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**BACK FROM THE FUTURE:
DEFINING SUSTAINABLE EMPLOYMENT THROUGH BACKCASTING**

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PhD thesis

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“Against utopianism and political voluntarism, necessity reminds us that the future will be fashioned by real human beings within the objective limits of historical possibility. Against mechanistic determinism, freedom reminds us of the uniquely human capacity to envision, act, and enlarge the sphere of the possible.”

Paul Raskin

Chapter 1: INTRODUCTION

1.1. A PERSONAL ACCOUNT

The choice of topic for this research is highly personal. I started working with social development around the millennium and obtained a position where I could gain quite an insight into the macro levels of social and employment policy. This happened at the time when Hungary was all about becoming a respectable member of the European Union provided that it adapts to its values, adopts its rules, and joins other member states on their development course and converges to their levels of development. The country implemented development programmes that were leading towards the 'right direction': a drop in the unemployment rates; an increase in the level of trainings and education; the social integration of the Roma minority; equal opportunities for women; and a fully functional and respected civil sector. We all believed that we were on the right path towards real social change; all we had to do is keep on spending on education, job creation, and social integration programmes and wait. Social change takes decades; we cannot expect all our efforts to bear fruit right away.

Ten years later I had my doubts whether it would bear fruit at all. Besides the fact that the lack of trust on all social levels led to the massive over-complication of social development programmes that impeded the system to focus on the real underlying social goals, the policy tools themselves also seemed inefficient. Social development programmes may have changed a few personal lives but on a social level they seemed more like damage control rather than development. Significant funds went towards involving unemployed people in complex projects where they received training, sheltered employment circumstances and psycho-social support to help them 'gain access to primary labour markets'. The problem is that there are whole towns and villages where there is hardly any primary labour-market at all and there will be none in the foreseeable future under the current economic paradigms. There are whole social groups that will always be marginalised on the labour-market as long as productivity and efficiency are the magic words in the business world. The mismatch between the Roma minority and the so-called labour market has become such a Gordian knot that policy-makers simply stopped dealing with it and chose to ignore the

problem all together. Social development programmes poured money into building a state mechanism that in the form of labour-market services could fulfil the role of matching the supply and demand side of the labour market. However, this is a Sisyphean task as more people join the group of job-seekers every day than employers announce their openings. With every year that passed, it has become clearer to me that the whole concept of the labour-market is flawed and our perception on development must seriously be questioned. Despite the huge failure of the Lisbon strategy, no change in mentality, no questioning of the fundamentals took place. The EU2020 strategy reflects the same old principles that faltered the Lisbon strategy. This is hardly surprising as – Einstein so aptly said - we cannot solve the problems with the same thinking that created them.

Even though it became clear to me that whatever we call development policy today does not lead to major breakthroughs, to see how this may be improved or transformed was a different kettle of fish. Great thinkers like Polányi (1946) and Beck (2007) have long pinpointed to flaws in our system to provide social justice, but it was not easy to come across truly pragmatic approaches as to how a transition to a better society could take place. It was a casual magazine article that first drew my attention to ecological economics. When I realised that the problems they raise are highly similar to those that I had been contemplating in my own work, I started to familiarise myself with their theories. The book *'Természet és gazdaság'* (Nature and economics) edited by Pataki and Takács-Sánta (2004) provided a great overview of the main works of ecological economists. Their research approaches seemed a perfect fit for my quest to find answers to questions that I had faced in my working life, namely how the basic approaches could be redefined in the area of development policy, more specifically employment policy.

This short personal account shows that my approach to the topic of sustainable employment is dominantly from the social point of view but at the same time I truly believe that social and ecological perspectives are not only reconcilable but very much analogous. As the second chapter will show, the chosen research field of ecological economics itself includes both socio-economists that have taken on environmental

issues and natural scientists willing to incorporate social dimensions in their quest for better solutions (Røpke, 2005).

1.2. THEORETICAL COMMITMENTS

Even though the phrase ‘sustainable employment’ can be interpreted in one way or another by most people, the term itself rarely occurs in scientific discussions. What we perceive as sustainable employment may differ significantly depending on the context, the political and social background and the underlying assumptions of the individual. The subject of this thesis is to examine what may make employment sustainable and what directions employment policy could take in order to help the transition of society into a more sustainable existence. However, in order to set the scene for this research, it is important to define sustainability for the sake of this dissertation.

The operationalisation of the most important notion in this research, namely sustainability is highly challenging. The core concept of sustainability has not yet reached scientific consensus and hence measuring sustainability is even more problematic. On the level of rhetoric and everyday speech, sustainability is becoming an exceedingly fashionable word in political, social and economic discussions. However, this trend may signify that there is a reason why ‘sustainable development’ is an appealing concept, namely that it suggests that with technological innovation the current levels of nature degradation can be decreased maintaining the same levels of consumption and economic growth (Kerekes, 1993). On the other hand, the content and execution dimensions of sustainability demonstrate high variations in the sustainability debate.

However, there seems to be one strong distinction in the sustainability literature: assuming weak or strong sustainability predetermines certain aspects of the discussions (Málovics & Bajmócy, 2009). These terms were first applied by Pearce (1989) and later “codified” by Neumeyer (1999) to point out a crucial difference in the sustainability debate: whether the substitutability of natural capital stocks with man-made capitals stocks should or should not be allowed. This division determines whether natural capital stocks should be maintained regardless whether other capital stocks grow or not (Robinson, 2004; Kerekes, 2009). Hence, in the case of weak

sustainability the depletion of natural capital is acceptable as long as the total capital stock remains constant or grows; while strong sustainability is more restrictive. With regard to renewable resources, the utilisation should not exceed nature's regenerative capacities; while the consumption of non-renewable resources in any case reduces the welfare of future generations (Daly and Cobb, 1989). This implies that while throughput growth is acceptable in the weak sustainability scenarios; strong sustainability prompts either a steady-state-economy (Daly, 1977) or de-growth (Latouche, 2011).

In this research, sustainability is defined in terms of strong sustainability that does not allow for the substitution of natural and man-made capital but demands maintaining the constant stock of natural capital. Moreover, the intended sustainable development of employment policies must apply the definition of strong sustainability by taking into account all four capital stocks: natural, human, social and manmade. These intertwined four stocks present us with a dynamically changing system whereby the depletion of one would seriously affect all others. Hence, the goal of sustainability can only be the parallel preservation of all four of them (Spangenberg, 2001).

With regard to sustainable employment, the social capital is of utmost importance. However, the operationalisation of the social dimension of sustainability presents an even more complex problem. Having summarised the different understandings of social sustainability, Boström (2012) acknowledges the subjectivity of the term, the difficulties in measuring such notion and the overall flexibility of the conception of this terminology. Nonetheless, the common denominators seem to be equality, well-being, democratic governance (Magis and Shinn, 2009), and justice (Agyeman and Evans, 2004). After a comprehensive literature review, in order to provide a suitable policy framework, Murphy (2012) determined four dimensions of social sustainability: equality, awareness, participation and social cohesion. In his definitions, equality refers to the fair distribution of 'welfare goods and life chances' regardless of gender, race or religion. Awareness covers the notion of citizens being conscious of the impact of their actions on their natural and social environment. The dimension of participation implies that the interests and opinions of all affected parties (including future generations) can be articulated in the decision-making processes with an impact on the outcome of such

decisions. Social cohesion is the most perplexing concept of all, referring to issues such as solidarity, tolerance and integration (Murphy, 2012). The underlying assumptions of this thesis attempts to integrate these notions of social sustainability in the quest to define sustainable employment.

So far two out of the three main pillars of sustainability has been discussed with regard to their association to sustainable employment examined in this thesis: namely environmental and social sustainability. The short overview of ecological economics as a non-growth paradigm will explain in the next chapter why economic sustainability – the third pillar of sustainability – will be discussed only tangential to that of environmental and social sustainability in this thesis. The aim of this research is to uncover the elements of sustainable employment whilst bearing in mind strong environmental sustainability, social sustainability based on social justice, and a non-growth economy.

1.3. THE RESEARCH PROBLEM

Ecological economics - being a relatively young research field - has not really taken a stance on the issue of employment. When searching¹ for the term *employment* in the titles of the published articles in the field's most prestigious journal, *Ecological Economics*, only six appear. Even when extending this search to keywords and abstracts, just ten articles emerge. However, when the search allows for all fields, 854 articles are listed out of the 3111 articles that contain the term *ecological economics* (EE). This is a strong indication of how the topic of employment occurs in EE literature: few authors deal with it specifically but many are concerned with it. Hence, my proposed research on the characterisation of sustainable employment from an ecological economist's point of view may fill a gap.

However, in order to tackle complex issues such as sustainable employment and uncover new priorities, new methods and new approaches for introducing sustainability to the world of work, new sets of tools must also be found. This is the reason why the underlying assumptions as well as the research method intend to leave

¹ When the searches were performed in 2013, the database of Science Direct was used (www.sciencedirect.com). The search term was employment AND ecological economics and all searches were limited to the journal of Ecological Economics.

behind the comfortable realm of mainstream paradigms. Currently, the global economy and most of our societies operate under the neoclassical² economic paradigms. Even though these paradigms are facing serious challenges, we are still looking for solutions within them. Kuhn (1962) believes that it is a natural phase in the life of a reigning paradigm that solutions will be sought within the existing paradigm until the anomalies disintegrate its boundaries. In Kuhn's words this is the period of the 'paradigm crisis'. Neoclassical economists try to adjust the main models within the reigning paradigms, while at the same time others work on alternatives. The former believe that the crisis can be solved by normal science, while the latter expect scientific revolution.

It is the characteristic of a paradigm crisis that a myriad of 'paradigm candidates' exist through alternative research fields but normally the mainstream ignores them. Real clashes do not occur and the shift takes place gradually, when the old fails and an alternative paradigm takes its place. As real debates never exist between the old and the new, the paradigm candidates go through their own developmental phases without being seriously challenged by the mainstream. However, during the scientific revolution scientists slowly turn away from the mainstream and convert to a new paradigm. The paradigm most scientists convert to becomes the new mainstream (Kuhn, 1962).

It is clear that we live in times when neoclassical economics experiences serious anomalies like ecological unsustainability or the widening of social gaps but researchers still try to find solutions without questioning the validity of underlying assumptions. As scientific revolutions are obscure, it is subjective whether one believes that the crisis has not even started, it has started but solutions can be found in normal science or we are already experiencing a scientific revolution and a paradigm shift. However, paradigm candidates do exist.

² This thesis will use the term 'neoclassical economics' when referring to current mainstream economics. Some authors (Witt, 2007; Gowdy et al., 2012) prefer the term 'canonical economics' or 'canonical economic theory' referring to the fact that even though neoclassical economics is the most significant approach, mainstream theories cover a wider range of ideas. However, – besides acknowledging this fact – the term neoclassical will be applied as in ecological economics literature this is the more common usage.

Ecological economics has by now become an established research field that questions many of the foundations of neoclassical economics (Røpke, 2005). It is yet unclear which paradigm can take over the reign of neoclassical economics but ecological economics is certainly a viable candidate. Just as Kuhn predicted, in this phase of development serious debates do not take place between the mainstream and ecological economics and it has advanced independently. It is only natural that the alternative seeks certain cornerstones from the reigning paradigm that it can build on or facilitate the transition. This may be the reason why there are serious ongoing debates among ecological economists just how far they can incorporate mainstream ideas (Røpke, 2005; Spash, 2012). However, as the two paradigms differ radically in their philosophy of science approaches (Spash, 2012), it is unlikely that the two will seriously converge. In such cases of paradigm shifts, not only theoretical foundations but methodologies also change (Kuhn, 1962).

As discussed later, the research field of ecological economics considers itself post-normal science that embraces not only problem-oriented approaches but also policy-oriented approaches. The constructivist paradigm is especially well suited to come up with research findings that not only contribute to our understanding of the given topic but can be fed into policy implementation processes (Tacconi, 1998). This research is also a constructivist, policy-oriented, participatory enquiry into what sustainable employment is. The transition management approach provides the backbone of this enquiry. Transition management is a policy-oriented theoretical background that facilitates research into how to move towards sustainability in fields that must break free from current lock-in effects (Loorbach, 2003; Kemp and Loorbach, 2003; Voss et al, 2009). It identifies pathways that link desired states with present conditions. One of the well-known transition management tools is the future-study method of backcasting. Backcasting promotes the identification of a normative future scenario that serves as the ideal end-point of a transition process. In order to establish pathways that can lead us towards that scenario, backcasting moves from the future backwards to the present identifying policy measures that can induce changes that point towards the desired direction (Quist and Vergragt, 2006; Börjeson et al, 2006; Vergragt and Quist, 2011). Backcasting is a qualitative, participatory method that

enables the incorporation of different viewpoints and facilitates out-of-box thinking. Therefore it is an adequate tool to research complex issues such as sustainable employment (Köves et al, 2013a). The empirical data to this research will be provided by a Hungarian backcasting experiment that aimed at identifying alternative employment policy tools in order to move towards sustainability. I had the fortune and the honour to take part in this experiment and the analysis of the data that emerges from this backcasting provides a substantial input into identifying the elements of sustainable employment.

1.4. RESEARCH GOALS, RESEARCH QUESTIONS AND ASSUMPTIONS

In summary, the main purpose of my research is to uncover how sustainable employment may be defined leaving behind the currently reigning economic paradigms. As the triple crisis of our times indicates, it is becoming harder and harder to find solutions to everyday social, ecological and economic problems with well-known mainstream methods and approaches. Bringing together employment and sustainability can contribute towards discovering common grounds for handling social and environmental problems together. The research findings add new insights as to what alternative interventions could break the negative loops of environmental degradation, the widening of the social gap, social disintegration and economic crises. The complexity of the issue of sustainability also demands new methodological approaches. Even though this research is not primarily a methodological one, its tangential benefit is to share the experiences of the relatively newly developed, and in Hungary rarely used method of backcasting. The results of this research can hopefully influence both scientific and policy-making practices.

There are no firm assumptions or validated theories in the literature on sustainable employment beyond the mainstream economic paradigms. Therefore, it is not my aim to prove or refute theories. My research is of an abductive nature. According to Blakie (2000) abductive research explores the everyday actions and activities of stakeholders in a certain field or investigates the meanings attached to a given topic by these stakeholders in order to uncover relationships within and characteristics of the subject of the research. This approach is particularly suited to research where we have limited knowledge of the topic and hence the researcher can base her conceptions on the

cognitive frames of stakeholders (Blaikie, 2000). In my case, the stakeholders will be the backcasting participants and authors of the relevant literature.

The abductive nature of this research does not necessitate the phrasing of hypotheses. It does, however, demand that research questions are phrased and certain principles and axioms are declared that frame the context of my research. The proposed research questions are the following:

- ✓ What is sustainable employment?
- ✓ What are the main elements that make up sustainable employment?
- ✓ What policy tools, measures or processes may lead to ecologically and socially sustainable employment?

The underlying assumptions of the research are as follows:

- ✓ Strong sustainability is only possible beyond the paradigms of unlimited economic growth.
- ✓ The neoclassical concept of full employment cannot be reached under the current economic processes if sustainability is to be achieved at the same time.
- ✓ The alternative visions of the future enable us to influence our actions in order to move in the direction towards a desired state.

1.5. THE OUTLINE OF THESIS STRUCTURE

Beyond the introduction and conclusions, the thesis consists of three main chapters. The conceptual context of my research will be presented in the literature review. The literature review will provide a comprehensive overview of the chosen research field of ecological economics, current issues related to the sustainability of employment and the existing scientific approaches to handling these issues. It also introduces the transition management approach and the theories behind backcasting that provide the theoretical background of the empirical research. In the third chapter the Hungarian backcasting experiment - that provides the backbone of the data for this research - will be described. The fourth chapter will analyse the results of this backcasting in order to identify the concept of sustainable employment.

Chapter 2: THEORETICAL FRAMEWORK - LITERATURE REVIEW

On the one hand sustainable employment as such - not being a commonly used scientific terminology - does not have extensive literature. On the other hand, in most cases when sustainability becomes the topic of discussions, the issue of employment comes up directly or indirectly. This literature review attempts to put the pieces together and provide an overview of what may constitute as sustainable employment in existing scientific debates.

However, as mentioned before, sustainability discussions and environmental movements are manifold and cover a wide array of paradigms. The elements to sustainable employment are certainly different if we change the underlying priorities or assumptions of an approach. In order to provide adequate structure to the review of currently existing approaches, the classifications suggested in Jennifer Clapp and Peter Dauvergne's book (2011) entitled *Paths to a green world: the political economy of the global environment* will be used. They propose that four main perspectives appear in the sustainability literature: market liberals; institutionalists, bioenvironmentalists, and social greens (Clapp and Dauvergne, 2011). It is the limitation of any classification that it runs the risk of oversimplifying certain perspectives or straitjacketing complex ideas. Moreover, as the original authors have not reflected on their position in any such classification, it also takes the chance that they may not even consider themselves for example institutionalists or social greens. Nonetheless, in our case it is necessary to take that risk in order to facilitate some structure in the cacophony of ideas. Hence, as sustainable employment does not have its 'founders' or 'great thinkers' and some of the notions presented appear in a completely different contextual environment, the focus will be on the idea itself rather than the author.

The aforementioned sustainability perspectives of this thesis also influence the extent to which certain ideas will be presented. Our focus on strong environmental sustainability, just and fair social sustainability, and a non-growth economy will be maintained at all times. This means that in the case of ideas that do relate to sustainable employment but do not meet the previous criteria, their criticisms will also

be presented. At the same time, those ideas that are out of the mainstream solutions and less frequently discussed in mainstream literature will be presented more extensively. The four categories identified by Clapp and Dauvergne (2011) can also be merged into two main subchapters: the market liberal and institutionalist approaches reflect the environmental approaches of the current mainstream, while bioenvironmentalist and social greens can both be regarded as radical change paradigms.

This chapter will start with a brief introduction to ecological economics in order to provide the general theoretical framework for this research. The next subchapter will present some of the reasons why current employment practices face sustainability challenges and what issues arise often in the employment vs. environment debates. It will then present the suggested solutions to such matters from the perspectives of market liberals, institutionalists as the representatives of mainstream and bioenvironmentalists and social greens as the representatives of radical change³. Finally, the conceptual framework of the research will be presented.

2.1. THE RESEARCH FIELD: ECOLOGICAL ECONOMICS

Compared to other disciplines, ecological economics is a relatively young field of research as its institutionalisation began in 1989 with the first issue of its scientific journal *Ecological Economics*. This comparatively short history prevents it from having set dogmas and there are serious ongoing debates on what concepts may or may not be embraced by ecological economists (Røpke, 2004; Gowdy and Erickson, 2005; Røpke, 2005; Faber, 2008; Spash, 2012). However, it is possible to describe its development and the main concepts that occur in ecological economics research in order to be able to put my research into context.

Most ecological economists would agree that neoclassical economics has failed to incorporate the effects of economic activity on the environment treating environmental degradation as mere externalities at best. This stems from its core assumption that the natural environment is a subcomponent of the economy. One of

³ The content of this chapter strongly overlaps with the literature review of sustainable employment – a part of the study written by myself - that appeared in the study prepared for the National Council for Sustainable Development by Pataki et al. (2011).

the founders of ecological economics, Herman Daly in his book *Steady State Economy* (1977) insisted on the revision of this misconception, and treat nature not just as the provider of inputs (natural resources) and a disposer of outputs (waste) in economic theories but acknowledge that the economy is in fact merely a subcomponent of the environment. They also agree on the fact that natural resources are finite, and their uncontrolled exploitation leads to serious consequences. One of the most important progenitors of ecological economics, Nicholas Georgescu-Roegen went as far as stating that from the perspective of thermodynamics - as economic activity turns materials with low entropy into outputs with high entropy – the cost of any economic action is higher than the value of the produced good (Georgescu-Roegen, 1971). Hence, ecological economists agree that in a world with finite resources, ecological and social limits, the idea of infinite growth of the economy is unattainable and the attempt in itself brings peril on the world.

It was over three decades ago, when the models of the Meadows group pointed out that the extent of growth would be determined by ecological limits (Meadows, 1972). Not too long after, Hirsch (1976) already mentioned the social limits to economic growth. In this period, Daly (1977) blames the “growth mania” for all environmental degradation and social moral crises. Daly (1999) argues that it is rather controversial in mainstream economics that on the level of microeconomics it is accepted that a point exists where the continuation of a certain activity becomes uneconomical while we do not hold this true on a macro level. Moreover, in neoclassical economics all economic activity is considered useful, even though there are undoubtedly ecological and social costs related to them (Daly, 1999). Ekins (1993) believes that there is a general consensus on the fact that current economic trends are ecologically unsustainable. Differences in opinion on the extent of this unsustainability depend on the technological optimism or pessimism of the parties (Ekins, 1993).

While the substitutability of capitals is fully accepted in mainstream economic theory and the optimum is where the marginal cost of lost natural resources equals the marginal gains of the produced man-made capital, in ecological economics the different forms of capitals are not interchangeable at all. Man-made capital cannot fully make up for the loss of other capitals (Daly, 1999). Boulding (1966) envisions that

the current mindset is characterised by a “*cowboy economy*” where resources are considered unlimited and nature acts as a bottomless waste container. He argues that this must change to become a “*spaceship economy*” where the primary concern will be the protection and preservation of the currently available capitals and the discounting of future losses will become unacceptable based on our moral obligation to respect the rights of future generations (Boulding, 1966). As ecological damages are irreversible and may only occur in the future, and at the same time profits may be harvested in the present while costs may arise in the future, it is our moral obligation to compensate at the time of causing the damages (Spash, 1993). Hence, time preferences and positive discount rates as evaluation tools for future resource-use and future consumption are irreconcilable with sustainability (O’Hara, 1995).

In view of the above, ecological economics is a quest to overcome the primacy of economic growth both in theory and in practice. The extent of self-restraint and the path to transform the current economy into one that respects boundaries varies significantly among ecological economists from Daly’s steady state economy (1977) to Latouche’s de-growth (2011). These are the two most important theoretical directions that exist in ecological economics. The steady state economy implies that there is equilibrium where given the stabilisation of the population and our currently available technological options, an optimum level of production can be defined at the point where the marginal costs of the disruption of the environment is within the carrying capacity of the planet and meets the marginal benefit of production (Daly, 1977). The de-growth movement believes that the concept of de-growth is less of a quantitative approach to find a new, lower equilibrium but more of a qualitative approach to redirect consumption patterns where people can find fulfilment in life without excessive consumption (Latouche, 2011). Both agree, however, that significant and sudden de-growth may result in insufferable social damages, hence a better option would be to have tolerable levels of de-growth until it is possible to reach a slightly fluctuating steady state economy (Martínez-Alier et al, 2010). It is also common in their approaches that humanity does not necessarily have to give up all well-being but requires a shift in mentality as to what constitutes well-being and move from physical consumption of goods towards community and spiritual wealth. This is best reflected

by the de-growth movement's concept of 'buen vivir' where a good life in an equal society does not depend on consumption levels.

The abovementioned perspectives make it clear why ecological economists demand indicators of prosperity other than the GDP. Their criticisms of the almost sole use of the GDP to assess well-being are manifold. One of the most important criticisms is that well-being cannot be fully associated with consumption (Costanza, 2014). England (1998) summarises the literature on the criticisms of the GDP as follows. It fails to make a clear distinction between the intermediate and final outputs, intermediate outputs being all those items that do not contribute to the well-being of the final consumer and the costs of defensive activities such as environmental protection, health provision, job provision, logistics are also included in the indicator. Neither does it deduct those products that are manufactured in order to replace old ones due to amortisation. It also makes a number of incorrect assumptions such as that business exist for the sole purpose of producing and investing for the final consumer; households are unproductive and only exist in order to consume what businesses produce and finally that public purchases have no affect on the national wealth. Moreover, the GDP fails to incorporate how wealth is accumulated unequally and its indicated well-being may affect different social groups differently (England, 1998). Additionally, the GDP does not reflect at all the value of ecological services that were used up during production (Ekins, 1993). The alternative indicators most often suggested are the Index of Sustainable Economic Welfare, the Human Development Index (England, 1998), the Genuine Progress Indicator, the Happy Planet Index, or the Better Life Index (Costanza, 2014).

So far few ecological economists have dealt explicitly with employment. Employment and environmental issues have long had a traditionally controversial relationship even though Hueting (1996) presented the conflict of environment with employment as the number one persistent myth in the environmental debate. According to him, this is fuelled by the incapacity to understand that labour is the most important production factor that can substitute, restore and preserve scarce natural resources or any other functions of the environment. Demolishing this myth by researchers would lead to

governments and industry to realise that the two aims do not just neutralise each other but also have the capacity to reinforce each other (Hueting, 1996).

In his 2013 article *Eleven Confusions about Growth*, Daly named the misconception that without growth we are condemned to unemployment the eighth confusion. In his article, he argues that even though reaching full employment is still top of the political agenda, by economic growth becoming the end rather than the means such instruments are being tolerated like automation, off-shoring, and the reduction of wages. This, however, serves neither full-employment aims nor ecological goals. Hence, this is the time when reversing the overall supremacy of growth would be beneficial for both employment and environmental efforts (Daly, 2013).

However, we must face the fact that in the employment policies of the 20th century, economic growth has become instrumental in trying to converge towards full employment. The realisation that due to environmental and social limits, economic growth will either not be feasible any more or even if governments can push forward with growth strategies, it will only aggravate already serious problems, can also mean the final recognition of the end of the full-employment era. In our current mind frame, de-growth leads to unemployment that leads to the lack of demand that leads to further unemployment causing not only social disruptions but also fiscally strained welfare states. This is why the issue of employment in ecological economics most strongly appears in the de-growth discussions. In case the economy stops expanding while labour productivity due to technological innovations keeps on improving - unless people work less or their revenue is delinked from their wage employment – unemployment would grow and lead to social unrests (Martinez-Alier et al, 2010).⁴

On the other hand, some arguments claim that it is the fossil fuel age that stimulated the significantly rising labour productivity of the 20th century and with the price of conventional energy increasing, it is likely that we may have to work more in the further future and not less (Kallis et al, 2012). However, as in the short-term de-growth is more likely to manifest itself as mass unemployment if our social institutions do not

⁴ In a Canadian scenario analysis Victor (2012) calculated that if full-employment was to be achieved in Canada, an average work year would have to decrease 15% by 2035 in a zero-growth scenario, while in a de-growth scenario this drop would be as high as 75%.

change, our quest to find the right transition paths must continue (Klitgaard and Krall, 2012). It comes to no surprise that in order to be able to tackle such changes, the whole concept of work would have to be redefined (Kallis et al, 2012). This is the reason why ecological economics attempts to integrate environmental policies with solutions to income distribution and employment issues (Kronenberg, 2010).

The ontological and methodological perspectives of ecological economics also differ from the mainstream. Ecological economics has been defined “*an issue-driven discipline, concerned with the analysis and the achievement of sustainability*” (Tacconi, 1998, p.91). As Røpke (2004, 2005) summarised in her articles on the development of modern ecological economics, the research field has been built on a community of like-minded but very diverse scientists. These scientists were brought together by their conviction that without transcending current paradigms, humans will overuse the most important resource for its own survival: the ecosystem. These historical facts contributed significantly to the two main principles ecological economics is based on. On the one hand, it defines itself as post-normal science that is based on the assumption that complex social problems with high risk factors and high decision stakes, choices cannot be approached with the accustomed scientific tools. ‘Facts’ are being replaced with ‘values’, and ‘truth’ with quality (Funtowicz and Ravetz, 2003). On the other hand, the issue of sustainability itself being tremendously complex, ecological economics embraces complexity and attempts to avoid simplifications (Frame and Brown, 2008).

As opposed to the claimed objectivity and universal application of normal science that is incapable of handling the uncertainties of the real-world’s organisational and public policy contexts, post-normal science embraces concepts of constant dynamic changes; ever changing patterns in time and space; and the large array of actors and interests within the social constructionist theories of knowledge (Frame and Brown, 2008). It also accepts that subjective values may enter in the process but nonetheless encourages the shift from science’s logical positivist view to a more pragmatic view (Costanza, 2001), and away from deductivist methodologies (Spash, 2012). According to Spash (2012), this implies that the idea of rational, individualistic agents of the economy whose behaviour can be described by mathematical formulas must be

conveyed into the past. Economists must accept that social reality is created by humans and cannot be separated from values. Complex systems and their interactions are inherently unpredictable; and systems change and interact constantly (Spash, 2012). Post-normal science hence considers values and uncertainty as indivisible parts of science and believes that simplifications have *“brought us to our present mixture of intellectual triumph and socio-ecological peril”* (Funtowicz and Ravetz, 2003, p.1).

This, however, does not make the lives of economists and related social scientists easier. Accepting that finding solutions to today’s ecological, social and economic problems may lie in an array of answers rather than just one model requires the acceptance that reality might be more complex and uncertain than we had perceived before. Nonetheless, this does not mean that good scientific analysis is unnecessary in understanding the problems of unsustainability but we must accept the fact that sustainability after all is an issue of human behaviour and as such dependent on diverse sets of values and moral judgements (Robinson, 2004).

These characteristics differ significantly from the currently dominant theories of science. Positivism is being replaced with constructivism and the quest for the objective truth only happens with the deep understanding of the interconnectedness of subjective reality (Tacconi, 1998; Zsolnai, 2001). The outlooks on systems move from atomistic approaches to holistic ones. The acceptance of complexity is in itself part of the solution and the simplification of reality into models is only tolerated as long as its limits are clearly stated. Parallel acceptable solutions are widespread and the communication between disciplines strongly required. These philosophical differences have an impact on chosen research methods. Hermeneutical methods appear, and while currently quantitative research dominates, in post-normal science the validity of qualitative research is also widely accepted. Rather than just presenting results, scientists put an emphasis on discussing them with a wider array of stakeholders than just the narrow scientific community of a given discipline.

Ecological economists strongly criticise the seemingly insatiable quest of mainstream economic thinking to simplify otherwise highly complex systems by drawing up simple models and reducing the motivation of actors to one simple factor, and creating an

atomised worldview. The atomistic-mechanistic perception of the world demands from us the quest for finding equilibrium in a system where equilibrium does not exist (Noorgaard, 1985). However, no matter how much we wish to simplify it, our intertwined natural, social and economic world remains complex. As Nelson (2013, p.146) phrases it,

“Even if we are convinced that there is a fundamental mathematical structure to the universe, new science suggests that a comparison of the complexity of this structure, vis a vis the limitations of our human wet-ware (brains), should be humbling. Epistemologically speaking, our knowledge is unavoidably limited and incomplete. Economics would need to go beyond the “early stage” of physics analogies and notions of stable equilibria.”

Holistic approaches and the acceptance of co-evolution can lead us towards the recognition that with the changes in our environment, institutional changes are also necessary (Noorgaard, 1985). Accepting the complexity of our current global problems also prompt cooperation between disciplines and solutions can only be sought through interdisciplinary approaches (Pataki and Takács-Sánta, 2004). As Norgaard (1985) suggests, the differing perspectives are our best tools to understand the relationships between economic and ecologic systems and this understanding will only improve if we accept philosophical pluralism, the occurrence of inconsistencies, and co-evolution.

These approaches are naturally hard to combine with the positivist paradigms. While it would not be accurate to say that all ecological economists work under the constructivist paradigm, but we find radically more researchers among ecological economists who do chose the constructivist paradigm as the philosophy of science standpoint (Spash, 2012). Tacconi (1998, p.99) quotes Egon Guba’s definition of the constructivist paradigm (Guba, 1990, p.27):

“Ontology: Relativist—realities exist in the form of multiple mental constructions, socially and experimentally based, local and specific, dependent for their form and content on the persons who hold them.

Epistemology: Subjectivist—inquirer and inquired into are fused into a single (monistic) entity. Findings are literally the creation of the process of interaction between the two.

Methodology: Hermeneutic, Dialectic—individual constructions are elicited and refined hermeneutically and compared and contrasted dialectically, with the aim of generating one (or a few) constructions on which there is substantial consensus.”

As Csíkszentmihályi (2011, p.87) concluded, no matter how elaborate a theory is how precisely we can measure certain phenomena, all theories were elaborated and all measuring instruments were developed by human beings and therefore they cannot possibly be independent of the observer. Our brains, our cultures and our linguistic symbols determine the reality that we observe. Constructivist epistemology believes in the existence of reality but recognises that the inquiry into this reality is value-bound and cannot be disconnected from the researcher’s subjective values (Tacconi, 1998). The qualitative methods used under this epistemology accept that various factors can influence the reality described in the research but with adequate reflection on these factors, the inductive data can still be valid and a grounded theory can emerge. This is the reason why the research process itself can change as data emerges. The results of the research are never ‘lawlike statements’ as they had been interpreted in the given context by the given researcher. Qualitative researchers declare that the results reflect the segment of reality that was perceived under the given conditions, with the persons involved. Hence, another researcher cannot falsify the results but can bring another “piece to the puzzle” by saying that in other circumstances the results would change or have changed. However, this does not mean that qualitative researchers have to completely avoid declaring findings that can be generally applied but they should be more prudent in doing so (Tacconi, 1998). This prudence can be attained through comprehensive reflection where the researcher provides all explicit details with regard to the circumstances of the research (Alvesson and Sköldberg, 2000).

It is not only ecological economics that has begun to question the mainstream scientific practices. In their book on the *Metamorphosis of Science*, Prigogine and

Stengers (1995) also encourage the scientific community to re-evaluate their core assumptions on what science is and how it is being organised. They point to the material and technological problems of our time that science needs to handle and it can no longer be treated in isolation from social processes and perceptions. Without accepting that social needs and expectations must play an important role in science, scientists keep on excluding other citizens from their debates and this will in the end limit the validity of their solutions. In their words: *“Sliding into the myth of enigmatic and almighty science can only lead to us glossing over the true complexity of problems brought on us by history.”*⁵ (Prigogine and Stengers, 1995, p.30) They also quote Koyre’s criticism of modern sciences. He says that modern science has placed quantity and deified geometry in front of our world of quality and palpable perceptions where “we live, love and die” that leaves room for everything but humans. This way the world of science – the ‘real world’ – distanced and isolated itself from everyday life (Prigogine and Stengers, 1995, p.30). This has also led to the objectification of nature that gives it an unjust stationary and subordinate quality. Science has also become a reductionist and specialised web of knowledge where disciplines are isolated and the direction of development is linear. The authors suggest that we turn our attention the ‘meeting points’ of disciplines where the different approaches can unearth long lost or buried answers. It is also time for us to return to the ‘poetic contemplation’ where we open-mindedly watch the world around us being open to creativity and new insights (Prigogine and Stengers, 1995).

Along the same logic, there is another important aspect to post-normal science: its effort to bring science back from its ivory tower and its isolation from the majority of society (Funtowitz and Rawetz, 2003). Its attempt to reinstate the validity of ‘indigenous knowledge’ that is based on the subjective convictions, values and previous experience of stakeholders is founded on the assumption that science significantly influences the whole of society. In the past and at present, positivist scientific methods

⁵ Own translation. Original version: „Ha elcsúszunk a titokzatos és mindenható tudomány mítosza felé, az csakis oda vezethet, hogy elkendőzzük magunk a történelem által felvetett problémák valódi nehézségét.”

limit the solution of complex problems with highly relevant social impacts. This approach of involving other types of knowledge has two significant philosophy of science consequences. Firstly, post-normal science does not advocate that there is only one adequate answer to one question. It promotes that all research that leads to a deeper understanding of a particular issue can lead to results. Secondly, it does not limit the validity of results to the scientific community but encourages the involvement of other stakeholders in the discussion of proposed scientific solutions. Funtowitz and Rawetz (2003) suggest that in times of uncertainty and high decision stakes the traditional peer review process to evaluate the quality of scientific research is insufficient and all stakeholders must be involved in the process. This can take place after the research has been conducted but it is even better if this happens during the actual research. They also suggest the incorporation of methodologies that so far has been excluded from science, for example 'investigative journalism and related techniques' (Funtowitz and Rawetz, 2003).

2.2. CURRENT ISSUES WITH THE SUSTAINABILITY OF EMPLOYMENT

This subchapter presents some of the reasons why current employment practices face sustainability challenges and the issues that often arise in the employment vs. environment debates. It is not supposed to be a mere description of the world's pressing employment problems as those are widely recognised and frequently debated.

2.2.1. Flaws in the market logic

Current employment theories, practices and policies are well incorporated into the realms of neoclassical economics based on growth and on the reliance on market mechanisms. In this world, it is acceptable to reflect reality by simplistic models and a single indicator can signify complex situations. The economy operates as an independent entity from that of the ecological and social environment and hence ecological and social constraints play little role in theory. Man-made capital can substitute natural capital and it is acceptable to devalue future capital in order to accumulate current gains. It is a common belief that with the advance of technology - given that markets are left in peace to work their magic – all ecological limits can be

exceeded. The simplified image of human beings in economics is the 'homo oeconomicus' who makes rational individual decisions merely on the basis of how it contributes to the fulfilment of his needs. Competitiveness and placing individual needs above communal ones are part of this nature. His needs are infinite, insatiable, and his well-being is solely dependent on his consumption levels. Currently, this economic model serves as the basis of the social, economic and political life. Employment is no exception.

In simplistic terms, the labour market is treated similarly to the commodity market whereby the demand for human labour and the supply of available workers ideally meet where real wages are in balance. However, for the balance of the labour market, commodity markets must also be in equilibrium and in this idyllic scenario at the point of full employment the output of the commodity market meets the demand for goods. Under this ideal scenario, unemployment is only voluntary as a result of moving from one place to another, or when re-training may become necessary. If oversupply occurs on the labour market (as is the case in countries with unemployment), a drop in the level of real wages remedies the problem as labour demand begins to increase.

Current employment policy interventions are built around the same economic logic. They try to 'supplement' market mechanisms and correct market failures by enhancing the matching of demand and supply. This happens through better labour-market services, job brokerage and by improving supply through retraining and the promotion of mobility. At the same time economic policies encourage consumer demand in order to boost economic growth and create jobs.

However, in the last couple of decades, reality has put this model under a lot of pressure. The regional concentration of economic activity has left entire localities void of any labour demand and the encouragement of mobility has numerous environmental and social consequences. The pressure to consume more - in order to enhance demand for labour - means that we must generate new consumer needs constantly. Only this way can it be ensured that the equilibrium both in the labour and in the commodity markets would be achieved. This approach, however, runs into the problem of ecological limits as not all economic activities provide positive utility,

especially when social and environmental costs are taken into account (Daly, 1999). Moreover, the stress on productivity coupled with increasing labour costs has on the one hand pushed economic actors to concentrate on technological advances and on the other made human labour skills obsolete. The increasing costs of financial capital have resulted in a downward pressure on real wages while at the same time real wages provide the backbone of consumer demand. This has led to the so-called “double-dip” where decreasing wages lead to decreasing demand on goods and services that leads to further losses of jobs and hence, further depression of wages. The solution of this downwardly spiral – especially in the light of environmental and social sustainability – is difficult to forecast in particular bearing in mind the budgetary constraints of public bodies to intervene. Let us look into these problems in more details.

One of the gravest problems with the model itself arises with the occurrence of the so-called ‘double-dip effect’. This happens when the drop in the real-wages leads to a drop in the demand for goods on the commodity markets due to the fact that real people who constitute as ‘labour supply’ act as consumers on the commodity markets. With decreasing incomes, they are forced to decrease their consumption but decreasing consumption prompts new lay-offs and more oversupply on the labour market resulting in a downward spiral. While mainstream theory assumes that economic growth improves overall welfare of societies, it also presumes that the markets take care of the question of distribution of the resulting welfare. However, it is absolutely clear that markets not only fail to handle equal distribution but continuously contribute to the widening of the social gap (Wilkinson and Pickett, 2010). The International Labour Organisation’s ‘World of work report 2011’ described in great details how the last couple of decades have seen a significant shift within the cost structure of businesses from labour costs towards financing capital. This tendency was due to the fact that the insatiable profit-needs of the financial markets drove the cost of capital upwards and businesses had to compensate this by driving real wages down. The report states that the profits that occurred with the savings on real wages were not invested back into real economic processes, but were extracted as dividends from markets. At the same time - contrary to mainstream economic beliefs - the reduced

real wage levels did not lead to more job opportunities and higher employment. Hence, in developed countries higher consumption levels necessary for economic growth were financed by household debts rather than increasing incomes, while developing countries have turned the reduction of real wage levels a strategy of their growth based on export to developed countries. Accordingly, after deregulation it was the free movement of financial capital that put a downward pressure on wage levels in developing countries, while in developed countries it was the incorporation of countries with lower wage levels within the free trading systems that pushed wages downward (ILO, 2011). This mechanism reinforced the tendency that economic growth no longer results in the overall improvement of welfare but contributes to social disparity.

Korten (2009) also claims that the financial markets have a lot to do with employment problems. Similarly to the ILO statements, he argues that financial markets operate in such a manner that ensures that any profit made by labour productivity gains are turned into shareholder dividends or top management salaries rather than sharing it with workers. Unless these productivity gains are turned into time allowances for workers this tendency will continue to lead to the loss of jobs and higher unemployment (Korten, 2009).

The situation discussed so far raises numerous dilemmas between employment and natural, human, social and technological capital stocks.

Hawken and others (1999: 8) summarise the problem of employment and the depletion of the ecological environment in the following way:

“At the beginning of the industrial revolution, labour was overworked and relatively scarce (the population was about one-tenth of current totals), while global stocks of natural capital were abundant and unexploited. But today the situation has been reversed: After two centuries of rise in labour productivity, the liquidation of natural resources at their extraction cost rather than their replacement value, and the exploitation of living systems as if they were free, infinite, and in perpetual renewal, it is people who have become abundant resource, while nature is becoming disturbingly scarce.”

2.2.2. Employment and the natural environment

The relationship between employment and the natural environment has been highly controversial. Current scientific and policy discussions mainly focus on four major topics: how much employment the protection of the natural environment may generate; what is the extent of job losses in seizing activities in polluting industries, how far employment circumstances relate to consumption patterns and finally how taxing the use of natural capital rather than human labour can serve both purposes.

Regarding the first topic, the idea of green jobs has been with us for a while but the Global Green New Deal policy research paper commissioned by the United Nations Environmental Programme in 2009 (UNEP, 2009) heated up discussions on the linking of environmental protection, employment boost and the eradication of poverty. The research paper sees the solution of the multiple crises in investing in stimulus packages that lead to the greening of the economy while at the same time creating jobs. This intervention logic will be discussed later with regard to the proposals of market liberals. However, here a few issues must be raised concerning this approach. Investment into the greening of the economy will undoubtedly generate new job opportunities and employment policies will have serious role in making it work (Koltai, 2011). However, these investments are built around the current logic of economics, namely that growth and productivity are of utmost importance. Therefore, it is likely that these investments will enable new technologies to overtake old technologies that may be less labour intensive. This would mean that the job creation of new green solutions would only have a temporary impact on employment. This especially holds true when coupled with the second topic raised: the job losses due to the restructuring of polluting industries. The greening of the economy must also entail restraining industries that contribute to the degradation of the natural environment. However, this provokes “jobs vs. the environment” debates, where regardless which may win the upper hand, it becomes a lose-lose situation (McNeill and Williams, 2007). Moreover, this line of thought has not even taken into account the issues of scale that is vital in order to put a stop to ecological degradation (Daly, 1999). Hence, the gains from green jobs may only just offset the losses through stricter environmental regulations.

In the literature on the relationship between employment and consumption, Røpke (1999) and Schor (2005a) explored how employment - and especially working hours - has had a considerable impact on the levels of consumption. In the second half of the 20th century, the significant increases in labour productivity did not lead to more leisure time but were traded in by both employers and workers for higher wages. This meant that workers got used to increasing levels of consumption, driving it into an upward spiral, helping the growth economy. According to her, working hours have also become an employee's test of loyalty and bonuses, salary raises and advances at the workplace have been strongly related to working time or in some cases overtime. This is especially true in the case of salaried workers as in their case the pay itself is *hours invariant* (Røpke, 1999). However, this raises the issue of one of the most problematic trade-offs: more work may mean more consumption that is beneficial to employment but detrimental to the environment; while less consumption means less work that given the current structure of the economy leads to unemployment and social unsustainability. As a solution to cutting this Gordian knot, the fourth topic, the introduction of ecological taxation is a regular topic of the jobs vs. the environment debate that will be discussed in more details in the section on institutionalist approaches.

The aforementioned dilemmas pose serious questions regarding how to combine the boosting of the employment with pushing for sustainability. 'Outside the box thinking' is necessary to determine how the interests of employment and environmental protection can be combined; how firms can be encouraged to take into account both ecological and labour interests and how the inevitable structural changes that environmental sustainability demands can be achieved with the least disruptions and the most benefits of employment.

2.2.3. Employment and the human capital

The protection of human capital in the sustainability discussions cover mostly the facilitation of the flourishing of human capabilities in employment. Three issues can be raised with regard to the protection of human capital. Firstly, the mismatch that exists between individual capabilities and the work that is available. Secondly, the growing

limits to personal decision-making in the working sphere, and thirdly, human creativity that is now mainly constrained to free-time activities and can only be manifested through consumption patterns.

One of the central concerns of current employment policies is the matching of individual aptitudes with the skills required by employers. This is, however limited to the logic of the labour market where the focus is much more on the fulfilling of demand rather than taking into consideration the self-realisation potential of human beings. In an extensive study conducted by the National Labour Office of Hungary in 2013, the two most important competences that employers were searching for in an employee across the whole array of jobs examined were in the category of 'reliability, thoroughness, precision' and 'capability of following rules and norms'. These two outweighed by far competences like 'motivation', 'planning and time management', 'initiating ideas', 'creative and innovative approach to work', or 'empathy' that received almost no attention throughout the spectrum of occupations (NLO, 2013). These requirements obviously indicate a serious mismatch between human nature and the demand for labour. The reaction of employment policy to such tendencies is to train and convert the unemployed into what is expected of them and hardly any attempts are made to modify jobs in order to suit a more adequate image of human beings. From the point of view of the employers these tendencies are understandable under current economic conditions. As demand for labour is strongly influenced by the necessity of edge-cutting efficiency, employers are aiming at the highest possible degree of specialisation that - supported by technology - leads to easily absorbed, exceedingly monotonous tasks required from the workforce. On the other end of the scale, technological complexities require multifaceted knowledge that requires long training and an intricate mind that only a selected few possess. However, most people in their working age lie between these two extremes and hence for many, work fulfilment has become unattainable. As Habermas (1994) pointed out, the monotonous and fragmented organisation of production processes have occurred also in sectors where identifying with one's profession had provided people with identity and great internal motivation. The instrumentalist view of labour processes has taken over traditionally skilled areas as well as middle and top management positions. At the

same time, external motivation stemming from wage income fails as well, leaving workers with no work satisfaction (Habermas, 1994).

In literature on decision-theory and behavioural economics, numerous empirical studies underpin the necessity of human beings to take decisions in their own lives, and prove the added value of attaching even just a touch of creativity to work in improving well-being (Király, forthcoming). On the other hand, the unquestioned need of economic actors to perform efficiently puts serious boundaries on most people's room for decision-making or creativity in the working sphere. The aforementioned skills-mismatch coupled with the lack of personal decision-making opportunities of the workplace leads to the devaluation of work in private lives and becomes merely an everyday chore. To this problem, the mainstream answer of the current economic theory says that individuals can satisfy all types of needs through their consumption patterns. Hence, creativity and self-realisation can take place outside the realms of working life in the spare time through utility decisions. This is based on the currently reigning paradigm that well-being is strongly linked to higher consumption. In the last decades however, numerous economists have called for the redefinition of well-being and the inclusion of many more components (e.g. Hirsch, 1977; Pearce 1993). The dilemma does not just lie with the definition of welfare but also with the notion of spare time. As mentioned before, labour productivity gains are being turned into more consumption rather than more spare time (Røpke, 1999). Moreover, time spent at the workplace became a significant factor in the assessment of individual performance and lately overtime has turned into almost a prerequisite for advancement. At the same time, getting used to the higher levels of spending discourages workers to trade off work with spare time. This implicates that those in employment face the problem of free time scarcity, restricting them to express skills and creativity outside of work even if they possess the resources to do so through consumption. In the meanwhile, those out of employment may have the time but lack financial resources. This all leads to the predicament that as long as the value of human labour does not play a role in utility decisions, individuals as consumers assist in maintaining jobs that disable the flourishing of human capabilities. These dilemmas raise the need for solutions that bring the value of meaningful human labour as an element into our consumption

decisions. They also raise the question on how considerations of productivity and efficiency can be coupled or replaced with deliberations on the usefulness and real value of work activities. It also prompts measures that improve work-life balance.

2.2.4. Employment and social capital

Turning our attention to the issue of the current employment circumstance and social capital, the impact of work on community relations must be assessed. Current economic thinking consistently revolves around individuals and any behaviour that diverts from the self-centred, utility maximising actions does not only reflect irrationality in the theories but is increasingly hard to find in practice (O'Hara, 1995). In economic reasoning individuals decide alongside rationale and emotional aspects or the well-being of others do not play a role. In this theoretical framework, the vision of society is a fragmented one, consisting of individuals that take little consideration on the interest of society. Moreover, the value of community relationships receives little attention due to the fact that in mainstream theory they have no function in the workings of the market. In extreme cases, community considerations can be considered as disruptions to market mechanisms. For example they constrain the mobility of the workforce; locally organised production and consumption networks distort competition, and these work against the smooth running of the markets. In market economies, community interests are supposed to be safeguarded by institutions that are to adjust the failures of the markets. However, in this mechanism, the individuals' societal responsibilities decline as they are not required to take personal steps towards preserving community interests.

The aforementioned concept covers a complicated contradiction. One of the main driving forces behind consumption is status-seeking (Brekke et al., 2003), that is coerced by the desire to belong to a reference group in society. So while social belonging is a crucial element in economic activities, the considerations for individual responsibility towards community benefits can be ignored as these are transferred to abstract institutions. Consumption societies therefore face the paradox that achieving higher status in society requires more earnings and takes time away from social

activities, while those that have the leisure time (like the unemployed) would not achieve the same social recognition.

These contradictions are also reinforced by the economic standpoint that community work (including working for the state) is unproductive and does not contribute to the wellbeing of the economy (England, 2001). Economic reasoning labels those working for the state a mere burden on the economic system, even though activities assigned to the state or local municipalities (like education, health, culture, maintenance of communal areas) should be part of labour distribution on the levels of a community and of a society. This is the reason why interventions like public work schemes do not remedy problems in the market logic, even though there are whole regions and social groups where the only potential employer is the state.

At the same time, the welfare states are taking up more and more activities that had not been profitable on the markets but were crucial for society. This tendency is reinforced by the fact that individuals tend to be keener to finance activities through the tax system in the role of a citizen than directly as a consumer (Røpke, 1999). This puts governments under serious strains to take up social responsibilities that have been relegated from individuals to institutions, while at the same time economically they face increasing budgetary pressure to downsize state-owned sectors. It is also expected of the governments to correct market failures with public investments and tax-cuts, while at the same time dampen social unrest with transfer pay-outs such as benefits. Moreover, it is expected that states do this in a manner that does not affect negatively the economic markets as that would impede the recovery of the economy. However, the decreases in transfer payments and the reduction of salaries or lay-offs in the state sector further degrade the consumer base. This problem is aggravated by the fact that increasing costs of the welfare systems are covered by the tax system and this impedes the reduction of labour-related costs. The importance of labour-related taxes and benefits are due to the fact that labour's price sensitivity is relatively low and it is the least mobile compared to the other production variables (Kiss, 2010). Therefore, the tax systems rely heavily on these incomes but that approach entails yet another vicious circle. The higher the labour costs, the more likely businesses will try to

substitute labour with other capital or move production where these costs are lower. However, this means that tax income decreases, while welfare transfers increase.

These dilemmas raise the questions of how the different levels of labour distribution (family, local community, federal) could all have due weighs and operate in synergies that best serve community purposes as well as economic ones. On the other hand, solutions must be sought on how to incorporate considerations of social interests and individual interests in employment at the same time.

2.2.5. Employment and technology

Technology plays a crucial but rather controversial role both in the concept of sustainability and in its relationship with employment. The issues of employment in relation to technological capital generally cover the questions on how technological advances can be harmonised with human development. Market economies lay significant emphasis on technological advances both in terms of increasing productivity through creative destruction and lately as the path that leads economic growth to sustainability through technological fixes.

The effect of the Schumpeterian creative destruction (Schumpeter, 1943) on employment through the obsolescence of human skills has long been known. What took two hundred workers in 1770 could be done by a single spinner in the British textile industry by 1812 (Hawken et al, 1999: 7). And the speed of technological advance had been multiplied manifold ever since. The dynamics of the current economic system continuously foster innovation that make whole industries together with their workers and their skills obsolete, while new industries with new technologies occur. In theory, after a normal phase of structural unemployment, no losses are registered as resources only redistribute between old and new industries. These transitional periods, however, demand the retraining of the labour force and increased labour mobility that happens slower in practice as the theory may suggest and incur significant social and environmental costs. Moreover, as innovations are also aimed at increasing efficiency that steer costs down - including that of labour costs -, technological advances also lead to the loss of jobs (Jackson, 2010).

The issue of technological fixes is, however much more opportune in the times of sustainability concerns. As Ekins (2004) declares there is relatively extensive understanding of the fact that the current economic development is ecologically unsustainable, the differences occur mainly due to the differing scales of the individuals' technological optimisms. The gravest trap certainly lies with the elevated optimism that technological fixes can save the day. The belief that technology acts as a tool for de-coupling environmental pressures from growing consumption can overwrite the all-important issue of scale in sustainability and maintain an unfounded sense of security that business can go on as usual (Jackson, 2010). With regard to employment, technological fixes are the main drivers of green jobs mentioned above and hence have serious impacts on current employment levels, naturally with the aforementioned constraints. Another serious consideration may be that technological advances are significantly more capital than labour intensive, and if the cost of capital keeps driving real wages down as have done in the past (ILO, 2011), the double-dip effect may become even more severe.

Technology and work are also related through the 'paradox of time-saving' (Røpke, 1999: 413). As workers choose higher wages rather than spare time, a significant share of income is spent on time-saving technologies such as washing-machines, dish-washers, cars, etc. However, the use of these technologies in the end does not result in savings in spare time as customs also adjust. People only wear garments for a day compared to earlier times and are expected to have immaculate households as otherwise they are deemed poor. These result in more laundry and more cleaning. Having a car in almost each household also means that habits to shop have also changed: rather than shopping around the home, we travel extensively to purchase our food. At the same time, it means that we consume more buying the technology, while we also work more in order to be able to afford these time-saving machines (Røpke, 1999). This tendency is also aggravated by the fact that household work is not only unpaid but also unpriced, demanding women to take up paid employment resulting in 'women's triple burden' (Patel, 2009: 68).

These dilemmas raise the questions on how technological advancement may serve the purpose of sustainability as well as such employment that best supports human development.

In this subchapter the dilemmas and current problems with the sustainability of employment were discussed. In the next two subchapters⁶, such theories and ideas will be presented that attempt to harmonise employment and sustainability issues.

2.3. MAINSTREAM APPROACHES TO SUSTAINABLE EMPLOYMENT

The first two categories in Clapp and Dauvergne's (2011) classification of environmental perspectives are that of market liberals and of institutionalists. They are the closest environmental approaches to mainstream neoclassical economics and this subchapter will describe their suggested ways to achieve sustainable employment. A critique of the approach with regard to its sustainability from the chosen perspective of this thesis will also be offered.

2.3.1. Market liberal approaches: ecological modernisation

Market liberals believe that the state of the environmental crisis has not reached the level where advances in technology and some extra investments could not solve any occurring problems. They claim that problems behind environmental degradation are on the one hand poverty that can be alleviated by more economic growth, and on the other poor government policies that are incapable of handling market failures. Their proposed solution to the environmental crisis is the same as their answer to economic growth: further liberate trade and financing and leave the business sector to do its job. They believe that it is in the own interest of firms to take care of sustainable development in order to be more competitive and more resilient to crises. Hence, environmental choices can be easily harmonised with corporate goals and with the culture of consumption. (Clapp and Dauvergne, 2011)

The proposed solution of market liberals is ecological modernisation (Pataki, 2009; Nugent, 2011). The World Business Council of Sustainable Development declares in its

⁶ The content of this subchapter and the next subchapter strongly overlaps with the literature review of sustainable employment – a part of the study written by myself - that appeared in the Pataki et al. study prepared for the National Sustainable Development Council (Pataki et al., 2011).

Vision 2050 – a scenario on how to bring about transition to a sustainable world - that *“the participating companies strongly believe that the world already has the knowledge, science, technologies, skills and financial resources needed to achieve Vision 2050”* (WBC, 2010, p. 5). This type of technological optimism is the very foundation of ecological modernisation.

The theory of ecological modernisation dates back to the 1980s but it gained strength in the 1990s. Its appearance can be related back to German authors like Huber (2000) or Jänicke & Klaus, (2004) and Dutch scientists such as Mol (1997, 2000 és 2002) or Spargaaren (2000). The metaphor used by Huber describes the very nature of ecological modernisation: *“...the dirty and ugly industrial caterpillar will transform into an ecological butterfly...”*. In other words, industrialisation will move from causing environmental degradation to establishing an ecologically sustainable society without having to go through ‘great transformation’. The process takes place without the need for any special intervention. Science, the business world, public institutions and the consumers will move towards being ‘green’ as part of the natural course of development. Scientists discover problems and prepare technological solutions together with the business world that incorporates environmental awareness into its everyday operations. They do that partly because the state prompts them to do so but partly because ‘post materialist’ consumers demand so. Hence, markets can react efficiently to environmental limits and achieve ecological modernisation without any radical change in mentality or in institutions. The message of ecological modernisation is highly positive on both theoretical and practical levels: there is no trade-off between economic growth and ecological sustainability as “green growth” can provide solutions to both of them. This is the reason while the elements of ecological modernisation have become a commonplace in the rhetoric of international organisations such as the United Nations or the European Union. This vision also dominates most discussions on sustainable employment.

2.3.2. Green jobs in a green economy

The most common terminology that occurs in literature that handles the issues of employment together with sustainability is the notion of ‘green jobs’. This idea

foresees the parallel solution to both the environmental and employment crises by offering quick 'technological fixes'. Technological investments into a greener economy (such as the construction of green buildings or the production of zero emission cars) would prompt changes in production methods as well as product design. These investments would boost economic growth, create jobs and at the same time reduce levels of environmental pollutions. This concept is especially appealing to large corporations that would not only gain further market shares but also benefit from cutting costs for example through energy savings.

The beneficial impacts of the green economy and the idea of green jobs often occur in strategic documents of international organisations and in political rhetoric. The United Nations Environmental Programme issued its study entitled 'Green jobs: towards decent work in a sustainable, low-carbon world' in 2008 that explained how energy efficiency can lead to the creation of millions of new jobs. The document defines green jobs as work in such economic sectors that support the rationalisation of energy, natural resource and water usage; contribute towards the decrease and prevention of greenhouse gas emissions, waste and pollution; and protect or restore ecosystems and biological diversity (UNEP, 2008). Along these lines, the European Commission issued its strategy called 'Europe 2020 – The strategy of smart, sustainable and inclusive growth' in 2010, where smart refers to growth based on knowledge and innovation; sustainable to environmentally friendly, resource efficient and competitive growth; and inclusive to the fact that it prompts high levels of employment with social and territorial cohesion. The initiatives suggested by this strategic document follow strictly the technologically optimistic logic and believe that the innovative production of green goods will indeed boost employment as well as competitiveness of the European Union (European Commission, 2010). In line with the EU strategies, the Hungarian strategic documents, like the Hungarian Labour Plan of the Széll Kálmán Plan that forms the basis of the national employment policy also stresses the importance of the green economy in creating jobs. According to this plan, people with lower qualifications will find employment in green jobs, in agricultural tourism and in the construction industry, while skilled workers will be employed by the health industry, the creative industry, as well as the energy sector (Hungarian Government, 2010).

European civil society organisations have also issued a number of reports insisting on the introduction of green technologies emphasising their positive impact on employment (GHK, 2011a; GHK, 2011b).

The scientific community also examines the employment impacts of the green economy but literature shows that it is those researchers who deal with special technological developments who provide evidence on their positive employment effects. At the beginning of the millennium, researchers have been moderately optimistic. Based on the empirical research of five corporations, Getzner (2002) concluded that – to varying degrees - the introduction of green technology did have beneficial effects on the quantity and the quality of employment at the firm. McEvoy and others (2000) provided promising results in the energy sector and suggest methodological approaches on how to measure the relationship between energy efficiency and employment. However, in 2011 the empirical studies of Walz based on the experience of five German industrial sectors were not that straightforward. Even though the results indicated a slightly positive employment impact of material efficiency, this only occurred after significant structural changes and massive labour fluctuation. This suggests that the positive impacts only occur if we assume ideal labour-markets (Walz, 2011).

In 2011, the Hungarian Energiaklub Climate Policy Institute issued a macroeconomic analysis of the effects of public financial incentives that promoted investments into household energy efficiency. This report analysed the supposed employment effects of the investments from two perspectives. The direct employment effect incorporated all those jobs that were created in the construction industry as a reaction to the demand for re-constructions. This amounted to 51 002 jobs in a five year period. The other perspective was that of indirect effects, namely that the money saved through energy efficiency was to be consumed in other areas, boosting demand. This effect provided jobs for 4921 people for twenty years (Energiaklub, 2011).

However, the report makes it clear that the direct jobs created are only temporary and exist mainly in the period of the investments and as soon as public incentives are withdrawn, green jobs decline and the levels of employment return to previous levels (Energiaklub, 2011). Hence, they do not provide long-term solutions to employment

problems. The problem is aggravated by the fact that technological investments cost a lot and once economic actors decide to invest, they expect savings on labour costs as well in the long run. Moreover, the capital needed to make the investments must be financed through other savings. As mentioned previously, these savings are most likely to come from savings on labour costs (ILO, 2011).

2.3.3. Limits of the ecological modernisation approach from the strong sustainability perspective

The method of calculating the indirect employment effects in the Energiaklub analysis is a perfect example of the so-called '*rebound effect*' that is one of the major sustainability criticisms of ecological modernisation and the unconditional faith in the opportunities of greening the economy. As Jackson (2010) claims, the ideals of the green economy fail to take into account quantitative ecological limits and the rebound effect. Savings on energy efficiency result in a relative increase in incomes that are then spent on the consumption of other goods by economic actors. This means that the overall strain of ecological resources will not decline merely by introducing efficiency. Ecological modernisation results simply in the relative decoupling of ecological strain and consumption (i.e. the ecological strain per unit of consumption decreases). However, the overall carrying capacity of the environment is not taken into account and hence the concept still does not respect boundaries. Absolute decoupling would be if the whole extent of economic activity or throughput would be decreased or at least maintained at the current levels (Jackson, 2010). This means that market liberals and promoters of ecological modernisation only follow the weak sustainability criteria and ignore strong sustainability altogether.

In relation to the issue of social sustainability, the concept of ecological modernisation addresses little. The Viewpoints section of the Natural Resources Forum (Vol. 35, 2011) discussed the question whether the concept of green economy is useful in the policy discussions relating to sustainable development. Many experts phrased their criticisms that as long as the idea of green economy fails to address the issue of social distribution, the core problem will remain the same. Some lucky few will live in eco-efficient but still too large houses, while social disparity will remain ignored. Another

criticism that appears is that ecological modernisation provides us with the feeling of fake security, leaving us to believe that it is possible to go on business-as-usual and it is unnecessary to leave the realms of mainstream economic logic. We only need to paint green the economy we have now. Even the most supporting authors in this section claim that the concept of the green economy is only capable of raising certain issues but on its own does not provide a comprehensive solution. It could act as the first stepping stone in the transition process into a more sustainable society as it at least introduces ecological perspectives into business decision-making. However, it is important to see that it can only be a temporary solution until we find out-of-box remedies to our current problems (Natural Resources Forum, 2011).

There is another important problem related to the concept of ecological modernisation, namely the requirement that all relevant actors must adhere to the basic principles of it (Nugent, 2011). If all is left to the markets to handle and this commitment is not fulfilled by all economic actors voluntarily or not coerced by the state, some will 'beat the system' and environmental degradation will not cease to the extent foreseen by the theory. Moreover, even if they are willing to operate in an ecologically or socially conscious manner, it is unlikely that businesses will discover all negative impacts that they have on the environment. As Princen (1997) established there is short-sightedness on behalf of businesses when it comes to sustainability even if we assume no direct intention to do harm. This is due to the fact that often the environmental impact of the business activity is beyond the attention span of the company either geographically or in terms of timing. Market liberals would argue that it is the final consumers who can coerce businesses into sustainability by only purchasing sustainable products. However, it is also true in the case of the final consumers that they can be distanced from the consequences of business actions. They are on the one hand geographically distanced from either the production itself, or from the negative externality the business activity causes, and on the other the impacts may only occur in the future that the consumer has no knowledge of. Moreover, under current economic circumstances there is the problem of intermediaries that also contribute towards the decoupling of consumption and the

awareness of the externalities that occurred during the production of the consumed goods (Princen, 1997).

It is clear from the above that market-liberals and their ideas of greening the current economy do not go beyond current paradigms and still entail all the problems and controversies that are to be solved in the area of sustainable employment. The green economy still operates under growth pressure and under the assumption that there are no quantitative boundaries in production or consumption. This means that even if it introduces eco-efficiency in the economic processes; it still maintains high consumption levels. It fails to address social sustainability issues, as the efficiency pressure on businesses still prevents them from taking social perspectives into account. As Hawken and his co-authors (1999, p.261) put it: *“For all their power and vitality, markets are only tools. They make a good servant but a bad master and a worse religion.”*

2.3.4. Institutional approaches

Institutionalists move one step further in accepting the gravity of the sustainability issues than market liberals and they believe that the crises can be averted as long as global institutions and the states intervene in time and in an appropriate manner (Clapp and Dauvergne, 2011). Hence, as opposed to market liberals, they are not ready to leave the solution of sustainability problems to the invisible hand of the markets but believe in strong institutional interventions. They believe that growth and globalisation do raise wealth overall but the gains are not necessarily equally distributed. Global institutions and nation states must introduce measures to foster growth but at the same time have stronger environmental policies as well as strategies to reduce inequality (Clapp and Dauvergne, 2011).

The interventions proposed by institutionalist strongly influence the theoretical operations of the market. Measures like ecological taxes, regulations to foster work safety or to protect the environment all distort the market. Nonetheless, - according to institutionalists – they have become absolutely crucial in protecting citizens and the environment. Hoós (2002, p.233) summarises this in the following manner:

“Externalities of the markets raise serious concerns. With the growing population of the Planet, and the growing momentum of urbanisation, these externalities – especially environmental degradation - are becoming more and more significant. Some externalities can be internalised by the market, but most of them can be solved exclusively by state interventions, enforced regulations and different types of incentives.”⁷

Kerekes (2009) summarises the preconditions for effective and efficient state interventions. All measures must aim at halting the pace of environmental degradation at minimum social costs. In order to do that it is important to set the norms for pollution tolerance levels. The state must monitor all activities with negative environmental impacts and sanction all those activities that are above the tolerance thresholds. Sanctions must be set at levels that encourage innovation, technological change or product modifications. Regulatory measures must be comprehensive, politically acceptable, flexible enough to adapt to changing economic circumstances and must take into account market imperfections. State interventions can be based on direct measures or normative regulations (such as norms, strategic goals, forbidding laws, permit procedures, monitoring, sanctioning); indirect measures based on financial incentives (such as taxes, fees, grants, market development); and measures based on information supply. Kerekes (2009) also notes that direct measures face a number of problems that hinders their implementation. These problems include the costliness and ambiguity of setting norms; high administrative costs; and potential social-political tensions of adopting the measures. It is also problematic that it provides ecological services for free to all those who pollute under the norm. Moreover, the imbalances that can occur on international levels between the different measures also reduce the effectiveness of direct regulatory interventions (Kerekes, 2009). In spite of the difficulties of state interventions, institutionalists believe that the state must promote sustainability and ecological modernisation through these incentives rather than expect them to happen through the workings of the market.

⁷ Own translation. The original: „A külső gazdasági hatások súlyos problémát jelentenek a piacon. A Föld lakosságának növekedésével, és az urbanizáció fokozódásával egyre jelentősebbé válnak a külső gazdasági hatások, különösen a környezetszennyezés. Néhány külső gazdasági hatást internalizálhat a piac, a legtöbb azonban kizárólag kormányzati beavatkozással, kikényszeríthető törvények elfogadásával és különféle ösztönzők biztosításával szüntethető meg.”

2.3.5. Ecological tax reforms

One of the most discussed state measures in relation to sustainable employment is the introduction of ecological tax reforms (ETR). Policy documents on global (ILO, UN, OECD), EU, or national levels aiming at handling the global economic crises, promoting sustainability or boosting employment contain references to such tax reforms. ETR is the process that shifts the tax burden from employment, income and investment, to pollution, resource depletion and waste (Bosquet, 2000). ETR may also focus on avoiding disruptions in ecological services as a result of pollution or other forms of environmental degradation (McNeill and Williams, 2007). Shifting the tax burden from currently abundant labour supplies to scarce natural resources is expected to yield a so-called 'double dividend' by boosting demand for labour by reducing its cost to employers, and making the exploitation of the environment all the more costly.

The discussion on the double dividend is laden with contradictions. Bovenberg (1998) argues that the shift to more employment does not occur as the higher prices of consumer goods lead to the fall of real wages and this has a negative effect on the labour supply. In response to Bovenberg, Goodstein (2002) argues that this may not be true at all as adding to the equation non-labour and spousal income could in some cases actually mean a positive impact on labour supply resulting in the double dividend. However, both authors use general equilibrium models, assuming there is something like equilibrium. Moreover, they also assume that mathematical equations involving two elements (real income levels and labour supply) can provide some forms of reflection on trends on the real-world labour market. They also both presume that ecological taxes would lead to higher prices. While this would surely be true in the first phase, later on a shift in production may occur from goods whose prices include high ecological taxes (hence leading to smaller demand) to goods that are more environmentally friendly and entail less taxes. Additionally, ecological taxes are not likely to be introduced without offsetting its impacts by cuts from other types of taxes, e.g. taxes on labour. Therefore, if they are introduced at the same time – even if we accept that ecological taxes lead to falling real wages – tax cuts on labour or labour income could offset these changes.

Bosquet (2000) reviewed 139 modelling simulations of ETR and found that while reductions in carbon emissions may be significant, the gains in employment remain marginal. Anger et al (2010) also published a paper on their meta-regression analysis on the existence of the double-dividend hypothesis. Their results show that employment effects are negatively determined by the assumed stringency of environmental regulation: the higher the emission reduction due to environmental taxation, the smaller the prospects for an employment dividend (Anger et al, 2010, p. 1499).

The introduction of these tax reforms also face major delays as the growing budgetary burdens of the welfare states make the shift from labour taxes to other forms of taxation increasingly difficult. The importance of labour taxes is partly due to the relative price-inflexibility of labour and partly due to the fact that labour is the least mobile with regard to other production components (Kiss, 2010).

2.3.6. Social cohesion measures

As ecological tax reforms and other sustainability measures only handle the problem of social sustainability as far as potentially providing more employment opportunities, institutionalists find the answers to a just and equal society through the measures of the welfare state. In parallel to supporting the green economy, social cohesion must be promoted by the state through active labour market policy measures such as retraining schemes, public works, and the support of the social economy. The latter is especially strongly emphasised in the cohesion policy of the European Union (EU, 2010). The social economy has a number of definitions. Frey and others (2007, p.23) in their '*Szociális gazdaság kézikönyv*' (Handbook for Social Economy) provided the working definition that such local initiatives can be regarded as part of the social economy that aim at integrating people into the world of work who otherwise face serious obstacles in finding employment on the primary labour market. Hence, this sector is a halfway-point between the private and the public sector, and provides employment opportunities, skill development and consultancy for people who face disadvantages on the primary labour market. The social economy initiatives are generally locally organised on a voluntary basis and the aims of their operations are

based on social interests rather than individual interests of profit maximisation. The values that the social economy builds on are the following: *“equity; regulated free market; trust; reliability; cooperation; decentralisation; diversity; usefulness; universality; inclusion; anthropocentricity; sustainability; pluralisms; civil status”* (Frey et al, 2007, p.35).

It is not difficult to see how these values are incompatible with the values of efficiency, productivity or economies of scale that provide the very foundations of economic competitiveness. However, social economy organisations at the moment are forced to compete with private entities and hence, their economic sustainability face serious challenges. This is the reason why even if the social economy has unquestionable results in trying to bridge the social gap, it has so far failed to establish social cohesion. According to the 2007 study of CIRIEC (International Centre of Research and Information on the Public Social and Cooperative Economy), the potential of the social economy is being hindered by the fact that compared to private enterprises they have no lobbying power or unified advocacy and hence have little power over the development of their own sector. Another important obstacle to their development is that they can hardly prevent either becoming an entity similar to that of traditional for-profit enterprises if they are successful on the market; or becoming completely state-dependent. Another common problem is their undercapitalisation as their decision-making and profit distribution mechanisms prevent them from being attractive to investors, further hindering them in participating with equal opportunities in the markets (CIRIEC, 2007).

Spear and Bidet examined social enterprises in twelve countries in 2005 that aimed at reintegrating people into the world of work. They have come to similar conclusions. Most social economy entities depend on one single investor and in most cases this is the state. In this situation, however, it is their autonomy that becomes compromised. The financial insecurity of these entities affects those who are already in the most defenceless position having given up their social benefits in order to cover their sustenance with paid employment. This is the main reason while employment provided by the social economy only serves as a very transitory solution for disadvantaged social groups (Spear and Bidet, 2005). State financing of the social

economy faces even more problems during times of economic crises. The ILO report in 2011 described the controversies between the support of active labour market measures (such as grants given to social enterprises) and economic recovery. States attempt to moderate the effects of economic crises by spending more on recovery packages, unemployment benefits and boosting economic growth. However, this overspending is being retaliated by the financial markets and strict fiscal policies prevent the implementation of exactly those measures that lead to the creation of jobs. According to the ILO report, it is the grants given to employment and social programmes that first fall victim to fiscal scrutiny even though this leads to more unemployment, the erosion of the tax-base, higher social costs and in the end all primary savings prompted by the restrictions disappear from the system (ILO, 2011).

2.3.7. Limitations of institutionalist approaches

The arguments on the existence and the extent of the double dividend can become never-ending and would still not properly reflect reality. The arguments revolving around the discussion are still well-founded into the existing neo-classical paradigms. Equilibrium models may have been useful tools in the past but the complexity of our times requires us to think outside the box (Gowdy and Erickson, 2005). So even though in the short-term ETR may well serve the aims of sustainable employment, our search for other paths to unite the goals of employment and environmental policy must move beyond the potential double-dividend.

The previous subchapter has shown that while the potential of the social economy in establishing social sustainability is clear (more on this under the literature on social greens), the ideals of institutionalists to enable the state to intervene through direct and indirect measures to enhance the social economy fails for the following reasons. As long as they handle the issue of establishing the green economy through supporting ecological modernisation separately from that of establishing social sustainability, the social economy is doomed to fail. If actors in the social economy sectors must compete one-on-one with private enterprises, we expect them to play by the rules of the market and hence disregard the core values that prompted their establishment in the first place. Under such circumstances, their economic sustainability remains highly

problematic. At the same time, the primary investments that are needed in the initial phase of setting up social enterprises that may become capable of competing even under market conditions are being curbed by fiscal constraints.

Similar problems occur with public work schemes. The general idea behind public works is that instead of passive social measures (such as the provision of benefits), 'work with value creation' serves more the social standing of disadvantaged groups. As Csoba (2010) explains, the historical roots of public works go back exactly to this presumption. Society appreciates more people with capabilities to work doing useful tasks for the community than those spending their time without much to do. The role of public works strengthens in times when the economy and employment forms go through major transitions and it provides temporary solutions for those searching their place before the 'new equilibrium' comes around. However, from previous studies it has also become clear that public works have very little impact on providing opportunities for people to move on to the primary labour market and they normally involve people with the slightest chances to fulfil the expectations of the market. They have neither the skill levels, nor the social standings to enter the labour-market. Therefore, there are whole regions and social groups where the transitory nature of public works schemes turns into the only chance to provide for subsistence. Hence, public works resembles more to a form of social benefit than an employment solution to achieve social sustainability (Csoba, 2010b). Moreover, the public finance dilemmas raised in the case of interventions supporting the social economy stand true in the case of public works as well. Despite the fact that state-financed jobs are the most important in times of economic turmoil, it is exactly these periods when strict fiscal policies demand a cut-back on financing them.

From the perspective of strong ecological sustainability, the Keynesian ideal of economic stimulus and job creation encourages the states to venture into new investments just for the sake of reviving economic activity and provide subsistence is considered detrimental. This naturally does not hold true in the case when public works aim at protecting man-made and natural capitals.

From the above, it becomes clear that the solutions of institutionalists to environmental and social sustainability revolve around the direct and indirect

interventions of the state that aim at facilitating the greening of the economy; shifting tax burdens from abundant labour to scarce natural resources; and providing the chance of transition to the primary labour market for people with least chances to find employment without help. However, these solutions continue to handle ecological and social sustainability separately, providing disintegrated measures. At the same time, they face the problem of fiscal restraints that provide serious limits to their attempts to achieve sustainability. These institutionalist ideals remain within the realms of mainstream economics, even though they move on from letting markets solve all problems towards state regulated markets.

2.4. RADICAL CHANGE APPROACHES TO SUSTAINABLE EMPLOYMENT

In Clapp and Dauvergne (2011), bioenvironmentalists and social greens represent the third and fourth major environmental perspective. They are both significantly more radical than market-liberals or institutionalists in their assessment of the environmental crisis and their solutions also represent a radical move away from the mainstream.

2.4.1. Bioenvironmentalist approaches

Bioenvironmentalists believe that ecological degradation has long reached the carrying capacity of our planet, mainly due to the fact that humankind has failed to control its urge to overfill ecological space (Clapp and Dauvergne, 2011). According to them, the overconsumption per person (especially in developed countries) is a serious problem in itself but overpopulation represents the gravest dangers of all. Human greed, the exploitation of nature and each other and the incontrollable instinct to procreate are the main causes of the ecological crisis. In their view, globalisation supports the unsustainable population growth in the developing world, while at the same time leading to massive overconsumption in developed ones. Transnational corporations have highly suspicious motives and their worldwide operations must be strictly controlled. Moreover, current development policies and aid schemes only support out-of-control growth and consumption worldwide, while foreign debt forces developing states to sell out their natural capital. Hence, the bioenvironmentalist response to the current situation is to radically intervene to limit population growth as well as decrease

individual levels of consumption, especially in the industrialised North (Clapp and Dauvergne, 2011).

The author most often quoted as bioenvironmentalist is Paul Ehrlich who published a book in 1968 called the *Population Bomb* where he seriously questioned the possibility of halting ecological turmoil without controlling birth rates. Bioenvironmentalists tend to come from natural science backgrounds (Ehrlich himself was a biologist). This also means that there is a tendency among them to regard human beings as a nuisance to nature and the less people there are on the planet, the less risks they mean to ecological space (Røpke, 2004). Daly, one of the founding fathers of ecological economics may also be regarded as a bioenvironmentalist, believing that the steady state economy can only become reality if radical steps are taken towards stabilising population globally (Daly, 1999). This can be done through providing education, equal rights to women, and incentives to have two or less children in one household (O'Neill, 2010).

The topic of employment is rarely discussed by bioenvironmentalists. However, the argument often comes up that overall well-being leads to smaller families. Mehmet (1995) argues that all sustainable development concepts should entail the *“imperative of providing employment to everyone to ensure a rising quality of life”* (Mehmet, 1995, p.12). He also adds that *“the more rapidly Southern incomes per capita rise, the faster will fertility rates there decline.”* (Mehmet, 1995, p.13) However, bioenvironmentalists strongly oppose any rise in consumption and doubt the indirect link between quality of life and the ability to consume more (Clapp and Dauvergne, 2009). Hence, their answer to this problem is more global equality through the redistribution of wealth from the better-off North to the developing South that can lead to a slow-down of population growth as well as reduced overall consumption (O'Neill, 2010).

From our chosen perspectives of sustainability, in their approaches bioenvironmentalists certainly fulfil the criteria of strong sustainability. They also advocate more equality in the distribution of wealth but still have little to say about solutions to social sustainability. This is why it is important that we turn our attention to the radical change perspectives of the social greens.

2.4.2. Social green approaches

Social greens have a lot in common with bioenvironmentalists. To start with, they both belong to the ‘radical change paradigm’ that abandons the ideals of an economic and social system based on growth, consumer society and advocates fundamental economic and social changes (Köves et al, 2013a). Most importantly they also believe that our planet has reached its carrying capacity and ecological disaster is around the corner unless radical changes take place. As Clapp and Dauvergne (2009) define, the main difference between bioenvironmentalists and social greens is their focus on the problem. While bioenvironmentalist concentrate on decreasing environmental degradation at all social costs, social greens believe that it is social injustice that feeds the environmental crisis and the handling of such matters will lead to an improvement in the state of the natural environment both on local and global levels. However, they conceive the root of both problems to be the same: large scale industrialisation and global capitalism that produces ecological and social injustice. Economic growth and globalisation only leads to the acceleration of exploitation (both humans and nature) and to the erosion of community autonomy. The most common answer of social greens to our triple crisis is a *“more just political economy where the rich make do with less and do not deprive the poor of sustainable livelihoods”* (Clapp and Dauvergne, 2009, p.225). This also means empowering communities rather than aiding them. The social green approaches demand the redefinition of many basic assumptions that we make in mainstream economics.

2.4.3. Redefinition of human needs

It is clear that the definition of sustainable employment must also take a good look at how we perceive human beings, their motivations, and first and foremost their needs. Most social greens would strongly disagree with the neoclassical perception of human beings: the idea of the homo oeconomicus (Ohnsorge-Szabó, 2003). Homo oeconomicus describes people with insatiable and infinite needs focusing on the maximisation of their individual welfare. In this context welfare refers to solely the achieved level of material consumption. Therefore, consumption is not just the one

and only way to reach satisfaction but in the last few decades, we have reached the stage where consumption itself has become an end in itself (Sanne, 2002; Soper 2007).

This shift from relying on material consumption in individual welfare towards redefining well-being is being substantiated by a myriad of 'happiness' research. The 'Easterlin paradox' reveals that only up to a certain point incomes and the subjective feelings of happiness correlate but after having reached a level where basic needs are satisfied, happiness does not increase with rising consumption levels (Patel, 2009).

According to Mérő (2010) there are three major components to human happiness: positive feelings, meaningful life and Csíkszentmihályi's flow and the main direction of the economy could be diverted to fulfil at least one of them, namely meaningful life. Currently, the economy focuses on boosting positive feelings and maybe flows at best. But the future economy could take into account activities like participating in church life; in environmental protection programmes; in virtual and real communities; or in community work that help the poor. These activities can all contribute to meaningful lives. This would mean that those needs would become part of the mainstream economy that at the moment only appear in civil movements (Mérő, 2010). Behavioural economists like Ariely (2011) also point out that altruism is indeed part of human nature. Every day we do things without expecting reciprocity. Moreover, his empirical research showed that participants worked significantly harder without being paid than those who were given money for their efforts (Ariely, 2011, p.95).

Viktor Frankl, the founder of the 'Third Viennese School of Psychotherapy' believed that people live in an existential vacuum because they are not given the chance to search for real meaning in their lives (Frankl, 1996). The industrial society focuses exclusively to 'vita activa' even though this would demand a counterpart, namely the 'vita contemplativa' where people are free to concentrate on their role in the world (Frankl, 1996, p.37). While the consumption society tends to generate countless 'needs', it fails to handle the most important: humans' desire to find meaning in everyday lives. Hence, even in an affluent society where every basic needs are being covered, serious existential vacuum subsist. Frankl (1996, p.17) believes that it is the energy crisis and economic de-growth that follows such a crisis that provides the greatest chance for humans to find this meaning in their lives.

Accordingly, in order to achieve reduction in private consumption and a shift towards the emphasis on social capital rather than material capital, new values must arise and the notion of basic human needs must be redefined. This redefinition would enable the downscaling of production as well as the rebalancing of work-life activities without decreasing overall well-being. As Kallis et al (2012) state the increase in leisure time also leads to the accumulation of the stock of social ties and this can compensate for the reduction in personal consumption, assisting society in disassociating growth from welfare perceptions. In such a scenario, policy tools that enhance more equal distribution of wealth, invest in better public services, and recognise activities with lower productivity, higher labour intensity but with higher work satisfaction and added social value can lead to higher quality of life than generalised growth (Kallis et al, 2012).

Soper (2007) deals with the conceptualisation of human needs on a philosophical level. The questions she raises are about the nature of needs, whether we really can make distinctions between needs, wants, desires, preferences, choices and whether such things as universal “basic needs” exist or needs are subjective and partly socially constructed. Moreover, if there are such things as basic needs, do they just include food, water and shelter or are there distinctively human needs that have an intrinsic value. The way we answer these questions is crucial as to how we perceive the role and extent of the welfare state and development. Global capitalism is built on insatiable needs and wants, and the upholding of this without concern for ecological limits is one of the most controversial elements of political discourse. On the other hand, “satisfying basic needs” of people living in the developing world has become a business on its own (Soper, 2007).

Even if there may not be a consensus on whether it is possible or morally acceptable to normatively define human needs, most social greens would certainly agree that we must move away from the current definitions. Research on Human-Scale Development (Max-Neef et al., 1991; Cruz et al, 2009; Guillen-Royo, 2010) offers significant contributions to the re-conceptualisation of human needs. The HSD approach focuses on the “art of living well”. The main ideology behind the need of elaborating such a new approach is that the modern society and economy has moved away from the

concept of chrematistics (the art of acquisition) being just a mean to oikonomia (the art of “household management”) and ended up being an end in itself. Consumption and acquisition is no longer just one way of fulfilling one’s needs but it has managed to turn the conceptualisation of human needs around and now the very attribution of human nature seems to be revolving around the idea of unlimited desires that can be fulfilled or substituted by any monetised good or service. The HSD approach aims at describing human needs holistically. In its concept, needs are finite, few and classifiable, and they belong to the following categories: subsistence, protection, affection, understanding, participation, idleness, creation, identity, freedom and sometimes transcendence. Needs may be common to all humans but they may also vary in degree due to factors like characteristics, gender, physical and psychological conditions, age, etc. These needs can be met by so-called satisfiers that are classified into being-having-doing-interacting. The satisfiers are not static; some can be complementary to each other, some can to a certain degree compensate each other and some may be more or less interdependent. Not all satisfiers can be traded and they are nonmaterial, even though material goods may in the end relate to a given need. (Cruz et al, 2009; Guillen-Royo, 2010)

Amartya Sen’s (1995; 1997) capability approach is also aimed at redefining well-being but not from the perspective of needs but the perspectives of “substantive freedoms”. Sen agrees that certain needs may be common to all humans but argues that this should not be our primary focus as they do vary significantly. According to Sen (1997) needs vary based on personal heterogeneities (e.g. age, disability, gender); environmental diversities (such as climate); variations in social climate (e.g. availability of public goods); differences in relational perspectives (e.g. living in a poor or rich community); and finally on distribution within the family (e.g. the ratio of earners and non-earners). In order to do justice to these diversities, the capability approach suggests that we concentrate on enabling people to obtain a certain quality of life in terms of longevity, survival, literacy, fertility, employment status, etc. However, even if disposable income is an important factor, this enablement does not merely involve material consumption through income (Sen, 1995; 1997).

These arguments are especially important for the redefinition of work. If we accept that human needs are not restricted to needs that can be fulfilled by material consumption, it becomes possible to reposition the contribution of work to well-being. The current definition of work is that of a negative utility: something we must endure in order to gain access to consumption. In such a context, work is just a tool to individual material gains and the more we work, the better off we are. However, this is a relatively new perception of work in human history and can be dated back to the appearance of the Protestant ethics (Granter, 2008). Torgler's empirical study (2011) of work values in European countries showed that besides their satisfaction with their family background and marriage, work satisfaction is the most important contributor to well-being. Even though the correlation between happiness and work can be strongly substantiated, the base of work satisfaction has been clearly eroded lately (Torgler, 2011).

Referring back to Max-Neef's definitions of human needs, besides subsistence and protection such needs are strongly related to work as participation, understanding, creation, self-development and affection (Max-Neef, 1991). As soon as we can incorporate such needs into the redefinition of work, our current perception of work as an at least 40-hour long paid activity changes. In the case of subsistence and protection - beside wage-labour - the notions of housework, gardening, and self-sufficient farming also occur. The need for participation can be satisfied through community work and deliberative processes; understanding through the recognition of self-development and learning as work activities; creation both through more meaningful work or any non-monetised creative activity from playing music to gardening. Adding affection to the range of human needs in the discourse on sustainable employment, the concept of work can include community work as well as activities performed in order to take care of family and the closer community like child-care or nursing the elderly. Extending our understanding of human needs is hence closely related to our ability to redefine work and employment and opens up new ways to adapt to new-found challenges of our changing times.

2.4.4. *Redefinition of work*

In accord with the redefinition of human needs, there are two notions that often appear in the social green literature with regard to the redefinition of work: the role of unpaid work and the reduction in working hours. These are strongly related with the fact that social greens aim at changing the consumption patterns in order to reduce environmental strains. Let us turn our attention in more details to the relationship between work and unsustainable consumption, an area not discussed in mainstream literature related to employment issues.

Social greens would agree that strong sustainability cannot be achieved on the current levels of consumption (Røpke, 1999; Sanne, 2002; Schor, 2005b). However, the drop in consumption depends on people's willingness to consume less. Sanne (2002) examines whether it is individual choices that lead to ever increasing levels of consumption or people are simply locked in through employment patterns, urbanisation or the social norms of acceptable lifestyles. In the utilitarian approach, individuals maximise their welfare through their consumption. However, these dynamics are strongly related to our desire to belong to reference groups and gain access to so-called positional goods that reflect our position in society. Raising consumption is also prompted by the multiplication of one or two person households as a result of individualisation; increased distances due to urbanisation; and the ever-changing technological changes (Sanne, 2002). As described previously, work and consumption are the two sides of the same coin: consumption is the reward and work is the effort that we must endure in order to gain the reward. However, this is a self-reinforcing tendency. We no longer work more in order to consume more but we also consume more once we have earned it (Røpke, 1999; Sanne, 2002). With a change in the perception of our well-being and basic needs, it is possible that values change and alternative lifestyles appear where welfare is not just the result of having but also the result of doing. This means that social standings will not only be influenced by material consumption but also participation in art, sports, deliberative politics, and active leisure. However, these lifestyle choices will never be sufficient if employment circumstances do not change. And the most important change would be the reduction in working hours (Sanne, 2002). In case labour productivity does not drop, it is likely that the effects of de-

growth on the well-being of society can only be offset by reducing working hours or disconnecting income from wage employment (Martinez-Alier et al, 2010; Nierling, 2012). In Spangenberg's sustainability scenarios simulation, the rate of unemployment in Germany decreases from 12% in 2000 to about 3% in 2020 but at the same time working time per capita per year decreases; and the average weekly working time in 2020 is about 27 hours per week (Spangenberg et al, 2002).

Pullinger (2009) conducted empirical research relating to the correlation between working hours and ecological sustainability. In his definition, state measures that help restore work-life balance are aimed at enabling workers to schedule their work to suit their own needs without jeopardising their paid employment. Such measures include examples like sabbaticals introduced in Belgium where an employee has the right to take a leave of absence for a year once in his career, while the employer is obliged to take him back after his leave. Currently, three per cent of employees take up on this opportunity. Pullinger (2009) examined how these measures influenced the ecological footprint of two earner households with children and concluded that there was a correlation between ecological strain and working hours but this was more due to the reduction in earnings rather than the reduction in working hours.

This substantiates why the shortening of working hours have met fierce opposition both from employers and employees (Kronenberg, 2010). It is clear that – especially in the case of salaried workers - employers have a lot to lose if working hours drop (Røpke, 1999). As discussed previously, Sanne (2002) argues that workers may want to choose shorter hours but they are locked into patterns of life that prevent them from doing so. Such conditions include among others urban structures that require lengthy trips to work and additional consumption demands such as a second car for the family; or the differing levels of education that prompt parents to chose more expensive housing areas pushing them towards higher income goals trading leisure for work. The fact that the social understanding of work is the 40 hour paid full-time employment also makes working hours more of an institutionised social construction rather than an individual choice (Sanne, 2002).

Schor's analysis (2005b) of the possibility of working hour reduction comes to the conclusion that this is only an option if serious measures are implemented in order to

counteract employer resistance. Such measures could include the reduction in social benefits paid by the employer or other cost-neutral solutions to working hour reductions. It is not only the employers' counter interests that must be balanced but also that of employees. It is clear that workers are unwilling to give up their achieved consumption levels. However, research shows that even if they resist giving up current incomes, they are willing to relinquish future gains (Schor, 2005b).

According to Kallis et al (2012) - besides a reduction in working hours - meaningful sustainable employment may also include unpaid work like subsistence production, caring, communal work and social participation in order to provide people convivial lives beyond paid labour and reverse the logic of commodification. Similarly Nierling (2012) also argues that non-institutionalised unpaid work outside the economic sphere enables people to pursue sustainable lifestyles through providing certain forms of subsistence for themselves and the community and participate in social dialogue. Hence, any policy intervention that enables decoupling work from income and overcomes the central role of paid work may assist the transition to a more sustainable society. This would, however, prompt a new way of building societal orientations, especially in recognising the individual value of unpaid work (Nierling, 2012). Recognition received by individuals in their non-monetised contributions to society can replace the positional competition that is now made obvious through increasing consumption providing an incentive towards a more cooperative society. Nierling (2012) uses the normative concept of mixed work that entails both paid and unpaid work in order to satisfy human needs. In this concept paid work still plays a central role in employment but is being complemented with various other work activities that provide for needs that cannot be commodified (Nierling, 2012). This, however, demands different institutional structures as well as changes in personal attitudes.

The issue of non-paid work is also important from the unsustainability perspective of current social and economic convention that does not consider civic or household duties work. According to Patel (2009, p.67)

“the daily work of rearing children, maintaining a household and engaging in civic work – the unpaid slabs of work that feminists have called “women’s triple burden” – remains unpriced worldwide. Were all unpaid work to be remunerated,

the sum was estimated in 1995 to be 16 trillion dollars... Back in 1995, this was more than half the world's total output."

2.4.5. The guaranteed basic income

The most commonly cited policy tool that might be capable of achieving such shift towards mixed work is the guaranteed basic income (Guillen-Royo, 2010; Kallis et al, 2012; Berg and Hukkinen, 2011; Spangenberg, 2002; Liegey et al., 2013). The guaranteed basic income is a monthly stipend from the state paid to all citizens in equal amounts unconditionally. This would guarantee the most basic subsistence for everyone and any other earnings would be for further consumption. The basic income would be covered through the tax system, preferably through green taxes. The system would not only make the concept of unemployment or full employment obsolete but would also contribute towards fighting poverty and social injustice.

As we have seen in the institutionalist subchapter, one of the core ideas of reducing consumption levels is to increase the tax content of products with high ecological impacts. However, this would also mean that the increased prices of goods would have an influence on the social system as the costs of social benefits (e.g. unemployment benefits, pensions, child benefits) would also increase. It is also clear that under current economic paradigms, reduced consumption would lead to the loss of jobs that on the one hand puts yet another strain on the welfare state and on the other it would mean the definite end of full employment. Even without a drop in consumption, the mainstream ideal of achievable full employment has been questioned a number of times (Rifkin, 1995; Beck, 2007). In Rifkin's phrasing (1995), if industrialisation has eliminated slavery, the information age will eliminate full employment.

The theory of the guaranteed basic income was prompted exactly as a compensation for the transfer incomes and as a way out of the illusion of full employment. One of the founders of the basic income movement, Van Parijs (2000) believes that an income given to all citizens in equal instalments would on the one hand unify transferred incomes provided by the welfare state; while at the same time it would guarantee basic sustenance to all. He also stresses that the only answer to the unemployment problems in Europe under the current paradigms is the induction of further growth

that faces ecological and social limits, while with the guaranteed basic income, the notion of unemployment would be completely changed (Van Parijs, 2000).

In the Hungarian edition of his book, 'The brave new world of work', Beck (2007, p.11) in an interview provides the following answer to the problem of unemployment:

*"In a certain way, unemployment is not a defeat but a victory: with the increases in productivity with minimum human labour inputs we have reached maximum results. The answer to unemployment would be the guaranteed basic income that was to be financed by direct and indirect taxes. This would guarantee the fulfilment of the very basic needs but not previously achieved standards of living."*⁸

The most common criticism of the theory of guaranteed basic income is that it would reduce the willingness to work. However, many psychological studies have shown otherwise. Haagh (2011) substantiated that it is a highly common belief that any income providing a sufficient level of security (like the basic income) drives people away from work and towards merely concentrating on their own self-fulfilment in the free time. Nevertheless - work satisfaction being an element of well-being – people tend to find more satisfaction in their jobs if they have secure incomes through secure jobs. Therefore, the presumption that people do not work if they have an income from other sources than wage labour does not hold true. Currently this security is being sought by the individuals and presents them with true overburden. In neoclassical economic theories, work motivation is solely determined by wage levels and has little to do with self-fulfilment or sense of security. However, as soon as the factors of work motivation multiply and we do not get bogged down with mere survival, the correlation between motivation and wage levels are not too straightforward. Haagh (2011) concludes that these types of guaranteed incomes stabilise the individuals' economic background and enhance their feeling of being in control of their own working lives. And this leads to enhanced work motivation (Haagh, 2011).

⁸ Own translation. The original text: „Egy bizonyos értelemben a munkanélküliség éppen, hogy nem vereség, hanem győzelem: a termelékenység fokozásával minimális emberi munkával maximális eredményeket sikerült elérni. A válasz a létfenntartást garantáló, mindenkit megillető jövedelem lenne, amelyet közvetett és közvetlen adókból finanszíroznának. Az alapvető szükségletek kielégítését tudná biztosítani, nem az eddigi életszínvonalat.”

The guaranteed basic income does not only detach us from the illusion of full employment but also facilitates the flourishing of different types of work arrangements and reduces deep poverty. Its aim is not to lose the sense of doing useful work but to relieve people from the pressure of providing basic sustenance.

As Kallis et al (2012, p.176) summarise in their article:

“A basic income provides a minimum safety net to all citizens, reduces the compulsion for —and the importance of — paid employment (and hence the social distress from unemployment) and provides opportunities for low-intensity, non-enumerated (uncommodified) activities, including political participation. Unlike a minimum wage, the Basic Income is a fundamental new way of distributing national product and surplus.”

2.4.6. Working in and for the community

The redefinition of needs and work, the reduction in material consumption and a guaranteed basic income would enable us to reevaluate our approaches to the forms of community work. Currently, community work is based on either unpaid volunteering or – as is the case with the social economy and public work schemes – on the pressure to provide basic subsistence. At the same time community work contributes just as much to the welfare of society as economic activities and could be a legit level or work organisation in society. In a world where different forms of work are appreciated, community work of public work could become a highly appreciated form of employment.

If we set aside the hardships of the social economy under the current economic paradigms discussed under the institutionalist approach, the current social enterprise models give us a good glimpse as to how business could be done in an ecologically and socially sustainable manner. The CIRIEC (2007) report concludes that the social economy contributes significantly to the democratic culture of society and provides a base for participation from all social groups. Moreover, it has a significant impact on local initiatives from rural development to the rehabilitation of industrial sites and hence play a part in balancing out regional disparities. Its operational methods enable them to distribute incomes and produced goods more fairly (CIRIEC, 2007). However,

as research on social enterprises in the UK shows, this is only possible if trust exists between the different social actors (Amin et al, 1999).

Social greens believe that the different forms of social enterprises should play a part in sustainable employment. As Cato (2009) put it, it is especially easy to utilise one's skills and act holistically in social cooperatives where people share their knowledge and capabilities as well as the responsibilities and devote themselves to common values. Furthermore, the author believes that if we turn current logic upside down and regard mainstream business 'social economy', i.e. economic actors that work in and for the community, social values, service levels, product qualities and environmental sustainability becomes the norm (Cato, 2009).

There is literature that may be considered social green on lifestyle changes in order to harmonise work with ecological sustainability in the topic of the Slow Movement. The original idea of the Slow Movement was to counter balance fast-food chains and promote Slow Food that does not only refer spending more time to eat well but also to the way food is being produced. Later on this movement was transferred to other areas of life, such as Slow Money, Slow Fashion, Slow Travel and Slow Design. The movement itself promotes internal human values and the triumph of quality and sustainability over the values of the consumer society and quantity. The "slowing" refers to future studies that forecast an obligatory change in the pace of life due to overconsumption (SPREAD, 2012). Gelardin and others (2010) have raised the idea of Slow Career in their research report in full analogy to the Slow Movement. The Slow Career suggests a career path where human capabilities, ecological sustainability, and human relationships are integrated. Therefore, besides the earning potential of careers, their physical and mental requirements as well as the responsible and fulfilling relationship to the community and family must also play a role in career decisions. They also forecast that in the 21st century the concept of career will become obsolete as work will be inseparable from "home life" (Gelardin et al, 2010).

2.4.7. *'Site here, sell here'*

Social greens promote ecolocalism and bioregionalism with "site here, sell here" policies as well as local currencies and LETS, Local Exchange and Trading Systems

(Clapp and Dauvergne, 2009, p.244). This tendency is a direct response to the fact that it is not only ecological but also social diversity that is being lost and modern industrial societies no longer care for 'localities' and sacrificing loyalty to a place leads directly to the loss of its significance (O'Hara, 1995). As Beck (2007) puts it, we live in the paradox of social proximity and geographical distance. Global integration has led us to perceive conflicts geographically far from us socially close, if it affects our own circles. At the same time, on the local level we face disintegration, as we can live next to each other and still feel oblivious to problems (Beck, 2009).

Ecolocalism emphasizes the importance of local production and consumption loops. As Curtis (2003) explains, the so-called eco-localisation theories argue that individual ties to localities reinforce efforts to preserve local natural resources as well as consolidate solidarity of local communities. Eco-local economies place the locally available capital (natural, social, physical, financial and human) in the centre of its operations, and hence encourage self-reliance. The current situation has isolated production, consumption, and the externalities of production processes and this tendency not only dissociates the actors from the responsibility of their actions but also damage social ties. Local production and consumption not only reduces the negative externalities of long-haul logistics but also optimises production in order to protect local capital. In this economic vision, long-term goals replace short-term gains and therefore, the economy moves closer to the Aristotelian concept of *oikonomia*. This economy differs from the mainstream economic concepts not only in its geographical limitations but also in its definition of economic activities and its redefinition of efficiency. Eco-local economies are not exclusively about profit-making, market exchange and consumption but also about self-reliance and community values. Hence, it includes the local social economy such as collectives, cooperatives, community enterprises, barter and skills exchanges, mutual aid, volunteer activity and also household and subsistence production (Curtis, 2003).

Bioregionalism also focuses on establishing an economic system based on local production and consumption but thinks in somewhat stricter terms than ecolocalism. While ecolocalism does not determine what constitutes 'local', bioregionalism insists

on adjusting economic and political boundaries to local ecosystem borders. As Gray (2007, p.792) defines:

“Bioregion literally means ‘life-territory’. Taken a step further, bioregionalism refers to the organisation of human society within the ecological capacity of a natural region. Bioregions are defined by ecological characteristics such as mountain ranges, water catchments and vegetation assemblages.”

As Gray (2007) describes bioregional theories only foresee two political levels: bioregional and global. Hence, besides the decentralised decision-making based on participation on bioregional levels only global cooperation exists. In terms of economic activities, besides local production it is only the sharing of knowledge, innovation, music, and certain services and the trading of a few raw materials and cultural goods that are not substitutable locally that happen on a global level. Imported goods are not excluded from the markets but local good would have significant comparative advantages. With regard to employment, the bioregional economy

“has a strong non-market sector which emphasises the importance of cooperation and reciprocity. Individuals engage in meaningful part- time paid work, and also contribute to community projects, continue to learn new skills and spend time with friends and family. Production technology is able to be locally understood and maintained, and is post-industrial. New technologies are evaluated and accepted or rejected by the community.” (Gray, 2007, p.797)

Bioregionalism relies on the local organisation of society but does not exclude virtual global communities or cross-border co-operations. Hence, bioregionalism imagines the global network of regional economies and societies (Gray, 2007).

Even though there are few detailed studies on the effect of ecolocalism or bioregionalism on employment, their relationship can be easily determined on a superficial level. Local production and consumption loops would harness the local labour capital and hence reduce unemployment levels as well as the negative social and environmental impacts of mobility and migration. The idea of supporting LETS to fight unemployment has been implemented in employment policies in the past in

Australia (Williams, 1996). Other countries have also experience a surge in LETS initiatives that enable us to take a quick look at how local economic systems may work. In most LETS, the members substitute monetised services with work done for each other. Pacione (1997) defines in great details the ‘anatomy’ of such co-operation networks based on the experience of a LETS on the Isle of Skye in Scotland. LET members pay a yearly fee for the administration costs of the system either in local or in national currencies. Every member creates a list of goods and services that s/he is capable of providing and this list is published on a common site for all members. From here onwards, the members can trade with each other in local currencies. Members have individual ‘accounts’ and ‘chequebooks’ administered by the central accountant. Anyone can check another member’s balance that can even turn into negative. If a member leaves the LETS, it is only a moral obligation to pay for negative balances. Any abuse of the system would be reported to the managing board of the LETS and after a hearing process, the member at fault can be excluded from the system. As the local currencies of LETS cannot get inflated and debts do not raise interest rates, the ‘money’ really is just a trading unit and not stored ‘value’. Pacione (1997) emphasises that LETS are not alternatives to the formal economy but they can act as supplements and self-help solutions. Williams (1996) has come to the conclusion that while in the orthodox economic logic, rural development depends of the exportation of local goods and services; besides their ability to attract capital, eco-local solutions could be based on mechanisms of disabling the outflow of local capitals.

Seyfang and Longhurst (2013) mention beneficial employment effects in their international review of international community currencies such as time banks, local exchange trading schemes, ‘trueque’ barter markets and city-wide local currencies. In their article they relate CCs to eco-localisation movements that aim both at protecting local resources and relieving unemployment problems. They also draw attention to the ability of such movements to value, recognise and reward non-monetised work performed in the non-market economy already mentioned above. Furthermore, they claim that such local community currencies can provide basic subsistence to those who are otherwise crowded out of the formal labour-market, hence empowering “socially-

excluded groups, thereby boosting self-esteem, self-confidence, social participation and wellbeing” (Seyfang and Longhurst, 2013, p. 68).

As North (2010) concludes, the theories and practices of ecolocalism can provide a real alternative in times of global environmental crisis and diminishing energy supplies but it still waits to be defined how the different endowments of different regions can be handled and how we can draw a distinction between local and global levels. Nonetheless, ecolocalism is a theory that draws attention to questions that are widely ignored by the mainstream economy and acts as counterweight to dominant theories forcing them to face potential alternatives (Curtis, 2003).

Slightly different to eco-localisation but in relation to the connection of rural issues and employment, Gutman (2007) proposes the establishment of a new rural–urban compact. In this concept, cities pay for their benefit from rural products and ecosystem services, hence contributing towards environmental sustainability. He claims that in this new rural–urban compact employment opportunities would arise in rural areas as jobs in the conservation and sustainable management of natural resources would be created. However, at the same time, it is a challenge that currently prevailing conservation models must also change from being natural resource intensive to more human labour intensive (Gutman, 2007). Many social greens encourage the reorganisation of urban districts so that life areas (such as schools, work-places, shops, entertainment) would be all in one neighbourhood, rationalising travel and logistics. This concept also helps re-establish community ties and therefore leads to higher well-being (Korten, 2009).

2.4.8. The ‘service economy’

Another social green model is the idea of the ‘service economy’ or sometimes call the ‘solution economy’ (Hawken et al, 1999). The service economy would focus on producing goods with long duress and charge their costs as service fees. For example people would pay a monthly fee for using their washing machines that includes repairs as well as replacements if needed. On the one hand, this encourages producers to design products with the longest possible life-span and on the other it would replace natural capital intensity with labour capital intensity. Hence, under the service

paradigm employment would increase and most people would work in the production and customer-service phase and not the raw material phase. It would also shift the attention from increasing labour productivity to increasing resource productivity (Hawken et al, 1999).

2.4.9. Social greens and the sustainability perspectives

As it has become clear from this subchapter, social green concepts follow a wide range of topics and there is no straightforward answer as to what may constitute social green. There is also a rift between social greens in their vehemence opposing current structures. Some call for radical changes and would prefer to dismantle the existing global economic infrastructure and some merely want significant reforms (Clapp and Dauvergne, 2009). However, their focus is always the shift from material consumption towards social and ecological justice. Their approaches satisfy the criteria of strong sustainability and certainly concentrate on the improvement of social sustainability under a non-growth paradigm. It comes to no surprise that these are the concepts that fulfil the best the perspectives chosen in this thesis.

2.5. OVERVIEW OF SUSTAINABLE EMPLOYMENT PERSPECTIVES

The following table summarises the four environmental perspectives from our focus on sustainable employment and defines their relationship to the three pillars of sustainability:

Paradigms	Environmental perspectives	Leading concepts	Employment perspectives	Environmental sustainability	Social sustainability	Economic sustainability
Neoclassical mainstream	Market liberals	Ecological modernisation Enhancing eco-efficiency Green economy Allowing the markets to adapt freely to ecological challenges	Investments into the green economy creates green jobs	Weak	Merely focuses on the creation of jobs	Sustainability based on growth
Neoclassical mainstream	Institutionalists	Rules, regulations, state intervention on local, national and global level to correct market failures and minimise externalities Green taxes Incentives for establishing social cohesion Institutional systems for enhancing market efficiency	Tax reforms reduce labour costs increasing demand for labour, reducing unemployment The social economy and public work schemes provide employment to the most vulnerable social groups Labour-market institutions support the matching of supply and demand on the labour market	Weak	Focuses on social cohesion but fails to address distribution and equality issues	Sustainability based on growth

Paradigms	Environmental perspectives	Leading concepts	Employment perspectives	Environmental sustainability	Social sustainability	Economic sustainability
Radical change	Bio-environmentalists	Population control Radical intervention to reduce consumption	Not specified	Strong	Focuses on more equal distribution of resources	Steady-state economy
Radical change	Social greens	Redefinition of human needs Re-establishment of community ties Restoration of work-life balance Ecolocalism, bioregionalism Service-economy	Redefines work to include non-monetised activities Reduced working hours, more leisure time Ecolocalism enhances local employment levels and reduces migration and forced mobility Shifts economic activities from resource intensive to labour intensive	Strong	Strong social sustainability focus	Steady-state economy or de-growth

Table 1: Overview of the four environmental perspectives from our focus on sustainable employment

Focusing on our chosen perspectives laid out in the introduction, the overview shows that even though they put effort into making the economy more environment-friendly, the leading concepts of market liberals can only serve as transitional measures to sustainability. The main reason for that is that they do not aim at achieving strong sustainability. Institutionalists can support efforts with state intervention as long as they are not focused solely on making the current growth economy greener but embrace radical change paradigms. Bioenvironmentalists meet our criteria of focusing on strong sustainability and the creation of a steady-state economy but they fail to address the issue of social sustainability fully. It is undoubtedly social greens who have the most to say about directions where strong environmental sustainability and social sustainability complement each other in a steady-state or de-growth economy.

However, as Clapp and Dauvergne (2009, p.249) express it so meaningfully,

“There is ... no trouble-free path to a green world... Embracing such diversity of knowledge, of knowledge with many “correct” answers and no “absolute” certainties, will not, we sincerely hope, paralyze environmentalists with perplexity. Instead, we hope it will empower environmentalists – market liberals, institutionalists, bioenvironmentalists, and social greens – to probe their own beliefs, so as to one day have a humility of mind that comes from the true understanding of the arguments and evidence of others.”

2.6. THE TRANSITION MANAGEMENT APPROACH

Transition management (TM) literature offers an approach on how to change established systems (Király, 2013). From the previous subchapters it has become clear that sustainability is a highly complex issue with no sole right answers as to how we might go about achieving it. The most common perspective among those who aim at establishing social and economic systems that respect strong sustainability is that we must not continue business-as-usual. However, the most difficult issue at hand is how we can break out of systems with numerous lock-in effects such as currently available infrastructure or habits and routines (Voss et al, 2009). It no longer seems an option to just adjust small parts of the current systems but a transformative change is required to achieve radically new economic and social structures (Grin et al, 2010).

Transition management is a theoretical background aimed at facilitating such changes. In order to understand the core concept of transition management, we must first determine what transition is. Kemp and Loorbach (2003, p.9) define transition in the following way:

“A transition

... is the shift from an initial dynamic equilibrium to a new dynamic equilibrium

... is characterised by fast and slow developments as a result of interacting processes of structural change

... involves innovation in an important part of a societal subsystem”

Loorbach (2007, p.2) adds that transition is a multilevel co-evolution; unpredictable in terms of direction and pace; and is driven by external environmental factors and internal innovation.

Transitions have happened in the past but we have no knowledge of anyone trying to ‘manage’ such transitions. At first sight, the most unconvincing element of transition management is management itself. The question presents itself whether it is possible at all to manage such an unmanageable process like social change. Many would argue that this is impossible (Tenner, 2011). As long as we stick to the traditional definition of management as setting strategic targets, identifying quantifiable measures to achieve such targets and implement them in a linear manner, the answer would surely not be affirmative. However, transition management moves beyond the conventional approach of management and gives up the ideal of a controlled process. Management in transition management literature incorporates the acceptance of multiple solutions, trial and error approaches, unpredictability and uncertainty. It does not plan and control each step along the way but agrees on a normative direction and tries to move forward towards it through inducing and influencing change (Kerkhof and Wieczorek, 2005). TM believes in understanding relationships and transitions and supporting them with newly developed tools and interventions that lead towards the right direction (Voss et al, 2009).

Transition management is a comparatively new policy-oriented research field but there has been a wide discourse in the 21st century on transition in the academic world (Voss

et al, 2009). Governments in some countries have realised that short-term perspectives drive societies and the ecosystem to the brink of collapse and radical changes are needed. Distinct policy steps such as green taxes may not be adequate answers without fitting them into a larger strategic framework (Voss et al, 2009). There are so called 'persistent problems' where specialised and isolated responses are no longer adequate (Kemp and Loorbach, 2003). Hence, a few governments – the Netherlands being the forerunner - have started using transition management techniques in identifying policy responses (Kemp and Loorbach, 2003). Examples for such experiments include research on technological elements (like infrastructure or equipment design for topics of energy, transport, or mobility) as well as social and cultural factors (like habits, norms and values for topics like sustainable consumption).

Unlike what we are used to in current politics, transition management is a long-term perspective with short-term implications (Kerkhof and Wieczorek, 2005). Long-term perspectives existed in politics before the 70s but later – with the rise of market liberalism - the logic of the market took over (Voss et al, 2009). This meant that most things were left to the mercy of the magic hand of markets and government interference was considered detrimental to market efficiency. Once that logic failed and the world has been experiencing the triple crises, some governments have realised that new approaches are needed with longer prospects than election cycles (Voss et al, 2009). One of these approaches is 'reflexive governance' (Kemp and Loorbach, 2006; Shove and Walker, 2006). As seen from the previous chapter, reflexivity is not new to social science. It means that actors are fully aware that their actions impact and influence their environment and reflect on the potential action-reaction relationships in during the course of actions. This pre-requires the acceptance of the fact that planning is inherently uncertain and consequences of interventions are unpredictable (Van der Meer et al, 2005). Therefore, the aim is no longer to find the one best solution or the only linear way to achieve a goal or draw up one simple model that describes the situation (Voss et al, 2009). This may work when the issue is simple but in the case of complex problems, reflexive intervention is necessary (Van der Meer et al, 2005). Reflexive intervention means that policy strategies are long-term enough to know the desired direction and have different scenarios that determine certain paths

but flexible enough to adjust as soon as its action-reaction relationships are detected. Therefore, it is just as much a learning process through the understanding of interactions and co-evolutions as a management method (Kerkhof and Wieczorek, 2005). Moreover, this learning relates to both social and state actors (Voss et al, 2009).

Király (2013) present transition management through five major attributes. Transition management processes are open-ended; multi-level; multi-staged; based on trial and error; and participatory. The open ended nature of transition management means that even though the directions are determined but the processes themselves have no set time-limits or deadlines (Kemp et al, 2005). Therefore, as opposed to classic management, it is also impossible to quantify strategic goals linked to well-defined milestones (Kemp and Martens, 2007). This indicates how the theory of transition management gives up the idea of total control and focuses on the facilitation of a process as well as learning and reflexivity.

Kemp and Loorbach (2006) identify three levels of transitions. The first one is called the 'landscape' and represents the social and economic setting where transitions take place on a macro level. By nature, the landscape changes the slowest and is the hardest to influence. The second one is the 'regime' on the meso level that is made up of dominant, mainstream ideas; technologies and principles that present certain lock-in effects and their infiltration in the system prevent alternatives to rise. The third is the 'niche' that represents the local level where most innovations can take root (Kemp and Loorbach, 2006). According to Grin et al (2010) the currently reigning perspective is that meso and macro levels cannot be changed. However, they argue that these levels only seem stable and stationary from individual perspectives. Nonetheless, it is true that most changes initiate from the niche and it is the radical innovations in the niche that bring instability and unpredictability to meso and macro levels. This also applies vice-versa. The more unstable meso and macro levels are, the more chances initiatives from the niches have to instigate change in regimes and later on in landscapes. Nevertheless, it is often the case that innovations stay in the niche and even though they may exert pressure on regimes but never really take-off. Transitions are hence the results of the interaction of these three levels (Grin et al, 2010). This also shows why bottom-up initiatives receive a lot of attention in transition management.

Kemp and Loorbach (2003) also identify three stages of transitions. First is the predevelopment phase where many experimentations take place but whether they can take root and influence regimes depends on the second phase, the take-off. This is where real changes start and if they manage to fight off and get past current regimes, the transition moves into the third stage, namely the breakthrough. Once that happened, a new dynamic equilibrium arises at the stabilisation stage (Kemp and Loorbach, 2003). The success of an innovation to get from the predevelopment stage to the stabilisation stage is a process of trial and error. Many innovations fail along the way but after the learning process, its adjustment may advance further. This does not mean that innovations should be off-chance but they should primarily be aimed at understanding and learning.

Last but not least, transition management is based on participation (Voss et al, 2009). The literature on transition management puts a great emphasis on the participatory aspect of the method. This is not only for reasons of legitimacy (Loorbach, 2007). The participation of a wide range of actors is absolutely necessary in the process for a number of reasons. Firstly, one actor or one type of actors cannot possibly have an overview of the problem and hence knowledge sharing is crucial in the process (Foxon et al, 2009). Secondly, participation facilitates transdisciplinarity as well as the incorporation of many different perspectives (Kerkhof and Wieczorek, 2005). It also stimulates dialogue and even if actors do represent their own expectations and interests, deliberation can lead to harmony (Kerkhof and Wieczorek, 2005). Lastly, the incorporation of diverse interests and views ease the prediction of what may happen during the process and can in a smaller arena test newly developed platforms (Van der Meer et al, 2005). The participatory process involves three main phases. Participants take part in the transition arena that facilitates knowledge sharing, interaction, learning and deliberation. They prepare common visions and finally they identify potential pathways that lead towards such visions (Pataki et al, 2012).

The role of the government changes in each developmental stage. In the predevelopment phase they must support the creation of transition arenas, boost innovation on local levels and facilitate social experimentation. In the acceleration phase, during take-offs and breakthroughs on the one hand they must encourage the

adoption of innovations and on the other dampen the side effects of the induced changes (Kemp and Loorbach, 2003). Finally, they must react to changes in the landscape by providing adequate institutions that suit the new equilibrium. The role of the government is not paternal and does not control the processes but facilitates changes (Kerkhof and Wieczorek, 2005)

The Figure below provides an overview of the theory on transition management.

TRANSITION MANAGEMENT

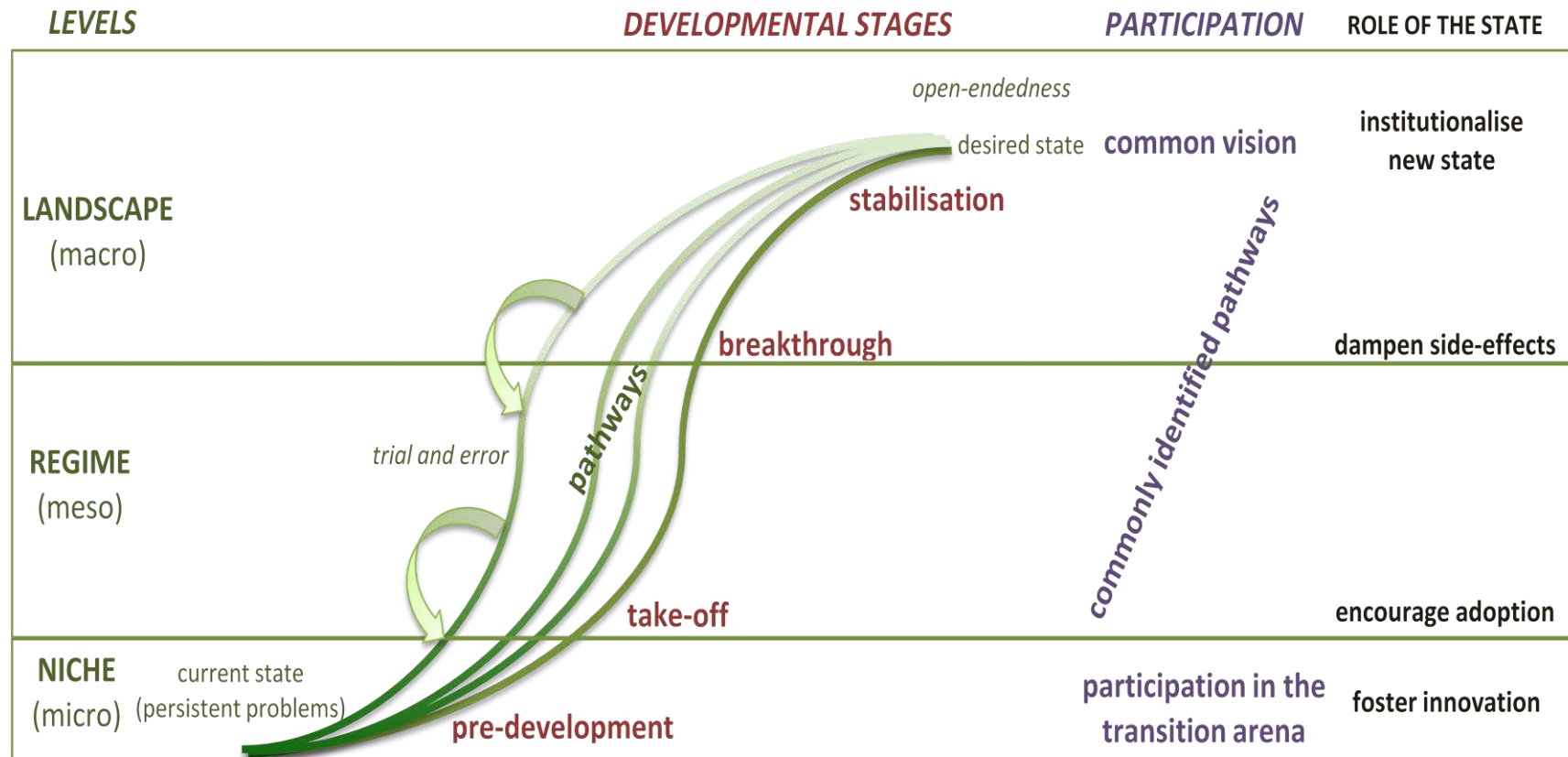


Figure 1: Overview of transition management – own compilation based on transition management literature used in the chapter

In summary, transition management is an interactive process with diverse actors (Kerkhof and Wieczorek, 2005) that takes into account the co-evolution of systems and the unexpected effects of action-reactions (Foxon, 2011). It replaces linear planning with an inspired and integrative approach (Loorbach, 2007). As Kemp and Loorbach (2003, p.11) say, *“transition management works with dynamics, not against them”*.

Jørgensen (2012) raises three important critical issues regarding transition management. Firstly, transition management presumes that there is some kind of central actor at least on the landscape level capable of managing transitions. However, this is not often the case and as more and more directions of change occur in the niches, these can lead to conflicts of interests. Secondly, actors are not present on just one level but they interact with others on all levels. Therefore, the transition process cannot be described linearly. Thirdly, transition theory may not be able to match research and complementary knowledge in order to provide a stable theoretical environment for the multiple actors in the process. While admitting the benefits of the transitional management approach, Jørgensen (2012, p.997) recommends the use of “arenas of development” (AoD) as an alternative:

“Instead of taking its outset in strong structural features represented by institutions and technologies, as is the case in the multi-level approach, the arena approach takes its outset in actor constellations and their collective sense-making activities. In the sense-making activities, existing configurations and institutions are reflected, but the stability of these institutions may be interpreted very differently by actors, depending on their relationship to these configurations.”

The concept of AoD is a more inclusive and fluid transformation process and enables conflicting alternatives to more flawlessly impact each other (Jørgensen, 2012).

2.7. THE METHOD OF BACKCASTING

Backcasting is one of the accepted research methods of transition management but it could just as well be a method of the newly developed AoD. Based on the aforementioned principles of transition management, backcasting is a participatory method that perceives that the vision of the future can influence our current actions. However, our current ways of thinking, and the lock-in effects we experience in the

presence can debilitate our perceptions of a possible future and hence our contemporary actions. This revelation serves as the basis of backcasting.

Backcasting belongs to the family of normative scenario building exercises (Vergragt and Quist, 2011, p.748) that envision futures of social establishments like companies, cities or whole societies (Quist and Vergragt, 2006). It is worth devoting some attention to what a normative scenario is as it plays the most crucial role in backcasting. According to Börjeson and others (2006) there are three types of scenarios: predictive, explorative, and normative. Predictive scenarios attempt to answer the questions of “*what will happen*” or “*what will happen if*” as in forecasting. Explorative scenarios are trying to find out “*what can happen*” and in most cases identify a number of possible futures in order to understand what elements influence the most the course of development. Normative scenarios answers the question “*how can a specific target be reached?*” This can be answered from the perspective of preserving the current state of affairs but adjusting certain elements in order to transform it to a desired state and from the perspective of transforming the system having realised that the current building blocks obstruct change. The vision that emerges in backcasting studies falls into the category of normative transforming scenarios (Börjeson et al, 2006).

The novelty of backcasting methods lies in the fact that rather than using the current state of affairs as a starting point in envisioning potential futures, it creates the vision of an ideal future and works its way back to the presence as to what actions could lead towards that desired state (JRC, 2008). This way it differs significantly from forecasting. The name itself also reflects this distinction as it stems from the word forecasting but swaps ‘fore’ with ‘back’ illuminating its nature of moving backwards in time rather than forwards. Robinson (2003, p.841), the scientist who first came up with the term ‘backcasting’ in 1982 explains the underlying principle of backcasting as follows:

“The essential rationale for a backcasting approach is twofold. First, our ability to predict the future is strongly constrained. There is fundamental uncertainty about future events, which stems from (i) lack of knowledge about system conditions and underlying dynamics, (ii) the prospects for innovation and surprise, and, most importantly, (iii) the intentional nature of human decision-making. These factors

do not make it impossible to say anything meaningful about future possibilities but they do seriously compromise our ability to predict the likelihood of alternative outcomes for complex human systems over the periods extending decades into the future.”

As forecasting follows a linear logic extrapolating current trends to future scenarios, it ignores these limitations (Robinson, 2003). Therefore, as opposed to the method of forecasting, backcasting begins with the development of a normative vision reflecting an ideal state and connects this future step by step moving backwards in time to our current state of affairs (Pataki et al, 2012). This way it corresponds better to the expectations of transition management detailed in the previous chapter, namely to assume from the beginning that processes are unpredictable and uncertain in their outcomes.

Another important distinction between forecasting and backcasting is the way it perceives the actors themselves. While forecasting presumes that actors simply adjust themselves to trends and events and merely follow them, backcasting assumes that actors move towards a perceived future direction while as a kind of feedback loop, their actions influence outcomes and directions (Robinson, 2003). Robinson (2003) argues that this assumption is closer to our everyday thinking as humans tend to act in a future-oriented manner. When we want to cook a meal, we decide what we want to cook and only then we go shopping for the ingredients and follow the steps that lead to the dinner we want. Hence, one of the most important underlying assumptions behind backcasting is that social actors influence the future just by what they perceive as an attainable future. This is especially true in the case of complex situations. If someone perceives that a sustainable world is unattainable, his actions will not lead towards sustainability. At the same time, if people perceive that their actions have consequences and can induce changes towards a desired future, their actions will reflect such responsibility.

Backcasting is not an attempt to substitute forecasting. Forecasting may work well in simple environments, where it is enough just to use a few variables and assume that the rest of the system remains constant. Backcasting, however, works better when the future is uncertain and the heterogeneous systems involved are highly complex and

the foreseeable trends of the present lead to unacceptable outcomes that demand continuous social learning in order to cope with rapidly changing natural, technological and social environment (JRC, 2008). As Höjer and Mattsson (2000, p.613) put it,

“The argument is that backcasting is mainly appropriate where current trends are leading towards an unfavourable state. Therefore, forecasting methods are necessary because they inform the backcaster when backcasting is required.”

In other words, backcasting is required when system innovations are absolutely necessary in order to break free from current trends. Quist and Vergragt (2000) introduced the term ‘system innovation’ for the combination of innovations on a system level including technological and cultural changes. They characterise the complexity of system innovations by a) the large number of variables; b) the large number of actors involved; c) the combination of different innovations including technological innovations and the so-called ‘soft innovations’ required for meeting cultural and institutional conditions (e.g. rules, legislation, paradigms, social structures, perceptions); and d) when the system only changes after their implementation in society (Quist and Vergragt, 2000:3).

There are at least four different types of backcasting (Wangel, 2011)⁹: target-oriented backcasting, pathway-oriented backcasting; action-oriented backcasting and participation-oriented backcasting. Target-oriented backcasting aims at working towards a specific goal in the future. In this case, an element of the future is given like the scenarios must reflect a vision where CO₂ levels are twenty times lower than currently. These often involve the analysis of required changes in the technical infrastructures but changes in social structures can also become part of the analysis. In the pathway-oriented backcasting the main focus is on the development of the normative vision itself. This means that the attainment of specific goals is downplayed, while the process concentrates on revealing the different pathways leading towards

⁹ The four types of backcasting are also presented in the co-authored paper “Backcasting for Sustainable Employment: A Hungarian Experience.” that appeared in the journal *Sustainability* (Köves et al., 2013). Only minor modifications have been introduced in this paragraph.

the future. The main question of these types of projects is usually about “how change can take place”. The third type of backcasting is the action-oriented backcasting, where the process focuses on the elaboration of an action or a strategic plan. Thus, from this perspective, a shared vision of the future and a common strategy to reach this future can facilitate the harmonization of efforts of actors working for the implementation of transitions. The fourth type is participatory backcasting which is essentially a creative workshop technique. This version emphasizes positive influences of the process on the participants themselves. So effects such as empowerment, social learning and community development are considered just as important, if not more, than other more tangible outcomes of the process (Wangel, 2011).

Quist and Vergragt (2006) identified five key elements of participatory backcasting that bring us closer to understanding the most important fundamentals of backcasting processes. The first element is the normative future vision itself and they emphasise the importance of understanding that these visions are not merely *‘analytical constructs but also social constructs’* that occur as a result of interaction between actors (Quist and Vergragt, 2006, p.1035). These visions also serve as guidance when handling problems where currently no rules or institutions represent consensus. Usually the end-point of the future vision falls between 25-50 years. The reason for this is twofold. Firstly, a longer timeframe is needed in order to create the necessary distance from the present and to allow for enough space for envisioning a qualitatively different future (Vergragt & Quist, 2011). Secondly, for most people the future they are able to imagine is constrained by their lifespan or that of their children’s (Robinson et al. 2011).

The second element is stakeholder involvement that enables the incorporation of diverse views and interests. Radical changes in socio-technical systems can only be achieved with the members of society and not against them. Therefore, proponents of participatory backcasting opt for the involvement of a wide range of stakeholders in backcasting projects (Robinson 2003; Robinson et al. 2011; Vergragt & Quist, 2006, 2011). The rationale behind this is that if once a future vision is constructed, the more members of the society are represented in the construction process, the more likely the vision reflects common grounds.

Another key element mentioned by Quist and Vergragt (2006) is stakeholder learning. As discussed previously in the subchapter on transition management, the issue of learning is in the forefront of such methods. Backcasting does not aim at describing the 'real future' or the 'most likely' future. It merely reflects a possible direction towards which actors can orient themselves. It facilitates a dialogue between the desired conditions of the future and the present and enables mutual learning. Learning does not only happen in the case of the individual participants who find out a potential direction they can move towards, it happens on the social levels as well as the results of such exercises are fed back into the social and political system. Moreover, this is not just learning through understanding but also 'learning by doing' as discussed in the case of transition management.

Kerkhof and Wieczorek (2005, p.735) define learning as something that implies a change and where those who learn undergo a change and improve their knowledge and/or action. According to them, there are four critical components to learning: a) the subjects of learning; b) the objects of learning; c) the results of learning; and d) the process of learning (Kerkhof and Wieczorek, 2005). Regarding the first component, it is clear that during a backcasting exercise policy-makers, researchers, participants, and if results are properly disseminated other stakeholders all learn. With regard to the object of learning, single loop learning occurs when the subjects of the learning gain insight into the policy options available and double loop learning happens if they also gain knowledge into the problem itself (Kerkhof and Wieczorek, 2005). The method of backcasting includes both single and double loop learning. A single loop learning in backcasting results in the implementation of certain policy measures or the modification of policy strategies, while double loop learning can lead to 'paradigm shifts' as the underlying assumptions may change during the process. With regard to the fourth component, transition arenas that facilitate learning must be organised on the basis of the following four principles: commitment (i.e. the willingness of actors to commit time and effort); fairness (i.e. representing as many viewpoints as possible including minority viewpoints); transparency (i.e. participants are given an insight as to how the process is being organised and results used); and lastly competence (i.e. that participants are able to deliberate in the given topic) (Kerkhof and Wieczorek, 2005).

The learning in backcasting processes is the result of iterations. Therefore, in ideal cases backcasting processes go on for longer periods of time to allow for these iterations to take place. It is also important to note that learning processes do not take place solely on the cognitive level but they also occur in terms of 'values, attitudes and underlying convictions' (Quist and Vergragt, 2000, p.5).

Other elements mentioned by Quist and Vergragt (2006) include the achievement of analytical results that can be gained throughout the process as well as the final result of implementation plans and follow-up agendas that can be produced by a backcasting exercise making it easier to put the results into practice.

Based on the previously identified elements and the experiences of previous backcasting experiments, Quist and Vergragt (2006) have also identified five stages in participatory backcasting. These are: strategic problem orientation; construction of sustainable future visions or scenarios; backcasting; elaboration, analysis and defining follow-up and (action) agenda and finally embedding of results and generating follow-up and implementation. (We will look more into these practical methodological arrangements in Chapter 3 on the details of the Hungarian backcasting experiment.)

It is clear from the previously described nature of backcasting that it is a method well suited to accommodate comprehensive research on sustainable development issues due to its ability to handle complexity in cases where current trends are part of the problem (Wangel, 2011). Its multi-dimensional and multi-levelled concept provides a 'structural affinity' to sustainability topics as it can handle transdisciplinary approaches as well (Robinson, 2011; Wangel, 2011). In summary, this normative approach can cover a wide scope and time-horizon and create alternative visions of the future that can facilitate thinking that moves beyond current paradigms. The qualitative, abductive nature of this research method enables drawing conclusions from a limited number of participants even if they cover just a small sample of society. All these properties make backcasting a suitable research method for sustainable employment as well.

Chapter 3: EMPIRICAL RESEARCH - THE HUNGARIAN EXPERIMENT OF BACKCASTING FOR SUSTAINABLE EMPLOYMENT

This chapter presents the process and the results of the Hungarian experiment of backcasting and establishes the research relationship. The description of the process and the results in this section of the thesis will be merely factual. The analysis of the results will be carried out in the next main chapter. Some reflections on the methodological experience will be offered in the conclusions.

3.1. ESTABLISHED RESEARCH RELATIONSHIP

In 2012 I took part in a research project on alternative economic policy approaches commissioned by the National Council for Sustainable Development (NCSD), a consultative body of the Hungarian Parliament. Even though there had been an ongoing scientific discussion on the possibility and the necessity of implementing policy measures that lead towards a more sustainable future, these alternatives almost always remain theoretical. The NCSD wanted to see if it was indeed possible to translate these theoretical goals into policy options and if yes, how. Therefore, this research moved not just beyond theoretical considerations in order to provide feasible policy options but beyond mainstream economic paradigms as well. However, there was neither sufficient time nor sufficient resources to cover the whole spectrum of economic policy and hence the topic was narrowed down to employment policy. The topic of employment provided a perfect subject for this research as it is topical; includes economic, social, individual and technological perspectives; and reflects the complexity of any other part of economic policy. The chosen method for this research was backcasting.

The NCSD research project covered one backcasting workshop with a panel of experts coming from different sectors and backgrounds with relevant knowledge on employment. Even though this workshop alone provided significant insight into a possible future scenario, the scientific curiosity of the researchers prompted them to organise another backcasting workshop using their own personal resources. The curiosity was in particular to see how the vision of a different group with participants

from a dissimilar background and age group would relate to that of the expert panel of the first backcasting workshop.

The participation in the NCSD project has given me empirical insight into the topic of sustainable employment under alternative economic paradigms. The results provided me with ample data to see what elements participants considered crucial for building a sustainable world of work. The second workshop also added a great deal of qualitative data to the quest to define the elements of sustainable employment. I believe that the analysis of qualitative data collected from these two backcasting workshops, contrasted to one another and weighed against the available literature on sustainable employment will provide my contribution to the scientific discussion on the future of work in a transition to a sustainable society.

3.2. THE RESEARCH PROCESS

The Hungarian backcasting was fully based on the principles and logic of backcasting described in the previous chapter. Its aim was to provide a cognitive framework for enabling participants to contemplate and deliberate on a complex issue such as the transition to the sustainable world of work in Hungary. The process itself can be divided into three main phases: the preliminary phase where the organisers set the scene; the project phase with the organisation of the backcasting workshop itself and finally the phase when the outputs, namely the normative vision and the backcasting steps are compiled (Király et al, 2013). Figure 2 provides an overview of the whole process. This subchapter will then present each phase describing its details in the Hungarian experiment.

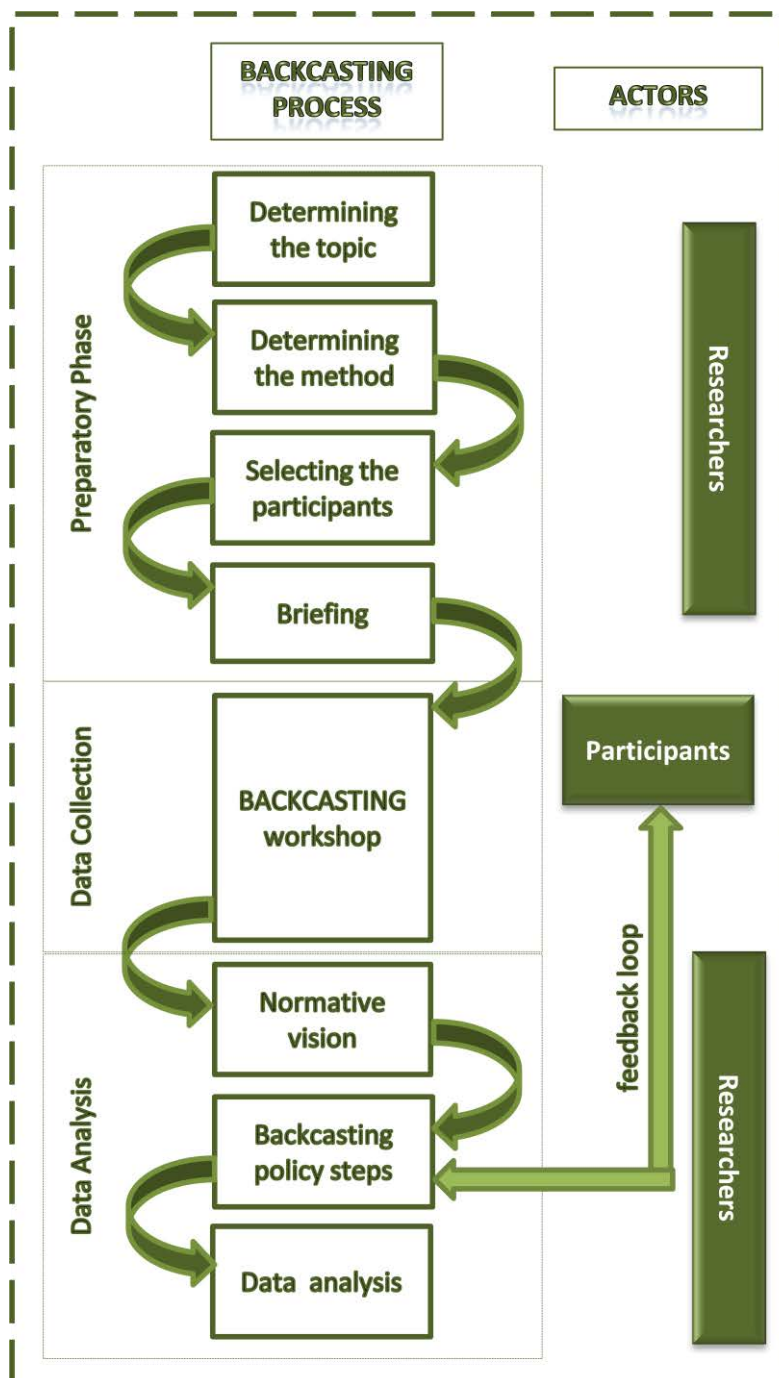


Figure 2: Overview of the backcasting process based on Király et al., 2013

3.2.1. Preparatory phase

The topic of sustainable employment was chosen as the theme of the backcasting workshop as it is a complex subject that is seriously intertwined with different social, economic and technological aspects. Backcasting is a policy-oriented approach and the commissioners of the first backcasting workshop, the NCSD did expect concrete policy tool recommendations. Hence, beyond the topic of sustainable employment that is

covered by the normative vision, the issue of employment policy in the backcasted policy steps was also part of the research. However, employment policy is based on questions like what the social interpretation of work is; what society perceives as production of value; or what expectations employers may have towards their work force. Therefore, the re-definition of such questions or any other questions that may come up during the backcasting process can become the topic of deliberations and help understanding the alternatives to current paradigms.

In order to facilitate the thinking process over such a complex issue, a thematic approach was adopted. With the purpose of revealing the different perspectives of employment, four focuses were also developed: work and community; work and the environment; work and individual capabilities; and work and technology.

The time span of a backcasting exercise usually covers between 25-50 years in order to be far enough into the future so that participants feel free to disregard lock-in effects of the present but close enough to still feel they care, if not for themselves, then for the sake of their children or grandchildren. The choice in this particular case fell on the year 2050. Even though in a globalised world employment can hardly be considered a local issue, the context of the backcasting was limited to the world of work in Hungary. This limitation was not only to limit the scope of discussions but also to ensure that the composition of participants reflect this scope. This does not mean, however, that the results of this backcasting cannot be interpreted in a wider context given that the original circumstances are properly reflected upon. Accordingly, the title of the backcasting project became *'Back from the future: sustainable employment policy in 2050 in Hungary'*¹⁰.

As in most cases of qualitative research, the sampling of participants was purposive. As Miles and Huberman (1994, pp.31) claim, qualitative researchers need not to “*seek statistical significance*” as long as they can provide reasonable explanation on why they selected whom they selected. Differently from the random sampling often used in quantitative research, purposive sampling can take into consideration the relevant

¹⁰ Originally in Hungarian: Vissza a jövőből: Fenntartható foglalkoztatáspolitikai 2050-ben Magyarországon

knowledge of those involved as well as the availability of those involved (Miles and Huberman, 1994).

For the first backcasting workshop, the researchers selected 17 expert stakeholders with experience in employment policy coming from different backgrounds. Their expertise ranged from policy-making through theoretical research to HR management. It was considered especially important to involve a wide range of expertise as the unpredictability of the future and the complexity of the issue at hand demanded the involvement of many diverse perspectives. There were also experts representing marginalised groups like the Roma minority or disabled persons. The experts represented four different sectors: academia, public administration, civil society and private business. Attention was given to the regional representation and to the gender distribution. Due to the fact that the participants were selected based on their expertise, the average age of the participants was 46 years.

Throughout the process it was emphasised that the experts represented only themselves as individuals and never the opinion of their background organisations or the interests of their sector. This appeared in the briefing and moderators accentuated this at the beginning of the workshop as well. This was especially important in order to facilitate meaningful dialogue and avoid turning the event into a clash of interests.

The participants of the second backcasting workshop were selected based on a different logic in order to be able to uncover the differences between an expert panel and a lay panel; between two different generations; and between a group with a strong social focus and a group with a strong environmental focus. They were master students coming from two different universities specialising in either environmental economics or human ecology. Even though the selection was an open call, the organisers tried to pay attention to the regional and gender balance. The experience of the previous workshop showed that a small reduction in the number of participants would improve the quality of deliberations. Hence, the second group only consisted of 14 participants.

Due to the fact that participants received no remuneration in either cases, their motivation for being there was either curiosity-driven or a favour to the organisers. Bearing in mind that the workshop involved devoting two full days of their time (with long-distance travel for some participants); highly intense intellectual work, preparation time and feed-backs after the workshop, this devotion can be considered significant. Hence, the selection of participants was invitational based on a snow-ball effect in the case of experts and based on an open call for participation in two university MSc courses in the case of the lay panel.

The preparatory phase also included the design of the methodology to be used during the workshops (discussed in the next subchapter) and the preparation of the briefing. The briefing served as an orientation material for the participants to familiarise themselves with the topic they would be discussing. It raises questions in order to induce preliminary thoughts to frame their mind and also describes the method and the process in a simple manner so that participants know in advance what to expect. In the case of the Hungarian experiment, the briefing was a 13-page long reading material that was sent to the participants well in advance. It contained a short description of the potential dimensions of sustainable employment revolving around the four thematic foci; the main dilemmas that can be raised around these focus points; and the brief description of the method and process. The briefing also posed some questions (Table 2) that served on the one hand the operationalisation of research questions, and on the other, provided a starting point for discussions during the workshops. They were by no means restrictive, their intention was just to provoke thoughts and initiate discussion.

Focus	Questions
The harmonious relationship of employment and the natural environment	<ul style="list-style-type: none"> ✓ What perspectives would help employment and environmental interests to overlap? ✓ What roles could companies, civil organisation and the state play in aligning these interests? ✓ How would it be possible to avoid generating more unemployment during the modifications in the employment structure that are unavoidable due to necessary changes for the protection of the environment? ✓ What could influence the business sector to have a long-term perspective and take on more responsibility with regard to labour issues as well as environmental protection?
The flourishing of human capabilities	<ul style="list-style-type: none"> ✓ What steps would lead to the higher appreciation of human labour? ✓ What elements could be built into employment policies that would lead to people doing jobs that best suit their capabilities? ✓ What changes could be introduced at the workplace in order to allow for somewhat more freedom of decision? ✓ How can work-life balance be restored?

Restoration of community relations	<ul style="list-style-type: none"> ✓ How could the structure of employment be transformed in order to enable community goals to weigh as much as private economic goals? ✓ How can the synergy be envisioned between the different levels of community work engagements (family, local community, nation)? ✓ What steps could be necessary to emphasise community interests in employment besides individual interests?
The harmony of technological and human development	<ul style="list-style-type: none"> ✓ How can it be ensured that the introduction of new technology as a result of human creativity is not constrained but at the same time they serve even better the development of humans? ✓ What methods can be used to ensure that ‘green jobs’ are not created just for the time when new technology is being introduced?

Table 2: Thought provoking questions in the briefing

The organisers decided to raise two horizontal themes as well. The first one related to spatial dimensions, namely the distance between actions and their impacts. This raised the issue of trying to close the gap between acts performed in one place and the intended or unintended negative effects of these acts born by people/nature in a different location. The second horizontal theme related to time dimensions. If the negative impacts of our current actions only occur in the future, how can we move towards a long-term mentality where we do not discount the importance of such impacts?

Besides framing the issue of the workshop and provoking preliminary contemplation on the issues, the briefing also shortly described what the expectations were towards the participants. It also provided a short introduction of the moderators and researchers that were going to be present during the workshop.

Table 3 provides an overview of the two backcasting workshops:

	First workshop	backcasting	Second workshop	backcasting
Number of participants	17		14	
Participants	experts		university students	
Participants' background	experience with employment (business, academia, civil, public administration)	policy	environmental orientation (MA in Human Ecology; MSc in Environmental and Regional Economics)	
Participants' average age	46 years		26 years	
Date	March 2012		January 2013	
Length of workshop	2 days			

Table 3: Overview of the backcasting workshops

3.2.2. Project phase

The backcasting workshops lasted two days. Due to the relatively high number of participants, some of the work was organised in smaller groups dividing the participants into two groups but a plenary session always gave the opportunity to discuss all themes together so that inputs could come from all participants.

The first part of the first day initiated warm-up exercises in order to enable participants to adapt to future-oriented thinking. After these short creative exercises that also served getting to know each other, the group's attention was turned towards discussing the normative future scenario. The method chosen to facilitate deliberation and the structured presentation of the group's conclusions that reflect consensus was the so-called 'mandala method' (Figure 3).

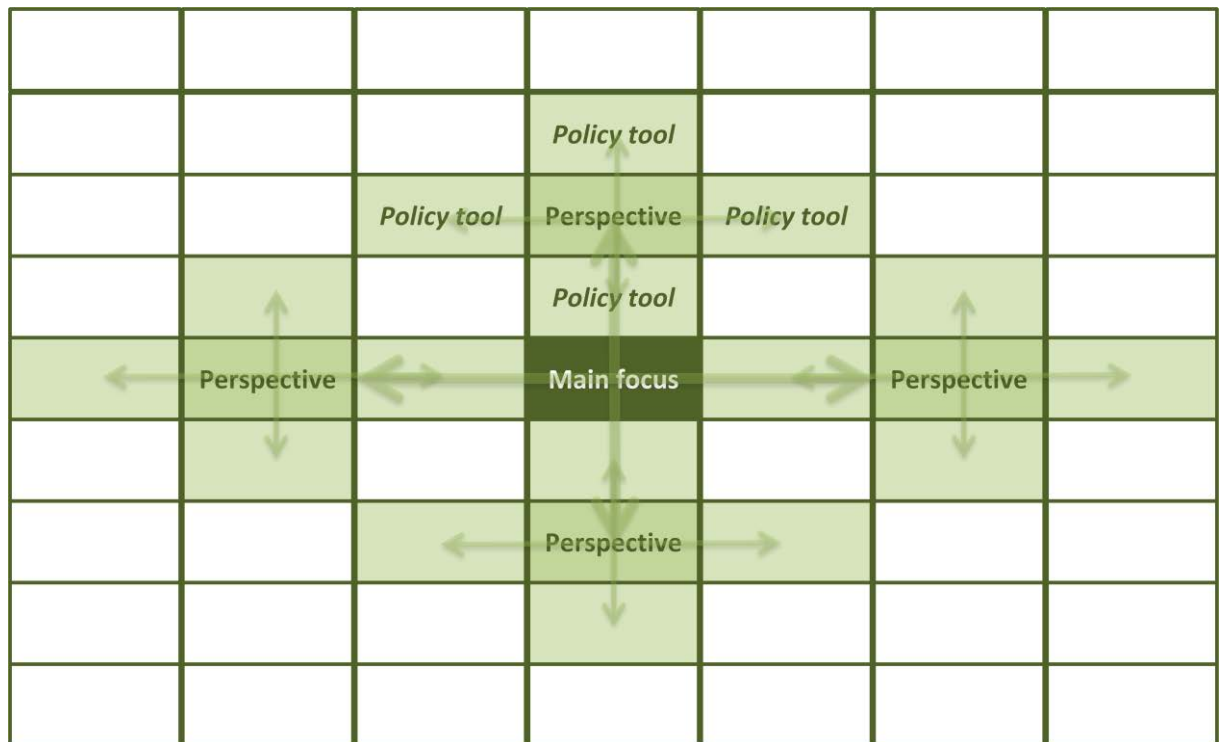


Figure 3: The 'mandala chart' – adapted from Pataki et al (2012)

As we can see from the chart, the mandala always has a defined focal point that serves as the centre of the thinking process. In this case, the main focus was always one of the foci mentioned above: work and community; work and the environment; work and individual capabilities; and work and technology. Hence, all four of these topics had their own mandala charts (for an example see Figure 4).

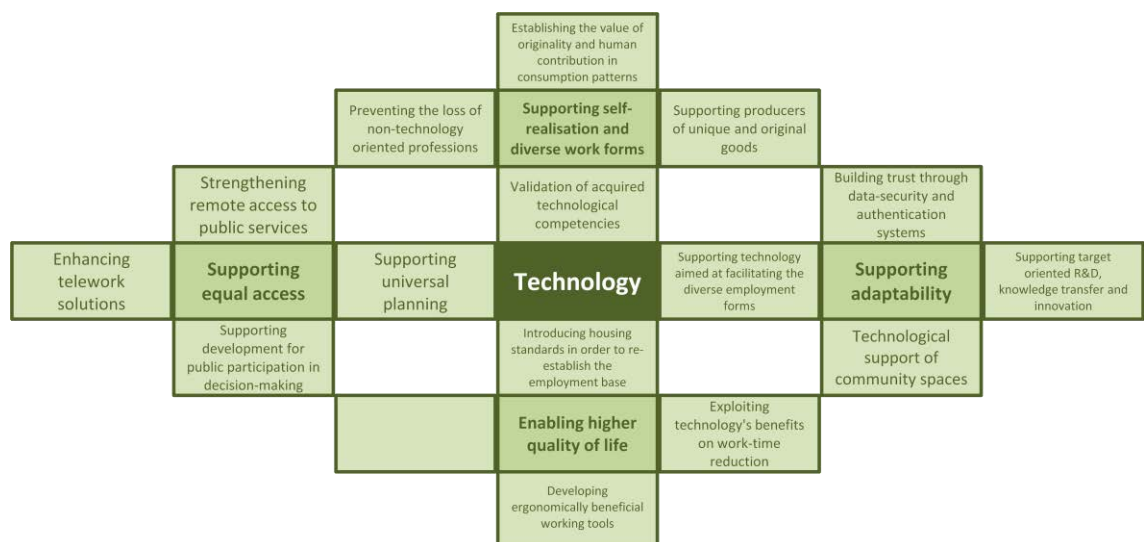


Figure 4: Example of a mandala chart from the workshops (the expert panel's technology focus)

The deliberations on the main foci resulted in different perspectives (or otherwise called priorities) from which the groups had to choose four that are the most important perspectives to the given focus point. At this point, participants had to agree on four and could not insert more in the chart. The normative vision of the future arose partly from the four times four aspects of the main focuses (altogether 64 in each group) and partly from the discussions that surrounded these aspects. Due to time limitations, the concrete textual phrasing of the normative vision was the task of the organisers. However, in both cases it was sent back to the participants to comment or raise objections if they deemed necessary.

On the second day it was these perspectives that served as the central topic for determining the most effective policy tools. It was indicated that due to time and scope constraints the number of policy tools should be limited to four within one perspective but this was not taken strictly and if more were identified, then more would be included on the mandala chart. If fewer tools were suggested, then fewer were inserted. Once all the policy tools were identified, working their way back from the future the participants decided on the realistic time horizon of these policy tools. The time horizons were defined long-term (around 2040); medium-term (around 2025) and short-term (around 2015).

In order to facilitate the deliberation on policy tools, the organisers provided a simple categorisation of possible types of policy interventions. This enabled the participants to say that the policy steps they suggested were legislative, economic or awareness-raising tools (or maybe a number of these combined). Figure 5 shows this categorisation.

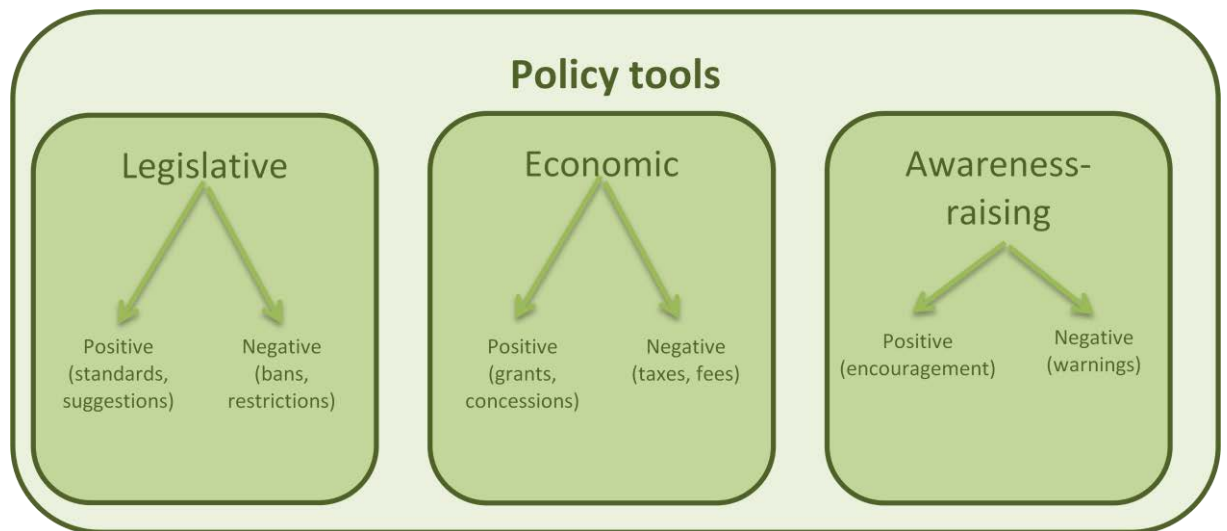


Figure 5: Categorisation of policy tools (based on Pataki et al, 2012)

The backcasting of policy steps happened in full during the second workshop and hence the participants had the option to group, re-group, eliminate or change their originally suggested policy steps once they saw them all together laid out around the room. However, in the first workshop this only happened partly as the participants identified on site the suggested time-frames of the recommended policy tools but the grouping of the tools were performed by the organisers and sent back to the participants for comments. Even though the original plan was to meet again with the participants, their other commitments prevented them from travelling again in order to discuss these final stages. However, feedbacks were sent on the compilation of their work and based on these feedbacks, the final version of backcasting policy recommendations were prepared. Hence, in both cases the final outcome of the backcasting process was the consensual textual version of the normative future vision on sustainable employment and the backcasted policy steps leading towards that vision.

During the backcasting workshop, discussions were recorded and photos were taken of each stages of the elaboration of the vision and the policy recommendations. In the closing round, participants could express their impressions on the topic as well as on the method itself.

3.2.3. Data analysis: creating the normative vision and the backcasted policy steps

After the workshops, the available data consisted of the researchers' notes, the photos taken of the flipcharts and other written notes (e.g. the resulted mandala Figures), and the audio recordings. The following steps led to the textual vision and the list of recommended policy steps¹¹.

1. The notes were put into an Excel file, the different notions into separate lines.
2. Based on these notes, larger topics were identified (e.g. definition of work; work and the environment; forms of work; glocalisation; state; technology; education; economic sphere; needs; community).
3. Each note was categorised into one of the main topics.
4. The individual notes were then filtered by topics and so labels were also identified. These labels indicated the condensed theme of the notion. The word cloud below (Figure 6) shows the most common labels for the student panel.
5. The notes were filtered by the topics and by labels by the present author. A text was created based on the meaning of the notes and the occurrence of the labels. This is how the normative vision was created. Table 4 below provides an example of notes/topics/labels taken from a fraction of the student panel's discussion on work from the community perspective.
6. Based on the photos of the flipcharts, in a different Excel file all the recommended policy measures were collected and classified based on the type of intervention (negative/positive legislative; negative/positive economic; negative/positive awareness-raising) and on the time dimension suggested by the participants. They were also linked to the priorities the groups suggested. This way, the final table of policy measures were completed (as seen in Annex 1).
7. The results were sent back to the participants for comments.
8. The visions and the list of policy measures were corrected according to the feedbacks received from the participants.
9. Audio recordings were used only in the case of lack of clarity.

¹¹ The data analysis leading to the final vision and the presentation of the backcasted policy steps were prepared by the present author with support from the project leader who is also the supervisor of this thesis, György Pataki and the two moderators, Gábor Király and Bálint Balázs.



Figure 6: The most common labels of the student panel

Notes	Topic	Label
<i>what is important for individuals in their work? to use all his knowledge and realise his potentials and capabilities</i>	Definition of work	self-actualisation
<i>it kills people if their work kills their souls</i>	Definition of work	creativity
<i>one must feel that his job is useful</i>	Definition of work	community-utility
<i>the working environment must also be a kind of community</i>	Definition of work	community-work
<i>if people receive acknowledgements from the community only through material things (getting paid), their self-worth will reflect that</i>	Community	community-life

Table 4: Excerpt from the data analysis

3.3. VALIDITY

With regard to validity, Maxwell (2013) describes four main threats to the validity of a qualitative research: description; interpretation; theory; and generalisation. The valid description is based on the accuracy of the data itself. Even though the transcription of

the workshops is unnecessary in backcasting exercises, the recordings and photos are there to substantiate observations. The validity of interpretation is dependent on the researcher's ability to avoid imposing her own cognitive framework on the original meaning. In this particular research case, the valid interpretation of the normative visions and the backcasted policy steps were ensured by the subsequent consultation round with the participants, a strategy known as 'member checks' (Maxwell, 2013, p.90). Theoretical validity can be questioned if some theories with substantial significance are omitted from considerations.

Validity was also reinforced by the different activities during the course of the research. At the first workshop, the participants themselves raised the question how different the results might be if the average age of the group was lower and the perspective of the participants were different from the predominantly social perspective of the experts. This prompted the researchers to organise another round of workshops with the environmentally conscious student group even though the NCSD project had finished. The depth of deliberations also supported validity. On the one hand, the organisers tried to involve participants from diverse backgrounds not with the aim of achieving statistical representativity but more with the aim of inciting dialogue from different perspectives. The moderators also paid immense attention to facilitating discussions in a way that encouraged participation as well as open and profound discourse.

In terms of generalisation, it must be acknowledged that the trends that emerge in the backcasting experiment reflect the co-construction of 31 individuals in Hungary. On the other hand, this qualitative technique accommodates real participation through deliberation and active exchange of ideas between participants. Hence, it provides an in-depth insight that some other methods even with wider involvement cannot generate (Köves et al, 2013a). It must also be duly noted that the composition of the groups also pose some limitations on generalising the results as they were well-educated people who reflect on social or environmental issues on a daily basis. Nonetheless, they can constitute a valuable contribution to the dialogue on sustainable employment bearing in mind that other social groups may have interpreted this issue otherwise (Köves et al, 2013b).

3.4. THE RESULTS OF THE HUNGARIAN BACKCASTING EXPERIMENT

3.4.1. *The normative vision*

The data analysis of both groups was prepared separately. However, the commonalities resulted in organising the elements of the common vision into seven main topics with environmental consciousness and the eighth serving as a kind of horizontal perspective. This chapter only presents a short overview of the results¹². The exact visions of each group in each topic will be separately presented in the next chapter where they will be analysed in depths. Figure 7 is an overview of the vision common to both groups.

Figure 7: An overview of the vision of sustainable employment in Hungary in 2050

Here is a summary of the resulting visions. Here the visions are treated as one of the two groups reflecting the commonalities. Chapter 4 will include the separate visions.

¹² The resulting vision was published in an article in the journal of Sustainability (Köves et al., 2013b) and an overview was presented as a poster presentation at the 10th Biannual Conference of the European Society for Ecological Economics: Ecological Economics and Institutional Dynamics on 18-21 July 2013 in Lille, France (Köves et al., 2013c). This chapter contains figures and excerpts from both these publications.

Work redefined

Having a different conceptualization of the role that work plays in people's lives was the central focus of the participants in the backcasting workshops. Participants in both workshops found the redefinition of work crucial in their vision for sustainable employment. They claimed that in Hungary, in 2050 work is not merely a tool for basic subsistence but also a "source of well-being". Work does not consist only of paid jobs and does not only exist in institutionalized forms. As work is no longer just a struggle for survival, people have an internal motivation to do what they enjoy and skilled to do and what enables them to exploit their full personal potential. Everyone can be proud of their jobs and society appreciates all kind of work. Work is meaningful and useful in many different segments of life. Hence, work motivation changes accordingly: prime motivation is no longer subsistence (earning one's own living), as in market societies, but self-actualization, self-development and the feeling of social usefulness. As one of the participants phrased, *"work is happy self-actualization in a socially beneficial manner"*.

This redefinition also prompts changes in our conceptualization of needs. Human needs go beyond the physical/material focus and intellectual/spiritual needs come to the forefront of activities. The satisfaction of needs is *"healthy"* (both materially and mentally), putting a stop to patterns of overconsumption. Such redefinition also facilitates the appreciation of human skills and labour over material consumption and this leads to *"mending things rather than scrapping"* as *"we do not ditch other people's work"*. The new approaches to working lives also enable people to take more responsibility for and better care of their own natural and social environment.

According to the participants, such redefinition of work stipulates the broadening of the different employment forms. In Hungary of the 2050s, employment is not purely part of the market economy as people also do work that is *"not necessarily monetized"*, so barter or working in Local Exchange and Trading Systems (LETS) are highly acknowledged and are no longer considered *"shadow economy"*. Learning is also a recognized form of employment in all age groups and the value of education is fully appreciated as a form of enhancing human capital. Hence, one can engage flexibly

in many different work activities, in many different legal forms, doing diverse, meaningful and acclaimed jobs. This enables people to retain more control over their own lives. The discussions on the redefinition of work in the future between the two different groups bore striking resemblance to each other. However, the younger, environmentally-conscious group also contemplated the notions of work-time reductions and initiating changes in production in order to reduce the pace and monotony of labour and increase the value added to the process by the workforce.

Strengthened communities

Participants in both groups envisage the Hungarian society in 2050 where the role of communities is of rising importance and builds on values of cooperation, trust and solidarity. Community ties of individuals are strong and communal events are frequent. The network of trust is operational and trust itself is treated as a prime social asset. Community plays two different roles in employment. On the one hand, community provides a framework and motivation to work. On the other hand, work serves community purposes. As *“people cannot have their work appreciated in larger spaces and large societies”*, society operates as a network of many smaller communities. Hence, both working in the community and working for the community becomes important. The student panel also envisioned a wide variety of communal services and spaces like community kitchens, gardens, or laundry facilities.

Blurred line between non- and for-profit companies

The participants of both groups envision the economic actors of 2050 not merely either for-profit or non-profit organizations. For-profit actors are sensitized (or coerced into) being environmentally and socially responsible organizations that build these aspects into their everyday decision-making and serve community values. Management culture embraces empowerment, where employees have certain degrees of self-determination. Bonuses include solutions that facilitate the new, diverse types of employment such as sabbaticals or work-time allowances for volunteering activities. Consultations with workers' associations are based on trust and dialogue, where both parties are present as partners. In case of inevitable downsizing, outplacement services are provided on a wide basis to employees. Different co-

ownership schemes for workers are common, cooperatives are rediscovered and many work in the predominantly non-profit social economy. The expert panel also added to their vision that as in the for-profit sector corporate social responsibility becomes the norm, at the same time corporate governance becomes widespread among non-profit organizations. Hence, non-profit approaches are built into the operations of for-profit companies, while non-profit organizations internalize some basics of corporate governance.

Supportive technology

The participants of the expert panel revealed outstanding technological optimism and technological determinism. *“In 2050 technologies will be widely accessible that we have no knowledge of today.”* They envisioned that even though in 2050 less work is available due to technological advances, this does not imply higher unemployment but rather more opportunities for redefining work. Technology supports flexible working arrangements, improvements in the quality of life, substitution of arduous and monotonous jobs, equal access to work and public services and participatory decision-making. The wide-ranging research and development activities do not only cover technological advancement but social innovations as well. While not questioning technological advances at all, much emphasis was also put on the preservation of traditional cultural values, and the safeguarding of those who work with traditional technologies.

While the younger participants in the backcasting exercise also envisioned a future where technology supports self-reliance and self-development, as opposed to the other group, they were highly critical of technological advancement and phrased their normative vision accordingly. They declared that in their vision *“it is technology that serves humans and not humans serving technology”*. In 2050, society is not afraid of discarding certain technological advances and the purpose of technology is not to replace but to complement human skills, strengths and creativity. It serves to diversify local opportunities to use local resources rather than to create path dependencies. Knowledge behind technology is open-source and accessible to all.

Knowledge-based society

Participants envisage a knowledge-based Hungarian society in 2050. Hence, education and training in many different forms play an outstanding role in all ages. In case of children, the frontal, class-based school system is replaced by education that respects individual talents, is tailor-made, and involves parental guidance as well. Young people have the chance to try themselves in different jobs and get experience under protected circumstances. Adults train themselves regularly but not necessarily in formal institutions. Both formal and informal education and self-development is acknowledged and regarded as standard part of working life. Due to this development, a number of career changes in a person's life are considered the norm.

Glocalisation

In both workshops, the issue of "global vs. local" continuously resurfaced in the discussions. However, in the expert panel anti-global sentiments did not occur and the concept of the global economy and global society were not questioned at all. According to their vision, in 2050 globalization is more of a global network of local economies and societies, where local production and consumption, and hence local employment play a significant role. This does not imply at all that there is any limitation on goods and services imported from the global arena, only that local products and services enjoy certain advantages. Work is performed predominantly locally, or even from home, but so-called "*office café*" solutions also exist where people can work outside their homes. Employees are also free to choose whether they work locally or globally (as this adds to the desired diversity of working arrangements) but the pressure on mobility eases. Individuals may have strong ties to a locality but this indicates more the solidarity with a given community than the lack of mobility. (On the necessity of mobility, participants were divided.) Regarding the suggested policy options, local employment should be fully supported but barriers to global employment should also be eased at the same time, leaving the individuals the option to decide. This was, however, slightly different in the student panel as they were more critical towards globalization. In their vision, local production and consumption and self-reliance of communities are the key to sustainable employment and the

movement of goods are limited to those that require significant know-how (like pharmaceuticals).

Decentralised democracy

During discussions, a vision of the Hungarian state in 2050 was also crystallized. The participants in both groups envisage that in 2050 Hungary is a democracy but one that is significantly more decentralized both in terms of decision-making and financial resources than today. Even though participatory or deliberative democracy as a term never occurred during discussions, the topic of a state where individual, community, and state responsibilities are clearly distinguished and decisions are taken on the levels where responsibility lies often appeared.

Environmental consciousness

Both group's commitment towards environmental sustainability was apparent throughout the workshop. According to their vision, in 2050 individuals as well as economic actors are environmentally conscious both due to their inner values and due to the regulatory environment. All other parts of their vision incorporated such a "horizontal perspective".

3.4.2. The backcasted policy steps

The expert and student panels identified altogether 157 (97 by the expert panel and 60 by the student panel) suggestions on possible policy steps. The full table of policy steps with the identification of appropriate tools (legislative, economic, awareness-raising) can be found in Annex 1. However, in order to facilitate the overview of these diverse recommendations, the policy steps were grouped and figures were created¹³. The policy tools of the expert panel concentrate around five major themes, while the suggestions of the student panel are organised into three wider topics.

¹³ The figures of the expert panel appeared in Hungarian in the study provided to the NCSD (Pataki et al., 2012). These figures were developed by the present author. The English description of the policy tools appeared in an article in the journal *Managing Global Transitions* (Köves et al., 2013a). The results of the student panel have not been published. Hence, these figures and their descriptions first appear in this thesis.

The first group of policy steps of the expert panel (Figure 8) serves the objective that work done beyond the economic sphere (such as community, family, self-development) will get recognition in order to provide people with the choice to work in many different employment forms doing diverse, meaningful and acclaimed jobs. This implies that the legal and social system should embrace and encourage employment forms beyond paid labour (such as self-employment, household employment, LETS, barter and all atypical employment forms). Local employment will be supported but barriers to global employment need to be eased at the same time, leaving the individuals the option to decide. In order to achieve these objectives, the policy steps identified in the backcasting experiment focus on the abolishment of administrative obstacles; introduction of new legislative frameworks for those elements that are currently not available; communication campaigns and financial incentives. This group of steps includes a recommendation to introduce guaranteed basic income that facilitates the redefinition of work.

The second group of policy steps (Figure 9) aims at supporting non-profit organisations to become an integrated part of the economy, while at the same time encouraging for-profit companies to take on board social values in order to ensure that people work in an environment that is based on cooperation and trust and embraces true social dialogue. This can be achieved through awareness-raising campaigns and financial incentives. These tools could lead to better cooperation and more solidarity in both sectors but only if trust is established. Social trust can be built up by first introducing trust building elements into public administration, for example by encouraging real participative social dialogue. In addition to positive measures, the participants recommend that later on certain legal sanctions can also play a role especially in the case of for-profit companies.

The third group of policy steps (Figure 10) aims at keeping the detrimental effects of work and the environment to a minimum level. The notion of sustainable employment must include that neither the work environment, nor other elements of employment (e.g. overwork, stress) lead to any damages of health. The proposed measures in this category include both awareness-raising and legal establishments to ensure healthy

and environmentally friendly working environments, proper work-life balance, and food safety.

The fourth group of policy steps (Figure 11) aims at providing opportunities for people to realise and develop their own potentials both in education and training and on-the-job. These measures establish a knowledge-based society that can only be achieved through an education system that facilitates self-development at any age. This includes the introduction of new, innovative forms of learning and new types of learning infrastructure. Life-long learning can be encouraged by legally acknowledging training as employment.

The policy steps in the fifth group (Figure 12) serve to establish the role of technology in supporting sustainable employment by encouraging targeted technological and social innovations through financial incentives. They include a wide-range of potential applications from the introduction of trust-building, participatory community decision-making; through boosting the creative industry, until facilitating equal access to employment, locations and services. This group of policy steps also included those that prevent the disappearance of traditional professions.

The first group of policy steps of the student panel (Figure 13) establishes the central role of communities both in social and economic life. Such importance can be founded by the introduction of participation in both political and economic decision-making. The former can be done through active citizenship education and establishing the legal and technological base for real participatory methods and in the long run decentralising democratic decision-making. The latter can be achieved not only through awareness-raising on the importance of stakeholder participation but also through setting up the environment that facilitates employee ownership. In the long-term employees and employers can form professional communities rather than sticking to current hierarchical establishments. Communities also gain importance via the localisation of economic activities that also boosts local employment. This localisation can be triggered first by prioritising local products in public tenders, taxing foreign financing, and encouraging the hiring of local labour through economic

incentives. Later on setting up incubator houses and networks, regional and interregional information and communication networks and co-operations, and strengthening local infrastructure can all support this tendency. In the long run, establishing new business models (e.g. service economy models) can also reinforce the localisation of the economy. In the future, part of people's income can be paid in local currencies leaving resources within the community. However, localisation can only happen if children from a young age learn strong community spirit and adults participate in community life on many occasions.

The student panel's second group of suggestions (Figure 14) revolve around the notion that in sustainable employment work must become flexible both in space and time and enable the self-actualisation of individuals. Hence, measures in this group aim at facilitating the unity of personal and professional life; supporting career changes in all stages of life; transcending the concept of work as the only mean to fulfilling basic needs; and transforming the education system to facilitate the self-actualisation of people from a young age. In the long term this is where the introduction of alternative employment forms, the guaranteed basic income or personalised education can occur. However, in the short run these tendencies can be reinforced by relying on already known methods such as telework and career orientation systems. The transformation of the educational system must start by enhancing teacher training and thereby re-establishing the prestige of teaching. Later on alternative pedagogical methods can exploit the potential of all individuals. This must all start with raising awareness that new cultural values must arise.

The third group of policy steps (Figure 15) focuses on economic actors who need to operate in a socially and ecologically responsible manner. The suggestions also aim at making the real costs of any economic action clear to all stakeholders. The measures reflect the presumption that smaller, self-sufficient entities operating in a legislative environment that incorporates environmental rights. The social and environmental responsibility can be assisted through setting a quota on how much income a corporation must invest in community development; introducing Green Consultancy Boards, and a transparent system to provide clear balance on the damages and benefits of economic activities. Once complete transparency of corporate and other

organisational operations is achieved and the trainings and education of managers include elements on responsibility, compulsory standards for product quality and lengthened warranty times can be introduced and the pricing of products can be based on their real value incorporating environmental and social costs. In order to remove obstacles of such changes global and multilateral pacts need to be renegotiated and monopolies need to be demolished. This way in the long-term large-scale industrial production can be limited and economic self-determination and a degree of self-sufficiency in food production and energy supply can be achieved.

Here are the figures that visualise these policy paths. The analysis of these results will be presented in the next chapter.

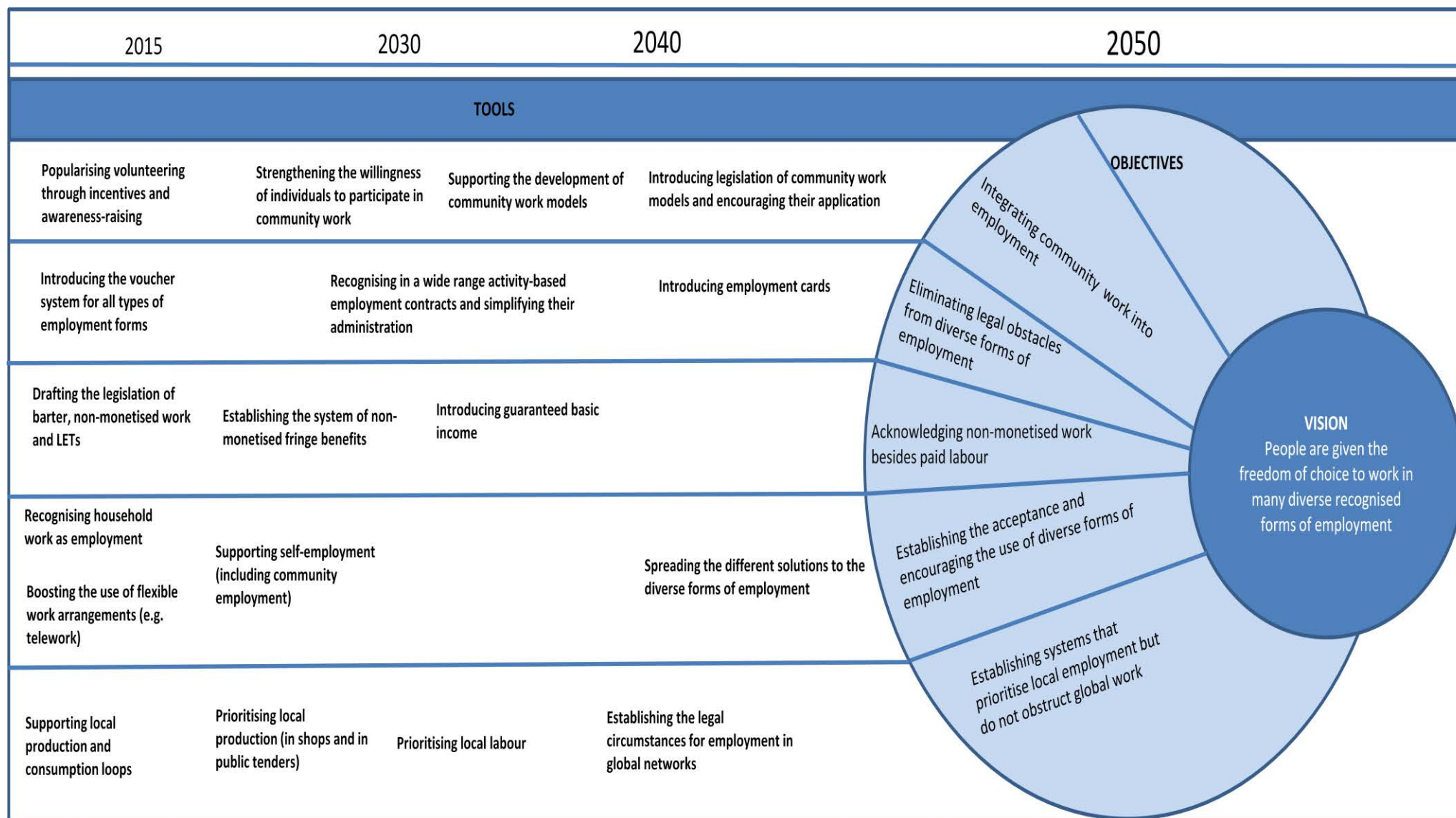


Figure 8: Policy recommendations of the expert panel 1.

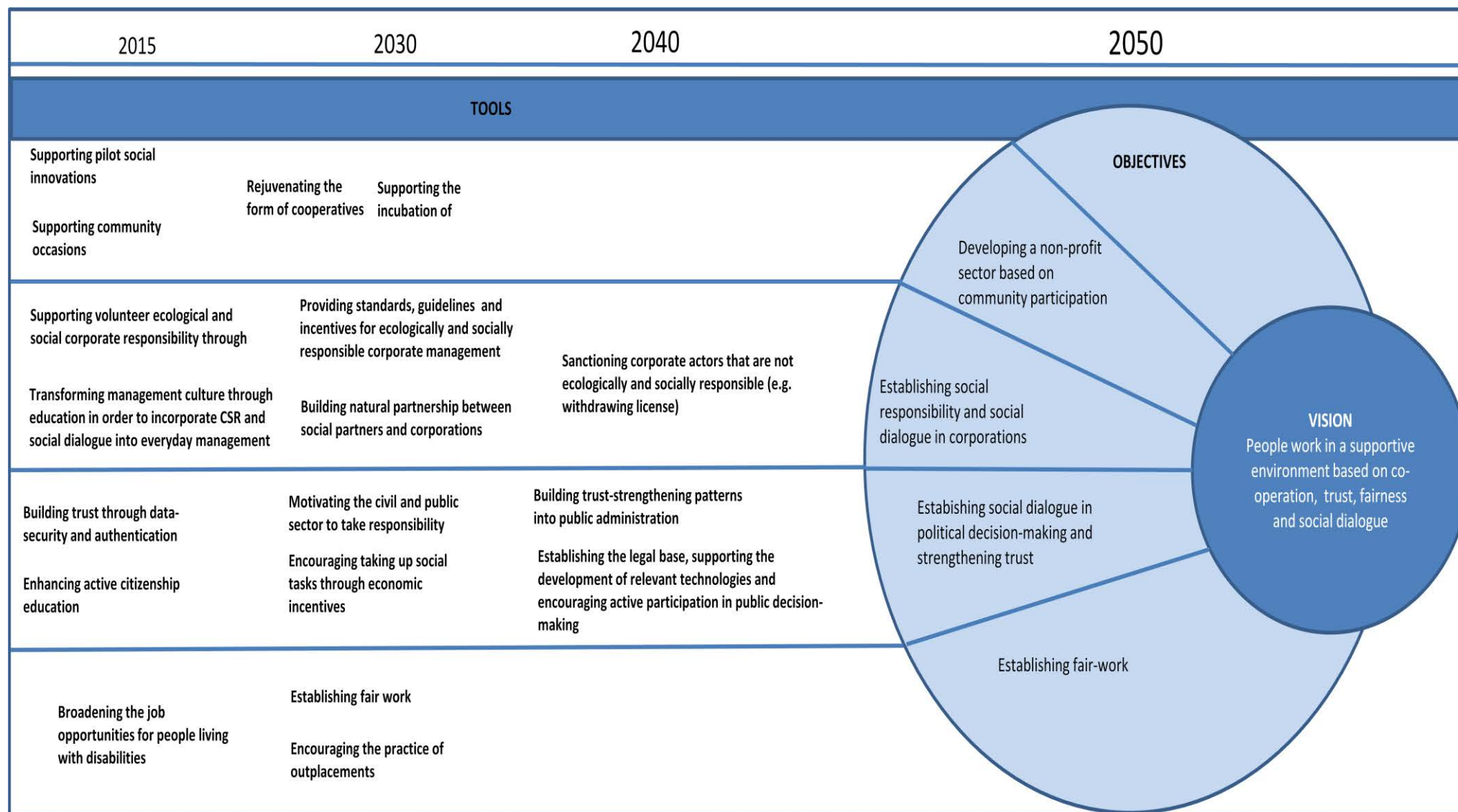


Figure 9: Policy recommendations of the expert panel 2.

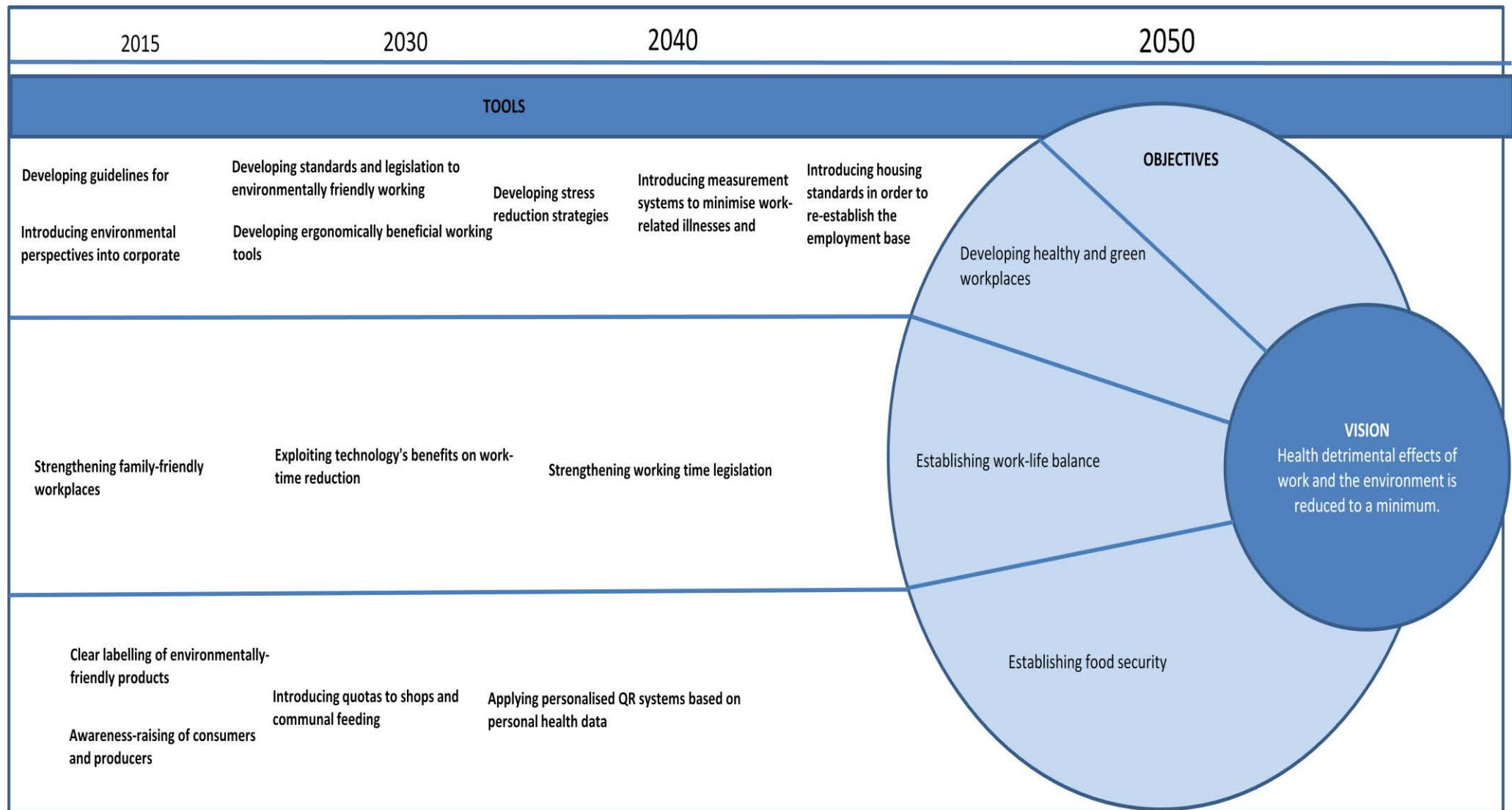


Figure 10: Policy recommendations of the expert panel 3.

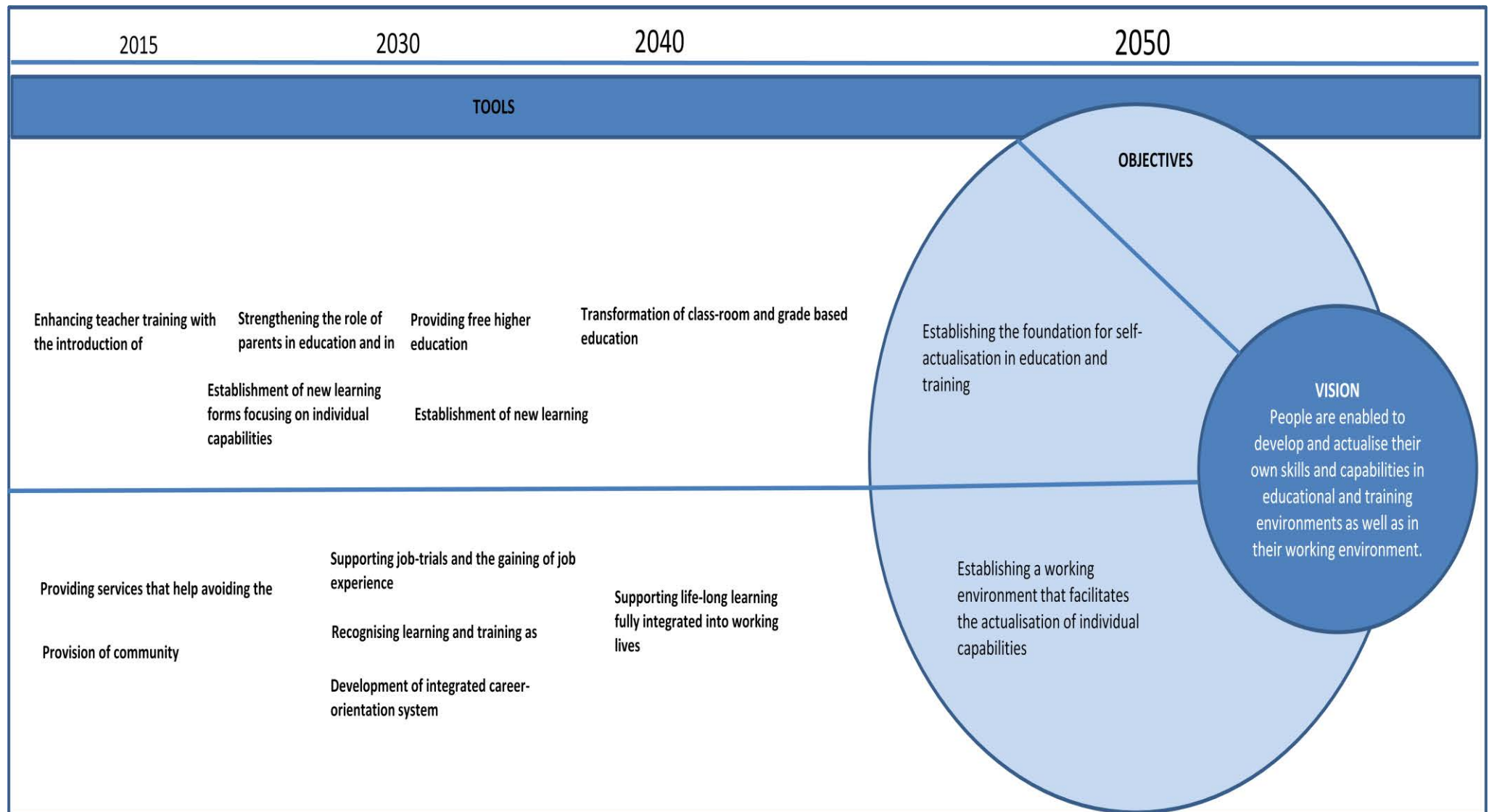


Figure 11: Policy recommendations of the expert panel 4.

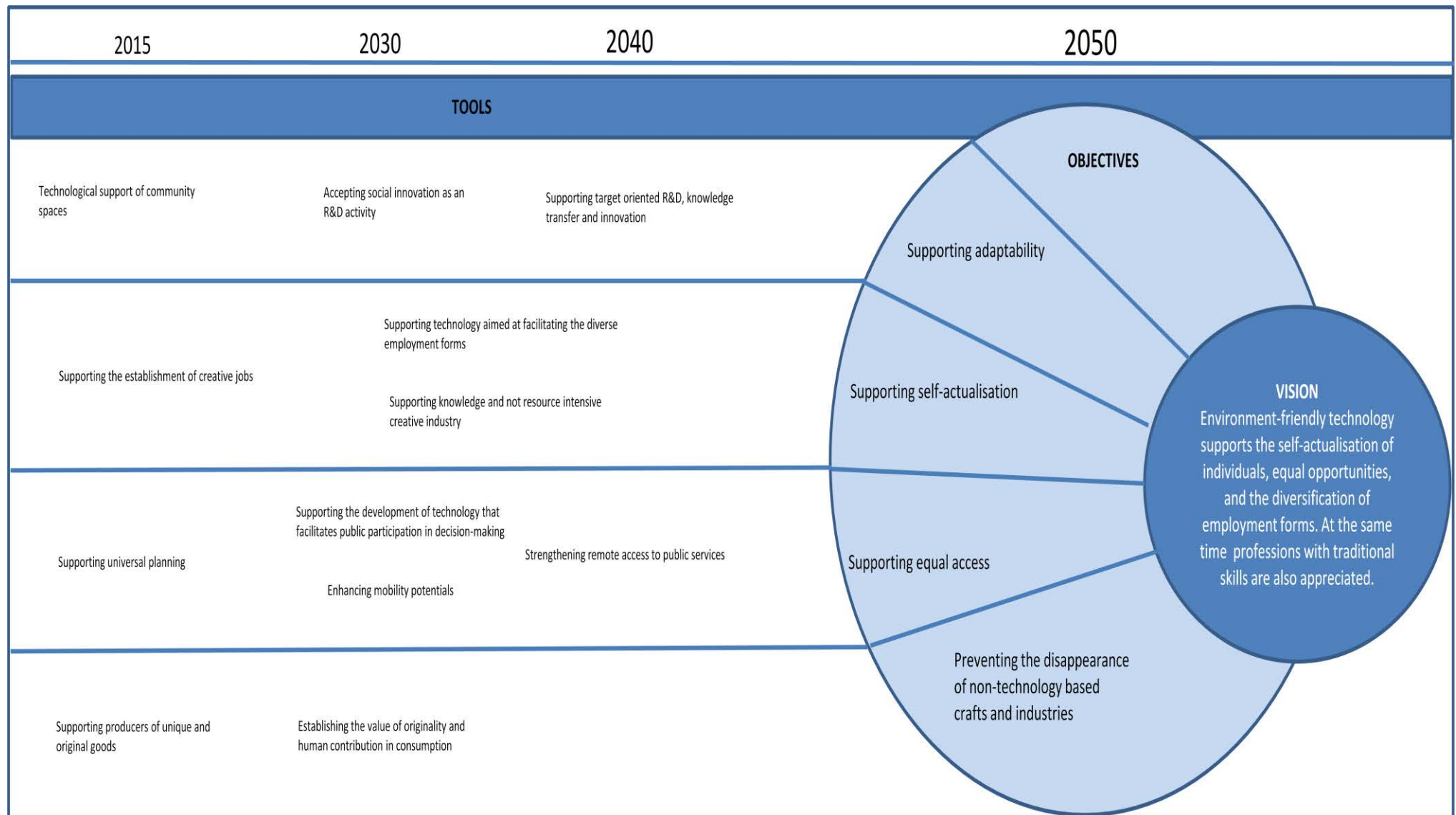


Figure 12: Policy recommendations of the expert panel 5.

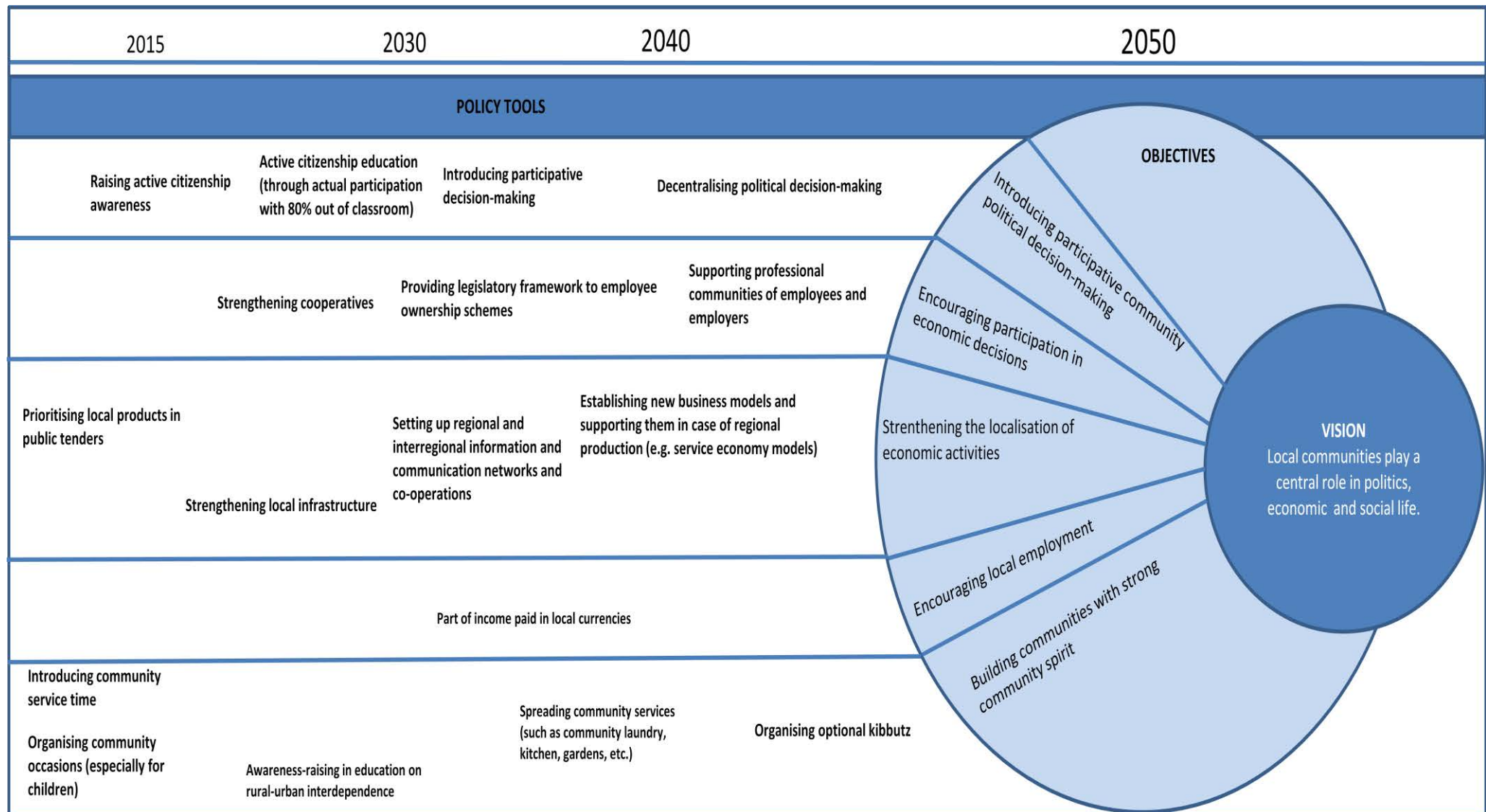


Figure 13: Policy recommendations of the student panel 1.

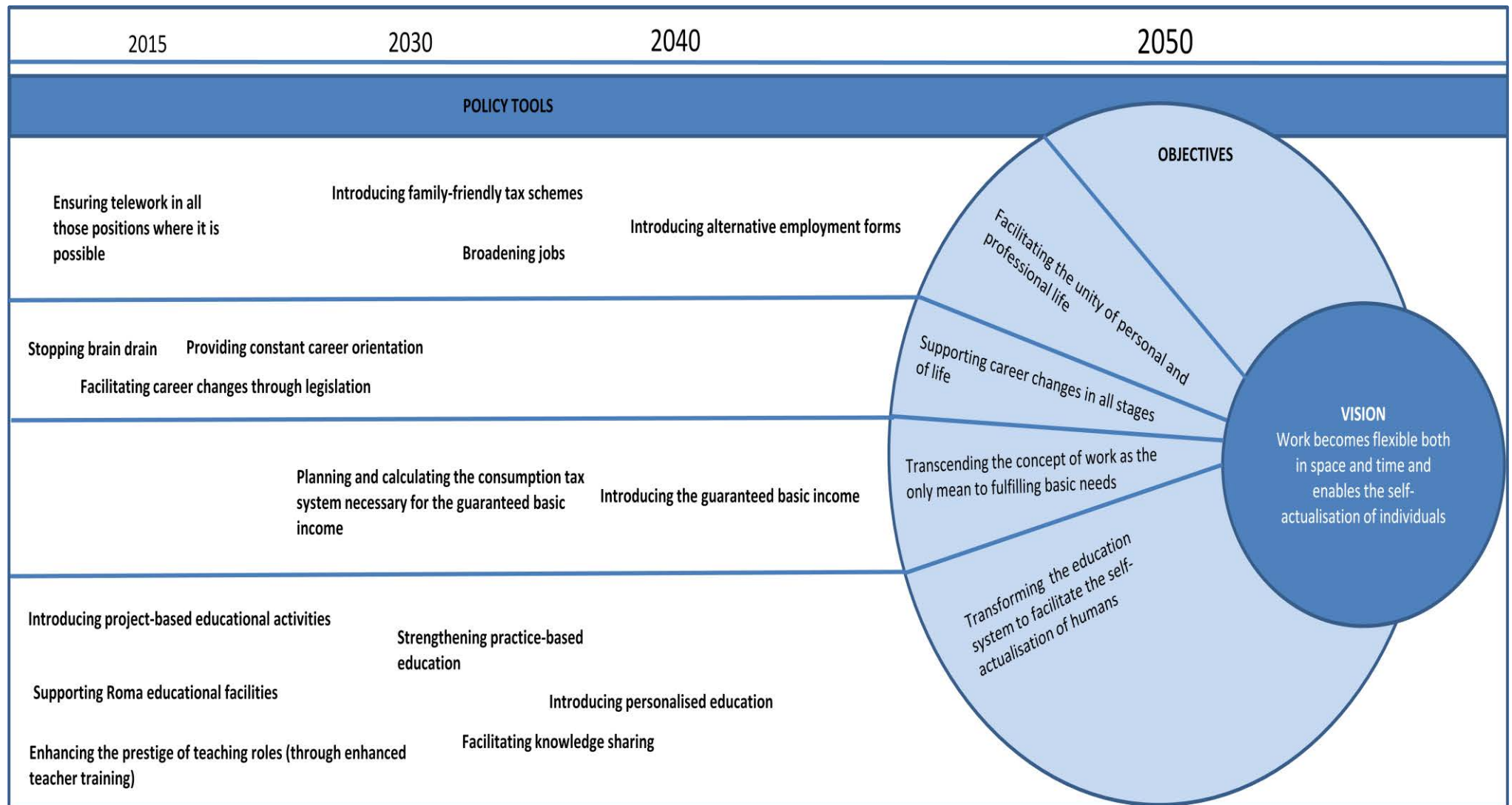


Figure 14: Policy recommendations of the student panel 2.

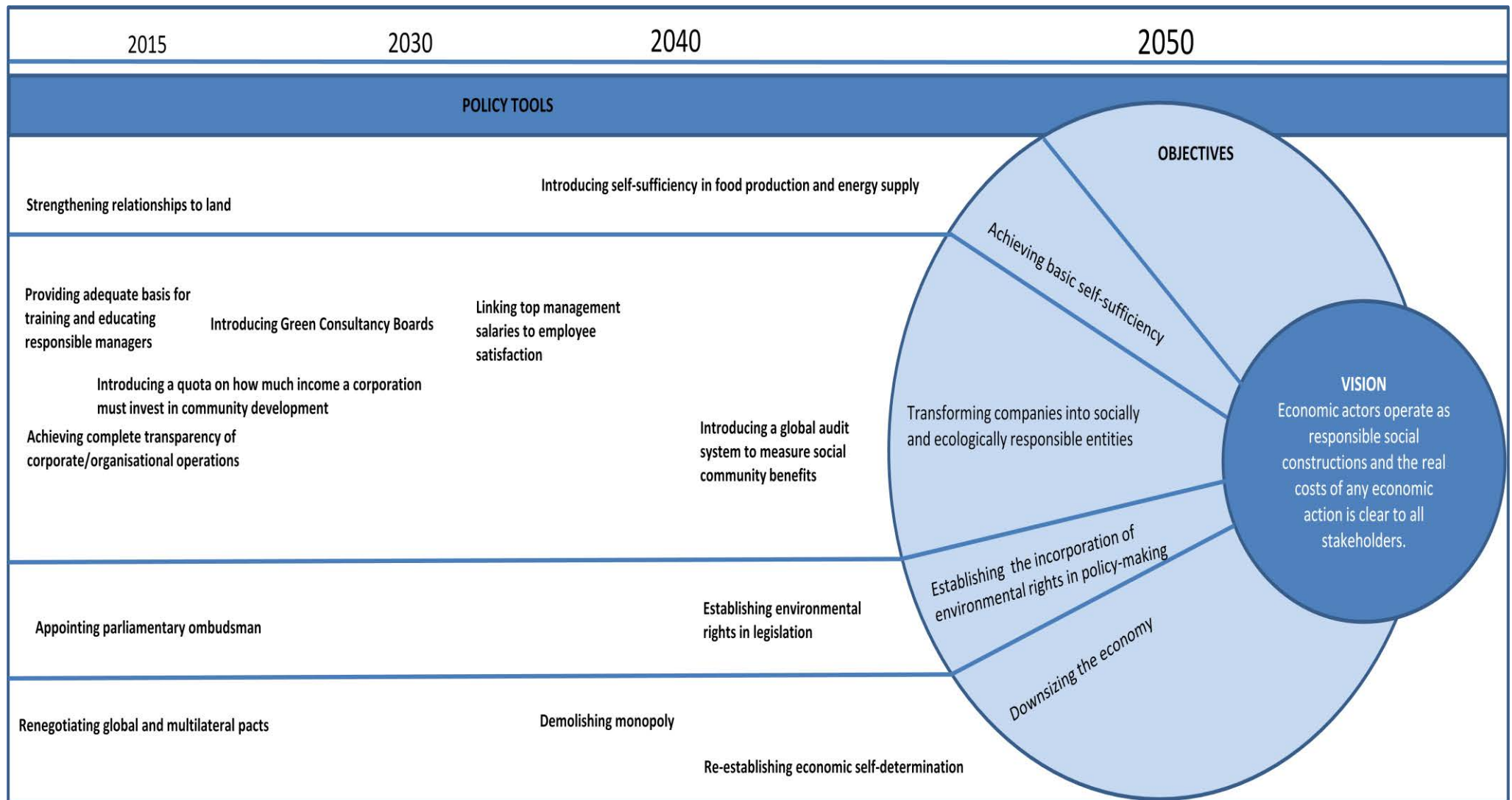


Figure 15: Policy recommendations of the student panel 3.

Chapter 4: DEFINING SUSTAINABLE EMPLOYMENT - ANALYSIS OF THE BACKCASTING RESULTS

The research goals and questions were laid out in the introduction of this thesis. The main goal of this research is to uncover how sustainable employment may be defined beyond the currently reigning economic paradigms. Therefore, the proposed research questions are the following:

- ✓ What is sustainable employment?
- ✓ What are the main elements that make up sustainable employment?
- ✓ What policy tools, measures or processes may lead to ecologically and socially sustainable employment?

The theoretical underpinnings of my research were presented in Chapter 2. My approach is embedded in the research field of ecological economics. This prompts that my quest to find the elements of sustainable employment must bear in mind strong environmental sustainability, social sustainability based on social justice, and a non-growth economy. There are no firm assumptions or validated theories in the literature on sustainable employment beyond the mainstream economic paradigms. Therefore, it is not my aim to prove or refute theories.

This chapter compares the results of the backcasting empiria to the available literature. The main perspective of this comparative analysis will be just how far the visions and tools that emerged during the backcasting reflect scientific evidence. It is important to see what scientific recommendations play a significant role in the empirical evidence as well. The differences in the composition of the two groups also facilitate inspection on what similarities and distinctions occurred and what attributes of the composition could be behind these discrepancies. The emerging tendencies in literature compared to the empirical evidence will in the end make up one possible characterisation of sustainable employment.

The chapter analyses the results of the Hungarian backcasting experience in depth using the textual vision of the two groups and later on the recommended policy steps. Each of the following subchapters includes the part of the vision that refers to the

topic at hand and the analysis refers to concepts that exist in scientific literature, drawing upon the similarities. In order to support the reader, the texts of the visions will appear at the beginning of each chapter.

4.1. WORK REDEFINED

Vision of the expert panel:

Work in Hungary in 2050 is not merely a tool for basic subsistence but also a “source of well-being”. Work does not consist only of a paid job and does not only exist in institutionalised forms. As work is no longer just a struggle for survival, people have an internal motivation to do what they do well. They can be proud of their jobs independent of their status or scope of activities. Work is meaningful and useful in many different segments of life. People’s needs go beyond the physical focus and spiritual needs prompt the existence of new types of work activities. The satisfaction of needs is “healthy”, putting a stop to patterns of overconsumption. Work motivation changes accordingly: prime motivation is no longer subsistence but self-actualisation, self-development and the feeling of social usefulness. As one of the participants phrased, “work is happy self-actualisation in a socially beneficial manner”.

Vision of the student panel:

In 2050 in Hungary besides ensuring basic subsistence, work supports humans to discover their true self, to feel useful to society and enjoy the variety of activities in life. Work is very much about being able to make the most of one’s skills and knowledge and is one form of self-expression. “Work is a creative activity and a developmental opportunity for individuals and is well-suited to our skills and aptitudes.” Creativity plays a significant role in work and this leads to higher quality of production. People work with passion and it provides them with the feeling of success, with positive feedback, flow, satisfaction and acknowledgement, hence contributing to their happiness. All this leads to them feeling their “call” that plays a considerable factor in career orientation. As this may not happen at once

and may change during the course of life, people are given the opportunity to try themselves out in different jobs and multiple career changes are common. In 2050 work is not the sole source of subsistence as Hungary's sustenance and housing conditions and technological development enables the satisfaction of basic needs through the mechanism of the guaranteed basic income for example. This way the world of individual and community work becomes enmeshed in each other. Individuals are fully aware of the public utility of their work and its impact on the environment. A number of feedback mechanisms assist employees in this awareness. This feeling of usefulness makes their work meaningful.

When Gardner, Csíkszentmihályi and Damon (2001) define “good work” in their book, the concepts of social responsibility and personal development keep occurring together. They believe that people feel they are doing good work when they act responsibly taking into account their own personal goals and calling as well as their family, friends, business partners, colleagues, the institutions they work for and in a wider sense the whole world including people they do not know, the next generations and in the most sublime meaning, the Planet and God. It is hard to be really satisfied with our own development if it is not in harmony with a devotion to contribute to the greater good. There is also a very perceptible sign of someone doing a good job: they enjoy it (Gardner et al, 2001). The visions both seem to replicate the insights of three world-leading psychologists stating that work should be redefined in order to enable people to enjoy it through facilitating self-actualisation coupled with the feeling of social usefulness.

The student panel emphasised the importance of “calling” in the oldest sense of the word: a vocation and occupation that one feels is part of his/her mission in life. Gardner and his colleagues (2001) also emphasise the significant role of this calling in good work even though it may seem like an outdated concept in today's world of labour. They explain that this role becomes important when we approach the issue from the perspective of moral identity. Moral identity is one of the key factors in a person's development and should be an integrated part of the Self. This morality is, however, partly a social concept and society's appreciation of a profession plays a

crucial role in it (Gardner et al, 2001). This is presumably why both groups emphasised the social value of work and that even those – or especially those – jobs should be highly respected in society that are arduous but absolutely necessary to social welfare. Habermas (1994) draws attention to the fact that the classic notion of calling cannot be rediscovered in fragmented and monotonous work processes and in a society that defines work only in highly instrumentalist terms. Hence - as also suggested by the backcasting results - to bring back the classic sense of calling as part of good work – the organisation of production as well as the definition of work would have to be readjusted.

When examining the role of self-actualisation in “good work”, Gardner et al (2001) draw the attention to the fact that personal development has two distinctive directions: competence and character and two hidden opportunities: differentiation and integration. While our society knows a lot about the development of competence (our whole educational system being based on the transfer of knowledge and to some extent skills), character development is left up to the individual and currently has little value in our educational system. Character development is especially problematic in a world with volatile religious, community, and family values and traditions. However, work can contribute significantly to the development of the character as well as to the exploitation of the two hidden opportunities. Differentiation means that the person is not only competent and has a distinct character but also acts completely autonomously. Integration on the other hand means that a person’s goals, values, thoughts and actions are in perfect harmony with each other and is well placed in the complex web of mutual responsibilities and common meanings. While the former is more emphasised in Western societies, the latter is more of an Eastern philosophy. However, the authors stress that we need to find a future where these two directions can live side by side with each other.

Viktor Frankl (Frankl and Lapide, 2007), the founder of logotherapy (a psychological school emphasising the role of finding the existential meaning in one’s life) denies that self-actualisation can be a primary goal in a person’s life. He believes that self-actualisation is an outcome and not motivation. It cannot be an end in itself but can be achieved through our actions and interactions in the world and through dealing with

issues of substance and interrelating with others that should be important to us. As the welfare society is capable of fulfilling most of our basic needs, attention must be turned to the most important need of all: finding the meaning and value of our lives in all situations. In affluent societies the main problem is that even the people who have money, have no true goals in life and suffer from the feeling of pointless existence in what he calls the “existential vacuum” (Frankl and Lapide, 2007). What Frankl says is highly relevant to the vision of good work. It means that the focus is not that we must achieve self-actualisation at all costs but that given the opportunity to try ourselves out in different situations, we are more likely to find our own personal cores and find existential meaning in our lives.

This part of the vision (and we will see many others) challenge the concept of the homo oeconomicus. While self-actualisation can be regarded as a selfish, rational and utility-maximizing action, the way described by Gardner et al (2001) and Frankl (Frankl and Lapide, 2007), it moves well beyond this simplified description of the human nature. Self-actualisation cannot be interpreted without evaluating social connections or peer approval. It is a concept deeply embedded in the world around us and hence, in the sphere of work demands that what we do is not only useful to society but also appreciated by others. The provocative scholar and activist, David Graeber (2013) draws our attention to the phenomenon of what he calls “bullshit jobs”. These are the jobs that are created just to satisfy our vision of the “work economy” (more on this concept in the next chapter) and provide some basic subsistence to people in a world where technology would enable us to work just 3-4 hours a day to satisfy our basic needs. These jobs have no real social utility and do not contribute to overall social well-being. The visions on the redefinition of work can be interpreted as reactions to this feeling of futility under current employment conditions.

Giddens (1998) and Bourdieu (1978) both argue that work must be redefined in order to include meaningful activities that strengthen both personal identities and social cohesion. In a substantive economy (Polányi, 1946) where economic activity is not based on the idea of scarcity but on the concept of providing adequate livelihood strategies to humans in harmony with social and ecological environments, work is not

an end in itself. Work cannot be appreciated merely on its economic merits but on its social function independently of its economic value (Bourdieu, 1978).

The following chapters will present what dimensions can lead to the sustainable world of work that serves self-development as well as society as a whole through the different perspectives that arose in the workshops.

4.2. FORMS OF EMPLOYMENT

Vision of the expert panel:

Such redefinition of work stipulates the broadening of the different employment forms. In Hungary of the 2050s, employment is not purely part of the economy as people also do work that are not necessarily monetised. One can engage flexibly in many different work activities, in many different legal forms and hence retains more control over one's life. The non-monetised forms of employment such as barter or LETS become legally acknowledged. Work is performed predominantly locally, or even from home but so-called "office café" solutions also exist where people can work outside their homes. Learning is a recognised form of employment. Technology supports this type of evolution as it transforms most arduous and monotonous work and "there is nobody digging trenches in 2050". However, if someone performs such demanding jobs, society fully appreciates them.

Vision of the student panel:

Society in 2050 acknowledges a wide spectrum of work as employment including household work, nursing and caring jobs performed in the family as well as voluntary work performed for the community. The ratio of paid employment has declined significantly in the last decades. Instead, community work has increased. The non-monetised work includes forms like barter and LETS. Community work provides an opportunity for employment for also those who find no work in the economy. The considerable drop in working hours also facilitates the spreading of

community activities. Instead of pursuing productivity, efficiency, and quantity in the jobs, work is focused around producing quality in a slower and more creative manner. The shortening of the working week and the reduction in working hours means more paid employment in total. Work is now flexible both in terms of time and space. Legislation reflects this and facilitates all life circumstances. Alternative and atypical employment forms are widespread. With the expansion of telework, work-life balances improve. Mobility is accepted as long as it does not involve “soul destroying” and environmentally harmful commuting. There are obviously still hard jobs that no one likes but they are fewer in numbers as automatisisation improves and those who take up these jobs are highly appreciated by society. There are whole industries where machines are being replaced again with human labour as production focuses on high quality and creativity. As individual skills cannot be realised in large industrial arrangements, automatisisation is organised in a manner that it does not diminish human tasks to small, monotonous motions. Environmental and employment interests are mutually supportive of each other as transitions to ecologically responsible production do not lead to less employment.

Even though the vision on the future forms of employment is part of the redefined concept of work, its importance prompts it being handled separately. While the previous chapter presented how work becomes “*self-actualisation in a socially beneficial manner*” in this normative vision of the future, this section translates this into the “practicalities” of employment such as types of work, work organisation, work-life balance, monetisation of work and working hours.

Williams (2008) identifies three different narratives on the possible future of work. The first one, the “formalisation” of work covers the mainstream idea of goods and services being delivered by mostly the markets and to a small extent by the state, where employment is present merely in formal forms and any alternatives are being labelled as backwards or underdeveloped. This takes place in a de-regulated world economy that enables the free, unrestrained flow of capital in a borderless world with

global politics and homogenous global culture. This represents the shift from industrial to post-industrial societies. The second narrative is the shift from Fordist to post-Fordist modes of work organisation where labour becomes more flexibly deployed and there is a move away from the Taylorist fragmentation of work processes. The third one focuses on the transformation of employment from hard to soft human resource management, the latter stressing the importance of enabling individuals to self-direct. Williams (2008) argues that these are binary approaches to normative futures where one is considered bad (e.g. non-commodification from a neoliberal perspective or Fordist modes from a socialist perspective) and only perceive that it is just the private or the public sector that is capable of delivering goods and services while disregarding the options of the third – civil – sector as an alternative to the other two. The future development of work, however, is likely to be a non-hierarchical, non-binary, multi-dimensional evolution just like in the backcasting results.

Polányi (1946) claimed that the separation of work from other spheres of life and its subordination to the market destroyed our organic ways of living. As mentioned in the literature review, Frankl (1996) also claims that our industrial (and for that matter post-industrial) societies emphasise the ‘*vita activa*’, the active life and does not allow humans to live their ‘*vita contemplativa*’ that enables them to take a step back and just be. The opposite of activity is not passivity in this sense. It can also be receptivity, internalising and reflecting on events in our lives and in the world around us. The backcasting vision on the transition of the forms of employment reflects this kind of return to a more balanced life.

Beck (2009) states that “work society” has reached its ecological and technological limits and is now showing a clear contradiction between using work as the main pillar of society and the incapacity to be able to provide meaningful employment to a wide segment of people. He encourages leaving the concept of “work society” behind by not just redefining work but also reorganising the social and economic institutions that now serve as the basis of work. Otherwise, in “second modernity” the only other option would be the complete rift of society to unemployed masses and a few lucky ones in employment. In line with Polányi (1946) and Frankl (1996), this redefinition and reorganisation should revolve around the “active society” instead of the “work

society” where paid employment is only one part of work activity. Beck (2007:78) quotes Bergmann (1998) who envisions people spending two days a week in paid employment, two days with self-development and two-days doing what they really want to do. This latter may lead to new, paid activities but the aim is not to earn money but to “dig up the gold in people’s heads”. Therefore there are myriads of work forms: family work, self-development such as studying or taking part in informal learning activities, voluntary work, or political participation.

Despite of common beliefs, the moral standards and organisational implications of the “work society” had not existed before industrialisation and societies can define themselves without narrowing themselves down to their role as workers (Csoba, 2010a). In previous epochs, “decent work” meant a voluntary activity acknowledged by society that not only provided basic subsistence to the whole family but also reinforced the individual’s loyalty and belonging to the community (Csoba, 2010a, p.20). This was, however, multidimensional, including tasks for the church, tasks for the family, entrepreneurship and community work. The definition of decent work in the 21st century is of utmost importance as the majority of people in current societies do not fit into the frames of previously dominant form of “wage labourer” (Csoba, 2010a).

In one possible vision of the future Khallash and Kruse (2012, p.678) envisage that

“In the optimistic approach to future work and work-life balance, everybody lives in a high-tech world where old work structures disappear, allowing many to transform into mini-entrepreneurs and knowledge workers. The foundation for this massive transformation is the leap into the era of creativity and productivity through innovation, and employment growth will be in the knowledge-intensive and technology-based industries. This will change organizations and the concept of ‘work’ and ‘organization’; while Bridges foresees “dejobbed” organizations, Joseph Boyett anticipates a total erosion of barriers between managers and workers in a ‘boss-less’ organizational setup.”

They claim that this optimistic scenario can be supported by high-performance work systems on the one hand and growing worker participation on the other. (Both these

concepts appear later on in the backcasting visions under the subheading of economic actors.) This flexibility of organisations will provide an environment where managing work-life balance pressures becomes easier. However, these pressures are no longer seen only as external ones (e.g. stemming from the need to look after children and elderly) but also internal (e.g. occurring due to the internal motivation of individuals to fulfil many of their goals both inside and outside the workplace). Moreover, it is widely acknowledged that both internal and external pressures on work-life balance change in the different stages of one's life (Khallash and Kruse, 2012).

Through an empirical research involving top executives, Gratton (2011) also foresees organisational changes in the workplace. Executives reported that many of the ways of working that have been dominant in the past (such as 9 to 5 work; working for just one company, taking weekends off, working with people we know in the same office) are disappearing. This also implies that it is no longer hierarchy that is necessarily the most suitable way of organising work. The other interesting trend quoted by these executives was the appearance of the "balanced man". This concept is not unlike the one expressed by the student panel as the multidimensional person discussed in the section on the role of community. The balanced man is the one that is capable of integrating the roles of a family man and the worker and is enabled to make their own choices regarding this balance (2011). These choices require greater reflexivity to adapt to the plurality of choices throughout a person's lifecourse and transforms the concept of the linear career plan to "temporary role configurations" (Heinz, 2002). The OECD (2011) reports that work-life balance has been improving gradually in recent decades but this masks over the changes in tasks being performed both at the workplace and at home. The distribution is still tilted by gender: men working longer hours in paid employment and women spending more time with unpaid domestic work.

Information technology has already blurred the line between work and private life for knowledge workers (Rietveld, 2011) and will continue to do so for many other occupations (Brynjolfsson and McAfee, 2014). Therefore, the concept of work time and leisure time will continue to merge. There are already many forms of flexible work organisations: flex time; flex place enabled by telework; daily flexibility; reduced time

for full-timers; work part-year; paid time-off for personal matters; paid time-off for caring for sick children or elder care; time-off for volunteering; maternity leave; paternity leave; sabbaticals; extended career breaks, etc. (Galinsky and Matos, 2011). However, this flexibility does not only cover the free choice of working arrangements at one employer. As Csoba (2010a) points out, the other side of this coin is the tendency to contract for fixed periods of time, task or project based. The concept of “just in time” has been extended to include not just logistics but the availability of the labour force and the concept of outsourcing serves this approach well. This indicates the trend that some jobs are not suited for the 40-hour working week concept when the tasks are only required for a few hours a day (Csoba, 2010a). Davis and Blass (2007) also mention that the most evident characterisation that is changing in the work environment is flexibility. They state that

“at the organisational level, flexibility can manifest as a focus on niche rather than mass markets, creatively identifying and exploiting new opportunities and technologies, and adopting different forms of organising; from a post-Fordist melange of multifunctional teams, entrepreneurial, self-regulating networks of production, to a cost-driven outsourcing of non-core activities, optimising use of organisational resources to accommodate those demands. Patterns of flexible employment may lead to increases in self-employment, subcontracting and other displacement strategies” (p.39).

They also say that these different forms of organising work will prompt the broadening of both employee responsibility and the involvement in decision-making processes. This kind of flexibility will require new skills, and the development of competencies expected “on the job” will fall back on the individual. This flexibility comes at the cost of giving up security and demands a kind of “short-termism”. This leads to “portfolio workers” (Handy, 1984) who enjoy greater freedoms to express their creativity, and take control of their lives. However, it also means that this kind of project based environment provides less stability and requires a great deal of adaptation on behalf of the individual worker. On the one hand, the 24/7 working week provides a chance to really find work-life balance but on the other it comes at the cost of leaving the individual to his/her own resources (Davis and Blass, 2007).

Handy (1984) predicts the future of work to transform in direction where the so-called employment economy is only part of the whole economy and money is only one of the rewards for work. He establishes four main types of work: paid work done for the sake of earning money; gift work done for the community; home work serving subsistence; and finally study work for self-development. In an interview, Charles Handy (Ettorre, 1996, p.15) said that *“a lot of us will become portfolio workers, selling our skills to a variety of clients. And all of us will be looking beyond work to find meaning and identity.”*

This resembles to the concept of “mixed work” including paid and unpaid work activities. Nierling (2012, p.240) suggests that unpaid work can take the forms of *“many reproductive activities such as like cooking, gardening, doing handicrafts and becoming involved in voluntary charity work or community service. In this respect, it allows one to pursue a sustainable life style through (modern) forms of subsistence and political participation”*. She suggests that the recognition of the value of unpaid work is crucial in transforming the current definitions of work into more sustainable states. It is only this recognition that can replace the current status- and income-oriented approaches and pave the way for a more cooperative and less consumption-oriented society. She uses the concept of “mixed work” that she defines in the following way:

“(mixed) work can be regarded as an essential factor for socially sustainable development because it contributes to the satisfaction of human needs. This satisfaction takes place if a meaningful activity can be carried out that is directed both towards oneself and towards others, provided that it allows participation in society and is economically secured by the fact that basic needs are provided for”.
(p. 242)

Mixed work combines paid and unpaid work activities in all spheres of life that complement each other. As long as society appreciates the uncommodified rewards of non-paid work, it can lead to a “good life” meaning that individuals enjoy greater freedoms and more social involvement. The challenge is to transform the paid working environment in such a way that enables the concept of mixed work to take root in society (Nierling, 2012).

It is partly the facilitation of this concept where both groups brought in the debate on the guaranteed basic income and decided to include it both in the visions (under different themes) and in the backcasted policy steps. Similarly to Beck (2007), they believe that the guaranteed basic income is supposed to free us from the coercion of work without freeing us from meaningful work. As Beck (2007) says in some ways the phenomenon of unemployment is victory and not defeat: it signifies that with the development of technology we can achieve a lot even by doing a little. The guaranteed basic income could be seen as a reward for this achievement and could substitute the outdated concept of full employment with the freedom to work. The debate on the guaranteed basic income was just as vehement in the groups as it is in the scientific and political world. The main argument against it was – just like in literature and in contemporary politics – the lack of willingness to work. However, they also arrived to the conclusions similar to the line of reasoning Haagh (2011) uses. She concludes that when people feel in control of their lives and feel stable, there is an intrinsic motivation to work merely for the satisfaction of work as a source of well-being. This satisfaction grows with the levels of control and stability creating a positive feedback loop. However, this stability cannot be achieved individually and needs institutional social support (Haagh, 2011). This is why – after some deliberations – the groups decided that the idea of the guaranteed basic income serves their vision of sustainable employment.

In most cases, housework does not constitute as work in our current society as there are no monetary rewards associated with it. However, it does contribute to the notion of decent work as it provides the foundations of providing subsistence (Csoba, 2010a). Housework or domestic work includes all chores around the house (cooking, cleaning, shopping, mending the house) but researchers normally treat caring for children and the elderly separately. Housework cannot be avoided, only the time spent on it can be reduced through time-saving machines or buying help from the market. Housework is currently not organised along the logic of the economy, and with most European households having two earners, it is often labelled as the “second shift” or “double burden” (sometimes even tripple burden including caring for children) referring to the overwhelming ratio of women doing it alongside their paid employment (Paksi et al,

2008). Both groups treated housework as just one form of work, part of the “mixed work” concept regardless whether it is being performed by women or men.

4.3. STRENGTHENED COMMUNITIES

Vision of the expert panel:

Participants envisage Hungarian society in 2050 where the role of communities is of rising importance and builds on values of cooperation, trust, and solidarity. Community ties of individuals are strong and communal events are frequent. The network of trust is operational and trust itself is treated as a prime social asset. Community plays two different roles in employment. On the one hand, community provides a framework and motivation to work, on the other hand, work serves community purposes. As “people cannot have their work appreciated in larger spaces and large societies”, society operates as a network of many smaller communities. Hence, both working in the community and working for the community becomes important.

Vision of the student panel:

In 2050, the role of the individual is played down compared to the role of community. However, this also means that humans are not treated as “one-dimensional” creatures in the different spheres of social life (e.g. employee/employer at the workplace; mother in the kindergarten; pedestrian on the street; customer in the supermarket) but they can feel the integration of all these roles in all spheres. Community levels are multiple, diverse and widely acknowledged: from family and residential communities, through work communities and friendships to fictional communities (such as nations). The community identity is being strengthened by trust, the feeling of cultural belonging, and acknowledgement of strong dependency. Especially the latter makes people feel personal responsibility for community welfare as well. This means that individual goals and self-realisation is framed within their utility to the community and hence, the self-actualisation of individuals has a beneficial impact on the whole of

community. This is a positive feedback loop as the appreciation of the community strengthens the individual's self-concept as society recognises the value of even the smallest contributions regardless of their value. Living in the community is supported by community services and community spaces (such as communal laundries or gardens).

The panels used the notion of community in the sense described by Ferdinand Tönnies back at the end of the 19th century, namely the *gemeinschaft* of familiar human ties based on common values and close interactions (Tönnies, 1983). Beck (2002, p.3) notes that *"the litany of the lost sense of community that is just now being publicly intoned once more, continues to talk with a forked tongue, with a double moral standard"* as social institutions, rights and entitlements are all designed for individuals and these are not often called into question even though they put a great strain on individuals. Previously in human history, the family, the village or the rules of social classes supported individuals facing both opportunities and threats. Now, the individual is left to his own devices in coping with the complexity of the world and bearing the consequences of his decisions. The irony of the situation is that all these individual decisions are embedded in complex social structures dictating of what is ought to be thought and decided (Beck, 2002). Polányi (1946, p.60) also states that human economic activity is embedded in social relationships and their actions are not aimed at defending personal interests in ensuring possession of material goods but defending social positions.

The visions of both groups reflect these concepts when they emphasise the role of community beyond the individual interests and yearn for community values that replace the individualistic, atomistic approaches. Korten (2009) also asserts that humans are in the process of realising that existing in a healthy living system means that they need to rediscover their ability to organise themselves in communities based on cooperation and sharing. However, Meppem (2000) emphasises that it is important to distinguish between a naïve view of community that existed previously in human history and a more sophisticated one that focuses on the acceptance and respect of the complexity of human relationships. In such a way it is more likely that common

activities will produce synergies and a greater good than separate individual actions or the mere longing for an idealised past (Meppem, 2000).

According to Heinz (2002) it is the discontinuity in social relationships that prevent interpersonal trust – an essential component of social bonds - from developing. The current hectic pace of life (especially visible in employment conditions) no longer allows people to develop either loyalties and mutual obligations or long-term goals. This means that only temporary responsibilities exist with short-term loyalties and at best people superficially cooperate in work teams. This changes the character of individuals who must focus on their short-term relationships and flexible identities. Individuals also lose the comfort of self-affirmation that comes from long-term social bonds (Heinz, 2002). Even though in the backcasting visions, the flexibility of working conditions would not create socially defined biographical stability but the commitments to communities and localities can replace this and avoid the traps mentioned by Heinz. This is also consistent with the tendency described later on (in the section on technology), that open innovations and crowdsourcing moves work and performance away from *“being about the output of individuals to increasingly becoming more a phenomenon of collective intelligence and communities, both inside and outside the company”* (Gratton, 2011, p.250).

On the one hand, current tendencies support the individualisation of society (Beck, 2002). On the other, people are developing new layers of identity that ranges from local to global but research shows that the self-conception of belonging to local communities strengthens as people desire to stay *“grounded in a vast world”* (Goldstein, 2014, p.7). As will be discussed later on in the section on glocalisation, this strengthened local identity seems to be of fundamental importance in instituting social change towards sustainability.

Hawken and his colleagues (1999, p. 286) draw our attention to the fact that *“an overworked but undervalued workforce, outsourced parenting, the unremitting insecurity that threatens even the most valued knowledge workers with fear of layoffs – these all corrode community and undermine civil society.”* However, from the visions it seems that this relationship is not only unidirectional but mutual. A strong community leads to a balanced and secure workforce that is valued, and capable of

reconciling work and family responsibilities. In other words, it supports the development of sustainable employment.

4.4. ECONOMIC ACTORS: A BLURRED LINE BETWEEN FOR-PROFIT AND NON-PROFIT

Vision of the expert panel:

Economic actors of 2050 are not merely for-profit or non-profit organisations. For-profit actors are sensitised (or coerced) being environmentally and socially responsible organisations that build these aspects into their everyday decision-making and represent unambiguously community values. Management culture embraces empowerment, where employees have certain degrees of self-determination. Bonuses and fringe benefits include solutions that facilitate the new, diverse types of employment such as sabbaticals or work-time allowances for volunteering activities. Consultations with workers' associations are based on trust and dialogue, where both parties are present as partners. In case of inevitable downsizing, outplacement services are provided on a wide basis to employees. Different co-ownership schemes for workers are common, cooperatives are rediscovered and many work in the predominantly non-profit social economy. However, as in the for-profit sector social responsibility becomes the norm, at the same time corporate governance becomes widespread among non-profit organisations. Hence, non-profit approaches are built into the operations of for-profit companies, while non-profit organisations internalise the essentials of economic operations.

Vision of the student panel:

Economic actors in 2050 operate in a transparent manner and act as social constructions. The definitions of their interests and their decision-making processes are permeated with deliberations on environmental impacts and social utility. Part of their income is being spent on community-building. Earnings as well as the environmental and social costs needed to achieve such earnings are clearly accounted for. They aim to co-operate both internally (for example with their employees and social partners) and with

their external business partners (for example operating in clusters, having common information and logistics chains). Corporations use democratic, participatory decision-making. Employee ownership schemes are manifold and common from employee shareholding programmes to cooperatives. More environmentally-friendly traditional production techniques re-gain weight. Production takes place through small and medium-size enterprises. There are hardly any examples of large industrial corporations, and there are absolutely no monopolies. Start-ups are supported by incubator houses. Quality and not quantity is the main guiding principle of production and hence it becomes more labour-intensive as well. Beyond production, services related to the purchase of the goods gain weight and therefore durability becomes an important aspect in business.

The two visions on how the economy may evolve bear quite significant similarities. They both envision environmentally and socially responsible economic actors that behave more like social constructions rather than just profit-making money machines. This resonates on sociological research showing that the disconnection of economy and society has produced a dehumanised economy with a struggling society (Polányi, 1946; Granovetter, 1984; Beck, 2007). While in the case of premarket societies most sociologists agree that economic activity was embedded in social relations, currently the market logic embeds or crowds out other relationships. As Granovetter (1984, p.482) phrases it

“This view sees the economy as an increasingly separate, differentiated sphere in modern society, with economic transactions defined no longer by the social or kinship obligations of those transacting but by rational calculations of individual gain.”

Hence, classical and neoclassical economics – in line with their utilitarian approaches - operate in an atomised and undersocialised world where prices are the only visible results of the interaction of actors and any other interaction is a *“frictional drag that impedes competitive markets”* (Granovetter, 1984, p. 484). Granovetter (1984) argues that both undersocialised and oversocialised views are wrong as long as they

conceptualise decisions and actions by atomised actors as most behaviour is closely embedded in networks of interpersonal relationships. When examining the notion of pioneering, Parra-Requena et al. (2012) also emphasise the importance of making use of social capital, reinforcing the assertion that economic activity is undoubtedly entrenched in social networks.

Through an in-depth analysis of two companies with declared aims of achieving sustainable operations, Stubbs and Coclin (2008) attempted to conceptualise sustainability business models. Their findings have a lot in common with the backcasting visions. The social dimension of their business model demands – among others - stakeholder engagement skills (i.e. the requirement to be able to understand stakeholders' needs and expectations, hence being relevant to stakeholders); and multidimensional or holistic characteristics like a systems approach based on cooperative business strategy and planning; and collaborative models including supply chain, competitors, government agencies, and communities. The cultural attributes to these firms contain concepts like treating profit as a means not as an end in itself and having a "*higher purpose*" to business than just making money. Hence, management focuses on the benefits for all stakeholders and do not prioritize shareholders' expectations above others. This presupposes the sharing of resources (people, profits, and time) among stakeholders to achieve sustainable outcomes and emphasises relationship building based on trust, mutual loyalty, integrity, and fairness. All this of course requires a medium to long-term focus. All in all, their model suggests that for organizations to be sustainable, the neoclassical model must be transformed, rather than supplemented by social and environmental priorities such as environmental stewardship, respect for persons and nature, and social equity (Stubbs and Coclin, 2008). Their research shows that already in the case of currently successful companies, these concepts are not as farfetched as they may be perceived in theory. Even the expert panel's vision on fringe benefits including paid time for volunteering is not without precedents in today's economy. The Inn of Anasazi, a luxury hotel in Santa Fe, USA introduced an employee scheme where staff members are paid for two hours volunteer work a week for local groups. The hotel also runs other similar programmes and staff turnover is now kept minimal (Hawken et al, 1995, p.85).

In line with Granovetter, White (2014, p.7.) argues that *“at the turn of the twenty-first century, the corporation is arguably the most powerful social institution”*. Hence, it is necessary that values in economic action change radically in order to respond properly to social needs. Instead of the currently guiding attributes of scale, transience and disparity that promote overconsumption, short-term interests and social imbalances, values must change towards accountability towards all stakeholders. Similarly to the sustainable business models of Stubs and Coclin, he also suggests six principles of corporate redesign that resemble significantly to those foreseen by the backcasting panels: the purpose of the corporation must serve public interests; the earnings shall provide fair returns to shareholders but not at the expense of other stakeholders; economic operations must not compromise the ability of future generations to meet their needs; corporations must distribute wealth equitably to those involved in its value-creation and must be governed in a participatory, accountable and transparent manner, not infringing on self-governance of other human rights (White, 2014).

According to Furnham and Argyle (1998, p.5) the social acceptance of *“openly and proudly seeking money and ruthlessly pursuing it at all costs”* has fluctuated in the course of human history. While in the 1980s and 90s it may have appeared to be quite acceptable, the visions of the two backcasting panels suggest as if this tendency was halted. As consciousness levels of consumers are rising, enterprises will have less and less choice to sacrifice environmental and social perspectives on the altar of shareholder benefits. However, according to the visions and especially the tools leading to these visions, the road to giving up parts of profits for social causes will not be taken merely out of goodwill. It requires the transformation of institutions such as norms and legislation to provide incentives for responsible entrepreneurial activity. The student panel emphasised in their vision the networking perspective of these activities. Pacheco and his colleagues (2010) also suggest that the best way of escaping the “green prison” (referring to the metaphor of the prisoner’s dilemma not enabling otherwise environmentally devoted enterprises to introduce green measures if they want to stay in competition) is to run collective actions through partnerships with industry and civil organisations. Once these collective actions change the rules of the game, the disincentives can be reduced to the minimum.

Another commonality in the visions is the increasing role of social and civil enterprises, especially cooperatives. In his book *The crisis of global capitalism*, George Soros (1998) also suggests a form of communal economy to take over the current market fundamentalist economy. Booth (1995) also argues that other forms of business organisations must take over the currently predominant conventional capitalist corporation, and mentions cooperatives as a viable alternative. Through employment participation, co-ops tend to distribute earnings more fairly and at the same time use resources more efficiently in order to keep non-labour costs to the minimum. They also tend to internalise a number of community concerns beyond protecting local resources and offering employment to marginalised groups such as food safety or local development (Novkovic, 2008). Kelly (2012) emphasises the transformation of ownership designs to achieve the transition to a more just economy. However, it is not only the structure of ownership but also the purpose of economic activity that must change.

The idea of the expert panel of not making clear distinctions between mainstream for-profit and non-profit economy is strongly supported by Bruni and Zamagni (2007, p.22.) who claim that the logic of separate economic sectors only lead to unfruitful theoretical battles. They argue that the so-called third sector (the social economy) currently operates based on a “remnant identity” trying to plaster holes unhandled by both the first (economic) sector and the second (state) sector. In their book on the civil economy, the authors suggest that if we are ready to reject the concept of value-neutrality in economy, the civil economy can become a viable alternative to both neo-liberalism widespread in the first sector and neo-etatism prevalent in the second sector. The role of the civil economy is to find ways of integrating the concepts of parity, distribution of wealth and earnings and reciprocity. This integration is of utmost importance as neither parity nor reciprocity alone can serve the interests of a humanised economy. However, reciprocity in a civil economy is by and large based on a triple structure where one does not only experience reciprocity if it is received from the other party but also when the other party offers it to a third party. Hence, this kind of reciprocity moves beyond the prisoner’s dilemma of current economic theories. This kind of reciprocity is based on multilateral relationships where the self experiences

satisfaction beyond the symmetrical contractual nature of parity. However, as in the case of gifts, the gesture of giving a present is more important than the gift itself but some parity is also part of its dynamic as at some point one expects receiving a gift back. Also based on this notion, social and civil enterprises are a lot more efficient in convincing their employees of their strategies rather than contractually pressuring to adopt organisational goals. If the company treats external stakeholders fairly, employees also tend to expect fair treatment in their own relationships with the employer and act to reciprocate this fairness. Hence, distinguishing between the for-profit and social economy merely on the basis of their ways of distributing profits is a short-sighted way of handling the distinction. It is the motivational base and their diverse image of human beings (*homo oeconomicus* vs. *homo reciprocans*) that set them apart and demand different organisational perspectives (Bruni and Zamagni, 2007).

So far the support of social enterprises was part of the active labour-market policy toolkit that aimed at assisting marginalised people. This has been a tool that emphasised the role of participation of individuals in economic activities rather than just subsidizing them as passive labour-market policy measures would do or retraining them for the demand of the labour-market that may not suit a wide range of unemployed people. Having looked at the characteristics of WISE (work integration social enterprise) in twelve European countries, Spear and Bidet (2005) concluded that besides having strong links to the local communities and other stakeholders, these companies have a remarkable capacity for innovation and the spreading of these models (e.g. co-ops or multi-stakeholder organisations) may signify these types of corporations taking root in society.

Bruni and Zamagni (2007) draw our attention to the concept of prosumer that occurred in post-industrial societies. People act as producers as well as consumers of goods as they contribute partly to making the goods available. The authors give the example of shoppers acting as shop assistants in supermarkets, diners as waiters in self-serve restaurants or clients as bank tellers when withdrawing money from cash machines. In these situations they contribute to the companies' labour cost savings. This together with technological factors (to be discussed in the next section)

contributes to requiring less human labour in the economy, leaving many out of work. However, labour released from the current for-profit sector can be diverted towards activities that generate goods that the private sector is either incapable or uninterested in producing. This transition is not unlike the transition from agrarian societies into post-agrarian ones when agricultural workers moved into industry. It did not mean that food became scarcer, only it was produced with less labour (Bruni and Zamagni, 2007).

The real question is whether it is possible to humanise the economy by finding a model that is ready to include all human beings (not just those with aptitude) and all human dimensions (not just those relating to possession). The visions – resembling very much to the ideas presented in the section on social greens – seem to substantiate that strengthening the social economy and at the same time transforming for-profit corporate culture may just lead to such humanisation. The idea of the service economy described in the literature review was also echoed in the student panel’s vision.

4.5. SUPPORTIVE TECHNOLOGY

Vision of the expert panel:

In 2050 “such technologies are widely accessible that we cannot even imagine today”. Even though there is less work available due to technology overtaking certain jobs, this does not cause widespread unemployment. The efficiency gains from technological advances enable society to establish the new vision of work. In 2050 technology supports the flexibility of employment, raises the quality of life, eliminates hard and monotonous work, provides equal access to jobs and public services, and facilitates social participatory mechanisms. However, the surge in research and development activities does not just involve new technological solutions but also social innovations. Besides embracing technological advances, society puts great emphasis on safeguarding traditional cultural values and those who work with traditional technologies have high social prestige without turning them into a “mere curiosity”. Hence, modern technology coexists with legitimate traditional professions.

Vision of the student panel:

In 2050 technology serves man and not vice versa. Hence, technology is not self-serving and humans dare to take decisions based on widespread social dialogue on rejecting certain technological advances. Technology complements humans, not replaces them. Therefore, it does not undermine creativity but supports the flourishing of human strengths and skills. Technology supports local autonomy and instead of creating path dependencies it diversifies local opportunities. Technology supports production with higher labour input and hence better quality. Automatisations happens on an acceptable level only taking over extremely strenuous or monotonous jobs. Warranty times of products are as long as technologically possible and planned obsolescence is an unknown concept. Knowledge behind technology is open-source and accessible to all, enabling knowledge capital to flow freely.

It was the subject area of technology where the two groups diverted from each other the most, even though the topic of discussions was the age old question on how to make technology complement human creativity and labour rather than replace it. The contentious issue seems to have remained the same since the Luddite movement of the early 19th century: how do we deal with technology driving people out of work? If between 1770 and 1812 it took just one spinning machine to overtake the work of 200 textile labourers (Hawken et al, 1999, p.7), with the acceleration of technological advances and the developments in robotics (Brynjolfsson and McAfee, 2014) the issue still remains with us on an even grander scale. Even if current developments in the information age cannot be compared to those of the industrial age (Castells, 1996; Brynjolfsson and McAfee, 2014), the underlying problem of man vs. machine sticks with us. Both groups deliberated on this matter in great details but their responses differed significantly, especially in their degree of technological optimism (or pessimism) and technological determinism.

The approach of the expert panel reflected a great deal of techno-optimism with a high degree of technological determinism. Technological determinism means that democratic decision-making and human choices have little to do with the course of developments and the logic that 'science invents, technology applies and the market selects' determines solely on what kind of technology becomes widely accessible in society (Vergragt, 2014). The group did not question either the beneficial nature of technological advances or its self-

determining course of development during the discussions. Their approach also included concepts of the “technological fix” where technology can provide an answer to most problems, including those that occurred as the result of that particular technological innovation itself (Vergragt, 2014).

On the other hand, the student panel explicitly rejected the linear model of technological development and suggested that social values and decisions must become part of decisions that shape technology. This resembles to the works of academics on theories like SCOT (Social Construction of Technology) (Pinch and Bijker, 1987) or the Actor Network Theory (Law, 1992) where human and non-human systems develop in close interference with each other and the omission of either one of these perspectives leads to wrong conclusions on both social and technological development. Their technological criticism reflected the notions of many social critics who believe that the price we pay for technology far exceeds some of the benefits and manifests itself in environmental and health problems; job losses; inequality and the psychological problem of not feeling in control of our own lives (e.g. Heidegger). Their vehemence fell little short of neo-luddism that propagates simple living and the rejection of many modern technologies. (The discussions included strong phrases like *“self-propelled monster”* or technology that *“tossed humankind into slavery”*.)

The age difference is an unlikely factor explaining such differences. A more plausible explanation is the differences in perspectives. The expert panel was selected based on their knowledge of employment issues, while the lay panel consisted of students of human ecology or environmental economics. Therefore, the student panel was more conscious of the ecological destruction certain technologies have created and were more knowledgeable on subjects like lock-in effects, path dependencies, or planned obsolescence. Hence, while technology criticism was the topic of widespread discussions in the student panel, it did not occur in the expert panel at all. This is the reason why both the vision and the related policy recommendations differ in their approaches. This, however, reflects the differences even in scientific discussions. As mentioned earlier in this thesis, according to Ekins (1993) approaches to the whole subject of ecological sustainability depend largely on the lack of consensus on technological optimism or pessimism.

While the expert panel relies on technological fixes to support the transition to sustainable employment, the vision of the student panel calls for intermediate or otherwise called

appropriate technologies (Schumacher, 1973) that are “*small scale, energy efficient, environmentally sound, labour-intensive, and controlled by the local community*” (Vergragt, 2014, p.18). The notion of intermediate refers to the fact that it moves beyond traditional artisan work but falls short of the large-scale high-tech, expensive solutions. Even though the perspective of protecting traditional technology appears in the expert panel’s vision, it is implied that they had to be protected from the effects of uncontrolled modern technological inventions.

However, both groups agreed that technology can facilitate the redefinition of work explained in previous chapters, namely flexible working arrangements, diversity of employment forms, the acceptance of non-monetised work, a different type of work-life balance and participation in both economic and political decision-making. This claim seems to be substantiated by scientific evidence. The approach of the backcasting panels echoes some of the notions in the work of the Spanish sociologist, Manuel Castells not just in the case of assessing glocalisation in terms of networks (to be discussed later on) but also in terms of technological innovation opening up possibilities and supporting social change (Castells, 1996). In his trilogy (1996, 1997, 1998) Castells argues that the Information Age has enabled labour to be globally available but it has also restructured employment conditions and has provided opportunities for flexible working in terms of time and space. It also facilitates self-determination as people are given the freedom to form their own identity. This means that people are enabled to focus more on their self-actualisation than the mere subsistence provision through production.

Based on a wide empirical analysis of what factors executives believe are currently shaping work, major shapers of work were identified by Gratton (2011). One of them was the rapid and continuous fall in the cost of computing facilitating the tendency to outsource work to low-cost economies. The other is the fact that even though some work is being replaced by complex data analytics and robotics, at the same time connectivity combined with the trend of rapid digitalization of the world’s knowledge provides people the opportunity to share ideas (Gratton, 2011). Due to these impacts, technology has already triggered the questioning of the traditional place-based and time-based work by facilitating interconnectedness out of the workplace as well (Galinsky and Matos, 2011). This in turn has

a serious implication on work-life balance as well as on the organisational aspects of work. As Khallash and Kruse (2012:683) put it,

“technological and economic forces are creating a space for new organizations that are self-organized, self-managed, peer-to-peer, participatory, and people-centered. We will see more decentralized organization, which means more flexible organizations and work where people participate in making the decisions important to them.”

Let us now turn our attention to the elements of redefined work as foreseen by the backcasting panels in relation to the issue of technology, firstly to the question of non-monetised work. At first glance, for all of us socialised to equate work with paid employment, the concept of widely appreciated non-monetised work seems odd. However, as Brynjolfsson and McAfee (2014) pointed out, already much – currently not monetised – value is being created in the world and all this through people devoting their time and efforts (their labour) voluntarily. This becomes the most obvious when we look at the countless blogs, websites and other types of online information sources that people create solely for the benefit of others. The authors bring in the example of Wikipedia that is currently the largest and most consulted reference work without anybody getting credited or paid for editing it.

This takes us to the other main aspect of the groups’ suggested redefinition of work and its relation to technology. The phenomenon of open innovation or so-called crowdsourcing that appeared in recent years is a little peak into the future of diverse forms of work and the rise above the concept of one job – one employer. Once Wikipedia was mentioned earlier, I might as well use its definition of crowdsourcing available today¹⁴: *“Crowdsourcing is the process of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community, rather than from traditional employees or suppliers.”* With all human minds wired into a large network, the answers to certain questions or the supply of certain goods and services no longer needs to come from the person or team hired to find the solutions or produce the required goods. Howe (2006) mentions a good example on how technology and crowdsourcing influences professions, jobs and services. The website of iStockphoto contains millions of photographs

¹⁴ 25th June 2014

taken by enthusiastic amateurs. The technology needed to take a good photo that once separated these amateurs from professionals is now widely available to almost all. Once the surface of sharing these images was created by iStockphoto and the downloading of the images only cost less than a dollar, the profession of photographers was changed for good. Companies searching for images (the example brings in a pharmaceutical researcher requiring photos of sick people) no longer need to find the time to select and recruit the photographer suited for the job and pay hundreds and thousands of dollars for the images. They just go on iStockphoto and for a few dollars buy the photographs they need. The amateurs uploading their images receive some money for their services, the images are being used, the client pays little and iStockphoto ends up being bought for 50 million dollars just a few years after its foundation. It would seem that everyone is satisfied but the professional photographers in the world. However, people offering their photos online receive some income even though this is unlikely to be their primary occupation.

The other tendency – based on the very same concept – is open innovation that enables companies to announce their need for certain solutions online and open up their innovation challenges to all the people in the world. Even NASA used this technique in some areas of development (Brynjolfsson and McAfee, 2014). This enables researchers as well as just “tinkerers” (this word is used for home-based innovator enthusiasts) to think of the task at hand and contribute to its solution. As Howe (2006, p.3) notes, *“the solvers are not who you might expect. Many are hobbyists working from their proverbial garage, like the University of Dallas undergrad who came up with a chemical to use in art restoration, or the Cary, North Carolina, patent lawyer who devised a novel way to mix large batches of chemical compounds.”*

Crowdsourcing has also given rise to the notion of the ‘peer economy’. Writing about the peer economy, Brynjolfsson and McAfee (2014) bring in the example of TaskRabbit, a website that provides a platform for people to find help in their neighbourhood (if geographical vicinity is a question at all) from doing complex tasks like generating and improving graphs to minor task like gift-wrapping. Moreover, in the peer economy income is not only generated through making skills and labour available online but also renting out things people own. There are applications and websites that enable individuals to offer their tools, bicycles, parking spaces, etc. bringing in some income to the family (Brynjolfsson and

McAfee, 2014). Crowdsourcing and the economic opportunities of the peer economy may just be the first signs of technology radically changing the landscape of “work activities” not unlike those envisioned by the backcasting panels. In these circumstances, distinguishing between private and working life, hobby and employment, self-actualisation and basic subsistence becomes increasingly hard. However, the idea raised during the backcasting workshops is exactly trying not to separate but to merge them.

Both groups emphasised that technology could take over the monotonous and strenuous jobs. Research in the field shows this happening already. The research of Acemoglu and Autor (2011) provides evidence that the demand for human labour had been dropping the most in routine jobs regardless whether they were cognitive or manual. Brynjolfsson and McAfee (2014) suggests that soon in the future even the jobs of accountants will be taken over by technology (some may consider accounting monotonous) while even at the accelerating pace of technological improvements in artificial intelligence and robotics, creative manual jobs such as cooks or hairdressers will be the lasts to be replaced by machine. Those jobs that are out of the “race against the machine” at least in the near future are those that need sensorimotor skills, large-frame pattern recognition, complex communication and ideation. This is good news for the backcasting visions: technology can and will support creativity and non-monotonous jobs.

Technological advances are enabling humankind to sit back and enjoy past achievements. As Brynjolfsson and McAfee (2014:57) points out, what an average American produced in 1950 in a 40-hour working week can now be produced by using only eleven hours of labour and similar productivity gains were harvested in Europe and Japan and some even higher in certain developing nations. However, there are no such benefits visible in our societies. Rather than harvesting these productivity gains, we are faced with technology that impoverishes some while producing unimaginable gains for a selected few. The authors call this imbalance and inequality the “spread” and while acknowledging that many other forces influence this spread, technology must be one of the most important ones. Even Keynes (1930) believed that once we reach a certain level of satiation with consumption, we would chose to make use of our productivity gains and work less. In their book *The Second Machine Age*, Brynjolfsson and McAfee (2014) support the basic ideas behind the backcasting visions:

“As more and more work is done by machines, people can spend more time on other activities. Not just leisure and amusements, but also the deeper satisfactions that come from invention and exploration, from creativity and building, and from love, friendship, and community. We don’t have a lot of formal metrics for those kinds of value, and perhaps we never will, but they will nonetheless grow in importance as we satisfy our more basic economic needs. If the first machine age helped unlock the forces of energy trapped in chemical bonds to reshape the physical world, the real promise of the second machine age is to help unleash the power of human ingenuity.” (p.140)

However, how much we can exploit these technological advances depends on the social choices we make, and on the question of how much we can divert from the trends that are creating the spread. As Vergragt (2014, p.29) puts it *“developing the “right” technology depends both on far-sighted and entrepreneurial individuals and on a deep insight in technological opportunities and societal consequences. None of this is easy or self-evident.”* What we can deduct from this chapter is that sustainable employment can indeed be supported by technology but only if the social consensus on the definition of work is consciously reflected upon and social dialogue is conducted on how technology can substantiate the development of this type of definition. However, leaving technology to run its own course within the current economic paradigms can lead to the widening of the social gap (to a larger spread). Hence, clever interventions must be aimed at deliberately limiting these negative effects while enabling the gains of technological advance to be harvested in a more equal fashion in all segments of society through better working conditions, reduced working hours, more work-life balance and a guaranteed basic subsistence.

It is interesting how the notion of social innovation occurs in the technological perspectives. Novkovic (2008) defines social innovation from two different perspectives. One refers to innovations (technological or any other) created not by one individual but by teams. The other one – likely to be the social innovation participants referred to – is the process of discovering innovative means and methods of delivering social goals. In this latter, social entrepreneurship (in line with the previous section of the vision on economic actors) can have a more significant role to play than for-profit organisations. As Novkovic (2008, p.2173) summarises, “social entrepreneurship has been described in the literature as a trait of individual visionaries, who against all odds,

and with very little resources, force social change”. Therefore, innovation should no longer include just the notions of technological innovation that the market transforms into saleable goods but also social innovation that supports the transition to a sustainable society.

4.6. KNOWLEDGE-BASED SOCIETY: THE ROLE OF EDUCATION

Vision of the expert panel:

Hungarian society in 2050 is knowledge-based. Hence, education and training in many different forms play an outstanding role in all ages. In case of children, the frontal, class-based school system is replaced by education that respects individual talents, is tailor-made, and involves parental guidance as well. Young people have the chance to try themselves in different jobs and get experience under protected circumstances. Adults train themselves regularly but not necessarily in formal institutions. Both formal and informal education and self-development is acknowledged and regarded as standard part of working life. Due to this development, a number of career changes in a person’s life are considered the norm.

Vision of the student panel:

In 2050 education plays a key role in the development of sustainable employment. The support to enable people to make the most of their skills and talents starts in the school. Education is tailor-made, competence based and adapts to the needs of the students. Therefore, classes are small and alternative pedagogical methods are widely used. In all ages, education emphasises practical knowledge. Learning is not merely from textbooks but also gaining firsthand experience on site. University facilitates the learning of adequate forms of deliberating and debating skills through encouraging the students to question and discuss topics and not just sit in silence. Many people choose to be teachers as the profession has gained back its social status and appreciation. In 2050, Hungary is capable of keeping knowledge within the country and has stopped brain-drain.

Education from a young age includes environmental consciousness, sustainable consumption, community values and active citizenship. In primary schools, kids are taken to greenhouses, and in middle-schools students learn to respect their environment and do volunteer work in construction camps and kibbutz. Volunteer work is an important part of socialisation of youngsters and after finishing school people widely choose to have a year-off in the civil sector.

Discussions on the education system arose continuously in both groups during the backcasting workshops. Even though the education system as a topic was not mentioned either in the briefing or in facilitation, participants chose to spend a considerable amount of time deliberating on it. As both visions emphasise, education seems to play a key role in the developmental course of sustainable employment in a knowledge-based society. Mortensen and Vilella-Vila (2012, p.674) - with a highly similar view on how employment should evolve in the future - also emphasise the role of education in a transition to a sustainable society:

“Closer integration between transformative policies (towards a low-carbon economy, but possibly also towards new interpretations of social justice that stress opportunity and incentives to a greater extent than income redistribution) and employment policies would be desirable. In this scenario, education has a central role as it creates the human capital required for a major structural change.”

Participants never for a moment questioned that 2050's Hungarian society would be knowledge-based. Both groups agreed that the education system would have to go through radical changes in order to facilitate the redefinition of work. However, this vision of a knowledge-based society moves far beyond the concept of a knowledge economy where the division of labour is the division of knowledge and the more specialised labour becomes, the more expertise people need in small segments of human knowledge (Metcalf and Ramlogan, 2005). It is a far more holistic view of knowledge that provides the foundations of redefined work.

As we have seen from the previous section on technology, the knowledge and skills needed to keep up with technological advances are rapidly changing. As Brynjolfsson and McAfee (2014) state in their book, it is ideation, large-frame pattern recognition and complex forms of communication where people would have an advantage over machines for some time to come. However, the current education system is based on the the skills of reading, writing and arithmetic and demands a great deal of memorisation work of facts that is getting increasingly hard with the exponentially growing volume of knowledge and information available to us.

“We don’t necessarily think teaching to the test is always a bad thing, at least for skills that really can be taught and tested, including many basic capabilities that are needed in a global, information-based economy. But it’s also important to recognize that hard-to-measure skills like creativity and unstructured problem solving are increasingly important as machines handle more routine work.”
(p.118)

Tăusan (2013) compiles the new principles of educational practices of the third millennium based on similar concepts to the ones that occurred in the visions. Contemporary education and pedagogy is founded on – among others - the notions of lifelong learning, in-depth learning based on action and empowerment of the learner, vocational skills, integration of application knowledge structures, interactive teaching, and inter- and transdisciplinary curriculum. The education of the 21st century should be organised around four basic types of learning: learning to know, learning to do, learning to live together, and learning to be. ‘Learning to know’ aims at providing adequate tools to individuals to acquire knowledge through the classic three Rs as well as problem-solving skills. ‘Learning to do’ is about vocational training, putting knowledge into practice, and skills needed to fit into working environments such as creativity. ‘Learning to live together’ involves the acquirement of social skills like cooperation, understanding, respecting others, and avoiding or settling conflicts in a peaceful manner. ‘Learning to be’ covers the most personal perspectives such as developing critical thinking, the feeling of responsibility, communication skills, personal ethical code, or imagination. For all this, the school should be

“a place of social learning and personal development that take place in close contact with family, local community and society as a whole. The fundamental objectives of the 21st century education aim to develop the human personality through: competencies (critical thinking, cooperation, dialogue, participation, creativity, and tolerance), attitudes and values (self esteem and respect for all individuals, protection for the natural and social environment, equity and justice) and practical knowledge in the social field”. (Tăusan, 2013, p.323)

There are a number of non-mainstream schools already operating that are based on the principles the backcasting panels foresaw: Freinet, Waldorf, Decroly and most importantly the Montessori schools. Maria Montessori developed a child-centred primary education system in the early years of the last century that focuses on allowing the children to discover learning in a supportive environment. Montessori schools have a largely unstructured school day and multi-age groups rather than frontal classes with pupils of the same age where they facilitate peer-learning, self-directed learning and hands-on experiences with different materials. As the American Montessori Society phrases:

“The teacher, child, and environment create a learning triangle. The classroom is prepared by the teacher to encourage independence, freedom within limits, and a sense of order. The child, through individual choice, makes use of what the environment offers to develop himself, interacting with the teacher when support and/or guidance is needed.”¹⁵

Other similar but more contemporary initiatives include Sugata Mitra’s SOLEs (Self-Organizing Learning Environments) that also let children develop using their own curiosity and skills through a healthy mixture of competition and collaboration. Children can roam the Internet unsupervised to find questions asked at the beginning of the class in groups of fours. Teachers are not there to provide correct answers but to assist the search if and when necessary (Davidson, 2010). Even if these environments seemingly assign fewer roles to teachers, it is exactly this invisible role that matters the most.

¹⁵ <http://amshq.org/Montessori-Education/Introduction-to-Montessori> visited on 30/07/2014

Research in development and social psychology would also agree with the backcasting views that the development of a person does not stop with the end of formal education but stretches along all stages of life from the cradle to the grave (Heinz, 2002; Laal et al, 2014). It was only after the 1980s that education has been perceived as a lifelong process and the need for adults to continue developing their skills and knowledge was acknowledged (Laal et al, 2014). Heinz (2002) argues that this approach to life-long learning demands a re-conceptualisation of socialisation. Exactly as presumed in the visions, the increasing flexibility of careers demands a shift from *“parental instruction to individual construction, from internalized social control to self-initiated learning and development”* (p.42). Moreover, it is not just academic and skill development that needs focus but as foreseen in the visions, also personal development. Laal et al (2014) include the development of new interests, the awareness of various topics, the expansion of personal network, the enhancement of self-esteem and dealing with community issues into personal development.

Especially in the later years of development, the role of non-formal and informal learning or otherwise called experiential learning gains significant importance (Laal et al, 2014). According to Tudor (2013), non-formal learning is defined as the opposite of formal learning taking place in alternative institutions to educational establishments. They are intentional and normally take the form of various training programmes, some of them certified but some of them not. As opposed to formal and non-formal learning, informal learning is unintended but nonetheless key to the development of people. Learning a language in a country where someone lives, reading a book or seeing a movie may all be considered as informal learning. Currently, there are attempts to validate non-formal learning as part of a person’s curricula but this process is still in its initial stages. From her research on the role of informal learning, Tudor (2013) concludes that in the future the acquisition of information previously received through formal education will shift to non-formal and informal sources that will occur during different practical learning experiences such as trips, visits to museums, watching films, etc. Even though this does not necessarily mean that traditional means of educating will cease to exist but new technology and newly-discovered needs prompt the tendency to combine these forms of learning and acknowledge the role of

non-formal and informal education (Tudor, 2013). This is fully in line with the backcasting workshops' visions.

The last part of the student panel's vision emphasises the inclusion of value-related subjects into curricula. It fully reflects the ecological economics view on how to redefine knowledge-based economy. Beyond the transfer of technological knowledge and the knowledge of facts, the moral dimension of knowledge must also be emphasised in education. According to Sabau (2010) sustainable societies can only evolve if objective knowledge is sufficiently combined with non-empirical knowledge such as intuition, introspection and rational awareness. This means amalgamating facts and moral purpose that suit the discovery of complex and dynamic relationships between society, economy and the environment. Moreover, Gardner and his colleagues (2001) underline that the moral milieu of schools and universities significantly increase the chances of people finding their "good work".

4.7. GLOCALISATION

Vision of the expert panel:

In 2050 globalisation is more of a global network of local economies and societies, where local production and consumption, and hence local employment play a significant role. This does not at all imply that there is any limitation on goods and services imported from the global arena, only that local products and services enjoy certain advantages. Employees are also free to choose whether they work locally or globally (as this adds to the desired diversity of working arrangements) but the pressure on mobility eases. Individuals may have strong ties to a locality but this rather indicates solidarity with a given community than the lack of mobility. (On the necessity of mobility participants were divided.)

Vision of the student panel:

In 2050 local levels play a significant role in society, in politics and in the economy. The level of nations is still with us as it remains part of a person's identity but strong bonds appear rather on local community levels. The major

part of production, consumption and therefore of employment takes place locally, using local knowledge and resources and reflecting local values. Local products enjoy priority even if it is more expensive as self-determination is highly valued in the life of communities. People receive part of their salaries in local currencies, thereby supporting the local economy. The importance of rural and urban areas is equally appreciated. However, localisation does not mean that globalisation ceases to exist as certain products (especially those that require knowledge sharing like pharmaceuticals) can occur on global markets. Nevertheless, legislation and the flow of information make sure that it is not possible to benefit from other countries' exploitation. Hence, localisation serves global equality and justice. The glocalised worldview evolves as an unintended consequence of strengthening local industry and people start developing a kind of "global empathy". Global treaties have long been renegotiated with the active participation of smaller nations and not just the main powers. Therefore, globalisation is now healthy enough not to allow any nation to take advantage of differing legislative circumstances.

The issue of global vs. local continuously resurfaced in the discussions. This is hardly surprising as globalisation is undoubtedly one of the most critical forces shaping not just global affairs in general but employment in particular (Giddens, 1998; Beck, 2007). At times this multidimensional process may seem to be uncontrollably restructuring the world's economies and societies. However, as opposed to the student panel, in the expert panel anti-global sentiments did not occur and the concept of the global economy and global society were not questioned once. Even though the resulting vision of the student panel is not radically different, the discussions that led there were laden with vehement attacks on current globalisation trends. Similarly to the differences discussed in the section on the role of technology, it is presumably not the age difference but the devotion to protecting the environment that created this difference. Herman Daly (1977), one of the founding fathers of ecological economics also blamed unconstrained globalisation for the ecological demise we are facing today. At the same time, the expert panel seems to share the sentiment of Mérő (2004, p.376) who claims that *"revolting against globalisation roughly makes as little sense, as*

revolting against the genetic code just because one does not like the fact that mosquitoes exist”.

However, it is also the student panel’s vision that includes the notion of what they call the development of “*global empathy*”. This idea of global consciousness has also inspired some great thinkers of our times (Rifkin, 2010; László, 2008; Csíkszentmihályi, 2011). Global consciousness evolves as humans transcend the belief that they are self-centred, aggressive and utilitarian beings and accept the interconnected destiny of all humans. Rifkin (2010) stresses that this approach to global empathy will be the key to overcoming the “entropy bill” of our current activities and ensuring our survival and ultimately our flourishing on this planet.

The literature review has already described the notion of glocalisation as it is a central theme in the concepts of social greens. Therefore, it will not be discussed again in this chapter. The main concept of this glocalisation is that local economies need to meet their needs within their boundaries as far as possible and only trade surplus production (Curtis, 2003) just as described in the visions. In its vision, the student panel also emphasises the importance of acknowledging that imported goods contain environmental costs not necessarily visible to those who consume them. Local actors must be fully aware of the consequences of resource depletion or pollution at the time of importing goods and should avoid transferring these costs to other regions. Curtis (2013) quotes Galtung (1986, p. 101) on this notion of self-reliance:

“...produce what you need using your own resources, internalizing the challenges this involves, growing with the challenges, neither giving the most challenging tasks (positive externalities) to somebody else on whom you become dependent, nor exporting negative externalities to somebody else to whom you do damage and who may become dependent on you.”

It is also interesting that the student panel deliberately included the level of nation states in their glocalisation vision. However, leading sociologists like Castells (1997), Habermas (2001) and Beck (2012) foresee the end of nation states due to the trajectories of globalisation. In nation states administrative and legislative powers are intermeshed with the economic cycles and cultural aptitudes while this

synchronisation is disrupted in a globalised world (Habermas, 2001). Beck (2012) even invented a philosophical utopia called “global domestic politics” (originally Weltinnenpolitik) that challenges the idea of the nation. He claims it to be the *“critical theory of our times since it challenges the most profound truths with we hold dear: the truths of the nation”* (Beck, 2012, p.IX). Maybe it is exactly this notion of “holding it dear” that encouraged the student panel to explicitly include the national level emphasising its cultural role as part of a person’s identity. Castells (1997, p.243) also admits that the nation state is losing its *power “although, and this is essential, not its influence”* (1997, p. 243).

In the backcasted scenarios of glocalisation, the acceptance of both *“global citizenship and regional pluralism”* (Raskin, 2014, p.9) occurs at the same time. The scenarios developed by the Tellus Institute “The Great Transition” also foresee a myriad of regions highly diverse in character with some corresponding to national boundaries, some to previous federations, while others form identities based on geographical characteristics like a river basin or other ecosystems. However, they also predict that the regional autonomies must still conform to global principles and accept global responsibilities (Raskin, 2014). This way the slogan of *‘think globally, act locally’* also holds true the other way round: *‘think locally, act globally’* and these two courses of action and thought become complementary (Werna, 2001).

The idea of the expert panel imagining local communities operating in a global network is especially fascinating. Thinking in networks implies that we can no longer assume that individual actors in the network (in this case local communities) can possibly focus on just themselves. In a strongly interlinked network, a disruption in part of the network (e.g. social unrests due to seriously unequal distribution of wealth) has a recoil effect on all actors in the network. From this point of view, acting responsibly is a method of developing the network and avoiding disruption while at the same time naturally improving one’s position by improving the network’s overall state, i.e. aiming at the well-being of the network, rather than the node alone (Köves and Mandják, 2014).

4.8. THE ROLE OF THE STATE: DELIBERATIVE DEMOCRACY

The vision of the expert panel:

In 2050, Hungary is a democracy but significantly more decentralised both in terms of decision-making and financial resources than today. In this state individual, community, and state responsibilities are clearly distinguished and decisions are taken on the levels where responsibility lies. The link between the citizens and the “central” state is only indirect as there is a wide range of institutions with different authorities. The redistributive task of the central state still remains important as it ensures through the guaranteed basic income the basic subsistence of citizens. The role of the public employment service changes as it no longer deals with the administration of unemployment benefits and the assistance of the unemployed (as due to basic income this concept becomes outdated) but more with the tailor-made supporting and brokering services for all employees.

The vision of the student panel:

Hungary in 2050 is a strongly decentralised state where long-term thinking is the norm and the state represents the rights of future generations as well. This is reflected in the institution of the ombudsman for future generations. Political attitudes are ecologically and socially responsible and emphasise co-operation. The state acts as a role model for protecting environmental resources. Politicians who receive specialised trainings represent professional rather than political interests and their decisions are complemented by the results of the participative mechanisms of citizen juries. Local levels gain significant importance in the transparent decision-making mechanisms and hence local citizens become involved in the decisions on local matters.

The topic of governance was not a focus of discussions but nonetheless some characteristics of a desired future state have been crystallised during the conversations. Even though the term participative or deliberative democracy never

occurred during discussions, the visions anticipate a decentralised, participative governance system that resembles very much to the concept of deliberative democracy.

The desire to establish a different democracy to the one prevalent today stems from the disillusionment with the current democratic institutions and processes. These institutions and processes of formal liberal democracies make sure that decisions are taken fully independently from the opinions and motivations of individual citizens. This happens through a legitimacy mechanism that ensures mass loyalty to an amalgamated mix of topics but avoids participation altogether (Habermas, 1994, p.64). Habermas (1994) suggests that this mechanism has been accepted by most people so far as the socio-cultural system emphasised the primacy of family, consumption and career-orientation, and substituted participatory patterns with previously prevalent authoritarian elements in its ideologies.

Representative democracy is based on the competition between political parties that compete with each other for power. Giddens (1999) agrees that there is significant disillusionment with democratic processes at the moment. However, he argues that most people are not disinterested in politics in general but with politicians who seems to have little to say about issues that really matter to them. Giddens (1999) suggests the “democratisation of democracy” that covers the decentralisation of power and experimenting with alternative processes that bring decision-making closer to citizens. However, Giddens – being a firm supporter of the “Third Way” that mixes elements of liberalism with social democracy - believes that participatory elements like citizen’s juries or electronic referenda will not replace representative democracies (Giddens, 1999).

According to the literature on political participation, the major factor behind the widespread demand for participatory opportunities is connected to this decline of state power and political order mentioned earlier. In this respect, participation is a key to reach political order, enhance legitimacy and the quality of decisions. According to Habermas (2001), one of the preconditions that must be met if society wants to regulate their coexistence democratically and to shape social conditions by political means is that —there must be a citizenry that can be mobilized for participation in

political opinion-formation and will-formation oriented towards the common good (p. 76). Habermas' (1984) deliberative democracy bases itself on communicative action and presents itself as an alternative to instrumental action that reflects the outdated logic of the homo oeconomicus. While the latter only focuses on attaining his own goals, people in deliberative societies seek understanding and consensus through dialogue. In such a democracy model, the source of legitimacy is this dialogue itself as it presumes that people engaged in such communicative actions are capable of transforming their preferences to suit common goals. This concept seems coherent with the previously discussed parts of the visions. Both groups transcended the idea of a self-focused human being only aiming to achieve what is solely good for him. The idea of homo reciprocans occurred in the discussions on economic actors. Here, the Greek idea of 'zoon politikon' is relevant, a creature that cannot survive on its own. The opposite of this term in Greek is the 'idiōtēs', the idiot that in ancient Athens meant the free person who is unwilling to participate in the political life of democratic Athens and is only concerned with himself (Frankl and Lapidus, 2005).

The idea of a decentralised state with a lot of power allocated to local levels is also consistent with other parts of the visions, especially the one regarding glocalisation. Castells (1997) points out that the globalisation of economic activities as well as communication and crime has led to a significant loss of sovereignty of nation states. However, at the same time no other mechanism is available to represent certain localities in the global arena and also to put into effect decisions that had been taken on a global level. This presents a serious dilemma as nation states struggle more and more to hang on to their credibility on domestic levels but they are restrained in their freedom of actions by global mechanisms. This contradiction is partly the reason why the liberal democracy is facing a serious crisis as representing local levels (currently national constituencies) on the global scene no longer seems convincing. Castells (1997) finds it ironic that just when the liberal democracy is becoming the most accepted form of governance on the planet, it is beginning to lose its identity. The suggested way out may be to disconnect identity from decision-making mechanisms (Castells, 1997). This resembles to the idea of the student panel to leave the nation state as part of a person's identity (see previous section) but decentralise decision-

making to levels where this process of incredulity in proper representation has not taken place.

Bollier (2014) argues that the “commons paradigm” can support the transition from current forms of liberal democracy to a more decentralised system of governance. This paradigm – similarly to glocalisation movements described before – would enable communities to organise themselves and to guard their own resources. This happens through allowing them to make up their own rules and take control of their environment in the spheres of life that matter to them. He encourages new collective management systems but unlike in Hardin’s (1968) concept in the Tragedy of the Commons, this management would recognise the strength of *“local and distributed engagement; moral, social and ecological considerations; and the creativity and legitimacy that result from self-organised, bottom-up rulemaking”* (p. 7). As the governance of large-scale common resources (like the atmosphere and the oceans) present significant challenges in the commons paradigm, it can be more easily achieved on local levels on smaller scales (Bollier, 2014).

Zografos and Howarth (2010) argues that real sustainability governance should be based on the very same idea where public decision-making is guided through these kind of communicative processes. This resembles to the vision of the student panel that suggests citizens’ juries to become supplementary tools to political decision-making. The International Association of Public Participation defines core values for public participation practices. They state that public participation should involve those who are affected by a decision; should recognise the needs and interests of all interested parties (including decision-makers); provide participants with the necessary information to participate in a meaningful way and should involve participants to decide how they wish to participate. The public’s contribution should influence the decision, and feedback should be given as to how their input affected the decision (IAP2, 2007). However, high levels of political participation and social cohesion can only be a result of a strong culture of tolerance and interpersonal trust (Raskin, 2014), notions that are included in the backcasted policy steps that are supposed to guide us through this transformation.

The student panel's emphasis on the need to have long-term policy perspectives that represent the rights of future generations also reflects the shortcomings of the current representative democracy. They realised that merely by ensuring public participation, without changing the rules of the current political game, long-term mentality will not necessarily set in. Király et al (forthcoming) argue – using de Mesquita's selectorate theory (de Mesquita et al, 2003) – that the political institutional system is currently settled in ways that prevent the implementation of sustainable policies even if they involve participatory elements as the main motivation of politicians is ensuring their political survival. This is by default a short-term perspective. This is only aggravated by the fact that future generations belong to the so-called disenfranchised political groups whose interests are not represented within the system as they have no chances of affecting the political leader in any way. This way costs and risks are and will be shifted to future generations until their welfare is more strongly related to the political survival of present leaders, for example through the re-introduction of the parliamentary ombudsman for future generations (Király et al, forthcoming) just as suggested by the student panel.

In the expert panel's vision, the new role of the state run employment services were also included. As by 2050 the notion of employment is redefined and the guaranteed basic income is introduced, unemployment as we know now will not be an issue. Hence, employment services no longer need to focus on the various administrative tasks of registering the unemployed and administering temporary financial supports such as unemployment benefits but their existence will still be justified. The need to match available jobs and suitable candidates will still remain with us even though the classic labour-market will have been transformed. Public employment services can retain some of their current roles such as making information available in the form of career guidance, vocational counselling; providing job-matching services, and assisting the incubation periods of self-employment and business start-ups.

4.9. THE ROAD TO SUSTAINABLE EMPLOYMENT: THE POLICY STEPS

The backcasting experiment resulted in altogether 157 recommended policy steps (97 in the expert panel and 60 in the student panel) as can be seen from Annex 1. Chapter 3 has already presented these policy interventions. The purpose of this chapter is to

analyse these results and put them into context. The recommended policy steps reflect the views of the panels and it ranges well beyond the purpose of this thesis to look at and evaluate the applicability of each recommendation in the political context. However, the general analysis of the recommended areas of intervention can bring significant insights into not just the topic of sustainable employment but also how to move towards it.

At first sight, some of these recommendations may look rather farfetched and irrelevant to the topic of sustainable employment to the superficial reader. What does building trust, introducing alternative pedagogical methods, enabling participation in political decision-making have to do with sustainable employment? Even participants reported that they had the feeling they may have been diverting from the central theme at hand and after two days, the myriad of topics that arose in the matter seemed rather overwhelming. However, after careful analysis, reading and rereading the resulted recommendations - together with the analysis of the vision -, a complex but relatively lucid picture stands out. It shows that the recommendations did indeed link to the central theme and create a coherent train of thoughts and an overview of factors that are relevant in the issue of sustainable employment.

In order to present this system, I have used the method of system mapping (Lane, 2007; Sedlacko, 2011; Király et al, 2014a; Király et al, 2014b). The causal loop diagram was prepared by the present author for the sake of this thesis. The construction involved examining the rationale behind each proposed recommendation and listing all the concepts they related to. The diagram visualises the links, relationships, and feedback loops of the different concepts that occurred in the final lists of backcasted policy steps trying to provide a relatively comprehensible overview of the topics raised. Once all policy steps were categorised according to their themes and goals, the relations between these concepts were drawn and re-drawn until the cognitive models that were behind the recommendations were reconstructed. The advantage of presenting the results this way is that it shows how the intervention in one factor can influence many other factors and ultimately the whole system. Hence, any recommended policy step that is aimed at throwing the given factor off balance can have an impact on the whole system. By nature such models contain serious

simplifications but nonetheless support the comprehension of a complex matter (Király et al, 2014a; Király et al, 2014b). The diagram shows a number of variables, their relationships and whether they move in the same or opposite directions. This latter is being indicated by plus and minus signs. Positive causal loops mean self-reinforcing effects, while negative ones self-regulating ones (Haraldsson, 2000).

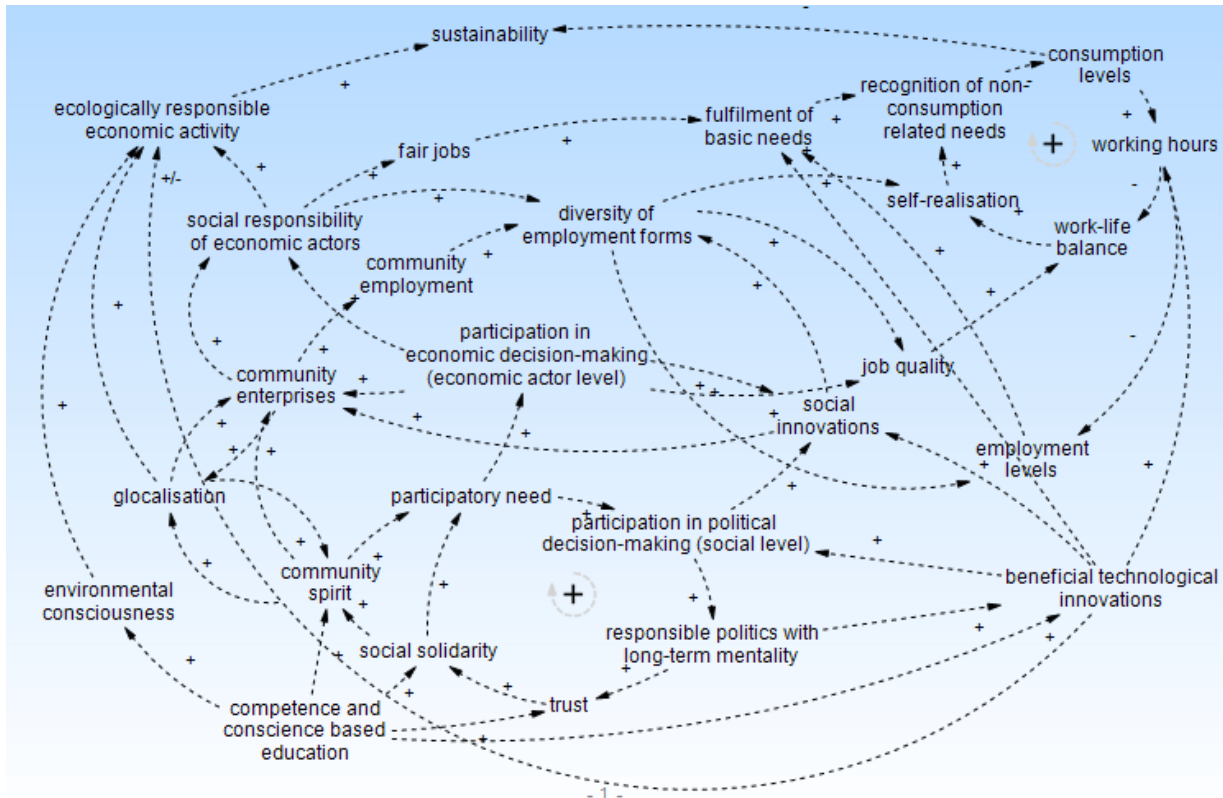


Figure 16: Causal loop diagram of sustainable employment based on both panels' recommendations

The diagram shows that sustainability can be achieved by reduced consumption levels and ecologically responsible economic activity. Reduced consumption levels are in a positive feedback loop with working hours, work-life balance, self-realisation and the recognition of non-consumption related needs (Figure 17).

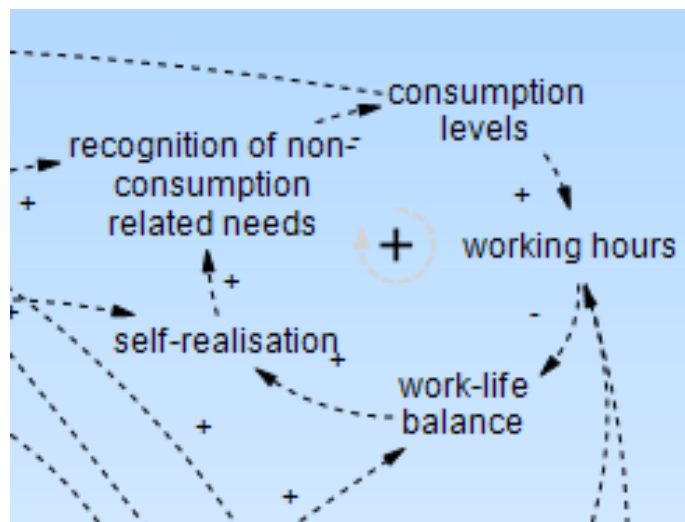


Figure 17: Focus on a positive feedback loop of consumption levels, working hours, work-life balance, self-realisation and the recognition of non-consumption related needs

As people recognise their valid needs that cannot be fulfilled through consumption, consumption levels drop that can lead to reduced working hours (as they need not to perform that many monetised activities in order to enhance their consumption levels). This in turn enhances their work-life balance that supports their self-realisation needs. Self-realisation makes people recognise that there is more to fulfilment than those needs that can be satisfied through consumption and hence the loop closes. It is, however important that in case of those people whose basic needs are not satisfied, this realisation can only occur once the level of fulfilment of these needs are covered. Therefore, for them the entry point to this positive loop is the fulfilment of such needs. This is the reason why the policy tool of the guaranteed basic income occurred in both panels. However, for those whose consumption levels are extended beyond their basic needs, the entry point to the loop can be through the reduction of working hours that is enabled by technological innovations; their demand for self-realisation or an enhanced work-life balance through higher job quality (e.g. enabling creativity to flow in the workplace or enhancing participation in a firm's decision-making).

Self-realisation can be supported through the diversification of employment forms where most people can find the solution that suits their personalities, capabilities and life stages best. Both the diversity of employment forms and reduced working hours can help employment levels by enabling more people to work in one form or another. Having access to different types of employment also has a direct impact on job quality

that can also enhance work-life balance. The diversity of employment forms gained central focus in both groups and in this system map it also seems to demand a central spot as it enhances employment levels, increases job quality and supports the realisation of one's potential. Broadening the available forms of employment was the second most common area of intervention (see Figure 19) as it seems that participants believe that one of the "easiest" ways of intervening in the system is to actually allow and encourage people to participate in different forms of employment. Such recommendations ranged from strengthening already existing policies such as introducing flexible employment arrangement (such as telework, flexitime), through setting the legislative framework right for existing but currently semi-illegal activities (such as barter, or local exchange and trading systems), to recommendations that would institutionalise best practices such as the voucher systems or employment cards. In the causal loop diagram, this kind of diversity can be further supported by social innovations that can develop methods and means to broaden our horizons in what ways work can be performed in society. Socially responsible economic actors can also facilitate changes in employment forms and move away from the currently reigning norms. The appearance and proliferation of community employment in the social economy on its own also open up new ways of finding employment.

So far we have approached sustainability from the approach of reducing overall consumption levels that seems to be more of an individual choice depending on the person's realisation that not all human needs can be satisfied through consumption. The other perspective is more of a social notion, namely turning overall economic activity ecologically responsible. No doubt that technology can directly support such endeavours as long as eco-efficiency is concerned. However, technology alone is not expected to save the day as we have seen in previous chapters. Three other factors can also influence the ecological responsibility of economic actions. For once, enhanced environmental consciousness has a direct impact through improved awareness of ecological impacts that can occur on all levels of society on both the supply and the demand side. Globalisation pursuits also enhance ecologically responsible behaviour as they rely on the healthy balance between local resources and local production only accessing global resources when locals are unavailable but even then with full

awareness of the environmental costs. Hence, policy interventions on glocalisation issues also received significant attention ranging broadly from prioritising local products in commerce and public tenders through strengthening local networks to innovative measures such as paying incomes in local currencies. Lastly, socially responsible economic actors are de facto ecologically responsible as they realise that human well-being cannot be treated separately from the ecological environment. However, participants seem to have believed that economic actors can be directly coerced or pushed towards ecological considerations. This is the intervention area that received the most number of recommendations as direct legislative and financial incentives such as standards, guidelines, bans, tax burdens or tax cuts as well as awareness-raising activities are believed to have a straightforward impact on the ecological conduct of economic actors.

This, however, does not seem that clear-cut when it comes to social responsibility as standards and norms are more subjectively value bound than in the case of ecological responsibility. Let us then turn our attention to what factors make economic actors socially responsible (Figure 17).

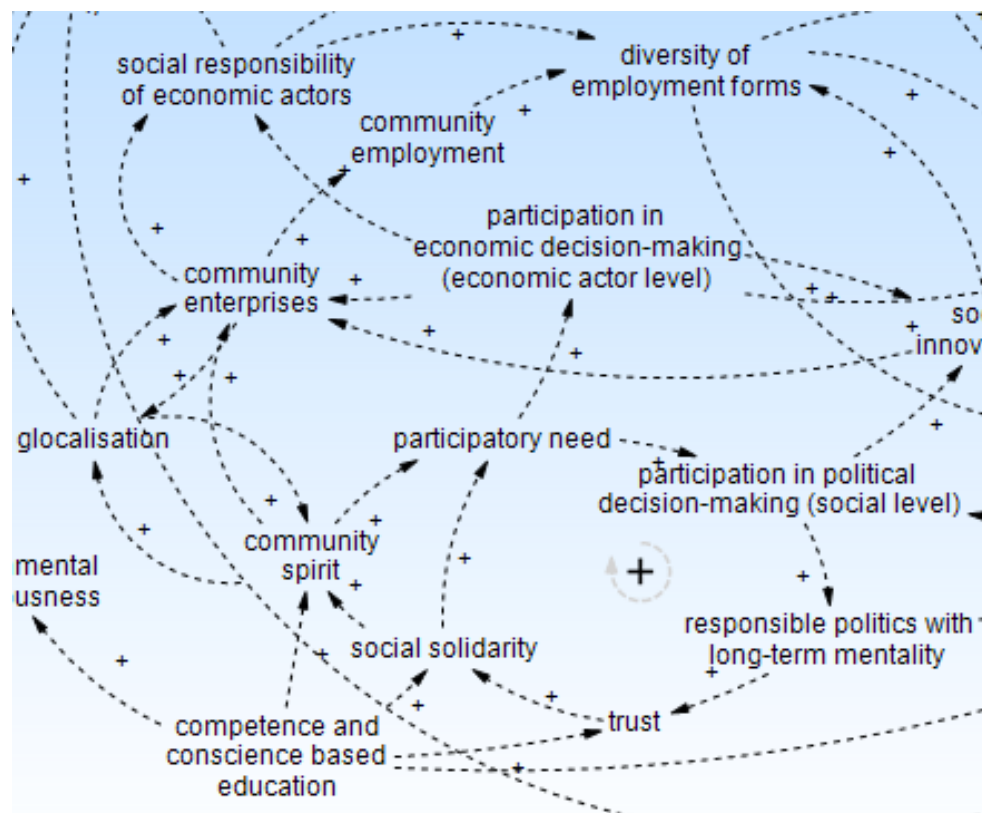


Figure 18: Focus on the causal loop diagram: factors leading to social responsibility of economic actors

Participation of all stakeholders in economic decision-making on the level of firms seems crucial in this matter. This is the reason why participants (especially in the expert panel) put a great deal of emphasis on dialogue between social partners and corporate management or both groups encouraged employee ownership schemes. Providing a seat to all affected parties at the table is likely to lead to considerations of all potential social impacts. However, just the need itself to participate can create community enterprises within the social economy or result in them gaining weight within the economic system. In the case of social enterprises the question is no longer whether stakeholders are provided a seat at the table as their very existence is founded on the principle of sharing responsibilities, risks, insights and gains. On the one hand, glocalisation policies alone can support the establishment of such entities but on the other, the establishment of community enterprises in itself is likely to lead to glocalisation tendencies, creating a small positive feedback loop together with the enhancement of community spirit.

Community spirit also seems to have an important role in the system of sustainable employment. As well as supporting glocalisation, it raises the need to participate on both political/social and economic/firm levels, the latter leading to more socially responsible economic actions and the other leading to a positive feedback loop of responsible politics with a long-term perspective, enhancement of social trust capital, raising levels of social solidarity. It has already been pointed out that glocalisation movements can lead to community spirit and vice versa but the role of education is also crucial in this loop. The creation of adequate community spaces and occasions and raising awareness of how human interdependence is not only necessary but part of social life received considerable emphasis among policy recommendations.

Education received immense attention in both groups and moved well beyond the commonly accepted role that competence based education leads to better equipped employees to enter the job market. It was the responsibility of education to raise awareness, environmental and social consciousness, and build trust in society that was stressed. The systems map shows clearly why. Education is an initiating factor in a number of relationships, directly or indirectly affecting all factors that lead to sustainability. Recommendations that transform the education system from one that

builds itself on pure one-way transfer of knowledge under formal classroom conditions to one that uses alternative methods to focus on the students recognition of their own capabilities and to one that stresses the importance of social skills and understanding received a great deal of attention in both panels. Education also has an impact on the other important 'initiation hub' to sustainable employment, the beneficial technological innovations that enable the development of a number of key factors. Such key areas are enhancement of eco-efficiency of economic activity, the reduction in working hours through productivity gains, the wider fulfilment of basic needs through resource efficiency, supporting participation in political decision-making and also facilitating social innovations that are made possible with technological support.

The following figure shows the areas of recommended intervention. It provides an overview of which areas received more attention. This is a good indication on which factors the participants deemed the most straightforward for state policy to intervene in. While an external influence on all the factors presented in the causal loop diagram has an impact on the whole system, those that stand out in their volume of recommendations are likely to be the ones that are the easiest to induce changes in.

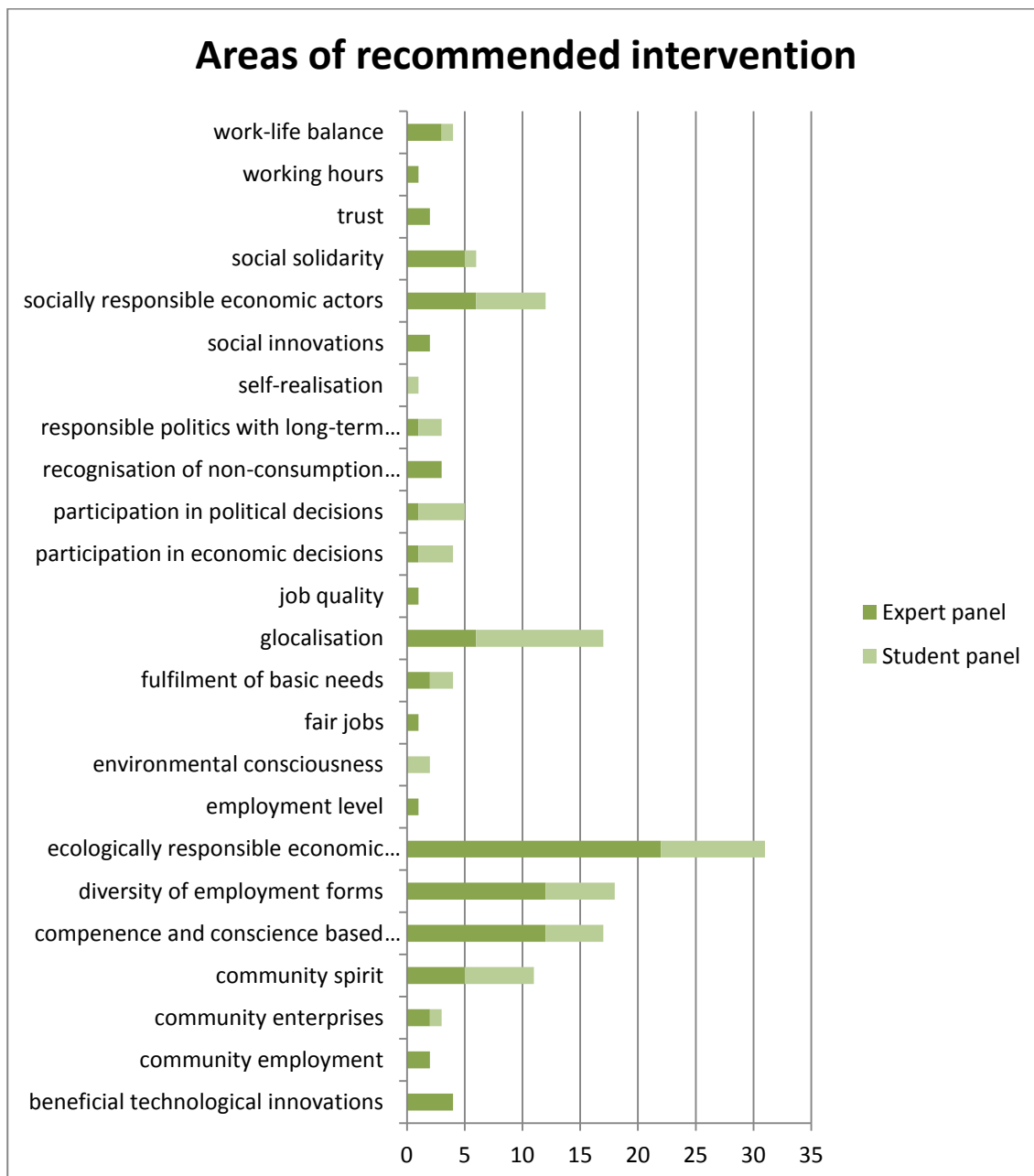


Figure 19: Areas of policy intervention recommended by both panels

As it can be seen in Figure 5 of the previous chapter, participants were given a small overview of what type of policy tools they can choose from: legislative (positive-negative); economic (positive-negative); and awareness-raising (positive-negative). However, other than introducing these six options, the organisers did not influence which participants pick. The following figures show how both groups seem to have found all three main types equally important. They also show that positive tools were overwhelmingly chosen over negative ones such as bans, financial disincentives (taxes, fines and penalties) and disheartening campaigns.

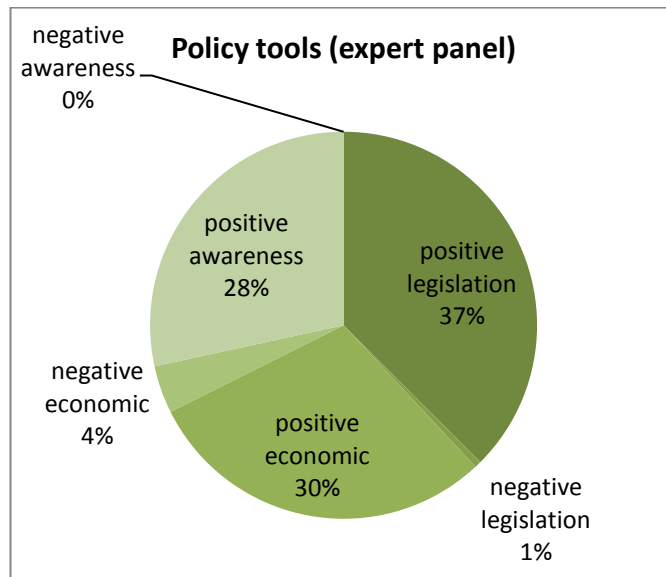


Figure 20: Typology of recommended policy tools (expert panel)

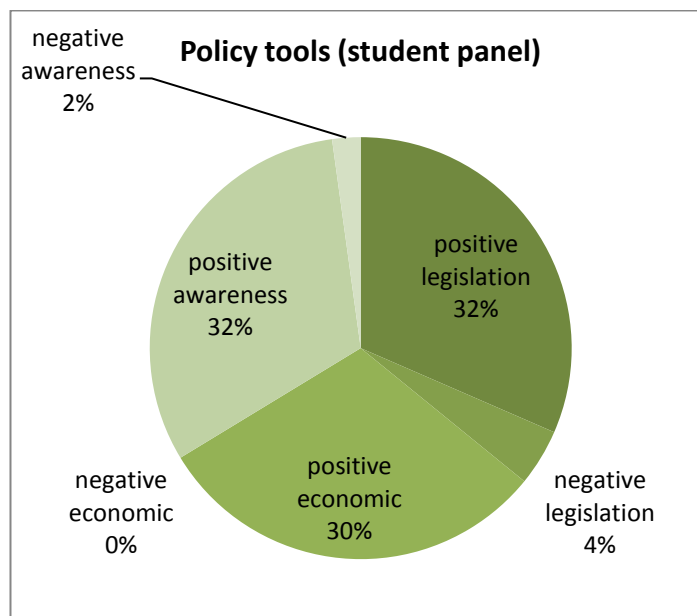


Figure 21: Typology of recommended policy tools (student panel)

In the case of recommended policy steps it is also interesting to see how “backcasting” worked. The following Figures show the time dimensions of the recommended interventions.

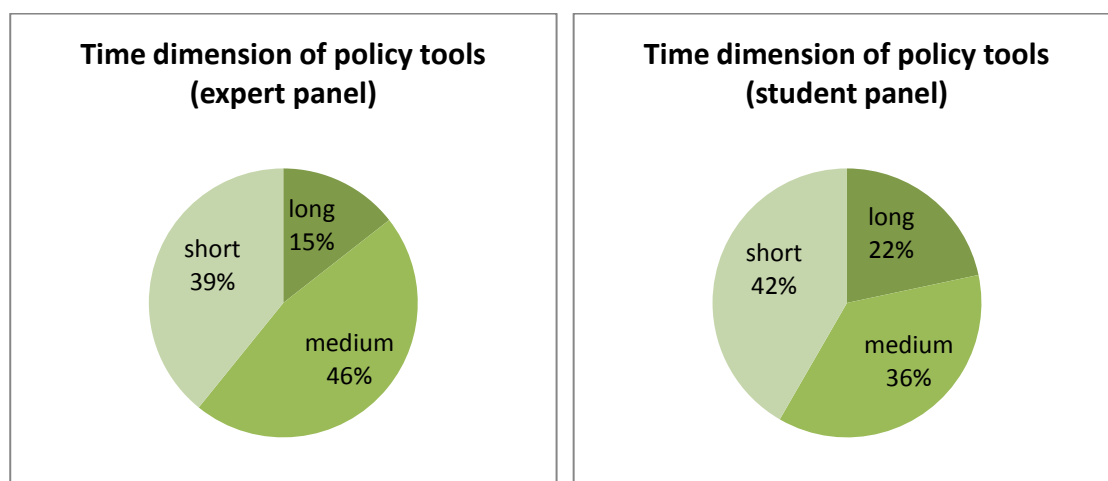


Figure 22 and 23: Time dimension of recommended policy tools by the expert and the student panel

It is clear from the figures (22 and 23) that participants found it easier to suggest policy interventions that either have a precursory experience or do not require major systemic changes. These are the interventions that can be implemented in the short run. They also found medium term interventions equally easy to find. These normally cover policy steps that require out-of-the box thinking for what the foundations can be laid in the medium term. It is clear from the figures that participants found long-term policy steps that divert radically from our current everyday mainstream perceptions more difficult to identify.

4.10. HORIZONTAL THEMES, CONCEPT MAP AND THE IMPORTANCE OF WHAT WAS NOT MENTIONED

The briefing material provided to the participants before the workshops included two horizontal themes: bringing actions and their consequences closer to each other in terms of space and aiming for bringing in long-term perspectives into actions. Even though participants in neither groups referred to anything in the briefing per se, they seem to have internalised these horizontal issues and treated them as “default presumption” all along. The conversations reflected their upmost respect for the moral obligation we have both towards future generations and towards all human being independent of the fact that they might be living in faraway lands. This consciousness became a kind of horizontal consideration that was not reflected upon but remained palpable all along.

Translating the backcasting results into concepts that occur in scientific literature, the following concept map can be drawn (Figure 24). The overview of the concept map serves only as an impression on how the map is organised. As it contains a lot of information to be legible on a single page, two zoomed in figures will follow.

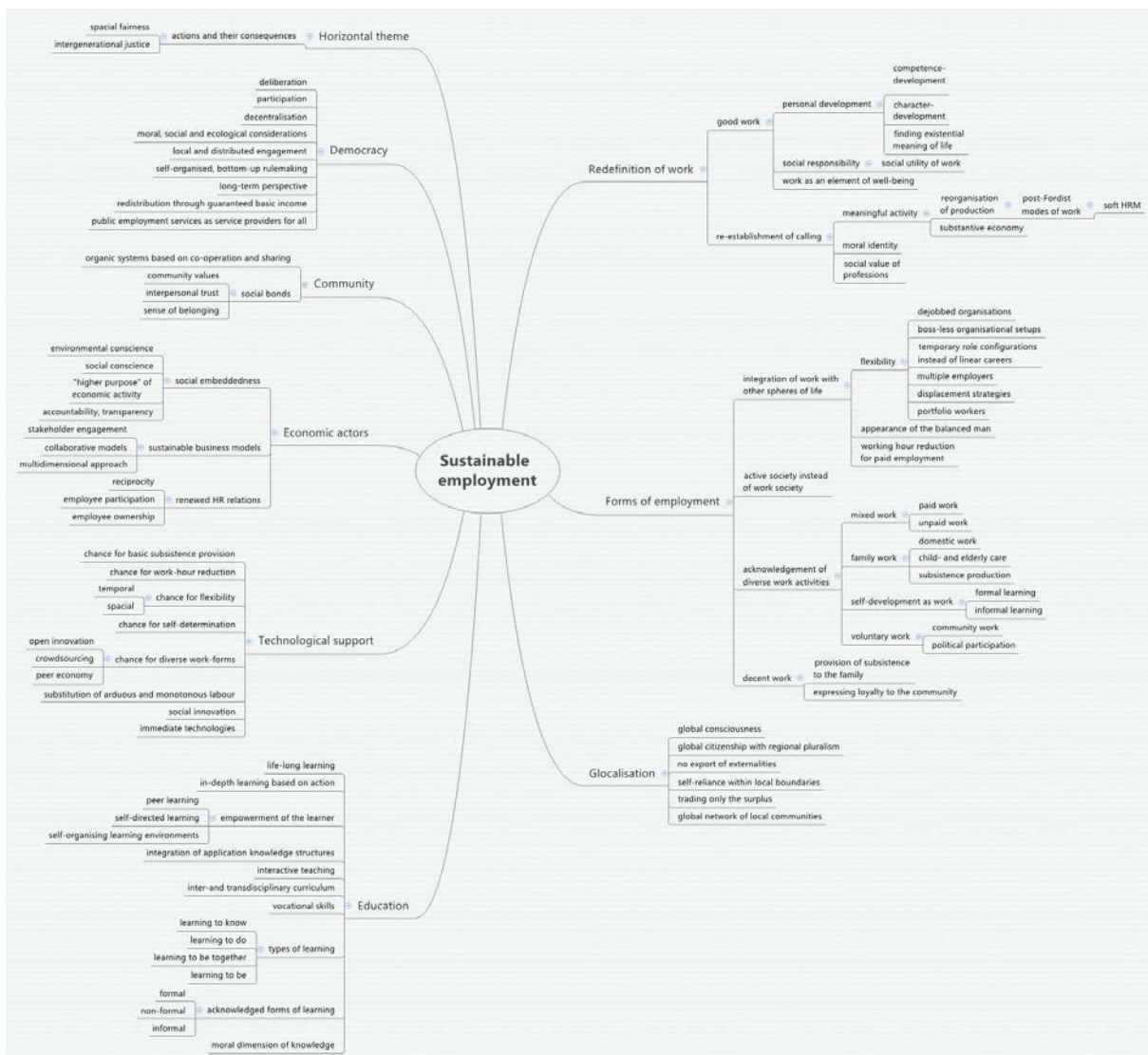
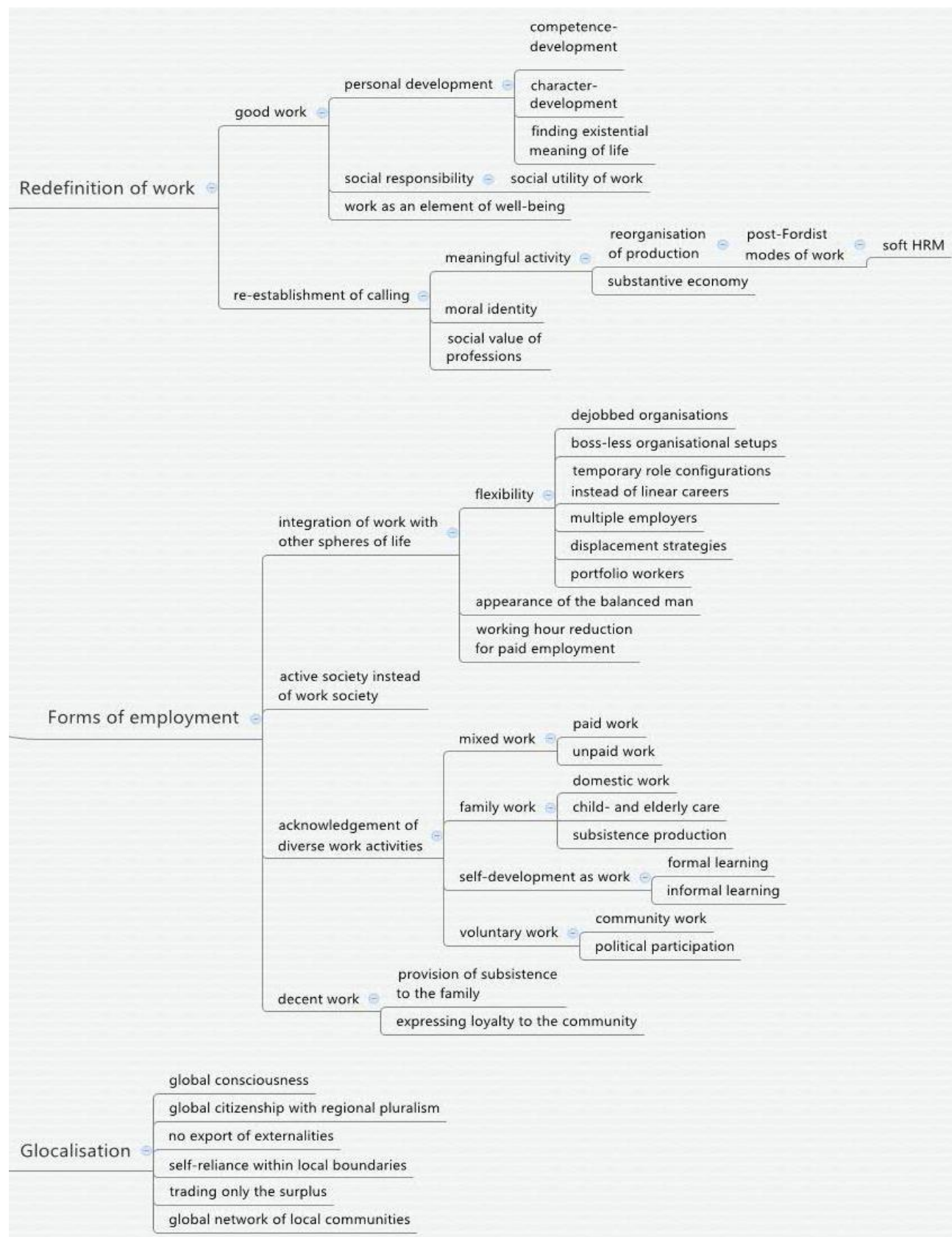
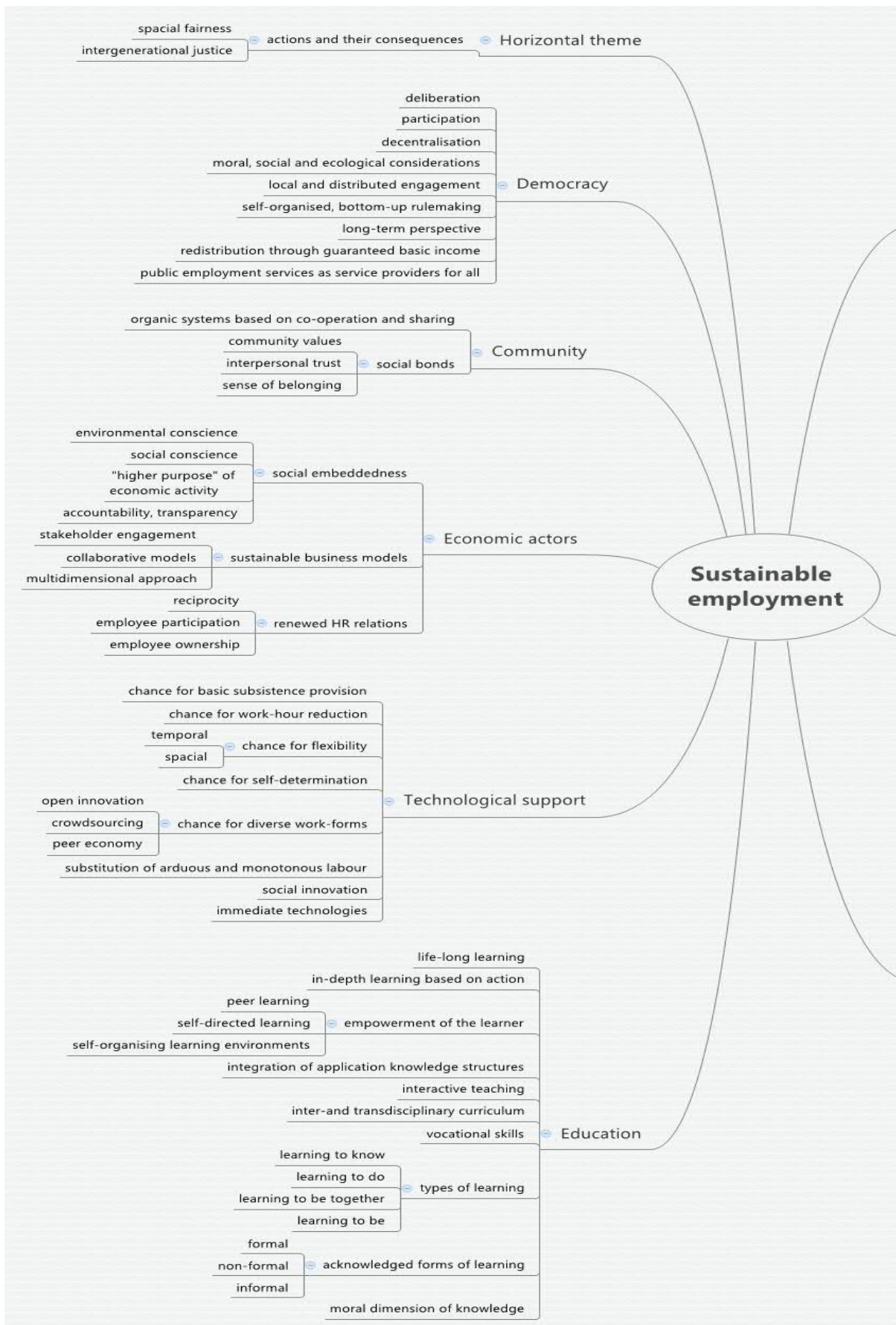


Figure 24: Concept map of sustainable employment





Throughout the discussions, there was the underlying assumption that this transition can be peaceful and the currently reigning economic and political interests will change due to bottom-up initiatives. There was no mention of a “revolution”. Even though some of the criticisms that occurred during deliberations concerned the basic assumptions of capitalism and the market economy, neither capitalism nor the mechanisms of the market were called into question. However, economic growth as the leading principle of economic processes did not play any role in the vision of sustainable employment. There was also no mention of green jobs in the form it exists in current strategic documents (UNEP, 2008; European Commission, 2010).

Chapter 5: CONCLUSIONS

The quest of this thesis was to find out what sustainable employment is in the Hungarian context, what the most important elements of this concept are and what policy tools, measures or processes may lead to ecologically and socially sustainable employment. In order to find these answers, the method of backcasting was selected since this participative, policy-oriented technique allows for a multi-levelled and trans-disciplinary approach of complex problems when current trends seem to be obstacles of systematic and major changes. Both the literature review and the analysis of the empirical results of the backcasting workshops contribute to our understanding of the concept of sustainable employment. The conclusions will attempt to summarise the main findings without regurgitating what had been said before. While this thesis was never meant to be a methodological work, the novelty of the method in the Hungarian context (and indeed in the topic of sustainable employment worldwide) also requires some reflections on the method itself. Due to the policy context of the thesis, some recommendations will also be provided together with the identification of potential future research themes. The structure of the conclusions will also reflect these three distinct aims, firstly revisiting the research questions, secondly evaluating the research method, and thirdly offering some recommendations. The introduction started with a personal note. Lastly, the conclusions will also close with short personal reflections. As the results have been published in scientific journals, the conclusions will include elements and excerpts from these conclusions as well.

5.1. REFLECTIONS ON THE RESEARCH QUESTIONS

When the two distinct groups were provided with the opportunity to envision “the future we want in the world of work”, they constructed surprisingly similar answers. The participants’ vision for sustainable employment abandoned the ideal of full employment and made way for a life where people are free to work not because they are forced by their subsistence but because work is an activity that serves the well-being of both their community and themselves. Well-being was redefined not only in material terms but also in terms of self-development; self-fulfillment; sufficient time for nurturing family and community relationships and access to a healthy environment.

This approach would enrich the forms of employment and dispose of the idea that employment generally means a 40-hour paid labour week. Participants truly believed that localized employment through the encouragement of local production and consumption patterns would contribute significantly to sustainable employment (Köves et al, 2013b). This shift is facilitated by technological development. Today we translate technological development that frees up human labour into unemployment. The sustainable employment concept translates it into time spent within the community and with self-actualisation.

This research underlined that in order to implement solutions that handle ecological and employment problems simultaneously, a shift from satisfying needs purely through personal consumption towards satisfying some human needs through for example meaningful work must take place. The backcasting visions seem to confirm the results of most 'happiness research', namely that human happiness is based on three main components: positive emotions, meaningful life and profound activities (Mérő, 2010). As the world of work is strongly related to all three, it is barely surprising that most concepts revolve around the solutions to maximise the gains in these components through "good work". Gardner, Csíkszentmihályi and Damon (2001, p.334) identify four key factors in laying the foundations of "good work" in the times we live in: development, ethics, democracy and education, all of which areas were reflected upon to varying degrees. This indicates that thinking about sustainable employment in the departmentalised policy environment we live in would not lead to satisfactory results. Sustainable employment is not just about the supply and demand side of the labour-market in green shading. It is ultimately about the way humans perceive themselves.

The deliberations, the visions and the policy suggestions of both backcasting workshops moved well beyond the concept of the homo oeconomicus. Research shows that small children act as homo sociologicus driven by moral and social norms and only older children start striving for personal hedonistic satisfaction (Furnham and Argyle, 1998). The question is not whether we are truly one or the other. The issue here is the acceptance that we are just as much homo sociologicus, homo reciprocans, homo ludens, homo habilis, homo moralis, or homo politicus as we are homo

oeconomicus. The need is not to completely renounce the rational decision-maker or the self-interested man in all of us but to stop building a global society and global economy merely on this perspective. As soon as we allow ourselves to embrace the other outlooks on human nature, we can redefine common social values and concepts and reconfigure social institutions. Currently, money is the most common and evident tool to confer social power, social adequacy and ultimately worthiness (Furnham and Argyle, 1998) but these visions (and previous epochs for that matter) have shown that social behaviour is believed to be strong enough to be seen as a factor of social status. Both groups included in their vision the notion that we must appreciate those who perform jobs that are unpleasant or arduous. Ultimately, if the bin man did not pick up our litter, our quality of life would seriously deteriorate and this contribution to our well-being deserves recognition. The visions were also fully in line with Sen's capability approach (1995; 1997) as they bore in mind the differences in needs and focused on facilitating the attainment of life quality not just through monetised income but through other means.

It is clear that there are no single solutions to such complex issues. Whether concentrating on a policy goal one at a time or launching them separately, it is crucial to achieve some forms of complementarities and a common understanding of an aim and a shared vision of the direction society should be heading towards. As O'Hara (1995) says, if we were finally to understand the co-dependencies that describe not just biological but also social contexts, we can move on from thinking merely in terms of rational choices and static equilibrium models. Korten (2009, p.129) defines the fundamentals of healthy living systems according to the following. They organise themselves into dynamic, inclusive and self-sustaining local living communities but maintain permeable boundaries. They strike a dynamic balance between individual and collective needs and interests. They cultivate diversity, share knowledge and value moderation, reciprocity and co-operation. Finally, they optimise their use of energy and material to the micro-environment they have to adapt to. Even though the panels have never reflected on these basics of self-supporting organic mechanisms, their visions on sustainable employment display a considerable appreciation towards these unwritten rules.

The conclusions drawn in the article presenting the expert panel's backcasting results (Köves et al, 2013a) seem to hold true even more after the analysis of the student panel's results. The visions established during the two-day workshops bear certain resemblance to those ideas that are present in non-mainstream economic literature. Common ground is that the current definition of work and the employment policies that rely on the notion of full employment are outdated. This crosstalk between the literature and the solutions identified by the participants may be due to a number of reasons. One can be that the reasons behind the economic, environmental, and social crises are perceived similarly. As soon as people are given the opportunity – like in the backcasting workshops – to distance themselves from the complexity of current problems, break-out strategies start to bear resemblances. It is also possible that mainstream paradigms are already so challenged that alternatives that are currently labelled alternative no longer seem unattainable. This seems to be underpinned by the fact that the foundations of many elements in the vision had already been laid. The social economy currently also presents an alternative to those crowded out of the labour market; a number of non-monetised local exchange and trading networks exist; and the legal base for a number of atypical employment forms had been developed. One of the main obstacles of the flourishing of these solutions is that the economic and political system still holds on to certain presuppositions. The rejection or, at least, the questioning of these assumptions could pave the way for a wider use of already existing patterns that enable a better harmonisation of ecological and employment interests and visions (Köves et al, 2013a). Another explanation – and this would explain why the visions of the two groups were also quite similar – is that underlying basic human desires and the cognitive pictures of how these desires could be met adequately in an ideal scenario are highly similar.

This thesis was also meant to draw attention to the fact that in the discourses on the relationship of sustainable employment and environmental sustainability, there are highly distinct presumptions on what sustainability is. These presumptions also reflect the underlying interests. Current mainstream aims at preserving the status quo whereby business-as-usual (only somewhat greener) with a little help of technology can maintain both high growth strategies and the ideology of full employment.

Therefore, they apply weak sustainability criteria and have little to say about social and environmental justice. Around forty years after the Meadows report (Meadows, 1972); Hirsch's book on the social limits to growth (1976) and Daly's declaration that the "growth mania" leads to ecological peril and social moral crisis, one of the most important policy areas, employment policy has still not even considered not relying on the promise of – green, inclusive, smart, or any other kind of – growth. At the same time, social greens – and as it turns out two backcasting groups in Hungary – are willing to throw status quo off balance and think out-of-the-box. In their approaches, strong sustainability can become the norm and just tinkering with eco-efficiency - without redefining notions, institutions, and political strategies - is not an acceptable option. Even though technology is believed to play a supportive role in social transitions, it is not energy consumption per unit of production that needs to be emphasised. While it can reduce carbon emissions, it can also facilitate major changes in our ways of thinking and in our ways of living.

The introduction showed my devotion to the research field of ecological economics and it is only fair if in the conclusions I reflect on the results from the ecological economics point of view. Even if EE does not explicitly possess a common understanding of sustainable employment as such, certain common guiding principles do exist. The most important principle is that ecological economics does not accept that economic growth is the only way to solve the employment problems of our times, let alone the environmental ones. Well-being is by no means solely dependent on material consumption but also relies on our access to clean environment as well as meaningful work. The redefinition of human needs facilitates the redefinition of work. Employment does not entail just a 40-hour paid working week but the concept of mixed work becomes widely accepted. Paid employment is complemented by non-monetised, non-institutionalised work that has the purpose of serving personal self-realisation and advancing community goals. Hence, working for and locally within the community is not just a voluntary undertaking on the peripheries of the economy but a crucial part of it. Sustainable employment cuts its chords to the mainstream ideals of full employment, limitless globalisation and mobility and places itself in the conceptual network of local communities. This way environmental and employment goals can

work alongside each other rather than in continuous confrontation. The backcasting empiria has backed up these guiding principles.

Both the vision of ecological economics and those of the backcasting experiment may seem like utopias. However, as Ingebrigtsen and Jakobsen (2012) put it:

“We ... accept that the transformation towards ecological economics depends on political initiatives to change some of the fundamental societal institutions. ... we argued that it is possible to implement ecological economics in practice, despite the fact that the principles may seem utopian...” (p. 89)

However, in all social transformations some people lose out. As McNeill and Williams (2007) noted, technological change, trade liberalisation, or changing consumer tastes have previously lead to job losses. Any sustainable employment concepts must deal with these transitional phases as well as following a holistic approach where potential consequences on employment must be handled alongside the potential consequences on the environment. Beck (2007) points out that the environmental degradation of the “work economy” would not change merely by doing work differently: monetised or not, formal or informal, by one’s own initiative or being coerced into working. It would only change, if the underlying assumptions change radically in all spheres of life. Sustainable employment alone would not solve the ecological demise we are facing today. It can only contribute to the changes in values and attitudes that can make humankind live in harmony with nature once again.

5.2. REFLECTIONS ON BACKCASTING AS A METHOD AND ON THE LIMITS OF THE PRESENT RESEARCH

The literature review demonstrated the overwhelming complexity of the issue of sustainable employment and the diverse means and methods to provide solutions. Post-modern science acknowledges the fact that no clear-cut answers exist to these questions but the quest itself to find some solutions may lead us in the right direction. This thesis attempted to use one particular method that facilitates this pursuit: the technique of backcasting.

Backcasting and the concept of sustainability have structural affinity since it facilitates the transdisciplinary quest for solutions of complex problems. The Hungarian process

can be categorized as a pathway-orientated backcasting exploring the possibilities of the future without identifying specific goals to reach in the future. However, as involving various stakeholders in the creation of a normative vision was a key characteristic of the process from the very beginning; the methodological approach can be regarded as participatory pathway-orientated backcasting (Köves et al, 2013b). Therefore, the participatory nature of the method deserves an evaluation.

Prior to this evaluation, it must be admitted that the experimental nature of this backcasting was emphasised during the invitations to participate. Even though in the case of the expert panel, the results were to be presented to decision-makers, the hardcore implications of their contributions were not felt to be significant. This changes significantly the conclusions that can be drawn from the participatory nature of the process as this was more of an imitation of what could be done rather than a deliberative procedure that has radical impacts on their lives. Nonetheless, the experience would support Habermas' (2001) idea of communicative action being of foremost importance in democratic decision-making and his conviction that - given the right circumstances -, people with different viewpoints are indeed capable of converging their views after ample deliberation. There were heated debates and widely differing views regarding certain issues in the panels and still a coherent picture could arise from the discussions. However - as noted previously – the participants may not have felt the urge to defend their positions as strongly as they would have in situations where the outcome radically changes something they care about (e.g. a backcasting on local development in the area they live in where the backcasted policy recommendations are certain to be fed back into decision-making). Nevertheless, it is important that participants coming from highly diverse backgrounds were still capable of framing issues that reflect their common standpoint.

According to Király et al (2014a; 2014b), the basic preconditions for participatory techniques can be grouped around three foci. The first focuses on how well suited the method is to involve stakeholders from different backgrounds, with uneven knowledge and from diverse circumstances. The second concerns how far it constrains participants' thinking into pre-established cognitive frames or, in other words, whether the participants are given the freedom to introduce new topics and/or cognitive

frames. The third issue of the participatory nature is how far the process and results can influence actual decisions or the actual policy-making.

Regarding the first focus – the perspective of stakeholders –, this backcasting experiment has only shown that it works well with highly educated individuals. Participants admitted that the two-day workshops were highly taxing and mentally tiring, and leaving the realms of the present behind in order to focus on the normative vision of the future demanded quite a bit of cognitive challenges. This may imply that the method is not well suited for involving all representatives of indigenous knowledge. On the other hand, the participants suggested running similar backcasting exercises with non-intellectuals as well as for example with children. They believed that these groups would add different and meaningful insights. The first group was suggested in order to avoid the bias towards “middle classes”, while children were suggested as they are supposed to find it easier to think radically out-of-the-box. This suggestion implies that the participants believed these groups would also be able to handle the cognitive challenges a backcasting requires. Nonetheless, we have no straight answer whether backcasting is indeed suitable for involving stakeholders with lower knowledge capital. The experiment also showed that in backcasting, expert panels work similarly to lay panels. It was highly emphasised at the beginning of the workshop that they need to distance themselves from their background organisations as they are representing their own knowledge and not the interests of their organisation. This request and the fact that the time span was long enough not to actually know what role an institution would play in such a long-term scenario enabled the experts to participate as private persons. Therefore, the method works just as well with student panels as it does with expert panels. This suggests that a wide range of stakeholders can be included in backcasting processes.

With regard to the second participatory perspective, the organisers laid great emphasis on the requirements of the participatory approach, only facilitating but not influencing the debates that occurred during the workshops. The four pre-set focuses and the mandala method provided a framework that participants could orient themselves in terms of time and topic but the moderators allowed them to sway off topic if the participants deemed them important. This is the reason why the topics

covered turned out to be much richer than the focuses mentioned in the briefing and as the analysis of the previous chapter shows, they were all highly relevant. Accordingly, the style of moderation was more of a facilitator than a moderator. Hence, participants were allowed to bring in topics they wished. They were also given the freedom to choose from the priorities they identified during discussions in order to limit the number of focal points in the phase of identifying policy measures. Therefore, this method allows free associations and free deliberation within time constraints.

From the third perspective on how far this event contributed to actual decisions, this backcasting is difficult to evaluate. Firstly, this was an experiment with alternative (non-growth) policies in mind that is not part of mainstream Hungarian politics and policy at the moment. Hence, it was never likely that it would impact immediate action. The best that can be hoped for is that the results would be fed into long-term sustainability strategies and that the participative method of backcasting would be accepted as a viable means to support policy-making. The recognition of policy-makers on the importance of deliberation and participation is also a factor in this perspective. All in all, the method has been proven to be able to provide adequate policy suggestions that can be fed back into a decision-making mechanism. Whether this mechanism is capable of internalising such participatory methods is not an issue of the backcasting process itself but a much broader issue for institutional design and power relations.

As for the limitations of the method, in our paper on the Hungarian backcasting experiment (Köves et al, 2013a), we have drawn attention to the following limitations. Firstly, it became clear during the workshops that participants find it a great challenge to get into the right mindset thinking in the future rather than the present. Due to resource limitations, these workshops could only last for two days. It would have been better to be able to spend more time in the orientation phase to allow participants to switch time horizons more smoothly, and devise and think about alternative realities. Hence, more time and careful planning is needed to loosen these mental boundaries to be able to aid participants to leave the problems of the present behind and to focus on the possible desired future. Secondly, our methodology was based on a thematic approach where participants discussed different aspects of a sustainable future of

employment (individual, community, environmental, and technological aspects). Even though this approach revealed many facets of the issue, they remained relatively independent from each other in the scenario building exercise. To be able to harness the rich connections and complex interrelationships between social, technological and environmental components in creating the vision of a future society, we shall seek a different, probably more systematic or network-based approach. This would allow for a more encompassing view on society as a whole while at the same time this modified approach could help to disclose how different parts of a system or network mutually constitute, stabilise, and feedback onto each other respectively. Thirdly, the paper noted that the researchers are aware that the composition of the group poses some limitations on generalising the results. The participants in both groups were well-educated people who reflect on employment or environmental issues on a daily basis (Köves et al, 2013a). It is also important to acknowledge that this vision reflects the co-construction of altogether 31 individuals in Hungary. However, this qualitative technique facilitates real participation thorough deliberation and active exchange of ideas between participants resulting in learning and shared understanding. Hence, it provides an in-depth insight that some other decision-support techniques with wider involvement may not generate (Köves et al, 2013b). Over the limitations that have already been published, it is also important to add a few more in order to complete the picture.

Backcasting is a relatively expensive social research method. Even though it does not involve huge samples, the deliberations only work if participants are distanced from their everyday environments and focus on the task at hand. Especially if we bear in mind the reflection on the time limits – that it would be even better to spend more time on a backcasting exercise – the question of compensating the participants arises. These participants took part out of curiosity or loyalty to the organisers, volunteering their spare time. Nonetheless, with the proliferation of such techniques and if a wider range of actors are to be involved, the issue of either monetary compensation or time allowance from work (like in the case of jury systems) would have to be considered. The costs of facilities and provisions must also be calculated with.

Another attribute of the method is the immense background work it entails in order to enable both participants and decision-makers to see the results. Even if it does not involve the analysis of word by word transcripts, it is highly time-consuming to put the whole picture together piece by piece and it cannot be automated. Unlike in the case of other methods such as systems mapping (Király et al, 2014a; Király et al, 2014b), the participants have no direct overview of the results at the end of the workshops and hence, they have difficulties in assessing whether their contributions really had an impact. It also takes more efforts from decision-makers to understand the complete picture drawn up during the backcasting exercise if they really want to appreciate the complex relationships the participants uncovered.

Nevertheless, in general, it can be stated that the Hungarian experiment has proven that backcasting could be used both for further social research and as a complementary tool for decision-making. The method provides ample space for associative and free-flowing thinking and deliberation that can uncover highly complex relationships and lead us to the synthesis of different types of knowledge and experience. If adequate participatory approaches are applied, the method could serve as a suitable tool for policy-making support. It would enable decision-makers to discover acceptable alternative scenarios even in the case of deeply sensitive issues. As the technique facilitates out-of-box thinking, decision-makers could be assisted in facing legitimate and implementable policy options also outside the realms of mainstream solutions.

5.3. RECOMMENDATIONS

Both the literature review and the backcasting results in this thesis contain a high number of policy recommendations that will not be repeated here. However, there are a few recommendations that stand out and deserve reiteration.

In Hungary, the political discourse on employment revolves around three main concepts: flexibility of the labour market, public work schemes and - to a lesser extent - investments into green technology (Hungarian Government, 2010). Employment policy interventions are limited to adjusting the supply side of the labour market through trainings and labour-market services on an ever contracting primary labour

market and organising public works for those who seem to be crowded out of the primary market permanently. The political rhetoric emphasises the concept of “work-based society”¹⁶ and the relentless goal of achieving full employment¹⁷. This research showed that sustainable employment starts with revisiting these moral and economic principles and substituting them with new ones. Employment policy is currently subordinated to economic policy at best, sometimes treated as social policy, and at the worst of times seen as just organised labour supply to public works. This inferior role indicates the preferences: humans are being relegated to instruments and (employment) policy-making has lost its focus, namely to support society in achieving a better life. The backcasting exercise has shown that as soon as this focus is allowed to be shifted back to issues that matter to both individual and collective well-being, a myriad of employment policy directions open up. Employment policy must regain this focus in order to support sustainable employment.

Even though on European level economic growth is still of utmost importance (European Commission, 2010), there are strategic initiatives that aim to strengthen the social economy, acknowledge and legalize household and care-taking jobs, invest in community-building and the civil sector, enhance corporate social responsibility or support social dialogue. The rationale behind the encouragement of these measures may be slightly different from the rationale this research propagates but nonetheless constitute as policy steps that we can build on if we are to move towards sustainable employment.

This research also sends another strong message. Despite the dismal results Hungarians achieve on active citizenship comparisons with other countries (Hoskins and Mascherini, 2008), both groups highlighted their desire to participate in real social dialogue. Participatory methods such as backcasting – especially if the results are taken into consideration by policy-makers – can serve as primary steps towards more citizen involvement. There are highly controversial issues such as the guaranteed basic income that must be the subject of undistorted and widespread public debate in order to learn when and how a society is ready to implement such measures.

¹⁶ <http://www.kormany.hu/en/the-prime-minister/news/the-era-of-the-work-based-state-is-approaching>

¹⁷ <http://www.haon.hu/govt-goal-full-employment-says-orban/2492795>

With regard to future research aims, any particular topic that has arisen in this research would demand more in-depth analysis. Undoubtedly, parts of the reasoning in this thesis may call a myriad of counterarguments and most topics that were raised demand a multitude of further research, more in-depth analysis and the weightings of pros and cons. This was a research of abductive nature that helped us have a holistic view on what may constitute as sustainable employment. Each topic or subtopic that was identified by the backcasting panels could serve as the subject of further research. Sustainable employment as a term hardly ever occurs in scientific literature. It is also a challenge to find research that couples employment and ecological issues in-depth. Hence, this thesis provides ample basis for further research both in terms of supporting or refuting the arguments that occur in it.

5.4. PERSONAL REFLECTIONS

Any research is as much of a personal search for answers as a social inquiry. My own disillusionment with mainstream answers to contemporary problems has been a constant driver to find unconventional approaches. This research attempted to contribute towards understanding how sustainable employment could be defined and what theoretical and practical approaches can take us towards a transition to a more sustainable society through establishing a different world of work. I believe that all attempts that try to challenge existing patterns and presumptions contribute towards finding better solutions. It is also clear that any transitions – especially those that affect the fundamentals of social and economic systems - implicate that there are losses as well as gains and losers as well as winners. Nonetheless, it is not all the same if these losses are temporary or they anchor social and economic structures in a way that permanently disenfranchise certain groups.

This research has dramatically reinforced my conviction that the knowledge of many overwhelmingly outweighs the knowledge of few. Great thinkers like Polányi, Beck, Habermas, Csíkszentmihályi, Frankl, Sen have raised questions and suggested answers that demonstrate incredible individual insight into contemporary social and psychological issues. However, - given the freedom to think without restraint – two groups of “ordinary” people could extraordinarily reflect on these same issues without the scientific knowledge we claim is crucial in having a proper uptake on complex

subjects. Collective wisdom emerging out of deliberation is seriously undervalued in our world and I seriously hope that one of the major contributions of this research is to reinstate its merits.

My primarily optimistic belief that humankind can conquer all, including its own shortcomings may have influenced the outcome of this research. Surely the results may seem utopian to some but - using Wright's terminology (2012) – they are “real utopias” and our society badly needs alternative visions to find its way out of a seemingly unsustainable *modus operandi*. There are no clear-cut answers to complex problems such as sustainable employment. However, the search itself brings in insights that broaden our horizons on potential solutions. As Csíkszentmihályi (1997) claims, the consciousness of contemporary humans determines the future of humankind in the third millennium and all our thoughts, values and not just physical but psychological actions matter in shaping our future. This backcasting research was a thought experiment that deployed a lot of this mental energy on behalf of the participants and the researchers in the hope that it contributes not just to understanding our options but also to redesigning our future.

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ANNEX 1: BACKCASTED POLICY STEPS

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness- raising	Policy type: negative awareness- raising
Expert	community	<i>Strengthening community spirit: work as a reinforcement of the individuals sense of belonging, and community encouraging work</i>	Supporting community employment solutions	long	x		x		x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Rejuvenating the form of cooperatives	medium	x				x	
Expert	community	<i>Diversification of the fulfilment of needs</i>	Supporting the incubation of community enterprises	short	x		x		x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Encouraging the need for community involvement in individuals	short			x		x	
Expert	community	<i>Diversification of the fulfilment of needs</i>	Supporting community initiatives	short			x	x		
Expert	community	<i>Strengthening community spirit: work as a reinforcement of the individuals sense of belonging, and community encouraging work</i>	Supporting community occasions	medium			x		x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Enhancing active citizenship education	short	x				x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Recognising learning and training as work activity	medium	x				x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Recognising household work as employment	medium	x		x		x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Expert	community	<i>Supporting the redefinition of work and its value</i>	Introducing employment cards	long	x				x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Introducing the voucher system for the different employment forms	short	x		x		x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Recognising in a wide range activity-based employment contracts and simplifying their administration	medium	x				x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Spreading the different solutions to the diverse forms of employment	short	x				x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Building natural partnership between social partners and corporations	medium	x				x	
Expert	community	<i>Diversification of the fulfilment of needs</i>	Boosting diverse supply in a sector neutral manner	long	x					
Expert	community	<i>Diversification of the fulfilment of needs</i>	Motivating the civil and public sector to take responsibility	medium			x		x	
Expert	community	<i>Diversification of the fulfilment of needs</i>	Supporting pilot social innovations	short	x		x			
Expert	community	<i>Diversification of the fulfilment of needs</i>	Accepting social innovation as an R&D activity	medium			x		x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Providing standards and guidelines for socially responsible corporate management	short	x				x	
Expert	community	<i>Diversification of the fulfilment of needs</i>	Encouraging the practice of outplacements	medium	x		x		x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness- raising	Policy type: negative awareness- raising
Expert	community	<i>Strengthening community spirit: work as a reinforcement of the individuals sense of belonging, and community encouraging work</i>	Introducing methods of integrating perspectives of people living with disabilities into community spaces	short	x				x	
Expert	community	<i>Establishing democratic employment based on cooperation; and building trust</i>	Building trust-strengthening patterns into public administration	medium	x				x	
Expert	community	<i>Supporting the redefinition of work and its value</i>	Strengthening working time legislation	medium	x				x	
Expert	community	<i>Strengthening community spirit: work as a reinforcement of the individuals sense of belonging, and community encouraging work</i>	Strengthening family-friendly workplaces	short	x		x		x	
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Developing guidelines to environmentally friendly working environments	short	x				x	
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Introducing environmental perspectives into corporate code of ethics	short	x				x	
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Developing standards to environmentally friendly working environments	medium	x				x	
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Supporting environmentally friendly working environments	medium			x			
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Withholding permits from environmentally damaging corporations	long		x		x		
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Seizing the option of non- recycled waste production of corporations	long	x			x		

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness- raising	Policy type: negative awareness- raising
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Supporting research into environmentally friendly agricultural production	short			x			
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Introducing guidelines and standard to environmentally conscious agricultural production	medium	x				x	
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Introducing quotas to shops and communal feeding	medium	x		x			
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Training of producers	short					x	
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Supporting environmentally sustainable agricultural products	medium			x			
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Developing environmentally sustainable production and consumption loops	long			x			
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Clear labelling of environmentally-friendly products	short	x					
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Supporting labour-intensive agriculture	medium			x			
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Introducing tax reduction schemes for voluntary ecological footprint reduction	medium			x			
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Applying compulsory ecological footprint sizes	long	x					
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Introducing financial quota systems	short	x					
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Introducing different ecological footprint measuring systems	short					x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Expert	environment	<i>Establishing environment-conscious decision-making of firms</i>	Introducing environmental perspectives into decisions on public investment and supply alternatives	medium	x				x	
Expert	environment	<i>Establishing environment-conscious decision-making of firms</i>	Developing an information hub for corporate social and environmental responsibility	short					x	
Expert	environment	<i>Establishing environment-conscious decision-making of firms</i>	Introducing fast-lane public services for companies with better environmental indicators	short	x					
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Supporting local processing industry	medium			x			
Expert	environment	<i>Establishing environment-conscious decision-making of firms</i>	Prioritising local production (in shops and in public tenders)	medium	x		x			
Expert	environment	<i>Establishing environment-conscious decision-making of firms</i>	Prioritising local labour	medium	x		x	x		
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Awareness-raising of consumers	short					x	
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Introducing measurement systems to minimise work-related illnesses and accidents	long	x			x		
Expert	environment	<i>Establishing environment-friendly workplaces</i>	Developing stress reduction strategies	long	x					
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Applying QR systems	medium	x		x			
Expert	environment	<i>Supporting environment-conscious agriculture</i>	Applying personalised QR systems based on personal health data	long			x			
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Applying corporate social responsibility standards	medium	x					

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Expert	environment	<i>Reinventing support systems to reduce ecological footprints</i>	Running campaigns on best practices	short					x	
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Supporting the establishment of community employment	medium	x		x		x	
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Provision of community learning facilities and occasions	short			x			
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Transformation of class-room and grade based education	long	x		x		x	
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Establishment of new learning forms focusing on individual capabilities	medium	x					
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Establishment of new learning infrastructure	medium	x		x			
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Enhancing teacher training	short	x				x	
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Strengthening the role of parents in education	short					x	
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Supporting life-long learning	medium	x		x		x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Providing free higher education	medium	x		x		x	
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Transformation of management practices through education	medium					x	
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Development of integrated career-orientation system	medium	x		x			
Expert	individual	<i>Establishing work as a source of happiness and socially constructed value</i>	Supporting job-trials and the gaining of job experience	medium	x		x			
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Boosting the use of flexible work arrangements (e.g. telework)	short	x		x	x	x	
Expert	individual	<i>Establishing work as a source of happiness and socially constructed value</i>	Establishing the system of non-monetised fringe benefits	long	x		x			
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Drafting the legislation of barter, non-monetised work and LETs	short	x					
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Supporting self-employment (including community employment)	short	x		x		x	
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Supporting knowledge and not resource intensive creative industry	medium	x		x		x	
Expert	individual	<i>Raising self-autonomy through enhanced self-determination and personal choice</i>	Providing services that help avoiding the socialisation of inherited unemployment	short	x		x			

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness- raising	Policy type: negative awareness- raising
Expert	individual	<i>Establishing work as a source of happiness and socially constructed value</i>	Establishing fair work	medium	x					
Expert	individual	<i>Establishing work as a source of happiness and socially constructed value</i>	Introducing guaranteed basic income	medium	x		x			
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Establishing the legal circumstances for employment in global networks	long	x					
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Supporting local production and consumption loops	short	x		x		x	
Expert	individual	<i>Lifting the barriers of both globalised and localised employment</i>	Supporting local employment initiatives	short	x		x		x	
Expert	individual	<i>Extending and fulfilling the knowledge and skill potential of individuals - raising the level and quality of education</i>	Supporting the establishment of creative jobs	medium			x	x	x	
Expert	individual	<i>Establishing work as a source of happiness and socially constructed value</i>	Popularising volunteering	short	x				x	
Expert	technology	<i>Supporting adaptability</i>	Supporting technology aimed at facilitating the diverse employment forms	medium			x			
Expert	technology	<i>Supporting adaptability</i>	Supporting target oriented R&D, knowledge transfer and innovation	short	x		x			
Expert	technology	<i>Supporting self-realising, diverse work forms</i>	Preventing the loss of non-technology oriented professions	short					x	
Expert	technology	<i>Enabling higher quality of life</i>	Developing ergonomically beneficial working tools	medium			x			

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Expert	technology	<i>Supporting adaptability</i>	Technological support of community spaces	short			x			
Expert	technology	<i>Supporting self-realising, diverse work forms</i>	Validation of acquired technological competencies	medium	x					
Expert	technology	<i>Supporting self-realising, diverse work forms</i>	Supporting producers of unique and original goods	short			x			
Expert	technology	<i>Supporting self-realising, diverse work forms</i>	Recognising learning new technology as work	medium	x		x			
Expert	technology	<i>Enabling higher quality of life</i>	Introducing housing standards in order to re-establish the employment base	long	x					
Expert	technology	<i>Supporting equal access</i>	Supporting technology development and application for public participation in decision-making	medium	x		x		x	
Expert	technology	<i>Supporting self-realising, diverse work forms</i>	Establishing the value of originality and human contribution in consumption patterns	medium					x	
Expert	technology	<i>Supporting equal access</i>	Supporting universal planning	short	x		x			
Expert	technology	<i>Supporting equal access</i>	Enhancing mobility potentials	medium	x		x			
Expert	technology	<i>Supporting equal access</i>	Strengthening remote access to public services	medium	x					
Expert	technology	<i>Supporting adaptability</i>	Building trust through data-security and authentication systems	short	x		x			
Expert	technology	<i>Enabling higher quality of life</i>	Exploiting technology's benefits on work-time reduction	medium					x	
Expert	technology	<i>Supporting equal access</i>	Enhancing telework solutions	short			x		x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	community	<i>Work for the community is not only monetised but the value of non-monetised work is highly appreciated</i>	Spreading community services (such as community laundry, kitchen, gardens, etc.)	medium	x		x		x	
Student	community	<i>Work for the community is not only monetised but the value of non-monetised work is highly appreciated</i>	Awareness-raising in education on rural-urban interdependence	medium					x	
Student	community	<i>Shorter working hours means more time spent in the community</i>	Introducing community service time	short	x				x	
Student	community	<i>Work means that we create something useful for the whole community</i>	Ensuring telework in all those positions where it is possible	short	x		x			
Student	community	<i>Shorter working hours means more time spent in the community</i>	Introducing alternative employment forms (telework, flexitime, etc.)	long	x		x		x	
Student	community	<i>Work for the community is not only monetised but the value of non-monetised work is highly appreciated</i>	Part of income paid in local currencies	long	x		x			
Student	community	<i>Shorter working hours means more time spent in the community</i>	Encouraging the hiring of local labour through economic incentives	medium			x			
Student	community	<i>Humans do not appear as a "one-dimensional" money-making creatures but as "multi-dimensional" community members</i>	Supporting professional communities of employees and employers	long			x		x	
Student	community	<i>Humans do not appear as a "one-dimensional" money-making creatures but as "multi-dimensional" community members</i>	Active citizenship education (through actual participation with 80% out of classroom)	medium					x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	community	<i>Work means that we create something useful for the whole community</i>	Introducing a global audit system to measure social community benefits	long					x	
Student	community	<i>Humans do not appear as a "one-dimensional" money-making creatures but as "multi-dimensional" community members</i>	Introducing a quota on how much income a corporation must invest in community development	short	x		x			
Student	community	<i>Work means that we create something useful for the whole community</i>	Introducing family-friendly tax schemes	short			x			
Student	environment	<i>Environmental and cooperative perspectives permeate all levels of state administration and politics</i>	Introducing a transparent system to provide clear balance on the damages and benefits of economic activities	short						x
Student	environment	<i>Human activity (work) adapts to environmental aptitudes and limits</i>	Land reform and supporting small land ownership	short	x		x			
Student	environment	<i>Human activity (work) adapts to environmental aptitudes and limits</i>	Greening workplaces through tax incentives	short			x			
Student	environment	<i>Human activity (work) adapts to environmental aptitudes and limits</i>	Strengthening relationships to land	short					x	
Student	environment	<i>Strong nation, global peace and well-being as the basis of any policy intervention</i>	re-establishing economic self-determination (e.g. setting the right balance between SMEs and transnationals; supporting "national" firms, introducing progressive tax system, providing incubator houses, etc.)	long	x	x	x	x		
Student	environment	<i>The role of community is enhanced in the economy that is more labour and less resource intensive (this change is driven by the civil sector)</i>	Setting up incubator houses and networks	medium	x		x		x	

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	environment	<i>Strong nation, global peace and well-being as the basis of any policy intervention</i>	Introducing participative decision-making (e.g. citizenship juries)	medium	x				x	
Student	environment	<i>Strong nation, global peace and well-being as the basis of any policy intervention</i>	Raising active citizenship awareness	medium					x	
Student	environment	<i>The state represents the rights of future generations and the environment</i>	Establishing environmental rights in legislation	long	x					
Student	environment	<i>The state represents the rights of future generations and the environment</i>	Appointing parliamentary ombudsman	short	x					
Student	environment	<i>Environmental and cooperative perspectives permeate all levels of state administration and politics</i>	Providing adequate basis for training and educating responsible managers	short					x	
Student	environment	<i>Environmental and cooperative perspectives permeate all levels of state administration and politics</i>	Introducing Green Consultancy Boards	short	x					
Student	environment	<i>The role of community is enhanced in the economy that is more labour and less resource intensive (this change is driven by the civil sector)</i>	Introducing self-sufficiency in food production and energy supply	long	x	x	x	x	x	x
Student	environment	<i>The state represents the rights of future generations and the environment</i>	Supporting Roma educational facilities	short			x		x	
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Strengthening cooperatives	medium	x		x			
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Organising optional kibbutz	long	x		x			

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	individual	<i>Humans are capable of satisfying basic needs on a decent level through work</i>	Organising community occasions (especially for children)	short					x	
Student	individual	<i>Work is a form of self-actualisation</i>	Introducing personalised education	medium					x	
Student	individual	<i>Work is a form of self-actualisation</i>	Broadening jobs	medium	x					
Student	individual	<i>Work is a form of self-actualisation</i>	Facilitating career changes through legislation	short	x					
Student	individual	<i>Work is a form of self-actualisation</i>	Providing constant career orientation	short					x	
Student	individual	<i>Work is a form of self-actualisation</i>	Supporting small and family businesses	short			x			
Student	individual	<i>Humans are capable of satisfying basic needs on a decent level through work</i>	Awareness-raising on the cultural transition (from current work paradigms)	short					x	
Student	individual	<i>Humans are capable of satisfying basic needs on a decent level through work</i>	Introducing the guaranteed basic income	long			x			
Student	individual	<i>Humans are capable of satisfying basic needs on a decent level through work</i>	Planning and calculating the consumption tax system necessary for the guaranteed basic income	medium				x		
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Training of employees and employers on participating techniques	short					x	
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Providing legislative framework to employee ownership schemes	medium	x					
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Achieving complete transparency of corporate/organisational operations	short	x					

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	individual	<i>Work provides individual satisfaction (flow)</i>	Linking top management salaries to employee satisfaction	medium			x			
Student	technology	<i>Technology support self-determination and freedom</i>	Assessing community needs	medium					x	
Student	technology	<i>Technology support self-determination and freedom</i>	Enhancing the prestige of teaching roles (through enhanced teacher training)	short			x		x	
Student	technology	<i>Technology support self-determination and freedom</i>	Strengthening practice-based education	medium	x		x		x	
Student	technology	<i>Technology is used for facilitating the flourishing of human capabilities and not for limiting them</i>	Introducing project-based educational activities	short	x		x		x	
Student	technology	<i>Technology is used for facilitating the flourishing of human capabilities and not for limiting them</i>	Facilitating knowledge sharing	medium					x	
Student	technology	<i>Technology supports labour-intensive and high quality production</i>	Setting compulsory standards for product quality and lengthened warranty times	medium	x					
Student	technology	<i>Technology supports adequate, humanly acceptable levels of automatisisation</i>	Limiting large-scale industrial production	long		x		x		
Student	technology	<i>Work and technology is based on global justice and solidarity</i>	Providing best-practices through media, education, state examples	medium					x	
Student	technology	<i>Work and technology is based on global justice and solidarity</i>	Pricing products based on their real value incorporating environmental and social costs	long				x		

Panel	Focus	Priority	Policy intervention aim	Term	Policy type: positive legislation	Policy type: negative legislation	Policy type: positive economic incentives	Policy type: negative economic incentives	Policy type: positive awareness-raising	Policy type: negative awareness-raising
Student	technology	<i>Technology supports labour-intensive and high quality production</i>	Establishing new business models and supporting them in case of regional production (e.g. service economy models)	medium	x		x		x	
Student	technology	<i>Technology supports adequate, humanly acceptable levels of automatisisation</i>	Taxing foreign financing	short				x		
Student	technology	<i>Technology supports adequate, humanly acceptable levels of automatisisation</i>	Prioritising local products in public tenders	short	x		x			
Student	technology	<i>Technology supports adequate, humanly acceptable levels of automatisisation</i>	Setting up regional and interregional information and communication networks and co-operations	medium			x		x	
Student	technology	<i>Technology support self-determination and freedom</i>	Strengthening relationships between sectors in local industry and in environmental management (e.g. energy supply, agriculture, waste management, water management)	long	x		x		x	
Student	technology	<i>Technology support self-determination and freedom</i>	Strengthening local infrastructure	medium	x		x			
Student	technology	<i>Work and technology is based on global justice and solidarity</i>	Renegotiating global and multilateral pacts	short	x					
Student	technology	<i>Technology support self-determination and freedom</i>	Decentralising political decision-making	long	x					
Student	technology	<i>Technology support self-determination and freedom</i>	Stopping brain drain	short			x		x	
Student	technology	<i>Technology support self-determination and freedom</i>	Demolishing monopoly	medium		x		x		

ANNEX 2: LIST OF PUBLICATIONS OF THE AUTHOR

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