]. In 2007, a new unemployment insurance took effect. In this system, eligibility is based on a 12 instead of 6 months earning period; unemployment benefits are paid for only 300 instead of up to 450 days; the income replacement rate is reduced from 80% to 70% after 200 days of unemployment; and the right of unemployed to search for jobs only in their field of specialisation was abolished. In addition, changes in the unemployment insurance system affected the configuration of Swedish labour markets. A new financing system of the employment insurance system differentiated according to the unemployment level of the respective industry or sector. This led to increases of individual insurance fees (up to a threefold increase for certain employees). Consequently insurance membership declined by about 500.000 between 2007 and 2008 (Anxo, 2013).

Furthermore as part of the greening of the tax system, taxes on labour income (the tax wedge) declined by 7.2% from 50.1% in 2000 to 42.9% in 2013. A comparison to an OECD average change of 0.7% of

[66] It needs to be noted that Palme et. al (2015) remark that this policy probably had positive distributional effects for wage earners while led to increasing poverty among rentiers.

the tax wedge in the same period shows the mere size of this reduction. Almost in parallel, however, the Gini coefficient in Sweden increased from 24.5 in 2000 to 27.3 in 2011. Hence, although Sweden shifted taxes from labour to environment (as suggested by the OECD (OECD, 2006), it did not compensate for possible regressive effects of this tax shift (also suggested in the same report). On the opposite, the OECD (2014) suggests that the increase in income distribution occurred independently from environmental taxation. Increasing inequality has rather been a consequence of the policies stated above, targeted on increasing employment and decreasing unemployment.

However, overall EPRs increased slightly from 75.7% in 2000, to 76% in 2008, dropped to 74% after the crises in 2009, and reached 77% in 2013. The female EPR increased from 73% in 2000 to 74% 2013, while the male EPR increased from 78.1% in 2000 to 79.4% in 2013, both declined in the aftermath of the crises to 71% and 76.4% in 2009, respectively. The overall unemployment rate increased from 5.8% in 2000 to 6.2% in 2008. It peaked after the crises at 8.6% in 2010 and levelled off at 8% in 2013. Other than, to the economic crisis 1990, little difference can be observed between the genders (see *Figure 33*).

Youth unemployment reached in 2013 the same levels as in 1994 namely 23.5%. The biggest changes occurred between 2000 and 2008 with an increase from 11.7% to 20%, in the time of the economic crises, it 'only' increased by another 5% from 20% in 2008 to 25% in 2009. Besides that, unemployment is high for non-Swedish born citizens[67]. While the unemployment rate of domestic born citizens was 4.7% in 2000, it increased to 5.3% in 2008. It furthermore peaked at 7.3% in 2010 and declined to 6.2% in 2013, non-Swedish born citizens have consistently faced higher unemployment rates with 12.3% in 2000, 12.2% in 2008, 16.3% in 2010 and 16.4% in 2013.

In comparison to the changes between 1990 and 2000 little happened during the last 15 years. In light of the policy goals of the Swedish ministry, EPRs increased by 1.3% between 2000 and 2013. Despite the fact that internationally Sweden is often portrayed as a case that relatively successfully handled the crisis in 2008 (Harbo Hansen, 2011), a longer time horizon reveals little positive developments. If anything, the good performance after the crisis holds only in reference to numbers observed in 2008, but not those in 2000. A longer run picture from 2000 to 2013 suggests that the small increase (+1.3%) in the EPR between 2000 and 2013 has been outcompeted by a higher increase in unemployment (+2.2%). Although by 2013 Sweden reached overall employment and unemployment levels as was the case in 2008. The levels do not compare to 2000 and by far not to 1990. Hence, besides the negative effects on social rights and increasing income inequalities, the policies implemented by the Swedish government did not reduce unemployment. It appears only successful in the aftermath of the crisis because unemployment was already increasing between 2000 and 2008. Additionally the data suggests, that the shift away from present oriented labour market policies towards future oriented policies, particularly affects vulnerable groups, like the youth and non-Swedish born citizens (Dominique Anxo et al., 2013)

[67] Since the unemployment rate by country of birth are from Eurostat, the unemployment rates can deviate slightly from the numbers provided by OECD.

Besides that, in difference to the other case studies, Sweden is the only country where annual working time increased per capita, per worker and in terms of duration of working life (compare *Figure 62*, *Figure 63*, *Figure 64*). Per capita working time was 784 in 1981, 846 in 1990, and eventually 786 hours annually in 2014. Working hours per worker increased from 1522 in 1981, to 1575 in 1990, to 1608 annual hours in 2014. Working time as duration of working life increased from 36.8 in 2000 to 40.9 years in 2013. Hence, increasing unemployment was accompanied by decreasing EPRs and at the same time increasing overall working time. In short, a large number of people in Sweden are working more hours whilst at the same time there are more and more unemployed people looking for work. Only overall working time (including unpaid household work) declined by 30-40 minutes a day. Women increased paid work by 30 minutes a day and decreased their unpaid housework by one hour per day. A shift from unpaid to more paid work can be observed for women (Statistics Sweden, 2012).

## 3.3. The Third Way or Swedish Social Investment

In summary, over the last 25 years an increase in unemployment, a decline in employment but increase in paid working time, combined with a decline in social rights and thus more burdens as incentives to join the labour force, accompanied by increasing income inequality took place. In light of these developments, it appears that the Swedish government is not anymore successful in combining equity and efficiency. The lack of success is paralleled by a shift from the Swedish to the 'Third Way' approach to social investment. Palme and Cronert (2015) have recently made similar observations in terms of poverty, employment and work-intensity.

The strength of the traditional Swedish social investment state model was the combination of investments in social development and present-oriented social rights based regulations with future-oriented ALMP (Morel et al., 2012). Although, in theory, EU institutions have taken up the social investment model from Scandinavia[68], their current focus lies on ALMP alone. As discussed above, this approach rather reflects the 'Third Way' than the Swedish approach to social investment. The latter solves the conflict between equity and efficiency through social rights based policies while the present 'Third Way' approach to social investment applies ALMP to increase "competitiveness and growth, employment and quality of jobs" (Morel et al., 2009). This ignores the importance of the other two pillars of the Swedish social investment state. This led to the paradox situation that Sweden shifted from the Swedish approach to social investment, to the now internationally prominent 'Third Way' approach to social investment, while at the same time referring to this as the Swedish approach to social investment. What this means for the environmental development in Sweden is discussed in the next section.

[68] Details on policy upload dynamics are discussed in Palme (2015).

## 4. Conclusions: Identifying links between Work and Environment

Work and Environment remain separated in Swedish policy-making. The short outline of the agenda of Swedish employment policymakers suggests a focus on green growth and cohesion through increasing employment and decreasing unemployment. The respective policies are in line with the 'Third Way' approach to social investment that focuses on future-oriented ALMP while neglecting present-oriented social rights regulations. In the last 25 years, environmental policy has been shifting towards voluntarism of trade partners, businesses and consumers, while the importance of paid work – measured in time units – has increased.

An average Swedish person of working age works 8 hours daily, 4.4 hours of them paid. This means that a Swedish worker spends about 1/3 of the day working, while for the average Swedish person it is 1/5 of the day. These numbers illustrate the sheer importance of work and its potential to structure individual life paths, as well as its importance for equity and the environment. Hence, work needs to be at the core of any thoughts about a transformation towards zero net emissions by 2050. The lack of integration of the two fields, as well as the focus on paid productivity at the cost of social and natural reproductive capacities hinder the satisfaction of the need for subsistence for vulnerable groups, have a negative impact on equity in society, and impair the chance to reach climate change mitigation targets.

To protect the domestic natural reproductivity, Swedish policymakers have been active and successful in tackling climate change since 1991. A set of stringent environmental policies have regulated GHG emissions from domestic production. Sweden successfully decoupled economic growth in absolute terms from production, and in relative terms from consumption. By now, policymaking focuses on GHG emissions from domestic consumption, however, accompanied by reliance on consumer, business and trade partner voluntarism and little ambitions in stringent regulation. Furthermore, adaptations of the domestic policies to the EU-ETS reduced incentives for industries to reduce $CO_2$ emissions. At the same time, scholars call for stringent consumer-focused regulations in order to reduce overall consumption and reach an internationally equitable level of two tGHG emissions per capita. Ignoring consumer-focused policies can increase conflicts between work and environment, as illustrated by the focus on nuclear energy production in Sweden.

Energy production still relies heavily on nuclear power, which, despite its low carbon intensity, is a danger for natural reproductivity firstly due to the high risks associated with production itself, and secondly due to the extraction of Uranium beforehand. Particularly the Swedish north and periphery are equipped with rich mineral resources (including Uranium), mined for their economic benefits on the one hand, but at the same time to provide these regions with access to paid work. However, local indigenous peoples as well as environmentalists contest mining[69]. Alternative policies could support unemployed

[69] More information on conflicts around the Rönnbäcken Nickel Mine, Västerbotten and the Gállok/Kallak Iron Mine is available at www.ejatlas.org

in finding jobs in other places (which has been longstanding part of the Swedish Investment State[70]), foster social cohesion through the policy strategies discussed below, and reduce the need for mining by decreasing levels of energy consumption or a shift towards energy production from renewables.

This exemplifies how a policy focus on having paid work can stand in conflict with preserving the natural reproductivity. Furthermore, the combination of increasing working time and increasing employment increases GDP and leads to increasing imports of GHG emissions from consumption[71], which potentially negatively feedback on the domestic natural reproductivity. Current policies to increase paid employment are not only in conflict with natural, but also social reproductivity. Although women were successfully integrated in the labour markets, particularly young and foreign-born people remain excluded, despite overall increasing working hours. Furthermore, total work (paid and unpaid) decreased since 2000, although paid work increased; hence paid work replaced unpaid work. Generally, unpaid work is expected to be reproductive (as discussed in detail in the general framework). Concurrently, paid reproductive work declined, due to recent reforms of the welfare state (Palme and Cronert, 2015). Hence, overall reproductive work declined in terms of paid and unpaid work, while paid work increased. The focus on paid productivity, therefore, successfully increased only cohesion between men and women, but led to decreasing levels of social and natural reproductive capacities.

Although having paid work implies having access to the returns from work, Swedish employment policies actually negatively affected the potential of paid work as a satisfier for the need of subsistence. As discussed above, recent taxation and unemployment benefit reforms increased income inequality and reduced the access to state support for unemployed; in order to incentivise them to join the labour market. The implemented policies are in line with a focus on ALMP and a decline in present-oriented social rights based policies, which would give people access to the returns from work in Sweden, independently from their employment status. Along these lines, an increased focus on cohesion through paid employment paradoxically led to a decline in social cohesion in terms of increasing inequality. Furthermore, social rights based policies are needed in order to pursue non-paid social cohesion policies, as they enable individuals to engage in non–work-centred systems of interaction and thereby satisfy needs. Alternatives to work centred social cohesion policies are for example community centres, popular education, or initiatives such as urban agriculture or community gardening (Heliker et al., 2001; Holland, 2004).

Moreover, increasing inequality combined with first increasing and later decreasing environmental ambitions make Sweden an interesting case to investigate the nexus between environment and inequality. However, it has been pointed out (Anxo, 2009; e.g. OECD, 2014b) that the increase in inequality in Sweden does not stem from potentially regressive environmental taxes, but other changes in taxation and the distribution of the market income. Laurant (2015) argues that increasing inequality

[70] See Palme et al. (2015)

[71] This reasoning builds on the historical evidence that suggests only relative decoupling of CO2 emissions from consumption in Sweden.

hinders the needed "collective action aimed at preserving natural resources" (p. 11), as it prevents a consensus that transcends political party boundaries. This case study provides evidence for and against this claim. After their steep increase in the end of the 1990s, environmental taxes particularly increased in the early 2000s. Increasing inequality hence has not hindered the implementation of stringent environmental policies. However, another argument could be that only after 2005 income inequality reached a level that hinders a collective agreement on domestic environmental policies beyond voluntarism. Increasing inequality can furthermore intensify the focus on economic growth and amplify dynamics of conspicuous consumption. Both would currently lead to environmentally harmful consumption in Sweden, due to the lack of absolute decoupling (Laurent, 2015).

Besides inequality, paid work focused labour market policies can also lead to environmentally harmful outcomes. As already described shortly above, an increased focus on employment can limit the time (through increasing working time) and the financial resources (through declining social rights) that are needed to pursue other activities that foster social cohesion as well as social reproductivity in a society. Recent research also suggests that such activities are less environmentally harmful (Nässén and Larsson, 2010). Particularly consumer behaviour is affected by the ways labour markets are organized (Shove, 2003; Southerton, 2004; Warde, 1999).

Although having paid work can serve as a satisfier of needs in several domains, negative impacts on the social as well as natural reproductive capacities were sidelined in Sweden. Increasing levels of inequality and environmentally ignorant labour market politics furthermore created tensions. Decreasing income inequality combined with present-focused and social rights based labour market policies (that reduce working time to enable community development and ensure the satisfaction of needs over all domains) could help to reduce $CO_2$ emissions from consumption, increase social cohesion, and ensure an equitable future.

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# 7. ANNEX: Figures

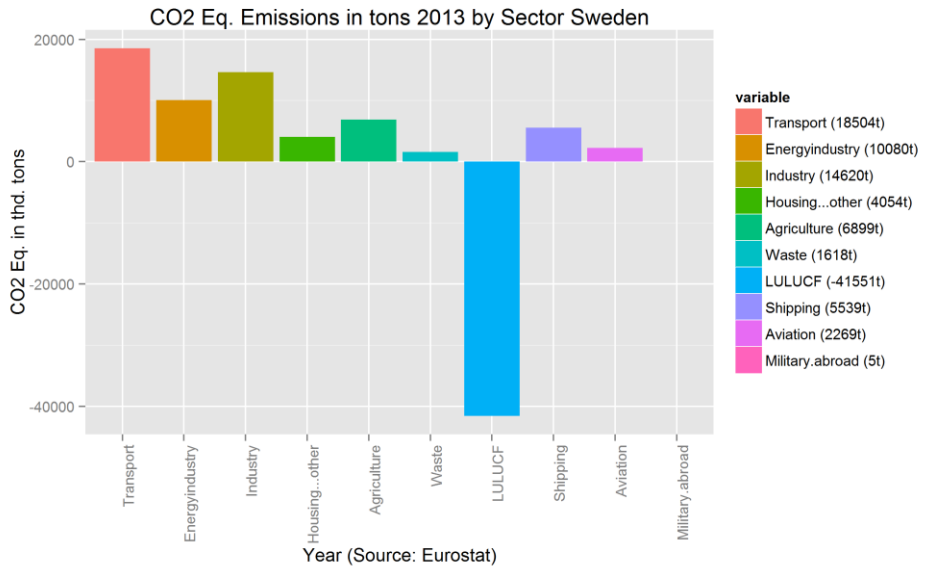


*Figure 36: GHG emissions by industry, 2013*

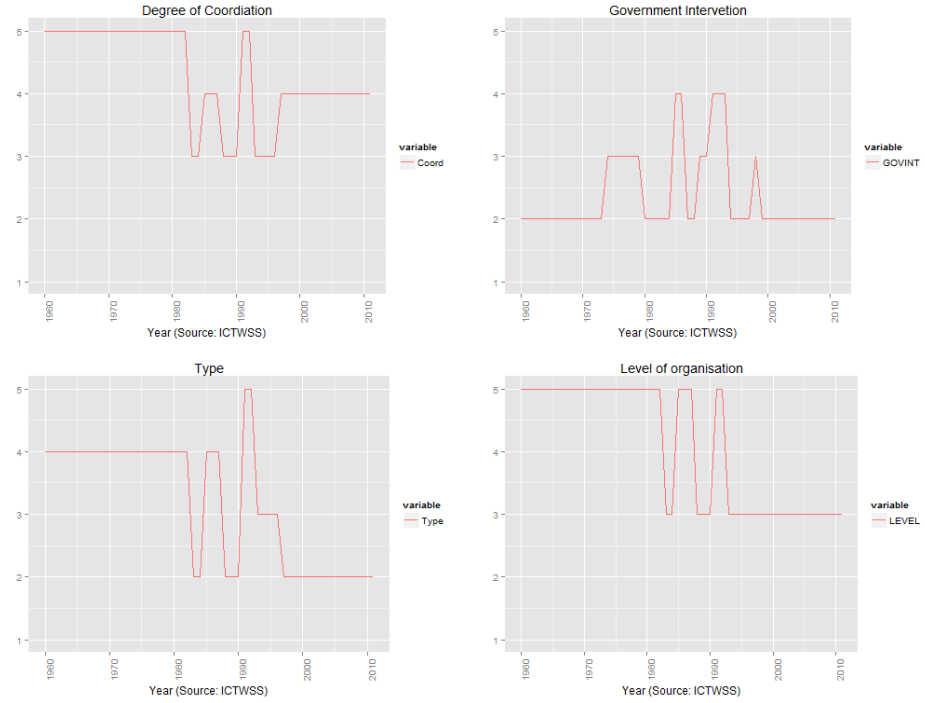


*Figure 37: Industrial relations in Sweden*

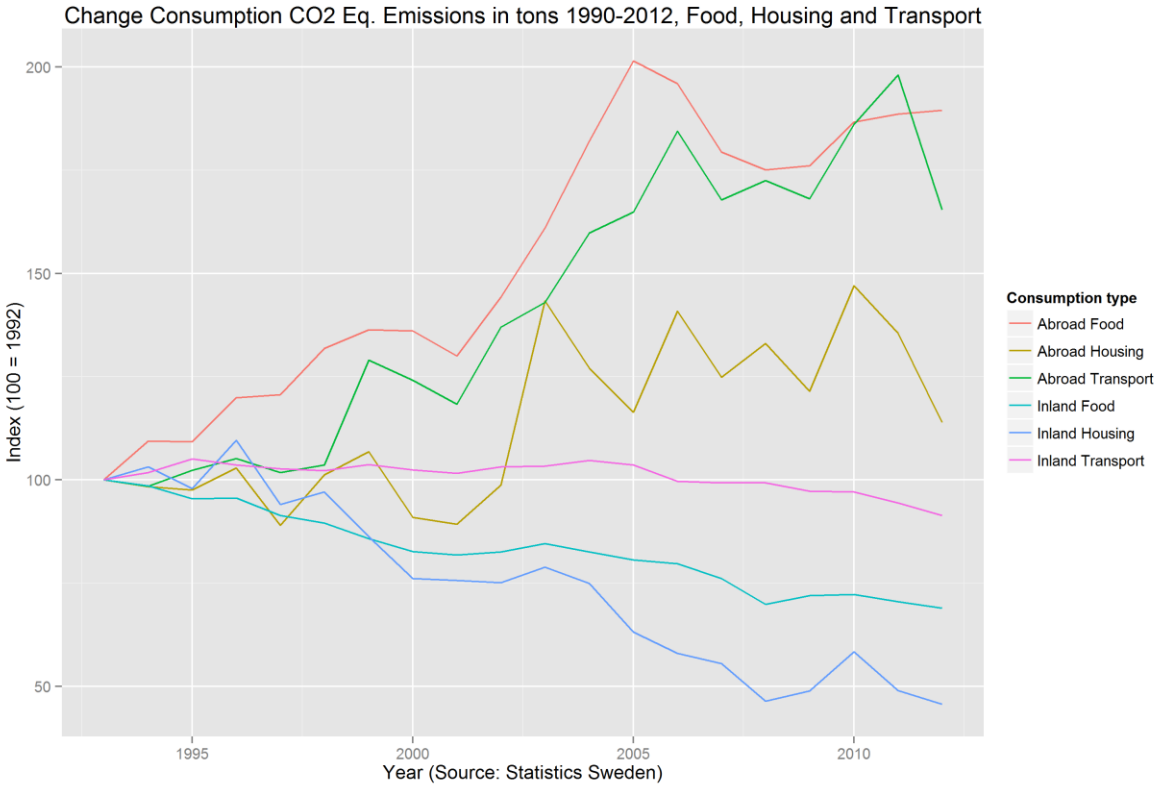


*Figure 38: Change in GHG eq consumption emissions from food, housing and transport*

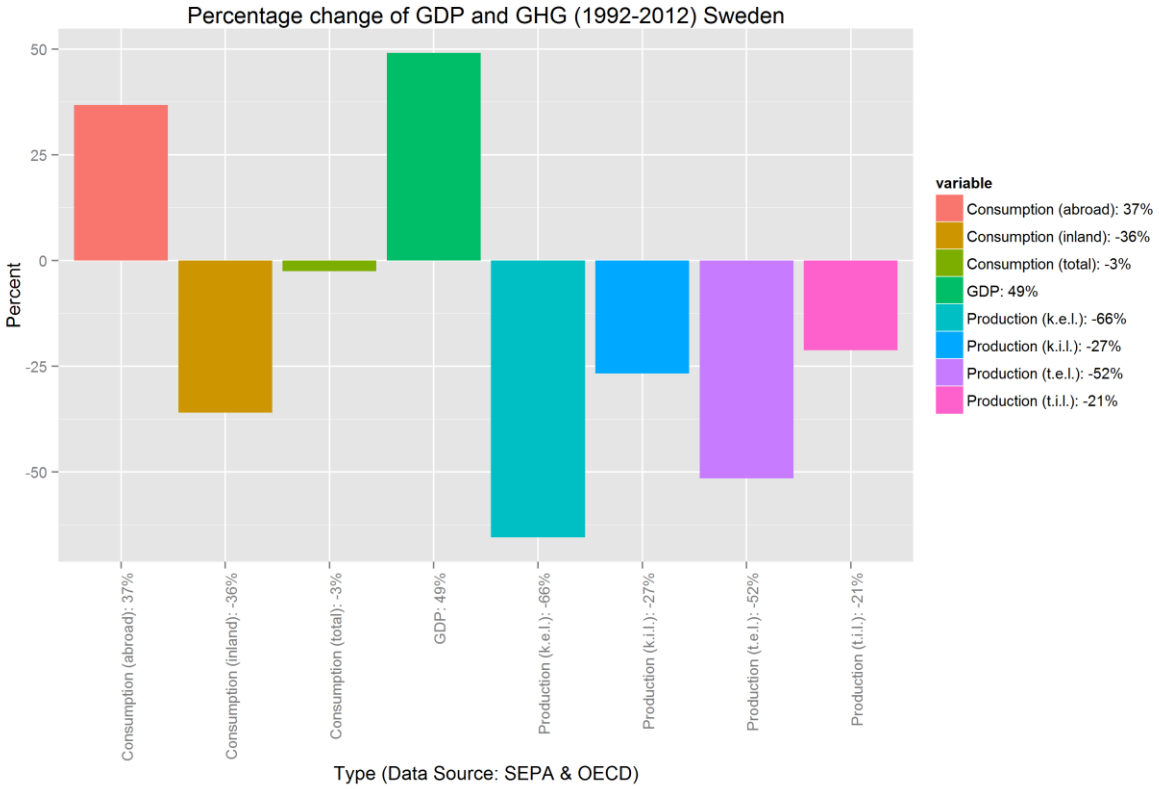


*Figure 39: Percentage change of GDP and GHG (1992-2012), Sweden*

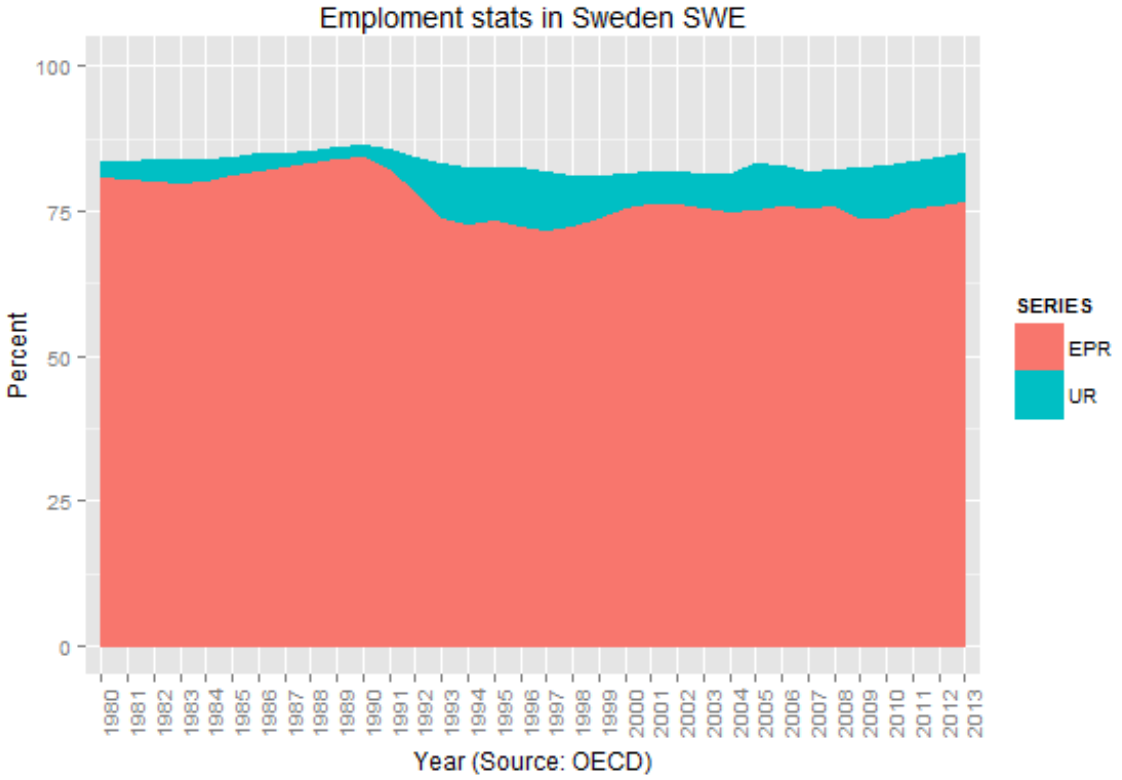


*Figure 40: Employment status Sweden (1990-2013)*


*Figure 41: Gini Coefficient in Sweden 1973-2012*

# VIII. Sustainable work in the UK

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## 1. Introduction

The world is currently faced with a number of crises – including climate change; ocean acidification; soil, water and air pollution; and biodiversity loss – which can be largely attributed to the human population living beyond the biophysical carrying capacity of the planet. If dangerous climate change is to be avoided, and potentially devastating ecosystem collapse, major changes to human society and economy are needed. In particular the resource use of modern societies need to be reduced.

Over the last couple of decades the UK economy has been transformed. Economic growth has been high, amongst the very highest in the OECD; wage growth has been strong; individuals on average spend less time at work; and importantly for the future of the planet, environmental impacts of the economy have been reduced. It is quite remarkable that a mature industrialised economy could be transformed so dramatically in three short decades. For these reasons, it is possible that the UK could provide a model for other countries to follow in the process of reshaping their economies for a sustainable future.

This case study first examines how the UK economy was able to achieve reductions in both working hours per worker, and material and energy use, whilst substantially increasing economic output. The study then examines, in light of these changes, whether the UK meets the needs of individuals, society, and the environment and as such can be described as transitioning towards a truly sustainable society (Baratech et al. 2015).

## 2. The UK economy – the big picture

The UK economy has been very successful since 1980. It has shown very strong economic growth, recording the third highest growth rate in the G7 over this period (only just exceeded by Canada and the US) and has more than doubled its output in real terms. When considered on a per capita basis its performance is even more remarkable. It has recorded the fifth highest per capita growth in the OECD over this period (82% increase to 2013), and the second highest of the established industrial economies (after Luxembourg)[73] (OECD, 2015b).

Many new jobs have been created. For most of the 1980s unemployment was above 10%, but this gradually fell through the 1990s and was consistently around 5-6% from the early 2000s until the GFC. Income growth has been strong, with both the real mean and median wages nearly doubling over this period (Brewer and Wren-Lewis, 2012). Moreover, this has been achieved whilst average working hours per worker have fallen (by 5.5%), although the total hours worked across the economy has increased due to population growth and increased participation of women in the workforce (OECD, 2015b). The economy has also strong shown resilience. There has been a good recovery from the global financial crisis of 2007/08, with the UK economy having the highest growth rate amongst the G7 in 2013 and unemployment falling to 6% by the end of 2014 (OECD, 2015c).

[73] the others were Korea, Turkey and Ireland

This has been achieved through a transformation of the economy into what has been called a post-industrial economy (Bell, 1974). Mining and manufacturing are much less significant contributors to the economy, both in terms of GDP and employment, whilst the service sectors have grown in importance and now account for 78% of GDP. Business services including finance are a major part of this growth (the finance sector contributed 10% of UK GDP in 2013) and London is now the largest financial centre in the world (OECD, 2015c).

Despite this substantial economic growth the environmental impact of the UK economy has declined. There has been a significant reduction in greenhouse gas emissions and resource use. Greenhouse gas emissions in 2007 were 18.4% below 1990 levels (Brinkley, 2014), and domestic material use fell by over 20% (SERI / WU, 2015). Despite GDP doubling in real terms, and the population increasing by more than 11%, consumption actually fell, not only per capita, but in absolute terms, leading to a dramatic drop in material intensity of over 60%. Wildlife is even returning to many parts of Britain after many decades of absence (Sylven and Widstrand, 2013).

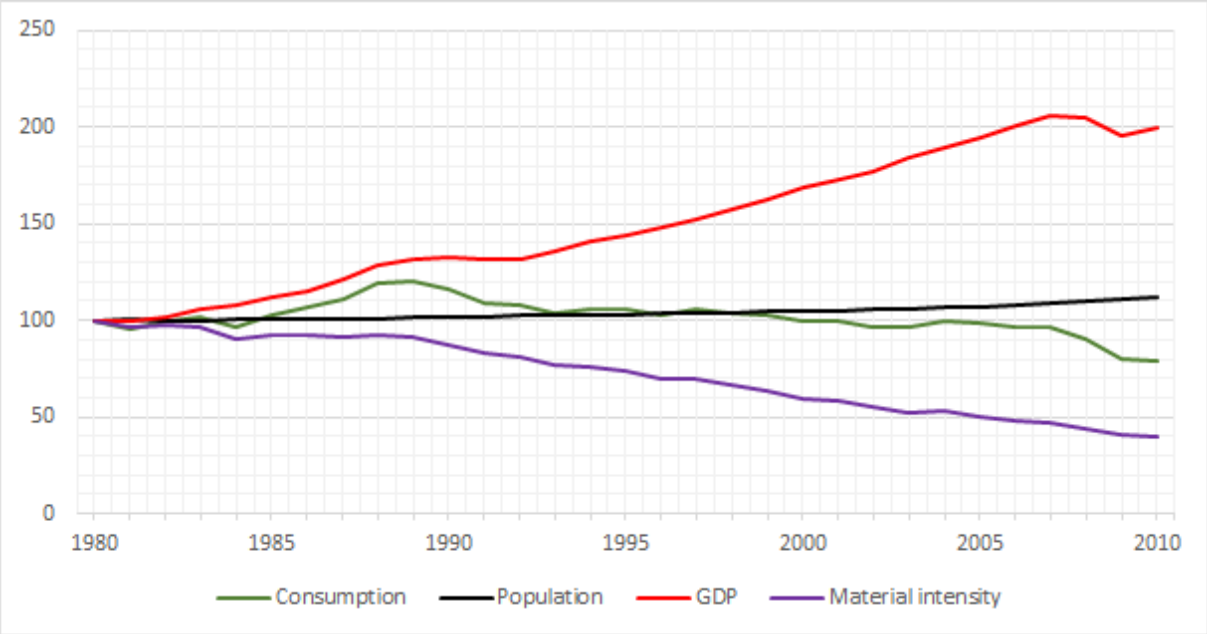


*Figure 42: UK trends in resource consumption, GDP, population, and material intensity in indexed form – 1980 equals a value of 100 (data from SERI/WU Wien 2015 & OECD 2015)*

## 3. Institutional framework of the UK labour market

Industrial relations in the UK has historically been much more individualistic than is the norm in Europe, and this is still the case. Contracts of employment are largely negotiated between employers and employees, with minimal interference from the state. For this reason trade unions became highly influential in the nineteenth century and during this time won the rights to represent workers and legally engage in industrial action, and subsequently negotiated many improvements in wages and workplace conditions. Collective bargaining thus became much more important than legal regulation which was

used to support and extend collective bargaining rather than to comprehensively regulate the system (Eurofound, 2015).

Since the 1980s, however, a number of legal restrictions have been placed on trade unions' ability to engage in industrial action, and this, along with a massive reduction in the size of the public sector, has seen a marked decline in trade union membership. In 1980, 49.7% of workers belonged to a union. This had fallen to 25.4% in 2013. Of those still in a union, the majority were concentrated in the public sector, with 55.4% coverage, whereas only 14.4% of private sector workers belonged to a union (ONS, 2014a). In addition, most of the sectoral collective agreements in the private sector have been dismantled and replaced with individual negotiation between the parties.

From 1997, largely under directives from the European Union, there has been a marked increase in legal regulation of the employment relationship. This has included legal individual employment rights for workers, a national minimum wage, and increased rights for trade unions (Eurofound, 2015). In addition, for the first time a limit was imposed on the number of hours per week an employee could be required to work. However, the maximum is now set at a relatively high 48 hours, and even that can be exceeded with the employee's consent.

Unemployment benefits are a paid at a flat rate based on family circumstances. They amount to only 14% of the average wage for a single, but can be up to 52% of the average wage for a married person with two children. There is no time limit to receiving benefits, but recipients must regular apply for jobs and there are heavy sanctions for not doing so, or for failing to meet other additional obligations such as attendance at interviews or training programs (OECD 2015).

As a consequence of these changes, the UK system of industrial relations now exhibits a mixture of characteristics. Most of the conditions of work in the private sector, such as pay and working time, are set at the company or plant level, or by individual negotiation between employer and employee. In the public sector most working conditions are covered by sector-level agreements negotiated by trade unions. There continues to be no centralised arrangements to coordinate wages and working conditions, and collective employment agreements remain legally unenforceable. However, there is now a supplementary layer of legislatively established employment rights which offer a low level of additional protection.

## 4. Changes in the economy

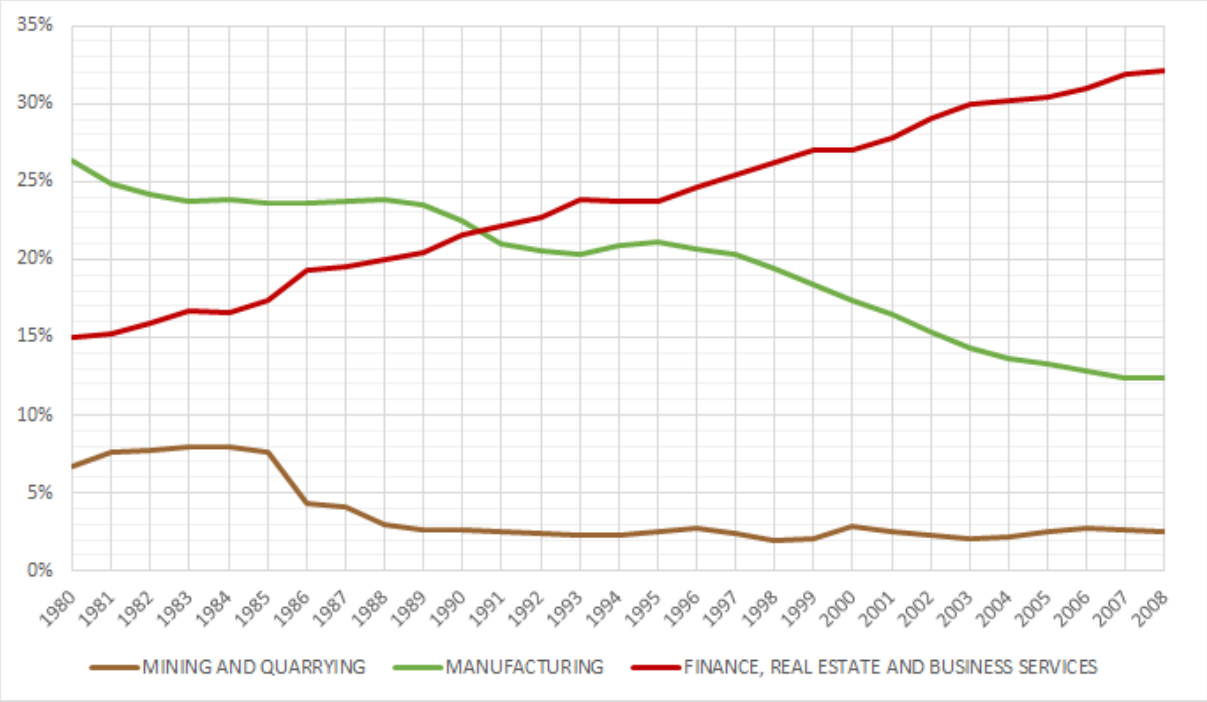


*Figure 43: GDP contribution by industry sector (data from OECD 2015)*

The UK economy has been transformed over the past thirty five years. From an economy with strong manufacturing and mining sectors, it has become a post-industrial economy dominated by the service sectors, with manufacturing, agriculture and mining playing much less significant roles. Manufacturing has fallen from 26.3% of GDP in 1980 to 12.4% in 2007, whilst mining has fallen from 6.7% to 2.6% in that time. Meanwhile the service sectors[74] grew from 49% in 1980 to over 69% of GDP in 2007. The vast majority of this increase was in the 'Finance, real estate and business services sector', which rose from 15% to nearly 32% of GDP. However, despite the often promoted importance of the finance sub-sector, and the fact that in terms of GDP, it is the largest financial sector of any economy in the G7, it only contributed 8.3% of GDP in 2007. A much larger contributor is 'Equipment rental and other business services' which contributed 14.8% of GDP in that year, or even 'Real estate activities' which contributed 9.4% (OECD, 2015b). It may in fact be that much of the growth in 'Equipment rental and business services' arises from outsourcing from other sectors in the economy, including the sectors that are shrinking.

These changes in the UK economy in the past 30 years are, in fact, merely a continuation of a trend that has been apparent in the UK economy since the early 1960s. As late as 1961, manufacturing contributed 37% of UK GDP. At that time, the UK was the world's second largest car manufacturer, as well as a

[74] The service sectors include wholesale/retail trades and hospitality; community, social and personal services; and finance, real estate and business services

producer of a diverse array of engineering products and other high quality manufactured goods (ONS, 2013a).

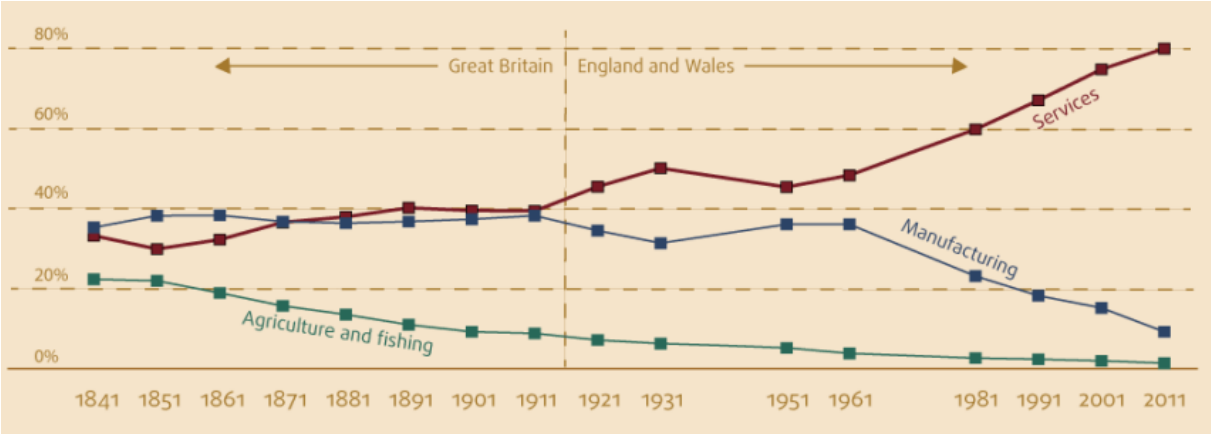


*Figure 44: UK Workforce composition 1841-2011*

# 5. Changes in the labour market

## 5.1. Sectoral changes

Naturally, the sectoral trends seen in the UK GDP are reflected in employment figures. Just as manufacturing and mining have declined in their contribution to GDP after 1980, so has employment declined in these sectors. Employment in manufacturing has fallen from 24.7% of total employment in 1980 to 9.8% in 2007 and mining employment has fallen from 1.4% to just 0.2%. Conversely, employment in the service sectors has risen from 56.9% to 74.9%. Note that as with the sectoral change in GDP, some of the fall in employment within manufacturing may be due to outsourcing and thus be reflected in the rise in employment within the 'Equipment rental and business services' sub-sector (OECD 2015).

It should also be noted that productivity gains in manufacturing have exacerbated the loss of employment from the sector. For instance, the actual number of motor vehicles manufactured in the UK was only slightly less in 2014 than in the late 1970s. However, in 1980 there were 2.11 vehicles produced per employee, whereas in 2007 there were 9.56 vehicles produced per employee (OECD 2015).

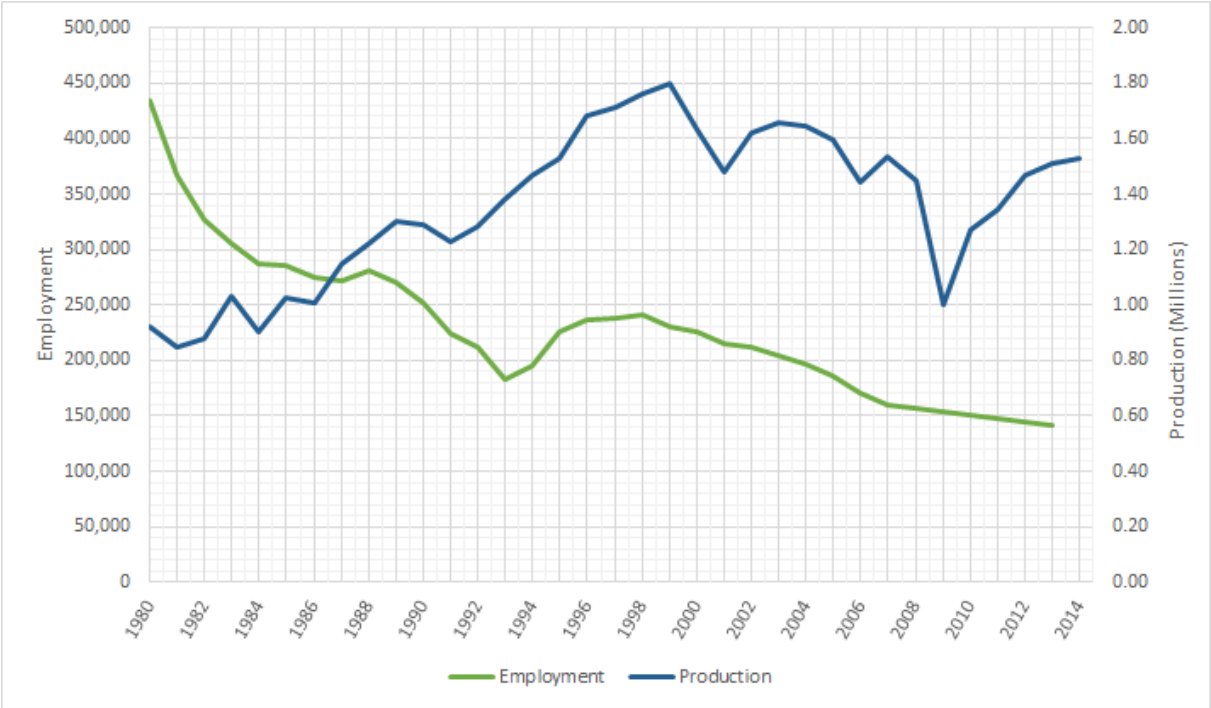


*Figure 45: GDP vs employment in vehicle manufacturing (data from OECD 2015)*

Equally, productivity improvements in the 'Finance, real estate and business services' sector meant that the GDP growth in this sector was not fully reflected in employment growth, despite the sector providing more new jobs than any other sector over this period. The sector changed from contributing 15% of GDP and 11% of employment in 1980 to 32% of GDP and 21% of employment. By contrast, the 'Community, social and personal services sector' provided almost as many new jobs as the finance sector but its relative contribution to GDP barely grew. The sector changed from contributing 21% of GDP and 25% of employment in 1980 to 23% of GDP and 32% of employment in 2007 (OECD, 2015b).

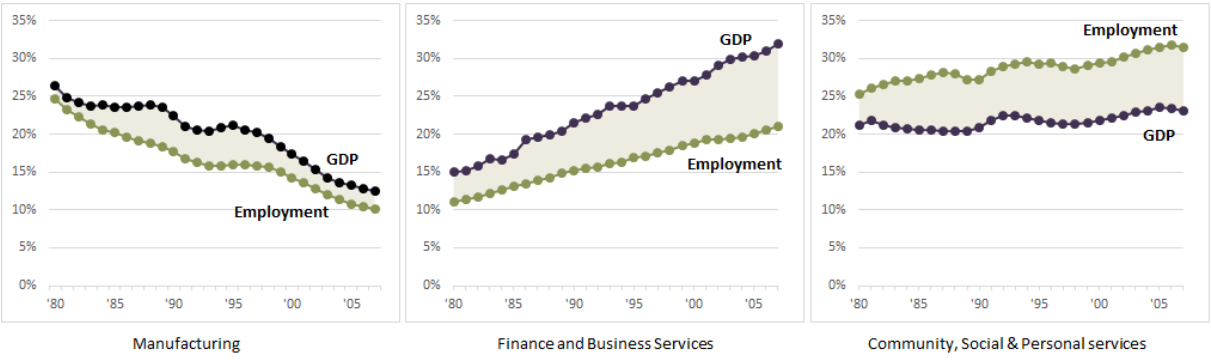


*Figure 46: Changes in GDP and employment in some sectors (data from OECD 2015)*

Across the economy as a whole, productivity per hour worked increased from US$24.43 in 1980 to US$44.51 in 2012 (constant prices, 2005 PPPs, OECD 2015).

## 5.2. Changes in skills

The transformation of the economy and increased international outsourcing has had a significant impact on the UK labour market. (Hijzen et al., 2005) found that there has been a strong negative impact on the demand for unskilled labour in the UK. In contrast, the increase in research and development activity appears to have increased the demand for skilled labour. This is reflected in changes in the levels of different groups of occupations. Figure 6 shows the changes in numbers of jobs in the major occupation groups between 1992 and 2014. The decline in both skilled and low-skilled jobs in manufacturing can be clearly seen, as can the growth of highly skilled professions (managers and skilled professionals) and low-skilled service and elementary occupations (ILO, 2015).

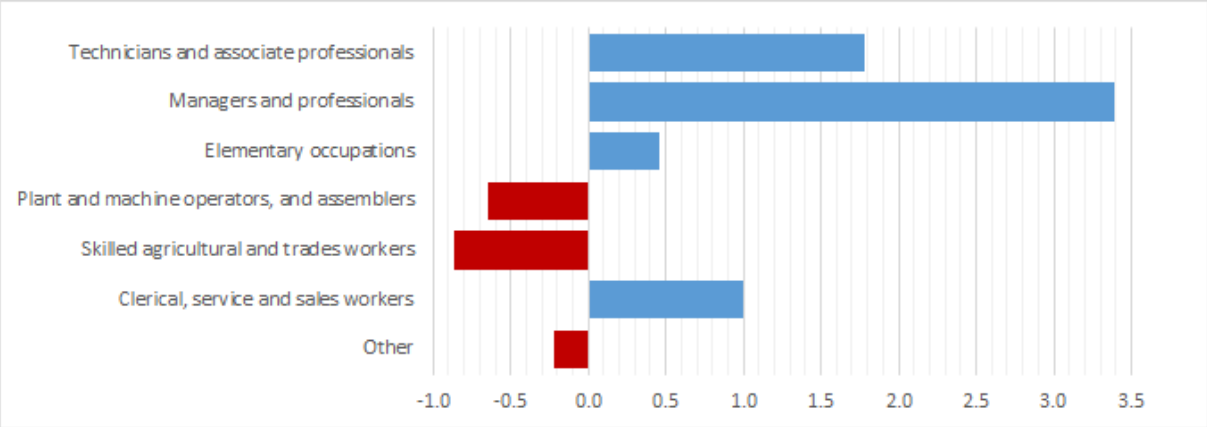


*Figure 47: Changes in employment numbers in major occupational groupings*

The UK is also one of the few countries in the EU where overall the skills and discretion asked of workers has declined from 1995 to 2010. Whilst the work intensity fell and the physical environment of jobs improved on average (likely due to the decline in mining and manufacturing) the index declined because of reductions in the average levels of discretion afforded to employees, confirming what has been found in other research (Eurofound, 2012b).

## 5.3. Gender balance

The last 35 years have seen a significant increase in the percentage of women in employment. In 1983 only 62.6% of women participated in the paid workforce. By 1983 this figure had risen to 73.6%. Meanwhile, male participation in the paid workforce during this period fell slightly, from 89.5% to 86.3%. As a consequence the ratio of women to men in the workforce rose from 62.34% in 1983 to 82.46% in 2013 (OECD, 2015b).

Women are overwhelmingly employed within the service sector, with 92% of women working in these industries. As a consequence women are the majority of employees in 'Public administration, education and health' and 'Other services'. There are also sectors dominated by men, particularly construction, where 9 out of 10 employees are male (ONS, 2013a).

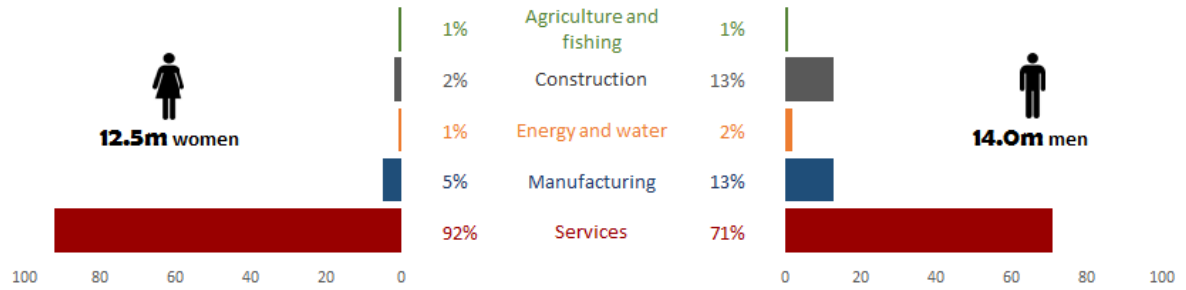


*Figure 48: Percentages of each gender working in industry sectors in 2011 (data from ONS 2013)*

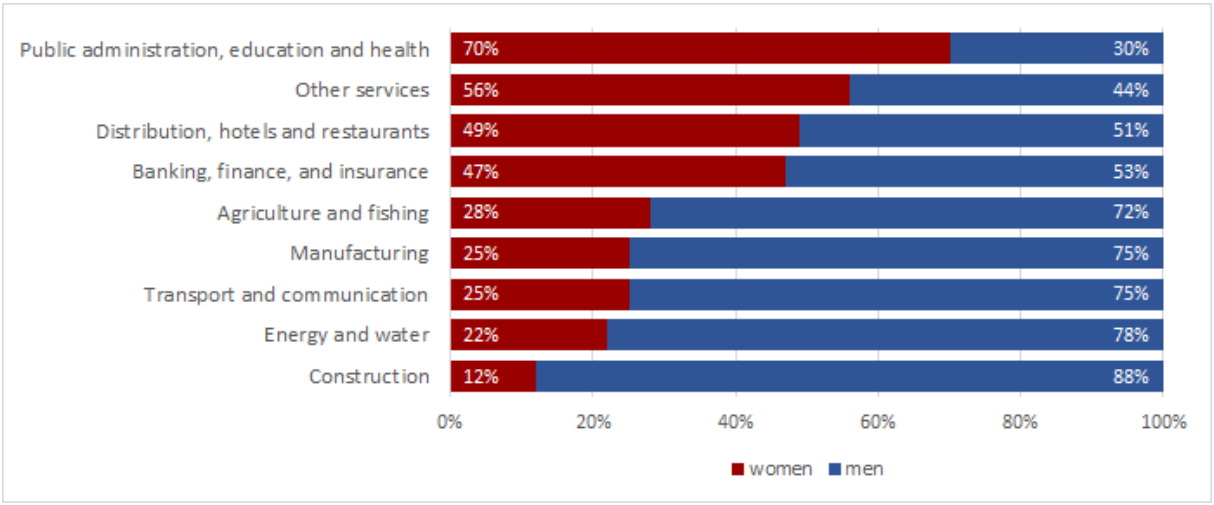


*Figure 49: Percentage of each gender within industry sectors in 2011 (data from ONS 2013)*

## 5.4. Working time

There has been a significant increase in the proportion of people working part-time. In 1983, only 18.42% of employees worked part-time. By 2013 this had risen to 24.50%. The majority of this increase was within the male workforce. In 1983, only 10.68% of men worked part-time; by 2013 this had risen to 26.19%. By contrast, over that period the percentage of women working part-time actually fell slightly, from 40.09% to 38.69%, although the number of women working part-time did increase substantially (from 3,993,000 to 5,240,000) due to the increased female participation in the work force (OECD, 2015b).

The percentage of people who are self-employed has also escalated significantly. At the start of 1980, only 7.5% of workers (1.8 million) were self-employed. By 2014, this figure had risen to 15% (4.6 million). Most of the self-employed do not have any employees and work in either the skilled trades or in service positions such as taxi drivers or security guards (ONS, 2014b). As such, whilst they are officially self-employed, the increase in the self-employed would appear to be more a reflection of changing employment contract arrangements, rather than an increase in people starting their own businesses.

## 5.5. Zero hour contracts

In recent years, particularly since the financial crisis of 2007/08, there has been a significant growth in employment contracts that require employees to guarantee that they will be available to work at limited notice (which generally means that additional employment or further education is either difficult or specifically prohibited), all without the guarantee of a minimum number of hours per week. These have been called 'zero-hour contracts' or 'no guaranteed hours contracts' (NGHCs). As of December 2014, 2.3% of workers, or 697,000 workers, identified themselves as being on such contracts. However, this is likely to be an underestimate due to the methodology used, particularly when a survey of businesses estimated the number of such contracts at around 6% of the workforce, or approximately 1.8 million workers (ONS, 2015a).

These contracts are largely found in the hospitality, education, healthcare and the social services. There are very small numbers in professional sectors such as finance and IT, although there are a significant number in the tertiary education sector. As might be expected, many of these contracts are held by employees who have been employed for less than twelve months (41%), but nearly 10% are held by employees who have been employed for more than ten years (ONS, 2015b).

## 5.6. Reduction in annual hours

The average annual hours worked by workers in the UK showed a downward trend from 1970 to 1990 but then plateaued at approximately 1775 hours per year. The downward trend resumed after 1997, but since 2010 the average hours worked has increased again. This is likely a response to the improvement in the economy, with the hours worked during the recession being abnormally low. This ongoing reduction in hours is likely to have been the result of a number of factors: the increasing incidence of part-time work, increases to the annual leave entitlements – progressively increased to a minimum of 4 weeks in 1997, to 4.8 weeks in 2007, and to 5.6 weeks in 2008 (DTI, 2007) – and a gradual reduction since 1997 in the average maximum hours worked each week by those in full time employment. The average maximum hours of part-time workers has actually gradually increased since 1996 by over 1.5 hours (OECD 2015).

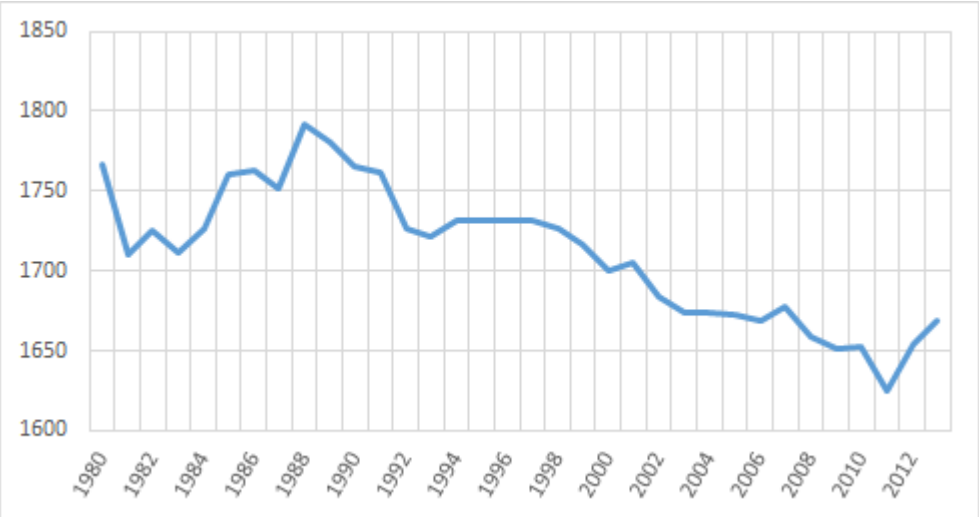


*Figure 50: Hours worked annually per worker in the UK (data from OECD 2015)*

## 5.7. Two tier labour market

As a consequence of these changes, it has been argued (Whittaker and Hurrell, 2014a) that the UK now has a two-tier workforce. Jobs at the low end of the labour market are predominantly in the service sectors, are low paid, have no security of tenure, and are often part-time, frequently without fixed hours. As a consequence, many of these workers want additional work hours, primarily to increase their earnings. Of the 25% of the workforce working part-time, 24% want more work. This amounts to 10% of total workforce, or just on 3.0 million people (ONS, 2014a).

In stark contrast, the top tier of employment offers satisfying jobs that are more satisfying, better paid and more secure. Moreover, rather than wanting more hours, many of these workers wish to work less, even if it is for a lower salary. There are over 3.0 million workers, again 10% of the workforce, who wish to work less hours. Within professional occupations, 13.9% of people would be willing to work less for less pay (ONS, 2014c).

## 5.8. Unemployment

The level of unemployment has fluctuated dramatically over the period from 1980 to 2014. In January 1980, the unemployment rate stood at 6.1%. This increased dramatically in the next few years, reaching a peak of 14.0% in September 1982, due to an economic downturn and the closure of many heavy industries. The unemployment rate remained above 10% until the end of 1987, when an economic boom steadily reduced unemployment down to 5.4% by mid-1990 (ONS, 1996). Another recession then drove the unemployment rate above 10% by September 1992, before consistent economic growth through the 1990s saw the rate steadily fall, reaching 6.8% by the end of 1997, and 4.7% in 2004. In the immediate aftermath of the Global Financial Crisis unemployment jumped from 5.6% in 2008 to 7.6% in 2009 and reached 8.1% in 2011. However, the labour market was much less heavily impacted than most European countries by the GFC and unemployment fell to 6.2% in 2014 (OECD, 2015b).

In addition, some researchers have argued that there is considerable hidden unemployment in the UK (BIS, 2011; Fothergill et al., 2012a). Firstly, many people have been placed into training schemes which are largely for positions in retail or hospitality that require minimal skills and that offer no real prospect of a long term career. Some argue that these schemes simply allow employers to claim training subsidies and to offer low wages for existing positions. Indeed one supermarket chain has admitted that none of the 25,000 apprenticeships it created in 2011 amounted to a new job (Jones, 2011). There are also at least 21,000 young people on unpaid internships in the UK (Sutton Trust, 2014).

Secondly, (Fothergill et al., 2012b) estimated that in 2011 there were approximately 900,000 'discouraged' unemployed who were capable of working but who had given up looking for work and were entitled to government benefits that did not require them to actively seek work.

Thirdly, there are many people on zero hour contracts who are actually receiving no work from their ostensible employer (or did not receive any work during the survey period) and yet are counted as employed. (Adams et al., 2015).

## 5.9. Employment protection

There is limited employment protection for both those in temporary and regular employment. The level of employment protection is the lowest in Europe, much lower than other Western European nations, and within the OECD is by Canada and the USA (OECD 2015)[75]. There are few government policies to assist firms in retaining workers through temporary downturns, and certainly nothing like the German initiatives such as working-time accounts[76], the strong social partnerships between firms and unions, and the government subsidies for reduced working hours that were implemented during the immediate aftermath of the GFC (Möller, 2010).

Government policies are also scarce to assist retrenched workers upgrade their skills or retrain in areas that are needed in the new economy. Such policies would make employment transition not only easier for displaced workers, but fairer, faster and more efficient. There is a need for workers to be actively involved in the transition, so that those affected by it are secure in the knowledge that their views and needs are being fully considered and incorporated in decision making. Such policies would also make it much easier to obtain community engagement with the process rather than opposition.

## 5.10. Youth – limited possibilities

The decline in manufacturing and the rise in the service industries offers little hope for many young people. If they are not academically suited to the new 'knowledge economy', or have a disrupted education, they face a future of unemployment or a sequence of insecure, low paid positions, mostly within the service sector. Even for those who do obtain tertiary qualifications, the employment market,

[75] The OECD indicator of employment protection is a synthetic measure of the procedures and costs involved in both hiring and dismissing individuals or groups of workers on fixed-term or temporary work contracts

[76] Rather than being paid for overtime hours, workers can accumulate these hours in their working-time account and be paid for them at a later date if they need additional leave or the company needs to reduce production

particularly since the GFC, is challenging. The (LGA, 2014) found that 40% of 16 to 24 year olds in 2013 were unable to find work matching their qualifications, with nearly 1.3 million unemployed, and another 1.2 million who are "underemployed or overqualified". In some regions, the proportion was close to 50%.

### 5.11. Flexible work

The statutory right to request flexible working time arrangements has been implemented in the UK ((Employment Act, 2002) and subsequent amendments). Initially implemented in 2002 to assist carers of young children, it has been progressively expanded to cater for further categories of employees in subsequent years. In June 2014 coverage was extended to all employees who have worked for longer than 26 weeks with their current employer.

Extensive use of these arrangements have been made by parents and those who look after someone with ill-health/disability. In 2009, 62% of such employees had taken up at least one flexible working time practice with their current employer. However, family friendly working practices are not always seen by employers as meeting their needs. In many professional sectors where there is a tradition of long working hours uptake has been poor. In particular, senior roles are rarely offered as part-time, job share or even with flexible working hours (Stewart and Rowlatt, 2009).

Many employees also report being afraid that a request for flexible working conditions may be seen by their employer as indicating that they are less than fully committed to their job and might therefore lead to their dismissal or prevent them from obtaining future promotions. Indeed, there have been many claims by employees of wrongful dismissal after submitting a request for flexible hours. In addition, many mothers working flexible hours claim that after several years that they have found their career on a 'Mummy track'– with lower pay and less opportunities. The results of a number of surveys suggest that flexibility works well for those with some negotiating power in their employment contract, which is not the low skilled (CEBR, 2014; Holt and Grainger, 2005).

## 6. Social outcomes

### 6.1. Well-being

The UK scores well on most well-being indicators. Both male and female life expectancy are high and have steadily increased over recent decades (OECD 2015). In addition, both men and women are staying healthy and free of disability for more of their lives. In 2009, 79% of adults stated that they were in good or very good health (Sweet & Beaumont 2012). The Human Development Indicator is high (United Nations Development Programme 2014), as is the Social Progress Indicator (Social Progress Imperative 2015). However, self-reported happiness is consistently just above average according to the European Social Survey (2012), the lowest of the seven studied countries, even lower than Greece and Spain which are going through much worse economic crises.

## 6.2. Income

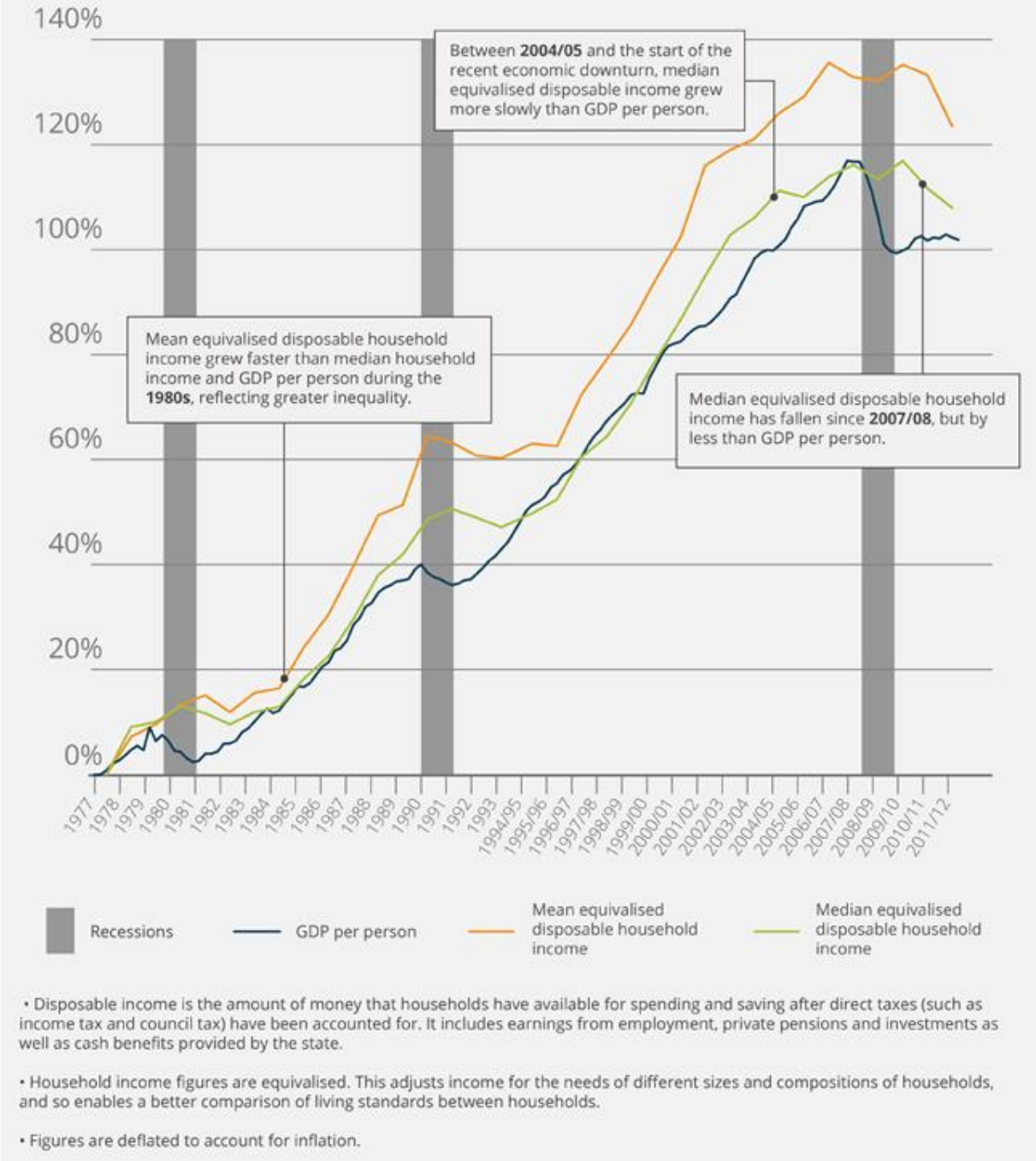


*Figure 51: Percentage change in UK household incomes and GDP since 1977 (ONS 2013b)*

There has been strong growth in both the mean and median wages in real terms since 1980. However, whereas the growth of the median wage has closely matched the growth in GDP per person, the growth rate of the mean wage has outstripped GDP growth. This indicates increased inequality with increased numbers of high income individuals skewing the income distribution (ONS, 2013b).

Indeed, the proportion of the population living in households surviving on less than 60% of the median household income has increased substantially over recent decades, from 13.7% in 1980 to 22.3% in 2009. Even worse, the proportion of the population living in households surviving on less than 40% of

the median household income has increased fourfold, from 2.4% of the population to 9.8%. Most of the growth in numbers occurred during the latter half the 1980s during a period that generally saw rapid economic growth (Belfield et al., 2014a; DWP, 2014a).

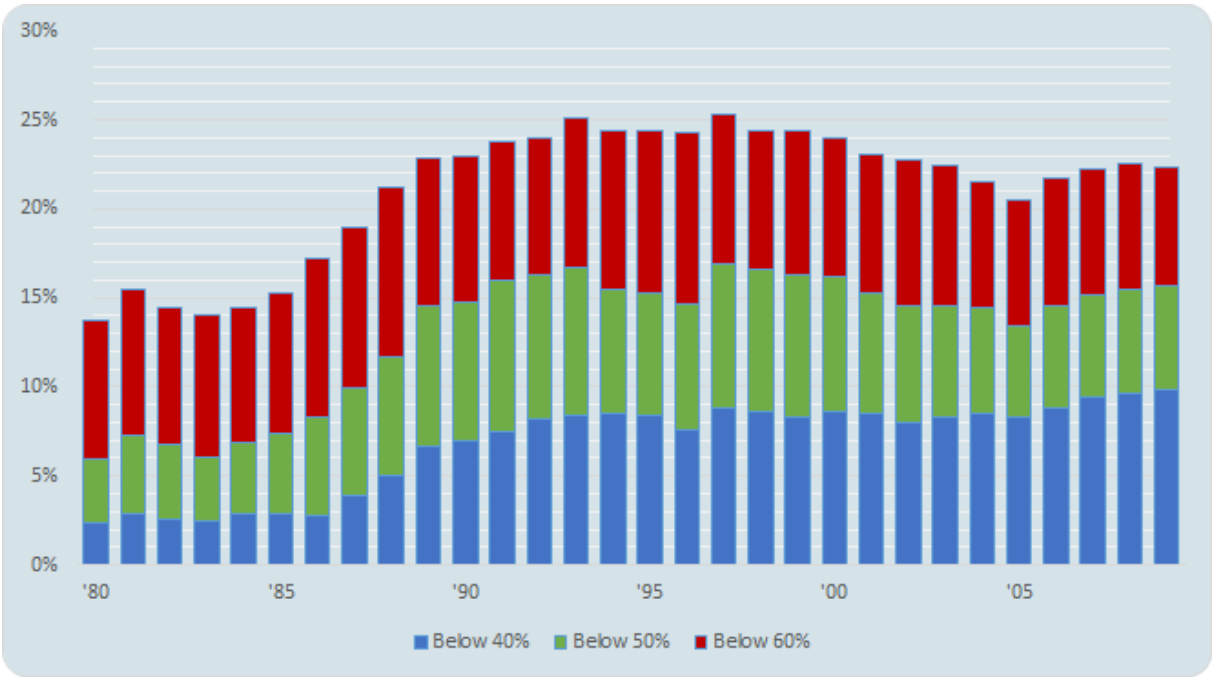


*Figure 52: The proportion of the population living on less than the stated percentages of the median household income (data from (Belfield et al., 2014a; DWP, 2014a)*

Note that the above calculations are made after adjusting for housing costs. Housing costs are effectively a 'given' and must be met, so this is considered by many a more accurate measurement of the extent of poverty. This can be seen in Figure 12. Housing prices have risen substantially, particularly since 1990, and this is clearly reflected in the much greater proportion of the population needing to survive on less than 60% of the median household income after deducting housing costs (Belfield et al., 2014b)(Belfield et al., 2014a; DWP, 2014a).

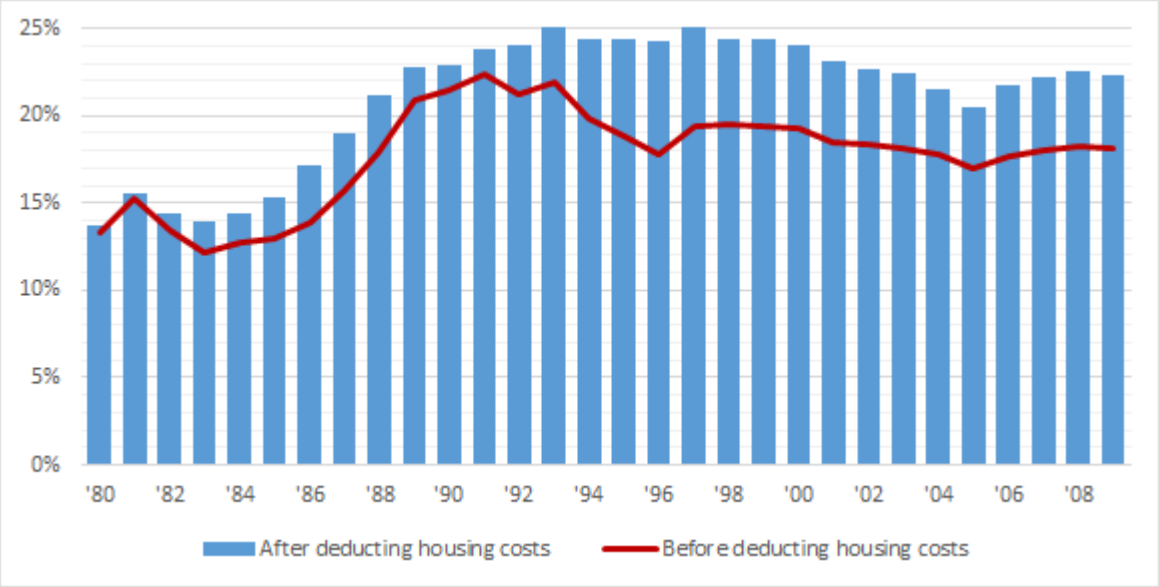


*Figure 53: The proportion of the population living on less than 60% of the median household income before and after housing costs (data (Belfield et al., 2014b; DWP, 2014b)*

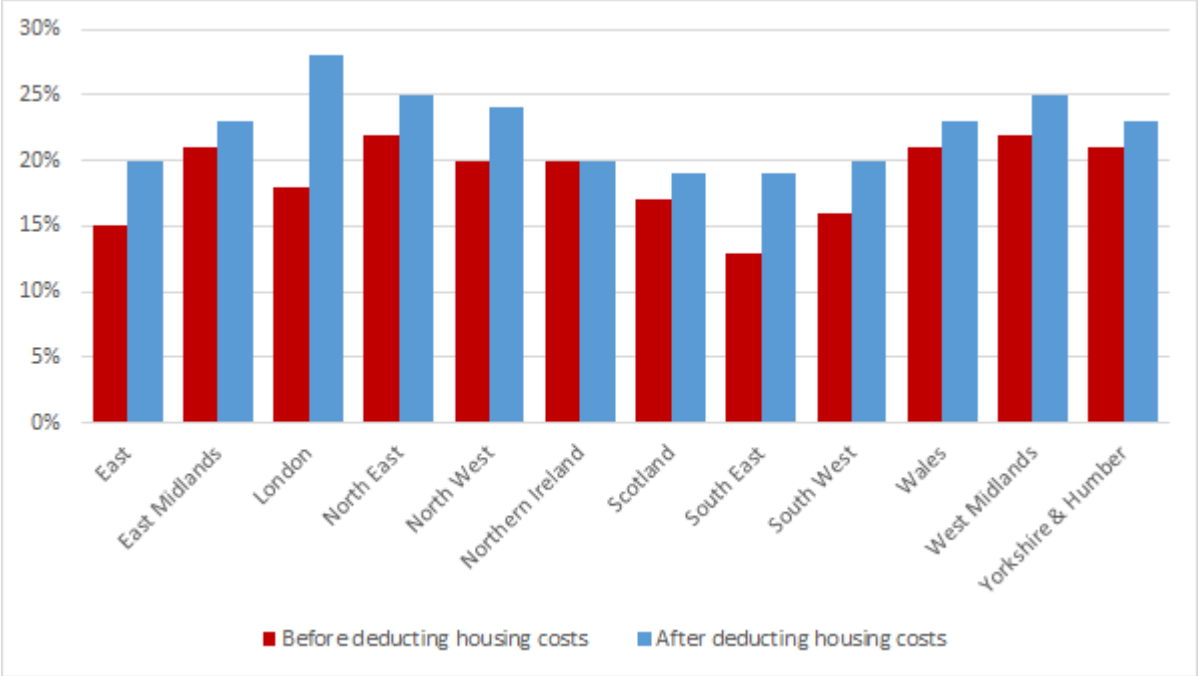


*Figure 54: The proportion of the population living on less than 60% of the median household income before and after housing costs in 2010 by region (data (Belfield et al., 2014a; DWP, 2014a)*

Housing costs vary quite substantially in the UK, so this also means that there is considerable variation in the regional impact of housing costs. For instance, in 2010 London had a lower than average percentage of families below the poverty line before deducting housing costs. However, because of the high housing costs in London, after deducting housing costs the percentage rises to 28%, the highest of any region in the UK (Belfield et al., 2014a; DWP, 2014a).

This increased inequality is reflective of many more employees falling below the relative low pay rate threshold (two-thirds of gross hourly median pay excluding overtime). Only 15% of employees in 1975 were paid below the threshold (despite their being no legislated minimum wage at that time), but this has been over 22% since 1996. These low hourly pay rates, coupled with irregular hours, has seen growing numbers of the working poor, who despite working full time, do not make sufficient income to achieve a minimum standard of living – the living wage. These workers amounted to 20% of employees in 2013, or around 4.9 million people (Whittaker and Hurrell, 2014b). Often the wages are so low that even when working full-time, it is only with the assistance of government benefits that they receive sufficient income to meet their basic needs (DWP, 2014b).

This large percentage of employees who, despite working full-time, still earn a low income compares poorly to other OECD countries. Using the OECD definition of low pay, two-thirds of gross median hourly earnings for full-time employees, 21 per cent of all employees in the UK were low paid in 2012. On this measure, the UK has one of the highest rates of low pay in Europe or the OECD. Workers in the UK are four times more likely to be low paid than employees in Belgium (OECD, 2015b).

Certain groups of workers are more likely to be low-paid than others. Women are particularly at risk of being low-paid, with 27% being low paid in 2013 (below 60% of median income), compared to 17% of men. Young workers (aged 20 years and under) are very likely to be low paid (81% in 2013). Older workers are also often low paid (in 2013 21% of employees aged between 61 and 65). It should be noted that whilst men are less likely to be low paid, the percentage of full-time male employees that are low paid has increased dramatically, from 6% in 1975 to 15% currently (Whittaker and Hurrell, 2014b).

Low pay is also more likely in certain industrial sectors – in 2013, 70% of employees (0.8 million) in the hotels and restaurants sector, 41% of workers (1.4 million) in the wholesale or retail trades, and 38% of workers (0.5 million) in administration and support services were low paid. Low pay is also concentrated in the private sector, with 85% of low paid workers (or 27% of all private sector workers) being low paid in 2013 (*ibid*).

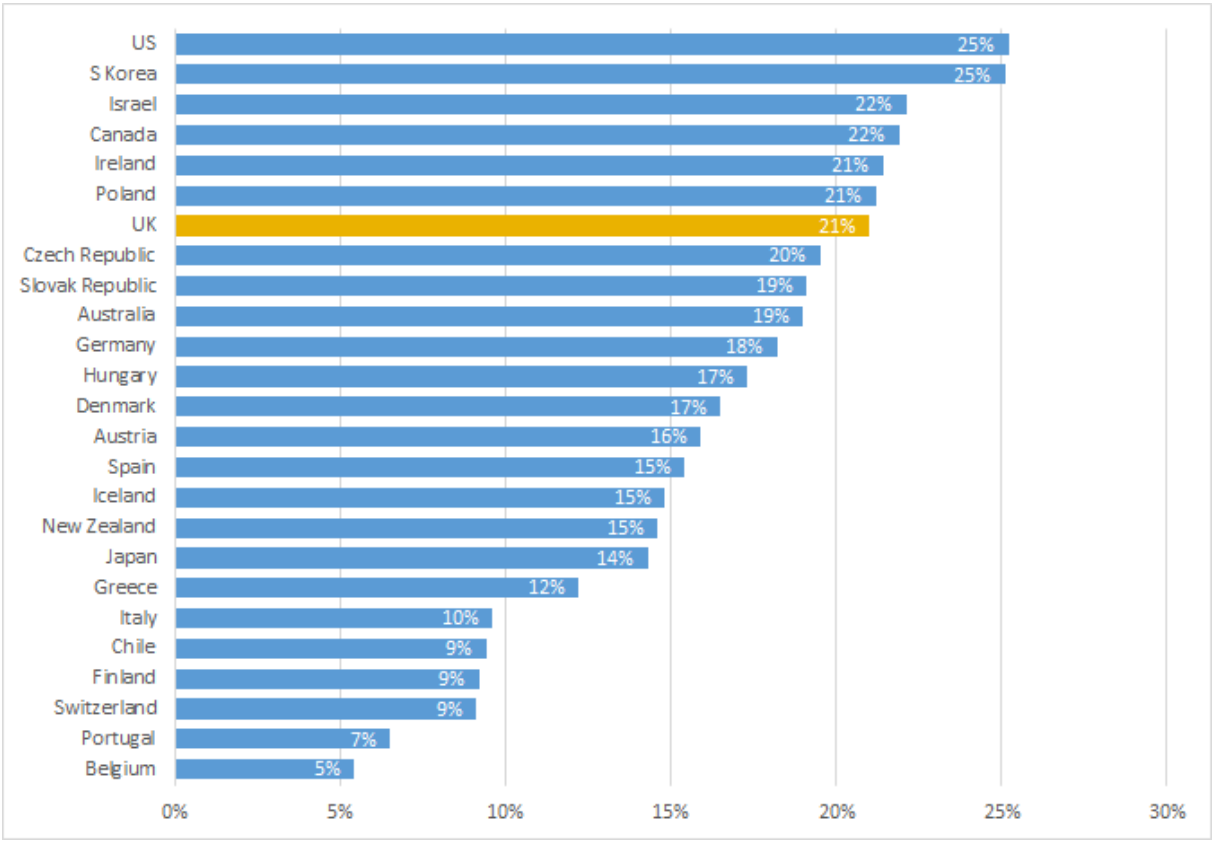


*Figure 55: Share of low paid full-time employees across the OECD (data from OECD 2015)*

Moreover, the changing shape of the labour market with the shrinking number of mid-level positions and preponderance of low-skilled service jobs, means that it is increasingly difficult to gain promotion to a more senior and better paid position (Bukodi et al., 2015). This has meant that a low paying job has ceased to be a first step on the career ladder. For many people it is their only step. Almost three quarters of those on low pay in 2002 were still on low pay in 2012 (Hurrell, 2013). Social mobility has become a forlorn dream for most people in Britain. A child from a poor family in Denmark has three times more chance of doing better financially that his/her parents than a child growing up in the UK (OECD, 2010).

## 6.3. Minimum wage

It can be seen from Figure 15, that over the period from 1986 to 2011 all workers received pay rises, and that there is a steady climb in the percentage wage increase with increasing income, with two exceptions. The top 10% of income earners have had extraordinary income increases, and the bottom few percent of wage earners have had a substantial increase in income (ONS, 2012).

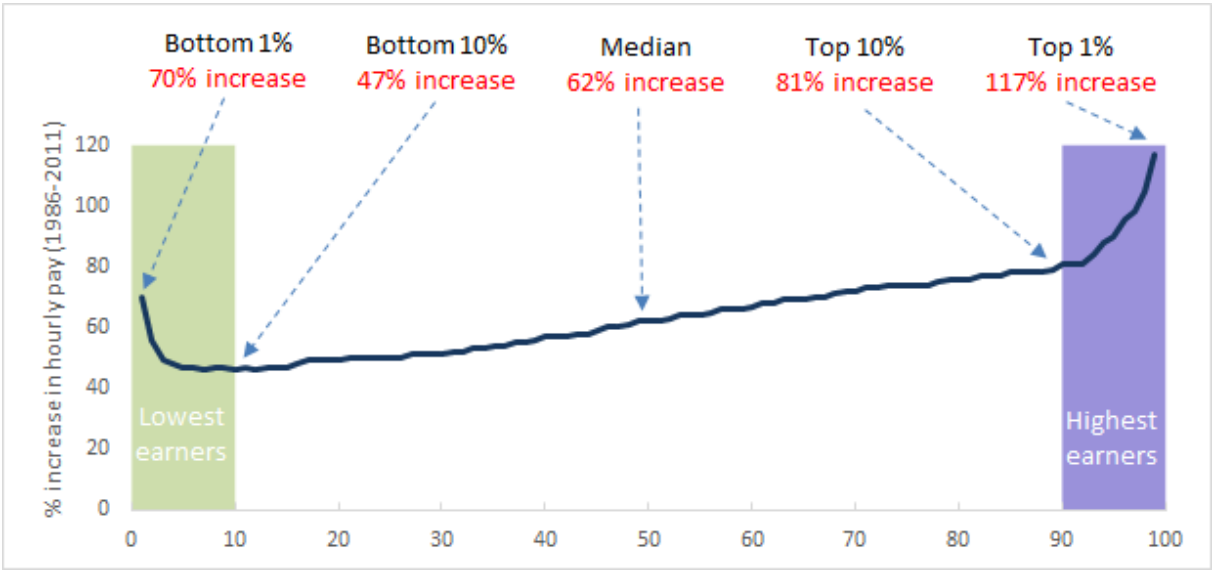


*Figure 56: Real hourly earnings growth by percentile, 1986-2011 (data from ONS 2012)*

However, as per Figure 16, if the period immediately prior to 1999 is examined, a very different trend is evident. Workers at the bottom of the scale received a fraction of the pay increases of even other low page workers (*ibid*). It is only with the introduction of the National Minimum Wage in 1999 that low paid workers received a substantial pay rise[77].

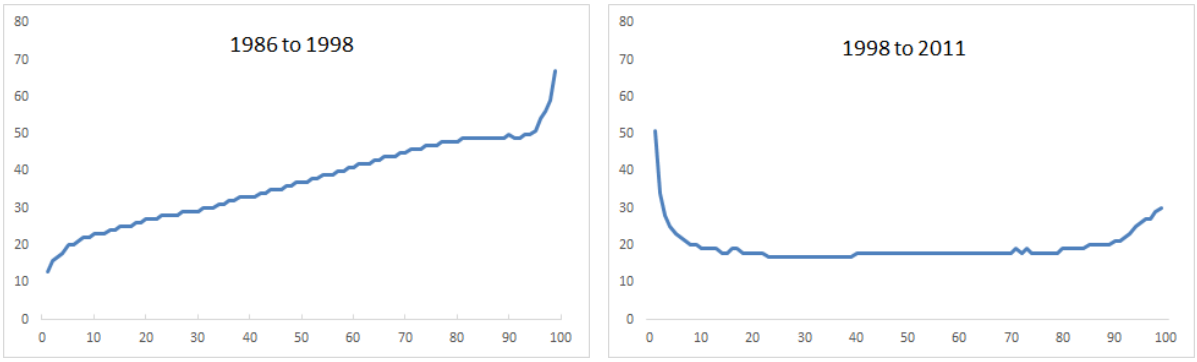


*Figure 57: % increase in hourly pay in real terms by percentile*

Nevertheless, even with the introduction of the minimum wage, the percentage of workers in relative poverty (defined as less than 60% of the median income) has increased significantly in recent decades, as noted in the section above. The introduction of the minimum wage has shifted many people out of extreme poverty, but as the main rate is just above 50% of the median income, it still hasn't moved them out of poverty (Whittaker and Hurrell, 2014a).

It should also be noted that there is no obvious change in the trend of unemployment as a result of the introduction of the minimum wage, despite the significant pay rise for workers at the low end of the pay

[77] The National Minimum Wage was introduced in 1999 and is the legal minimum that can be paid, although some employees are exempt such as apprentices. There is also a lower rate for employees aged 20 years and younger.

scale. Unemployment trended downwards from 1993 until 2004 and this pattern was not interrupted in 1998 (OECD 2015).

### 6.4. Unpaid work

In the UK, as in all societies, a great deal of time is spent each day performing unpaid productive activities within the household such as cooking, cleaning and caring. This work, whilst unpaid, is essential to meet the daily needs of individuals, families and society as a whole, and to maintain and (re)produce society (Biesecker and Hofmeister, 2010b). Normal economic analysis ignores this work, despite estimates placing its value as equal to approximately one third of GDP for most OECD countries (OECD, 2011). In the process of industrialisation, a large part of this household production is transferred to the market and purchased instead. In fact, it has been suggested that a considerable proportion of the growth in GDP in OECD countries in the past thirty years has been due to this commodification of household production as women have entered the workforce in greater numbers. Despite the importance of (re)productive work to society, by and large it is undervalued, and where it is paid, is poorly paid (*ibid*).

In the UK, whilst unpaid work is still mostly performed by women, there is now less than of a gender difference than in the past. In 1961 women did four times as much unpaid work as men, but by 2001 this had fallen to less than double (Gershuny, 2011). However, there is still a distinct gender difference in the type of work performed. Typical male tasks are construction, gardening and repair, although they also spend considerable time cooking and shopping. Women spend a greater proportion of their time cooking, cleaning and caring for children (OECD, 2011).

### 6.5. Consumption patterns

Despite the increasing participation of women in the workforce, paid work fell as a proportion of the average Briton's day, due to declining annual work hours, from 280 minutes in 1961 to 205 minutes in 2001 (Gershuny, 2011). However, the amount of time spent performing unpaid work actually increased over this time from 196 to 224 minutes. Gershuny (2011) argues that this is a reflection of changes in consumption patterns. Over the past fifty years, consumer expenditure shows a trend away from buying services (e.g. transport, cleaning services, and cinema tickets) and towards the purchase of consumer goods (e.g. large screen televisions, cars, and coffee machines) that are used within the house to provide those services *quasi-autonomously*.

## 7. Environmental outcomes

As noted previously, standard analyses of the environmental impact of the UK economy indicate that resource use has decreased not only in per capita terms, but in absolute terms since 1980. In addition, energy use has fallen not only in per capita terms, but in absolute terms, as have greenhouse gas emissions. These results have been achieved despite the population increasing by 13%. These analyses

indicate that the UK is one of the few countries in the world to achieve absolute decoupling, not just relative decoupling.

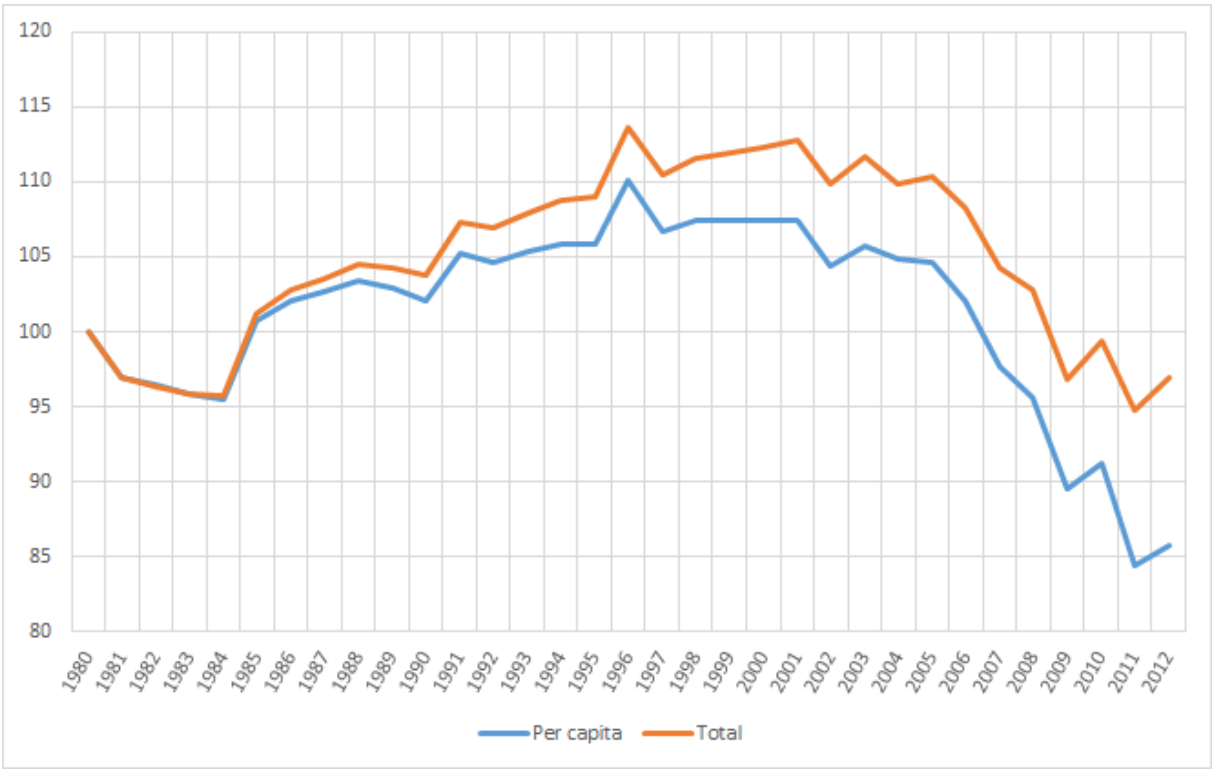


*Figure 58: Energy use in indexed form – 1980 equals a value of 100 (OECD 2015)*

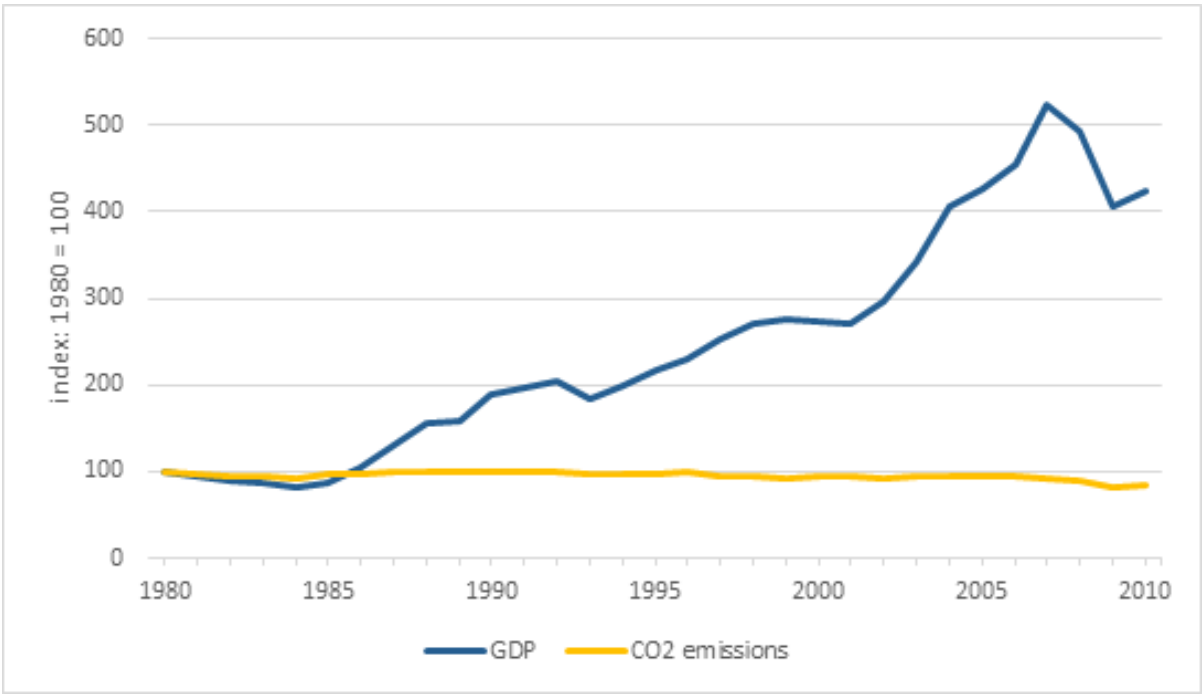


*Figure 59: UK CO2 emissions vs GDP (World Bank, 2015)*

Note: $CO_2$ emissions shown are those stemming from the burning of fossil fuels and the manufacture of cement. They include $CO_2$ produced during consumption of solid, liquid, and gas fuels and gas flaring

However, the standard measurement of resource usage, Domestic Material Consumption (DMC), does not include the full material cost of imported goods and services. For this reason, a number of researchers have been sceptical of these results (Bruckner et al., 2012b; Rawlings, 2013, 2011; Wiedmann et al., 2013b).

Rawlings (2011 & 2013) attempted to estimate the entire material consumption of the UK including wastes from extractive processes and the full material costs of imports. She created estimates of raw material consumption (RMC) for the UK economy for the period 2000 to 2008 by utilising estimates of UK imports and exports in raw material equivalents, and by separating fossil fuel consumption from all other materials. This preliminary experimental analysis indicated that DMC does indeed underestimate resource use in the UK economy. It showed non-construction material use rising at the same rate as GDP over this period. Even a reduction in construction material use over the period meant that resource use in total remained approximately level.

Bruckner et al. (2012) undertook a time series analysis of 53 national economics over the period 1995 to 2005. They utilized raw material equivalent estimations provided by the OECD, and a multi-directional multi-regional input–output model, which included all trade relations between the countries and regions in the model. Their analysis indicated that by not including the full resource impact of imported goods and services might have underestimated consumption in the UK economy in 2005 by 55%.

Wiedmann et al. (2013) undertook a very comprehensive time series analysis of 186 countries over the period 1990 to 2008 using the best available raw material equivalent estimations and a very sophisticated global multiregional input–output (MRIO) model. Their analysis also indicated that the use of DMC in material flow analysis seriously underestimates consumption in those nations that are net importers of goods and services (and overestimates consumption in those nations that are net exporters). Their analysis suggests for the UK that the difference is even larger than that calculated by Bruckner et al. (2012). Their calculations indicate that UK, far from achieving absolute decoupling, has actually increased resource use relative to GDP since 1990.

An examination of domestic resource extraction data, the sectoral changes in the UK economy, and trade figures suggests an explanation for the differing analyses. Since 1980 there has been a steady but dramatic decline in the mining of coal in the UK. With the lessening availability of coal, many of the coal-fired power stations have been replaced with gas turbines fuelled by increased extraction of North Sea natural gas. This has meant reduced material use, reduced waste material, and lower emissions as gas turbines emit much less greenhouse gases. In addition, the closure of much of the domestic manufacturing sector and the consumption of imported goods in their stead, has substituted foreign material and energy use for domestic. In addition, whilst there had been a plateauing of energy use during the 2000s at about 10% above 1980s levels, the fall in energy use did not occur until 2009, when the full impact of the GFC was being felt on the UK economy and GDP fell by 4% (OECD, 2015b).

As a consequence, it seems that both the usage of energy and materials, and the emission of wastes, from the production of goods and services within the UK has declined. However, this is largely due to the substantial decline in both manufacturing and mining activity in the UK, and the substantial rise of manufactured imports, rather than increased material efficiency of UK production. If all the worldwide resources needed to provide the goods and services consumed by UK consumers are considered, the UK economy has not decoupled. In addition, current macroeconomic conditions may be holding material and energy use below normal levels.

## 8. Impact of the financial crisis

Whilst the UK economy has not be affected as severely by the ongoing economic downturn as some European nations, the social impacts have been widespread and significant. Unemployment increased significantly from 5.3% to 8.1% (OECD, 2015b) and workers have experienced the longest and deepest decline in real earnings since as far back as the 1860s - wages have fallen on average by 8% since 2007 (Van Wanrooy et al., 2011). The majority (77%) of jobs that have been created since 2008 have been within low paid sectors, including retail, waitressing and residential care (*ibid*).There has been a large rise in the number of self-employed since 2008. This, however, has not been from more people entering self-employment each year, but by less people leaving self-employment for employment, despite average earnings from self-employment falling by 22% over the period (ONS, 2014b), clearly indicating a weakening of the job market.

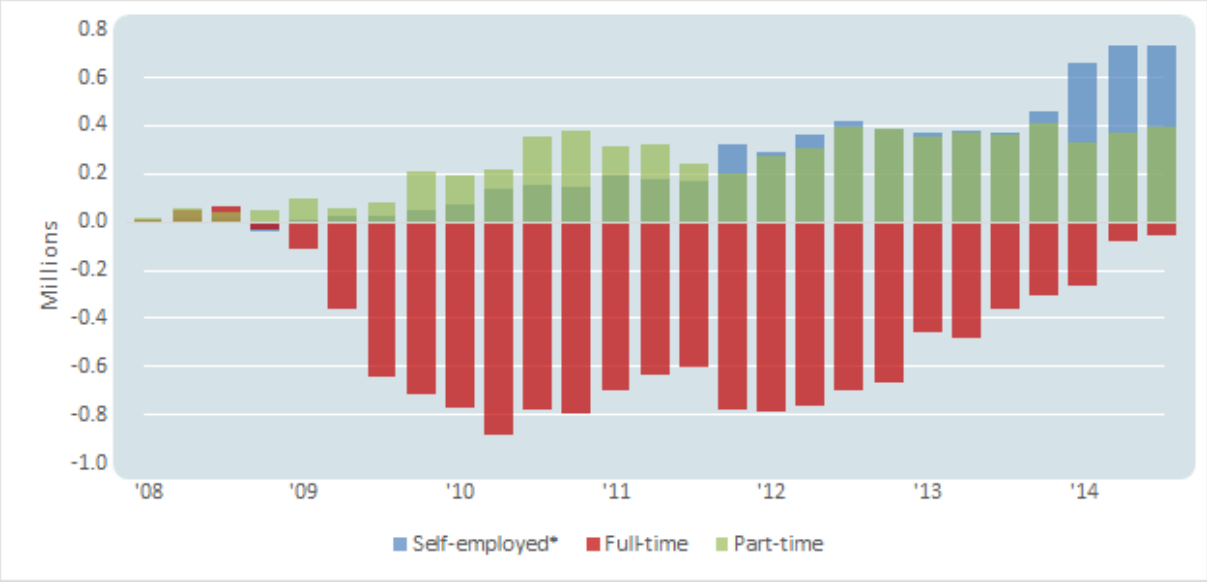


*Figure 60: Cumulative change in employment from Jan '08 (data from (ONS, 2015a)*

The increase in unemployment, and the reduced earnings of those still employed, coupled with substantial cuts to government benefits and services, have led to significant social impacts. Many more households are struggling financially. For example, the dominant provider of emergency food banks provided 25,899 supplies of 3 days emergency food in 2008. By 2014 that number had increased to 1,084,604 (Trussel Trust, 2015).

## 9. Discussion and conclusion

The nature of work has changed in the UK over the period since 1980. There has been a decline in long-term, full-time employment within the manufacturing and mining sectors, and a marked growth in insecure, low-skilled, poorly paid jobs within the service sectors and well-paid professional and managerial roles. Institutional protections for workers have been weakened, although a new base level of income has been established with the establishment of the National Minimum Wage.

The end result of the many changes that have occurred within the UK labour market has largely been to increase employment flexibility for businesses at the expense of workers, as identified by a number of researchers (Adams et al. 2015; de Ruyter & Burgess 2003; Quinlan 2012). This flexible labour market has increasingly seen the costs of flexibility being transferred to employees. For workers with low skills and/or who are starting their working careers, the vast majority of jobs available are low paid, have variable hours, and little or no security of employment. Moreover the restrictive employment conditions of many employment contracts and the weakening of institutions to protect low paid workers (Whittaker & Hurrell 2014) have exacerbated the impact of this trend leading to an insecure existence for many, with periods of poorly paid work punctuated with lengthy periods of unemployment. When or if they lose employment, the unemployment benefits on offer are wholly insufficient to meet their needs and assist them in gaining further employment. This pattern of 'precarious employment' makes saving for the future or attending further education difficult, leading to many becoming trapped in poverty, and helps to explain why 75% of the people earning low wages in 2002 were still earning minimum wages ten years later.

While low pay is not a new problem, the nature of the issue appears to have changed over time. The challenge looks increasingly to be structural, with new technologies and changing consumption patterns increasing demand for low paid service work at the same time as many middle-skilled roles have disappeared. It is a phenomenon which is evident across a number of countries, but Britain continues to stand out as a particularly poor performer (Whittaker & Hurrell 2014). It is apparent that policy decisions made by a succession of governments have not only failed to ease the situation for those at the lesser skilled end of the labour market, they have often made their position worse.

Based on an understanding of the world that sees the economy as embedded in society, which itself is embedded in the biophysical environment, **sustainable work** describes work that enables and supports a sustainable society. In turn, a sustainable society must fulfil three criteria: ensuring individual well-being by fulfilling the needs of each individual; ensuring equity among all members of society; and ensuring that biophysical boundaries are respected so that biocapacity is maintained for the future needs of both current and future generations. In these terms equity means not only an equitable share of income, wealth, resources and goods, but also equity in access to, and conduct of, paid and unpaid production. For example, everyone should have equal possibilities of obtaining work, of earning an income, or be able to satisfy his/her needs of subsistence in a satisfactory manner (Baratech et al. 2015).

From the case study it can be seen that many individuals in the UK struggle on a daily basis to meet their fundamental needs, and face an uncertain and difficult future, with no realistic prospects of improvement in their circumstances. Work is neither sustaining nor satisfying. Meanwhile, a small number of other individuals control a large amount of income and wealth. Inequality abounds, not only in income and wealth but in opportunity. Increasingly a person's path in life is dictated by their parents' financial and social circumstances. In an equitable society, it is important not only that all receive a fair opportunity to improve their lot in life, it should also not be the case that those who fail to do so are left in poverty. A truly sustainable society would provide everyone with an opportunity to have a decent standard of living, even if some do better than others. Further, the environmental burden of British society on the physical and biological resources of the planet is amongst the highest in the world, and far beyond the biophysical limits and carrying capacity of the planet.

Moreover, across all of these three dimensions, the UK has substantially regressed over the past three decades. The reduction in work time has not led to a reduction in environmental impacts. Increased productivity, outsourced production, and increased consumption have ensured that per capita resource consumption have increased over this period. The UK cannot be considered a model for other nations to consider in their transition to a truly sustainable society.

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# IX. ANNEX 1: Comparative Figures

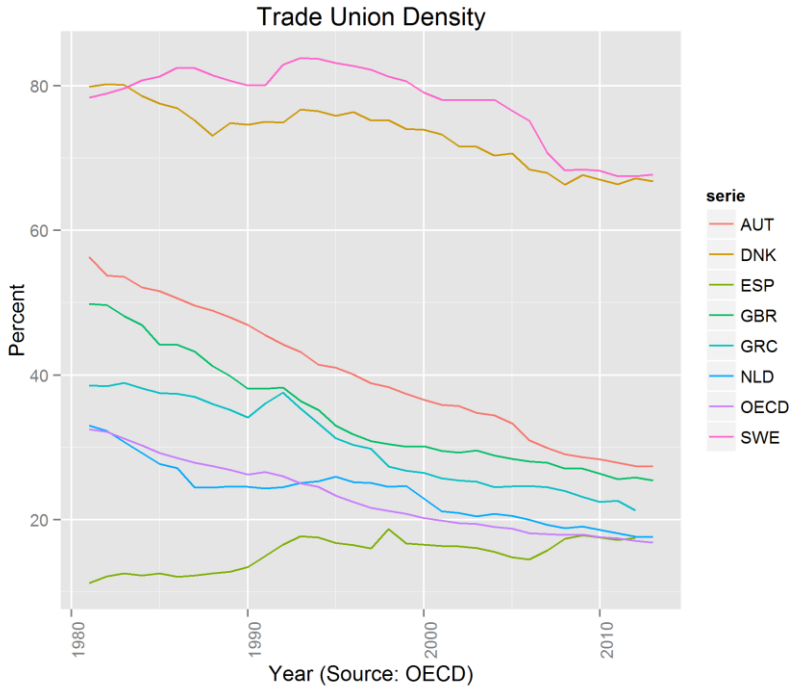


*Figure 61: Union Density (1980 - 2010)*

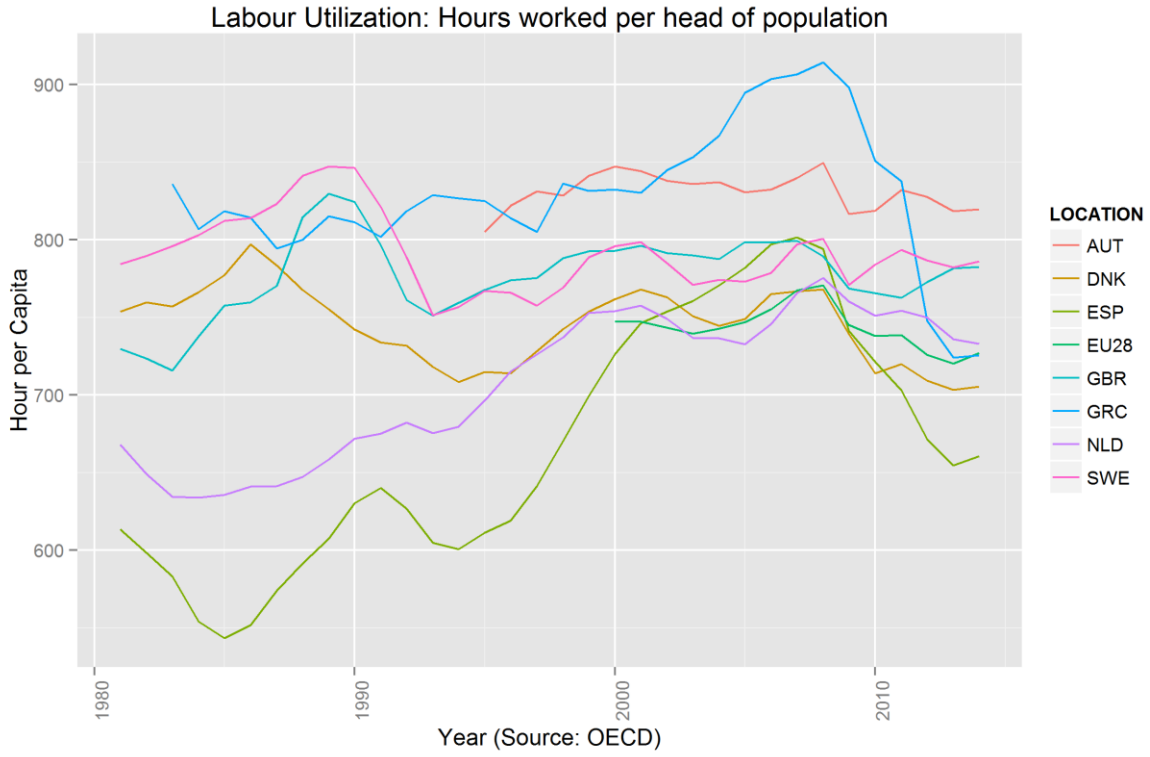

*Figure 62: Hours worked per capita*

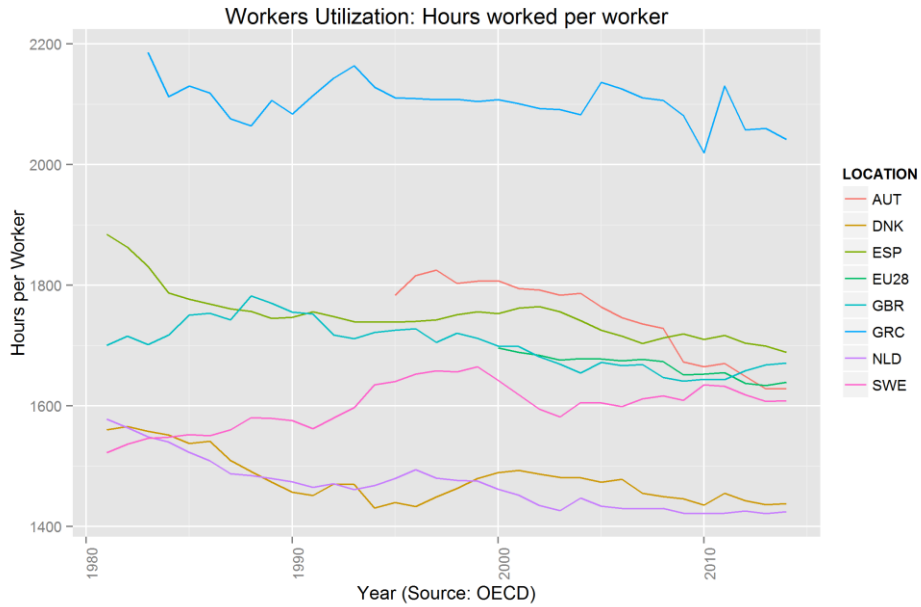


*Figure 63: Hours worked per worker*

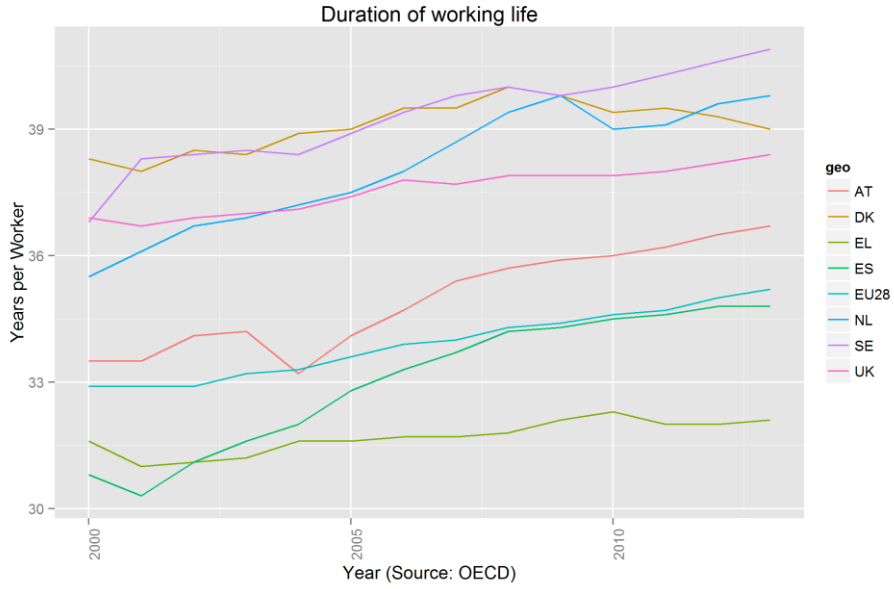


*Figure 64: Duration of Working Life*

# X. ANNEX 2: Climate Change Mitigation Tables

## 1. Annex to the Case Study on Denmark

*Table 3: List of climate change mitigation measures, based on information from the Danish Ministry of Climate, Energy and Building (2013)*

| Name of measure/initiative | Objective | GHG affected | Type of instrument | Status of implement-tation | Implementing entity/entities |
|---|---|---|---|---|---|
| **Taxes and Duties** | | | | | |
| TD-1a: Energy taxes | More efficient energy consumption, CO2 reduction | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-1b: Mineral-oil Tax Act | More efficient energy consumption, CO2 reduction | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-2: Gas Tax Act | More efficient energy consumption, CO2 reduction | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-3: Coal Tax Act | More efficient energy consumption, CO2 reduction | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-4: Electricity Tax | More efficient energy consumption, CO2 reduction | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-5: CO2 tax on energy products | More efficient energy consumption, CO2 reduction | CO2 | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-6: Green Owner Tax | More efficient energy consumption, CO2 reduction - through a fuel-efficiency-dependent annual tax on motor vehicles, electric cars are exempted | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-7: Registration Tax | More efficient energy consumption, CO2 reduction – through a fuel-efficiency-dependant registration tax on passenger cars and vans, electric cars are exempted | CO2, CH4 and N2O | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-8: Tax on HFCs, PFCs and SF6 – equivalent to the CO2 tax | Reduction of emissions of f-gases | HFCs, PFCs and SF6 | Economic/ fiscal | Implemented | Ministry of Taxation |
| TD-9(new): Tax on methane from natural gas fired power plants – equivalent to the CO2 tax | Methane reduction | CH4 | Economic/ fiscal | Implemented | Ministry of Taxation |
| **The energy sector** | | | | | |
| EN-1: EU-CO2-allowances for electricity and district heating production (including business) | CO2-reduction | CO2 | Economic (financial) | Implemented | State authorities, energy producers, energy-intensive enterprises |
| EN-2: Biomass Agreement | R&D, demonstration, CO2 reduction | CO2 | Economic (financial) | Implemented | State authorities, energy producers |
| EN-3: Price supplement and subsidies for environmentally friendly electricity | Energy efficiency, technology development, CO2 reduction | CO2 | Economic | Implemented | State authorities, energy producers |
| EN-4: Tenders for offshore wind turbines | Energy efficiency, technology development, CO2 reduction | CO2 | Regulatory (administrative)/ economic (financial) | Implemented | State authorities, electricity producers |
| EN-5: Scrapping scheme for old wind turbines | Other environmental improvements | CO2 | Economic, financial | Implemented | Local/ regional authorities, interest organisations, energy producers, state authorities |

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| EN-6: Energy research | R&D | CO2 | R&D | Implemented but regularly adjusted | State authorities, research institutions |
| **Business sector** | | | | | |
| BU-1: Agreements on energy efficiency with business | Energy efficiency at energy intensive enterprises | CO2 | Voluntary agreements, economic (financial) | Implemented As of January 1, 2010, the scheme does not cover CO2 any longer. | State authorities, business enterprises |
| BU-2: Savings activities by elec. grid, gas and district heating companies (including for the household and public sectors) | Energy savings and efficiency, environmental effects including CO2 reduction | CO2 | Information (advice, education, campaigns) | Implemented | State authorities, supply companies, enterprises |
| BU-6: Circular on energy efficiency in state institutions | Energy savings, technology promotion, environmental effects incl. CO2reduction | CO2 | Regulation (admin.) | Implemented | State authorities |
| BU-7: Electricity Saving Trust – campaigns and A club to promote efficient appliances (incl. elec. heating conversion and efficient appliances in households) | Energy savings, technology promotion, environmental effects incl. CO2 reduction | CO2 | Information (market influence), economic (subsidies – primarily to elec. heating conversion) | Implemented | Institutions, producers |
| BU-8(new): Renewables for the industry | Promote investment in energy efficient use of renewable energy in the production processes of enterprises | CO2 | Economic (subsidies) | Implemented (August 2013) | State authorities, enterprises |
| **The transport sector** | | | | | |
| TR-1a: EU demands on vehicle manufactures to deliver fuel efficient cars and vans | More efficient energy consumption, CO2 reduction | CO2 | Regulatory | Implemented | European Commission |
| TR-1b: Campaign on fuel consumption of new cars | More efficient energy consumption, CO2 reduction | CO2 | Information | Implemented | Road Safety and Transport Agency |
| TR-2: Campaign on energy-efficient driving | More efficient energy consumption CO2 reduction | CO2 | Information | Implemented - included in driving courses | Ministry of Justice |
| TR-3: Initiative on enforcing speed limits | More efficient energy consumption, CO2 reduction | CO2 | Information, economic | Implemented | Ministry of Justice |
| TR-4: Establishment of intermodal installations | More efficient energy consumption, CO2 reduction | CO2 | Economic (financial) | Ongoing implementation | Ministry of Transport, regions, municipalities, HUR, DSB |
| TR-5: Promotion of environmentally friendly goods transport | More efficient energy consumption, CO2 reduction | CO2 | Economic (financial), information | Implemented | Danish Environmental Protection Agency, haulage contractors |
| TR-6: Reduced travel times for public transport | More efficient energy consumption, CO2 reduction | CO2 | Regulatory (Administrative) | Ongoing implementation | Ministry of Transport, regions, DSB |
| TR-7: Spatial planning | Limitation of transport, CO2 reduction | CO2 | Regulatory (Administrative) | Ongoing implementation | Regions, municipalities |
| TR-8(new): EU requirements regarding biofuels | CO2 reduction | CO2 | Regulatory | Implemented | Danish Energy Agency |
| **Household sector** | | | | | |
| HO-1: Energy labelling of small and | Savings in energy water and environmental | CO2 | Information | Implemented | Danish Energy Agency, |

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| large buildings (incl. public sector and business) | impacts including CO2 reductions | | | | consumers and others |
| HO-2: Energy labelling of electric appliances | Energy savings and more efficiency, promote technology env. impacts including CO2 reductions | CO2 | Information | Implemented | Danish Energy Agency, consumers and others |
| HO-3 (new): Substitution of individual oil-based furnaces | The promotion of modern, low-emitting heating solutions, including systems based on renewable energy such as heat pumps and solar heating | CO2 | 2010-2012: Economic (subsidies) From 2013: Information | Implemented | Danish Energy Agency and consumers |
| **Industrial Processes** | | | | | |
| IP-1 (BU-4): Regulation of use of HFCs, PFCs and SF6 | Reduction of emissions of industrial gases | HFCs, PFCs and SF6 | Regulation (admin.) | Implemented | State authorities, enterprises |
| **Agriculture** | | | | | |
| AG-1 (AF-1): Action Plan for the Aquatic Environment I+II and Action Plan for Sustainable Agriculture | Reduction of N run-off from agriculture by 100,000 t N/yr1 | N2O | Regulation (order), economic, information | Implemented (1987, 1991, 1998) | State and county authorities |
| AG-2 (AF-2): Action Plan for the Aquatic Environment III | Further reduction of N and P losses from agriculture | N2O | Regulation (order), economic | Implemented (2004) | State and county authorities |
| AG-4a/4b/4c/4d/4e (AF-4a/4b/4c/4d/4e): Ammonia action plan and the new statutory order on manure | Reduced emissions of ammonia | N2O | Regulation (order) | Implemented (2001) | State and county authorities |
| AG-4f (AF-4f): Environmental Approval Act for Livestock Holdings | Reduction of N and P losses and reduction of the impact on nature. Increased use of technology | N2O | Regulation in connection to permits made when livestock productions expands. | Implemented (2007/2011) | State and county authorities |
| AG-6 (AF-6): Biogas plant | Reduced CO2 and methane emissions and better exploitation of manure | CO2, N2O and CH4 | Economic (subsidies) | Implemented (1987) Reinforced (2012) | State |
| AG-9(new): Agreement on Green Growth | Reduced use of N due to a re-structuring of nitrogen regulation and reduction of N and P losses from agriculture | N2O | Regulation (order), economic | Ongoing implementation | State and country authorities |
| **LULUCF** | | | | | |
| LU-1 (AF-3): Ban on burning straw on fields | Less air pollution | N2O | Regulation (order) | Implemented (1989) | State and county authorities |
| LU-2 (AF-5): Planting of windbreaks | Binding of CO2 | CO2 | Economic (subsidies) | Implemented (1960s) | State |
| LU-3 (AF-7): Subsidies scheme for private afforestation on agricultural land | Forest area increased by 450,000- 500,000 ha in 100 years.1 | CO2 | Economic | Implemented (through the Forestry Act) | Danish Forest and Nature Agency |
| LU-4 (AF-8): Public afforestation (state, counties and municipalities) | Forest area increased by 450,000- 500,000 ha in 100 years.1 | CO2 | State: regulation/ counties and municip.: voluntary | Implemented | Danish Forest and Nature Agency, counties and municipalities |
| **Waste sector** | | | | | |
| WA-1: Obligation to send combustible waste to incineration (in practice a ban on landfilling). | Reduce the landfilling of waste; higher recycling rates; energy production and CH4 emission reduction | CH4 | Regulation (admin.) | Implemented | State and local authorities |

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| WA-2: The waste tax | Greater recycling, least possible landfilling | CH4 | Economic | Implemented | State authorities /waste plants |
| WA-3: Weight-and-volume-based packaging taxes | Waste reduction | CH4, CO2 | Economic | Implemented | State authorities |
| WA-4: Subsidy programme – Enterprise Scheme (special scheme for businesses) | Reduce environmental impacts from waste | CO2 and CH4 | Financial | Implemented | State authorities |
| WA-5: Increased recycling of waste plastic packaging | 22,5%recycling of waste plastic packaging in 2008 onwards | CO2 | Implemented | State and local authorities/ enterprises and the public | WA-5: Increased recycling of waste plastic packaging |
| WA-6: Implementation of the EU landfill directive | More focus on gas in environmental approvals, less waste to landfills | CH4 | Implemented | State and local authorities | WA-6: Implementation of the EU landfill directive |
| TD-1a: Energy taxes (also on waste incineration) | To increase cost-effectiveness of waste incineration and improve the structure of tax on waste incineration | CO2 | Economic | Implemented | State authorities/ waste plants |

## 2. Annex to the Case Study on Sweden

*Table 4: Decoupling in Sweden 1993-2012 (Source: Ernest Aigner)*

| Indicator | Unit | period | absolute change | relative change | decoupling GDP/CO2 | data source |
|---|---|---|---|---|---|---|
| GHG emissions in CO2-aequivalents from the Swedish territory, Kyoto Protocol accounting, excl. LULUCF | total | 1993-2012 | -23692.00 | -62.37% | Absolute | Statistics Sweden |
| | per capita | 1993-2012 | 2.86 | -65.53% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG emissions in CO2-aequivalents from the Swedish territory, Kyoto Protocol accounting, incl. LULUCF | total | 1993-2012 | -14381.00 | -20.06% | Absolute | Statistics Sweden |
| | per capita | 1993-2012 | -2.20 | -26.78% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG emissions in CO2-aequivalents from Swedish economic activities (includes bunkering of Swedish ships, planes and military aborad), excl. LULUCF | 1000 t | 1993-2012 | -37123.00 | -60.13% | Absolute | Statistics Sweden |
| | t per capita | 1993-2012 | -4.97 | -39.06% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG emissions in CO2-aequivalents from Swedish economic activities (includes bunkering of Swedish ships, planes and military aborad), incl. LULUCF | total | 1993-2012 | -46434.00 | -20.06% | Absolute | Statistics Sweden |
| | per capita | 1993-2012 | -5.62 | -63.48% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG footprint emissions in CO2-aequivalents from Swedish domestic consumption (incl. CO embodied in products) - total | total | 1993-2012 | 6350.00 | 6.34% | Relative | Statistics Sweden |

| | | | | | | |
|---|---|---|---|---|---|---|
| | per capita | 1993-2012 | -0.30 | -2.60% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG footprint emissions in CO2-aequivalents from Swedish domestic consumption (incl. CO embodied in products) - domestic goods | total | 1993-2012 | -16320.00 | -30.15% | Absolute | Statistics Sweden |
| | per capita | 1993-2012 | -2.24 | -36.03% | Absolute | Own Calculation (Statistics Sweden + OECD) |
| GHG footprint emissions in CO2-aequivalents from Swedish domestic consumption (incl. CO embodied in products) - imported goods | total | 1993-2012 | 22670.00 | 49.28% | Relative | Statistics Sweden |
| | per capita | 1993-2012 | 1.94 | 36.72% | Relative | Own Calculation (Statistics Sweden + OECD) |
| GDP | total | 1993-2012 | 132342.6 | 62.73% | | OECD |
| | per capita | 1993-2012 | 11866.78 | 49.04% | | OECD |

*Table 5: Climate Change policies in Sweden* (UNFCCC, 2014)

| Name of policy/ measure | Primary objective | Prim. aff. GHG | Type of instrument | Status of instrument | Implementing agency |
|---|---|---|---|---|---|
| Cross-sectoral instruments | | | | | |
| Delegation for Sustainable Cities | Transition to ecological sustainability at local level | All | Economic | Concluded (2009– 12) | Swedish National Board of Housing, Building and Planning |
| Environmental Code | Ecologically sustainable development | All | Legislation | Ongoing (1999–) | Swedish Environmental Protection Agency |
| New Planning and Building Act | Promote sustainable development of society | All | Legislation | Ongoing (2011–) | Swedish National Board of Housing, Building and Planning |
| Climate and energy advice | Greater awareness of possible measures | All | Information | Ongoing (1998–) | Swedish Energy Agency |
| Research and development | Development of technology with very low climate impact | All | Economic | Ongoing (1990–) | Swedish Energy Agency (mainly) |
| Production of electricity and district heating | | | | | |
| Energy tax | Fiscal, and to improve efficiency of energy use | Carbon dioxide | Economic | Ongoing (1957–) | Swedish Tax Agency |
| Carbon dioxide tax | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (1991–) | Swedish Tax Agency |
| Electricity certificates system | Increase supply of electricity from renewable energy sources | Carbon dioxide | Economic | Ongoing (2003–) | Swedish Energy Agency and Svenska Kraftnät (Swedish National Grid) |
| EU Emissions Trading System (EU ETS) | Reduce use of fossil fuels in trading sector | Carbon dioxide | Economic | Ongoing (2005–) | Swedish Environmental Protection Agency and Swedish Energy Agency |
| Special support for wind power | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (2007–) | Swedish Energy Agency |
| Guarantees of Origin of Electricity Act | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (2010–) | Swedish Energy Agency and Svenska Kraftnät |
| Central government support for installation of solar cells | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (2009–) | Swedish Energy Agency |
| Residential and commercial/institutional sector | | | | | |
| Energy tax | Fiscal, and to improve efficiency of energy use | Carbon dioxide | Economic | Ongoing (1957–) | Swedish Tax Agency |
| Carbon dioxide tax | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (1991–) | Swedish Tax Agency |
| Building regulations – energy efficiency standards | More efficient energy use | Carbon dioxide | Legislation | Ongoing | Swedish National Board of Housing, Building and Planning |

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|---|---|---|---|---|---|
| Energy performance certificates | More efficient energy use | Carbon dioxide | Legislation and information | Ongoing (2009–) | Swedish National Board of Housing, Building and Planning |
| Ecodesign Act | More efficient energy use | Carbon dioxide | Legislation | Ongoing (2010–) | Swedish Energy Agency |
| Mandatory energy labelling | More efficient energy use | Carbon dioxide | Information | Ongoing (1995–) | Swedish Energy Agency |
| Technology procurement | More efficient energy use and increased use of renewable energy | Carbon dioxide | Economic | Ongoing | Swedish Energy Agency |
| Support for solar heating | Increased use of renewable energy | Carbon dioxide | Economic | Concluded (2009–11) | Swedish National Board of Housing, Building and Planning |
| Industrial emissions from fuel combustion and processes (incl. emissions of fluorinated greenhouse gases) | | | | | |
| Energy tax | Fiscal, and to improve efficiency of energy use | Carbon dioxide | Economic | Ongoing (1957–) | Swedish Tax Agency |
| Carbon dioxide tax | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (1991–) | Swedish Tax Agency |
| Electricity certificates system | Increase supply of electricity from renewable energy sources | Carbon dioxide | Economic | Ongoing (2003–) | Swedish Energy Agency and Svenska Kraftnät |
| EU Emissions Trading System (EU ETS) | Reduce use of fossil fuels in trading sector | Carbon dioxide | Economic | Ongoing (2005–) | Swedish Environmental Protection Agency and Swedish Energy Agency |
| Reduced carbon dioxide tax relief for industry outside EU ETS, and energy tax on fossil fuels for heating in industry | Reduce use of fossil fuels | Carbon dioxide | Economic | Ongoing (2011–) | Swedish Tax Agency |
| Programme for Energy Efficiency in Energy-Intensive Industry (PFE) | Reduce use of electricity | Carbon dioxide | Voluntary/ negotiated agreement | Concluded (2005– 12) | Swedish Energy Agency |
| Environmental Code | Ecologically sustainable development | ALL | Legislation | Ongoing (1999–) | Swedish Environmental Protection Agency |
| F-gas Regulation and Mobile Air Conditioning Directive | | HFCs | Legislation | Ongoing | |
| Legislation | | | | | |
| Emission standards for new vehicles | Reduce carbon dioxide emissions from light-duty vehicles | Carbon dioxide | Legislation | Ongoing (2015 and 2017) | Swedish Transport Agency |
| Support for research and demonstration | Develop technology for sustainable growth and reduced fossil fuel dependence | Carbon dioxide | Economic | Ongoing | VINNOVA and Swedish Energy Agency (mainly) |
| Vehicle fuel taxes (energy and carbon dioxide taxes) | Internalise external effects of road transport, incl. greenhouse gas emissions | Carbon dioxide | Economic | Ongoing | Swedish Tax Agency |
| Increased energy tax on diesel | Internalise external effects of road transport, incl. greenhouse gas emissions | Carbon dioxide | Economic | Ongoing (2011 and 2013) | Swedish Tax Agency |
| Targeted instruments to promote introduction of renewable transport fuels | Increase use of renewable transport fuels | Carbon dioxide | Economic | Ongoing | Swedish Tax Agency (mainly) |
| Waste | | | | | |
| Rules on municipal waste planning and on producer responsibility for certain products, landfill tax (2000), bans on landfill of separated combustible | Increase recycling and reduce total quantities of waste | Methane | Legislation and fiscal instruments | Ongoing | Swedish Environmental Protection Agency |

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| waste (2002) and of organic waste (2005) | | | | | |
| Agriculture | | | | | |
| Targeted agri-environment payments under Rural Development Programme | Reduced Climate Impact, A Varied Agricultural Landscape and Zero Eutrophication | Nitrous oxide and methane | Economic | Ongoing (2007–13) | Swedish Board of Agriculture |
| Land use, land-use change and forestry (LULUCF) | | | | | |
| Provisions of Forestry Act on forest management etc. | Achieve environmental and production objectives for forests | Carbon dioxide | Legislation | Ongoing | Swedish Forest Agency |
| Provisions of Environmental Code on land drainage | Biodiversity | Carbon dioxide and methane | Legislation | Ongoing | County administrative boards |
| Provisions on nature reserves and habitat protection areas in Environmental Code, and nature conservation agreements | Biodiversity | Carbon dioxide | Legislation | Ongoing | Swedish Environmental Protection Agency and county administrative boards |

# Project Information

## Welfare, Wealth and Work for Europe

## A European research consortium is working on the analytical foundations for a socio-ecological transition


### Abstract

Europe needs change. The financial crisis has exposed long-neglected deficiencies in the present growth path, most visibly in the areas of unemployment and public debt. At the same time, Europe has to cope with new challenges, ranging from globalisation and demographic shifts to new technologies and ecological challenges. Under the title of Welfare, Wealth and Work for Europe – WWWforEurope – a European research consortium is laying the analytical foundation for a new development strategy that will enable a socio-ecological transition to high levels of employment, social inclusion, gender equity and environmental sustainability. The four-year research project within the 7th Framework Programme funded by the European Commission was launched in April 2012. The consortium brings together researchers from 34 scientific institutions in 12 European countries and is coordinated by the Austrian Institute of Economic Research (WIFO). The project coordinator is Karl Aiginger, director of WIFO.

For details on WWWforEurope see: www.foreurope.eu


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WWWFOR EUROPE
WELFAREWEALTHWORK

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| | | | |
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