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# Reviewing the Smart City Vienna Framework Strategy's Potential as an Eco-Social Policy in the Context of Quality of Work and Socio-Ecological Transformation

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**Abstract:** In the face of an increasing awareness of environmental issues and the urgent need to tackle them without shifting the burden onto the most vulnerable social groups, calls for a socio-economic transformation are growing louder. However, there is no consensus on what transformative strategies should look like. Within the German-language literature one can broadly distinguish two transformative paradigms: the green economy paradigm, arguing for soft political steering mechanisms and technological innovations in order to green the current economic system and the degrowth paradigm, drawing the current growth-oriented economic system into question. In both approaches a tendency to marginalize issues of quality of work prevails. We argue that work is not only an integral part of one's income, but also of one's identity and psychosocial wellbeing as well as of social peace and cohesion and that it should therefore be at the heart of socio-ecological transformative strategies. We apply these theoretical considerations to the analysis of the Smart City Vienna Framework Strategy (SCWR), which is promoted as a holistic sustainability strategy paper. Additionally, we conducted expert workshops and interviews in order to analyze how stakeholders within the sectors with the highest CO<sub>2</sub> emissions in Vienna perceive the SCWR in relation to work. We found that the SCWR does not live up to its potential as an eco-social policy as it remains tightly rooted within the green economy paradigm and does not account for the ecological dimension of work. The stakeholders' perspectives on the SCWR vary according to the degree to which they are embedded within the green economy paradigm as well as their position within the economic system. However, generally the SCWR is not perceived as an eco-social policy and no connection is made between environmental issues and quality of work. We argue that transformative degrowth strategies could greatly benefit from making this connection explicit.

**Keywords:** eco-social policy; environmental policy; sustainable development; Smart City Wien Rahmenstrategie; socio-ecological transformation; degrowth; green economy; quality of work; decent work; sustainable work

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## 1. Introduction

While there is an increasing consensus that a socio-ecological transformation is necessary to tackle the climate crisis and associated social issues, analyses of the crisis and thus proposals for how to overcome it vary greatly [1]. Within the German-language literature one can broadly distinguish between two transformative paradigms: the green economy paradigm, arguing for soft political steering mechanisms and technological innovations in order to green the current economic system and the degrowth paradigm, drawing the current growth-oriented economic system into question [2]. Neither of

them addresses the role of work and particularly the quality of work within the socio-ecological transformation sufficiently.

This paper aims at contributing to overcome this shortcoming. Using a broad conceptualization of work, where it is considered to be an integral part of one's identity, psychosocial wellbeing, income as well as social peace and cohesion and a central mechanism of relating to and interacting with nature, we argue that work should be at the heart of socio-ecological transformative policies. We then apply our theoretical considerations to the empirical example of the Smart City Vienna Framework Strategy (SCWR)—a strategy paper of the city of Vienna aiming at integrating environmental, social and economic issues. We focus on how stakeholders and decision makers within the three sectors that are most relevant for the city's CO<sub>2</sub> emissions—transport, construction and energy—perceive and address the social and environmental aspects of work. It has to be pointed out that the role of work in a socio-ecological transformation cannot readily be studied as it is not often explicitly part of transformative strategies and there are several problems associated with collecting and analyzing related data.

The paper concludes that the SCWR does not live up to its potential as an eco-social policy. This is partly due to the fact that it remains strongly embedded within the green economy paradigm and thus gives economic and social issues priority over environmental issues in regard to work, instead of drawing on the degrowth paradigm, which would suggest more profound changes of the political and economic system. This leads to an avoidance of addressing potential goal conflicts between economic, social and environmental issues. This results in vaguely formulated goals which are not followed up by concrete, binding policies. The stakeholders' perception of the strategy as well as their wish for state intervention in general varies according to the degree to which they are embedded within the green economy paradigm. Combined with a narrow understanding of work this prevents the majority of stakeholders from making a connection between environmental policy and quality of work. We argue that transformative degrowth strategies could greatly benefit from making this connection explicit.

### *1.1. The Smart City Wien Framework Strategy (SCWR)*

Austria is characterized by a federal governance structure where the federal state as well as the nine Austrian provinces share legislative, executive and financial responsibilities in line with the Austrian constitution. Since Vienna is not only the capital but also constitutes one of the provinces, it has more legislative power than other cities. This concerns, e.g., matters of regional planning and development as well as the conservation of nature and landscape protection [3]. Another key feature of the Austrian political system is the social partnership, a form of institutionalized dialogue on economic and socio-political issues, established after the Second World War, between the four social partners: on the one hand, the Chamber of Labor (Arbeiterkammer—AK) and the Austrian Trade Union Confederation (Österreichischer Gewerkschaftsbund—ÖGB) representing the interests of employees, and on the other, the Austrian Federal Economic Chamber (Wirtschaftskammer Österreich—WKO) and the Chamber of Agriculture (Landwirtschaftskammer Österreich—LKÖ) representing the interests of the employers. Thirdly, the city has been governed by social-democratic mayors since the Second World War, since 2010 the social democrats are in a coalition government with the Green Party.

Taken together, these features provide favorable conditions for introducing a progressive strategy that integrates social and environmental concerns, while simultaneously considering the interests and thus securing support of employers and employees alike. It is against the backdrop of these features that the SCWR needs to be analyzed.

The SCWR is a follow-up project of the project "smart city Wien" [4], which was initiated in 2011 and had a strong focus on technological innovation. The project's steering group decided in 2013 to develop the framework strategy and hand it over to the city of Vienna's Municipal Department for Urban Development and Planning (MA 18). According to what is written in the SCWR, the strategy paper was created "in a participatory process involving numerous group discussions, thematic workshops and interviews with more than 100 experts, the main topics of the framework strategy were then rendered

concrete, leading to the formulation of objectives” [5]. It was then adopted by the Vienna City Council in June 2014. The aim was to answer current climate challenges through “charting [the city’s] course to becoming a smart city” [5]. A course differing—according to the preface—from strategies of other cities as “for Vienna, the integration of the social component into all areas is an essential element of its framework strategy. Climate-related and ecological objectives and the improvement of the everyday realities of its citizens are assigned the same importance in Vienna” [5].

In the face of the increasing importance of climate issues on the international political agenda as well as other social, technological and economic developments, the SCWR was updated in 2019 [6]. The most important changes of this new version include the alignment of goals and objectives with the Sustainable Development Goals (SDGs), the introduction of the three dimensions quality of life, resources and innovation as integrated guiding principles within every target area, as well as the addition of new topics such as climate change, the circular economy and consumption-based material use. Additionally, “digitalization” and “participation” were introduced as new target areas; indicators and their underlying calculation methods were specified and governance principles and methods were adjusted [6].

### 1.2. Research Questions

There are two sets of research questions guiding our study:

- Can the Smart City Wien Framework Strategy be considered an eco-social policy?
  - What role does work, in particular the quality of work, play in the SCWR?
  - To what narratives does the SCWR thereby relate?
- How do different stakeholders perceive the SCWR in relation to work?
  - In what narratives are their arguments embedded?

### 1.3. Paper Outline

In a first step, we will define and elaborate on the concepts of eco-social policies and quality of work. We will then continue to discuss the green economy as well as the degrowth paradigm, which can be considered the two main transformative paradigms within the German-language literature. Particular focus will be put on how work is discussed within those two narratives. Section 2 of this paper provides an overview of the materials and methods we used in our study. Section 3 is divided into two parts. The first part presents our results of the analysis of the two versions of the SCWR, while the second part discusses the stakeholders’ perspectives in relation to the SCWR and issues of (quality of) work. The fourth and final section draws our results together and discusses them in the light of our research questions and theoretical considerations.

## 2. Definitions and Concepts

### 2.1. Eco-Social Policies

Environmental and social issues have only recently begun to be discussed as interrelated. This is at least partly due to an increased awareness that the most disadvantaged groups (globally as well as within nation states or cities) contribute least to environmental degradation but are most vulnerable to its effects, thus leading to a “double injustice”. Likewise they run the danger of being most negatively effected by climate mitigation policies and thus are likely to suffer from a “triple injustice” [7,8].

These injustices cannot easily be compensated by social policies for several reasons. First, modern welfare states are built on economic growth, while social policies aggravate environmental degradation, as they enable even more people to take part in unsustainable production and consumption patterns. Additionally, social policies are usually short to medium termed and centered around the sovereign

nation state and thus poorly equipped to incorporate environmental dimensions, as environmental problems are long-term and global. Another critique on social policies often raised by environmentalists is that they encourage passive and consumerist attitudes towards the common good instead of encouraging self-organization and bottom-up initiatives in welfare provision. Compensatory measures aimed at alleviating the potential negative consequences of mitigation policies are often expensive and inefficient [9]. An increasing number of voices [10,11] thus call for novel policy instruments that integrate social and environmental concerns, building on synergies rather than insisting on differences. This is important in order to secure support from the electorate for a socio-ecological transformation [12].

Examples for eco-social policies are social tariffs for energy and water based on rising block tariffs, with lower tariffs for initial units covering basic needs and rising tariffs for successive units used or increased taxes on high-carbon luxuries [10], which encourages sustainable consumption, while at the same time shifting the financial burden onto on the wealthier part of the population. In the mobility sector such policies could comprise the provision of safe cycle paths and other facilities for cyclists, while simultaneously banning cars from inner cities. This could potentially lead to less pollution, while simultaneously encouraging more social interaction and better health.

With regard to work, a frequently cited example is the reduction of working time, which would then lead to reduced income, consumption and emission, while reducing stress-levels and freeing time for other welfare enhancing activities [10,13]. This mirrors a general tendency in public and academic discourses to address work primarily in its quantitative aspects. In our opinion, limiting the discourse on work in such a way falls short for several reasons. First, it entails a very narrow conception of work that does not account for other (unpaid) forms of work such as care work and associated social problems. A broader understanding of work can thereby help to grasp the interrelation of environmental and social dimensions of paid work while simultaneously putting it in relation to other types of work. The concept of mixed-work, developed within the German interdisciplinary research project “Arbeit und Ökologie” (Work and Environment), [14] (consisting of paid work, reproductive work, care work and own work) or related concepts like Haug’s [15] 4-in-1 perspective or Dörre’s [16] inclusion of control work (the work through which the different forms of work are coordinated) can thereby provide a promising starting point. Second, from the perspective of global and intergenerational justice it seems unlikely that the current way of life (what Brand and Wissen call the imperial mode of living [17]) and associated material standards prevailing in the Global North cannot be sustained. As Büchs and Koch [18] argue, sustainable welfare needs to rely on concepts of wellbeing that do not rely on the accumulation of material wealth. Accordingly, Hollstein [19] argues that “informed desires” are derived from our values and norms. As environmental values get more important within society, they could constitute such values. If work was to be explicitly connected to these values, people could derive meaning and happiness from their work. As Hollstein [19] states: “Subjectively attractive and objectively worthwhile activities are central for a meaningful and good life”.

It is here that we see the importance of including quality of work in eco-social labor policy proposals. Since this has been a much neglected topic we will put emphasis on analyzing the SCWR with regard to its eco-social potentials concerning work. The SCWR can be considered an eco-social policy to the extent that it considers work as an integral part of people’s identity, puts forth measures to secure the quality of work within the economic sectors it seeks to transform and does not discount the quality of work to economic indicators as it is frequently done within the green economy paradigm. Stakeholders’ perceptions of the SCWR will also depend on what importance they attribute to quality of work, whether they see a connection between quality of work and the environment, and what role they attribute to the economy in the eco-social transformation.

Before we present the results of our analysis we will first clarify what we mean by “quality of work” and present the two prevailing discourses framing the socio-ecological transformation and (the following) associated policies: the green economy paradigm and discourses of degrowth.

## 2.2. Quality of Work

The international literature on the conceptualization and operationalization of the concept of quality of work is multifaceted, comprising academic as well as non-academic discourses. Important political impetuses for this discussion have come and are coming from the International Labour Organisation (ILO) with its concept of decent work and the European Commission. In the context of the Lisbon Strategy several efforts have been made to re-conceptualize quality of work and operationalize it in Europe-wide measurable indicators. However, these endeavours showed above all the difficulties associated with a single definition and uniform measurements due to a lack of international comparable data and a multitude of different methods, leading to different results. On a national basis the debate about quality of work is mainly led by unions. In Austria, the Chamber of Labour of Upper Austria has, since 1997, annually released the so-called “Arbeitsklima-Index”, measuring perceived quality of work as well as the perception of social, economic and political developments. In Germany, the index “Gute Arbeit”, developed by the German Trade Union Confederation (DGB), constitutes an instrument of yearly measurements of subjective perception of quality of work of the employees [20].

We suggest a concept of quality of work that builds on the International Labour Organization’s (ILO) concept of decent work while simultaneously allowing us to take existing indices, studies and data sets into account. Accordingly, we consider the following five dimensions of quality of work:

- income (income security, collectively agreed regulations),
- work-related health implications, work accidents and safety,
- work design, organization of working time, compatibility of family and work,
- qualifications and opportunities for further training and
- job satisfaction (organization of work, meaningfulness, self-determination).

The connection between quality of work and the environment is usually reduced to work-related health implications, resulting in regulations such as the ban of poisonous material or the abolishment of jobs in sectors associated with a high level of fine dust pollution naturally have a positive impact on worker’s health. Within the degrowth discourse, the third dimension concerning working time is often considered as well, as a working time reduction could enhance, e.g., the compatibility of family and work, while simultaneously—as mentioned above—reducing spending and thus emission. However, we argue that the level of job satisfaction is also of uttermost importance in this context. In enhancing welfare through improving quality of work, the environment could become a central identification point for workers, particularly for those working in jobs explicitly aimed at making society more sustainable.

How the concepts of work and in particular quality of work and their potentials for designing eco-social policies are discussed, depends greatly on the discourse they draw on. This is what we will now turn to.

## 2.3. Green Economy vs. Degrowth (How Do They Consider Quality of Work)

As pointed out above, there is much debate on what the nature of the current environmental crisis (and associated crises in other spheres) is and which social and political strategies should be pursued to overcome it. Under the umbrella-term socio-ecological transformation different analyses and proposals from a variety of academic disciplines and different political actors have emerged [1]. In order to get a better understanding of the narrative to which different actors relate, and of the role attributed to (paid) work within the debate, we will start by outlining two opposing theoretical approaches that dominate the (German-speaking) socio-ecological transformation debate [2] and by considering how they address work in relation to a socio-ecological transformation.

### 2.3.1. The Green Economy

The green economy paradigm was promoted as the guiding principle of sustainable development around the Rio + 20 Conference 2012 through which the economy and ecology should be reconciled

and associated crises overcome. Beyond that, the green economy paradigm manifests itself in several flag-ship reports issued by political organizations and think tanks such as the United Nation Organization UNEP, the ILO, the International Trade Union Confederation (ITUC), the International Organization of Employers (IOS) as well as the Organisation for Economic Co-operation and Development (OECD) and a variety of NGOs. Further, the current EU-Framework Strategy as well as the Sustainable Development Goals (SDGs) build on green economy paradigm [21,22]. As such it can be argued that green economy constitutes the dominant concept of socio-ecological transformation [22].

Within the green economy paradigm, it is argued that comprehensive win-win situations can be created where economic and ecological development go hand in hand and enforce each other. As one of the key reports on the green economy of the UNEP states: “One of the major findings of this report is that a green economy supports growth, income and jobs, and that the so-called “trade-off” between economic progress and environmental sustainability is a myth ( . . . )” [23]. Technological innovations, as well as energy- and resource-efficiency, are seen as driving forces for growth and the creation of new jobs, and thus a remedy for poverty. The state is to assume the role of a regulator, governing through soft political instruments [22]. Accordingly, in line with neoclassic theory, much responsibility for a sustainable economy is transferred to the consumer, who is seen as the driver of market activity, making rational and well-informed choices on the market. Social relations, cultural contexts as well as routines and structural constraints are neglected and the act of consumption is reduced to an individual decision and as such moralized [22].

The neoclassic focus on economic growth and individual responsibility frames the paradigm’s conception of work. Economization and monetization of nature and the greening of the economy are seen as driving job growth. Work is narrowly conceptualized as paid work and mainly addressed in its quantitative aspects. The OECD, for example, focuses in its publication mainly on employment effects and on the need to train employees to meet the demands of the labor market. This is true despite the frequent use of terms such as “quality employment” or “decent work” [24].

A similar tendency can be found within the closely related discourse of green jobs. Here, strong emphasis is put on the number of jobs that can be created through a growth-oriented socio-ecological transformation, while issues of work quality are neglected [25] despite the fact that there is no consensus on the positive quantitative effects of green growth and that studies show that green jobs are heterogeneous, with good green jobs being fewer in number and primarily taken by men [2].

While the ILO concept of decent work is taken up by the SDGs, it is quite telling that it is subsumed under SDG 8 “decent work and economic growth”. The focus in subsequent reports is put on the income dimension of quality of work. As the ILO puts it: “Decent work puts money in the pockets of individuals and families that they can spend in the local economy” [26].

### 2.3.2. Degrowth

However, despite its hegemony in public discourse, there is much debate about whether a truly sustainable socio-ecological transformation can be achieved within the green economy paradigm with its focus on economic growth. Accordingly, prevailing production and consumption patterns are not drawn into question, leading to a global proliferation of the resource intensive Western way of life to which Brand and Wissen [17] refer as the imperial mode of living. Furthermore, the success of existing green economy transformative strategies has so far been very limited [22]. Additionally, a reconciliation of the current growth-driven economic system with environmental challenges seems unlikely as there is no evidence for absolute de-coupling of economic growth from CO<sub>2</sub> emission and resource use [1,18]. Issues like land grabbing [27] and strategies of resource extractivism [28] in the Global South and thus global injustices are not taken into account.

These shortcomings are taken up by the degrowth paradigm, drawing into question the primacy of economic growth for indicating prosperity and quality of life and thus for policy making. Further, it is argued that market mechanisms are inadequate in addressing social and environmental issues [1]. Consequently, Raworth [29] argues that sustainable and inclusive economic activity has to take place

in a space confined by social foundations and ecological limits. Similarly, Büchs and Koch [18] argue for a new, sustainable concept of welfare “oriented towards the satisfaction of human needs within ecological limits, from intergenerational and global (intra-generational) perspectives” [18], while others explore visions of a “good life beyond growth” [30]. As Kallis [31] points out, degrowth is “a multifaceted political project that aspires to mobilize support for a change of direction, at the macro-level of economic and political institutions, and at the micro-level of personal values and aspirations. Income and material comfort are to be reduced for many along the way, but the goal is that this is not experienced as welfare loss”. As such it comprises the academic field as well as civil society, attributing much importance to social movements as agents of change [1]. As of now, the degrowth paradigm is only being considered by a limited number of academics and has not been adopted in any significant official government programs or policy proposals. However, efforts are being made to change this. An example is the “Wellbeing Economic Governments” (WEGo) initiative launched in 2018 by Scotland, New Zealand and Iceland. The network includes representatives of governments and is advised by academics as well as the OECD. It promotes the sharing of ideas, expertise and best practices in designing an economy that puts the goal of enhancing ecological and social wellbeing above that of GDP growth. The WEGo initiative is supported by the Wellbeing Economy Alliance (WEAll), bringing together existing networks of citizens, academics, and businesses [32,33].

Since the basic theoretical assumptions of the green economy paradigm are drawn into question, it is remarkable that this does not necessarily hold true for the conception of work. Accordingly, even within the degrowth discourse there exists a tendency to address work primarily in its quantitative aspects as gainful employment. Accordingly, there is much debate on the reduction of working hours [10,13] as well as minimum and maximum income [34], while broader concepts of work and issues around the quality of work are less prevalent. This weakness within the degrowth literature was reflected in an expert interview with a member of the degrowth movement. We were told that the focus within degrowth is put on questioning the concept of gainful employment as such and the centrality it takes within our society. Correspondingly, work is central to degrowth in so far as it moves the focus away from the critique of consumption and towards a critique of extraction, production and (gainful) work as the principal ways of environmental degradation. Reducing work in environmentally unsustainable sectors like flight traffic would then directly lead to fewer possibilities of travelling by plane for the consumers. This way transformative and environmental aspects of work are given primacy over aspects relating to the individual wellbeing of the worker like the quality of work, and questions of what it means to lose or have to change one’s job. However, the idea that the realities of work will change drastically in the face of radical legislative answers to climate issues is put forth even by the Austrian Public Employment Service (AMS) [35].

The fact that a neoclassic notion of work persists even in degrowth discourses might be an indicator of the hegemony of the green economy paradigm. In order to draw this narrow quantitative conception of work into question and explore the potential of putting the quality of work not only back into the picture, but at the very heart of the concept of socio-ecological transformation, it is necessary to explore what the prevailing narrative of work is based on.

In orthodox neoclassic economics human activity is split into two opposing uses of time: work and leisure. People are assumed to choose the combination of work hours and leisure which maximizes their utility. This is done on the labor market. An essential analytical element here is the “disutility theory of labor” which states that labor will be provided by workers as long as the marginal utility from income equals the marginal disutility of effort. Consequently, work is assumed to necessarily lead to a loss of wellbeing, while increased amounts of leisure time lead to an increase in wellbeing. The incentive for paid work is thus entirely attributed to its ability to buy commodities [36].

Not only does this view neglect feminist criticism and thus veils the fact that our society is dependent on unpaid work still largely carried out by women [2], it also neglects the fact that labor power is not a homogenous good and workers are interested in more than just the money they earn. Rather, paid work is an important part of, and inseparable from, personal identity and as

such can provide a sense of meaning. A study on life quality and time use in Vienna [37] showed, for example, that people would prefer a 20-hour week if they could still afford life, irrespective of their job. Consequently, moral, political and social attitudes have to be met at least to some extent in order to avoid deprivation and alienation [36]. We thus argue that it would be beneficial for the degrowth debate to fully move beyond the theory of the disutility of labor narrative and provide a strong alternative conceptualization of work.

### 3. Materials and Methods

The research for this paper was conducted as part of the project Transformation of Cities into a Low Carbon Future and its Impact on Urban Metabolism, Environment, and Society (TransLoC), funded by the Vienna Science and Technology Fund (WWTF) through project ESR17-067. Our focus is on the quantitative and qualitative effects of the SCWR on work within the three sectors which are primarily responsible for CO<sub>2</sub>-emissions in Vienna. The transport sector is the most important cause of greenhouse gas emissions (2016: 39% in Vienna, 28.8% throughout Austria, according to the Federal Environment Agency [38], followed by the energy sector with 24% and construction sector with 18% in Vienna in 2016 [39]. This is in line with the first three transformative action fields of urban development as identified by the German Advisory Council on Global Change (WBGU), suspecting them to have the greatest potential leverage effects for a successful urban transformation towards sustainability, namely (1) Decarbonization, energy, and mitigation of climate change; (2) Mobility and transport; (3) Urban form (including provision of buildings and spatial structures to create urban quality of life, e.g., easily accessible, safe spaces with niches for different user groups) [40].

In calculating the regional CO<sub>2</sub> emissions as well as their sectoral breakdown, results vary widely depending on the assumptions made. Similarly, the quantification of employment by sector is a major challenge. The difficulty in allocating employees to sectors is, on the one hand, due to the different measurement bases and definitions of available statistics as well as historical changes in classification systems; and on the other hand, due to the complex and wide-ranging interconnections of a large number of upstream and downstream areas. We approached this issue by using the traditional sectoral classification of the national system of economic activity (ÖNACE) but additionally took into account the peculiarities of the city of Vienna and consulted experts from the municipal statistics agency as well as scientists in the special fields in order to arrive at a sectoral delimitation in a broader sense. Currently 5.7% of all employees in Vienna work in the transport sector, 5.5% in the construction and 1.6% in the energy sector. As we were also interested in qualitative aspects of employment, we combined different qualitative and quantitative research methods by means of methodological triangulation.

In the context of the lack of empirical data on the different dimensions of the quality of work within the three sectors in Vienna, the empirical part of this paper (workshops and expert interviews) is particularly important. The explorative and open evaluation method provides relevant insights on how the respective experts perceive the impact of the SCWR on the quality of work within the context of the expected effects of current mega trends and to which concept of socio-ecological transformation they relate. One of our main research questions was how the experts expect the SCWR to impact quality of work and how they perceive the relation between environmental issues and quality of work in general.

A qualitative approach was chosen in order to determine the stakeholder' assessments of the strategy as well as the correlation between the SCWR and the quality of work. In preparation, secondary data analysis and evaluation of documents and academic literature as well as discussions with researchers from partner scientific institutions were carried out. Subsequently, two workshops and numerous individual interviews with a wide range of stakeholders—scientists, representatives of municipal authorities in Vienna, of the unions, of workers' and economic associations, of urban infrastructure institutions, of the municipal statistic association, municipal undertakings, construction companies, an urban transformation think tank, engineers, etc.—were conducted.



The model of theory-generating expert interviews—which aims to make connections visible and to develop theories in an analytical and interpretative examination of the empirical material and which follows the methodology of Grounded Theory in this respect [41]—was used, which is characterized by a semi-structured interview guideline. The interview partners were selected systematically, based on the method of Theoretical Sampling.

The selection of data sources against the background of theoretical considerations is characteristic of the “Theoretical Sampling” method developed by Glaser and Strauss as part of the Grounded Theory. A pre-determined selection is omitted, instead data collection, analysis, development of the theory and further selection are carried out simultaneously and alternately. The sample size cannot be defined in advance and it is “not about representativeness or a random sample, but about capturing all empirical variants and characteristics of a certain phenomenon” [41]. We used this inductive process, which is particularly suitable when the object which is examined is “complex, confusing, partially or completely unknown” [42] to analyze the transcripts of the interviews and workshops and the central statements were developed into overarching concepts.

Even if the number of interviews was limited by the project’s capacities, we arrived at a high theoretical saturation of the concepts (i.e., subsequent interviews did not contribute new theoretical aspects). This being said, further analysis of stakeholders who did not agree to participate in interviews and comparison with similar policy documents could bring additional insights. Additionally, taking into account the specificity of the Viennese, results cannot be transferred to other contexts easily.

## 4. Results

### 4.1. *The Smart City Vienna Framework Strategy*

#### 4.1.1. First Version

The first version of the SCWR remains tightly embedded within the green economy paradigm. There is consistent emphasis on the need to reduce resource use and the potential of technological innovations in the envisioned transformation processes. The growth paradigm is at no point drawn into question. Rather in the vision statement of the strategy paper it is stressed that Vienna’s wealth “is built upon a strong economy, based on the performance of producers and workers” [5]. Accordingly, potential conflicts between economic growth- and work-related issues are not addressed, but rather it is stressed that “the wide use of the most modern information- and communication technologies opens up a diverse working world, which responds to manifold interests of women and men and leads to a sufficient number of jobs that are designed in a way allowing for the compatibility of work and family” [5].

In this version of the SCWR the (very broad) key goals of resource preservation, high quality of life achieved through innovation are envisioned until 2050 and it is aimed to lay out the principal approaches to attain them [5]. These goals are specified and broken down into more concrete objectives. The goal resource preservation, for example, is stated as “the aim of reducing the per capita greenhouse gas emissions in Vienna 35% by 2030 and by 80% by 2050 (compared to 1990)” [5]. This is to be achieved within the target areas of efficient energy use and renewable energy sources, resource-conserving mobility, buildings: built environment and new structures, as well as infrastructure and information and communication technology. Very broad suggestions are given on how to attain this level of reduction in greenhouse gas emissions within each of these areas.

In the case of mobility this is for example: “Strengthening of CO<sub>2</sub>-free modes (walking and cycling), maintenance of the high share of public transport and decrease of motorised individual traffic (MIT) in the city to 20% by 2025, to 15% by 2030, and to markedly less than 15% by 2050” or “By 2030, the largest possible share of MIT is to be shifted to public transport and non-motorised types of traffic or should make use of new propulsion technologies” [5]. Occasionally these are illustrated through examples of existing projects, but no concrete measures to achieve these goals or audit processes are suggested.

The concrete objectives of the key goals innovation (“In 2050, Vienna is an innovation leader due to top-end research, a strong economy and education” [5]) and high quality of life (“Vienna maintains its quality of life at the current superlative level and continues to focus on social inclusion in its policy design: as a result, Vienna in 2050 is the city with the highest quality of life and life satisfaction in Europe” [5]) are even less concrete. Even more remarkable, however, is that while the first version of the framework strategy as a whole combines measures directed at both social and environmental issues, it treats them under separate sub-sections. As such it can merely be considered a socio-ecological policy.

This also holds true for the discussion of work. Overall work only plays a marginal role in the first version of the SCWR. It is only very briefly mentioned once more under quality of life where “taking an active part in the working world or performed work has to be remunerated adequately and enable a satisfaction of fundamental needs” [5] is mentioned as a measure within the target area of social inclusion. Hence, a very narrow conception of work as only referring to paid employment is applied, while issues of unpaid work are not raised. While in the vision statement of the strategy it is implied that a “diverse working world” responding to the “interests of women and men” is desirable, the only measure explicitly featuring work, clearly relates to the disutility of labor theory according to which the only benefits for workers are derived from their wages. In this version of the strategy paper, quality of work is nowhere mentioned explicitly, and reference is made only to its income and family compatibility dimension, and very indirectly to the importance of work. However, it remains unclear what this means in practice or what measures there could be taken to achieve these goals. The failure to address social and environmental issues through integrated socio-ecological policies, rather than separately as well as the marginal role attributed to work, and in particular the quality of work reflects that the strategy paper is embedded within the green economy narrative.

#### 4.1.2. Second Version

The revised version of the SCWR deals with some of these issues. While there is still a strong focus on technological innovation and a strong economy in combating environmental problems, environmental issues are foregrounded more. However, in this version of the strategy, target areas are no longer assigned to one of the three dimensions of resource preservation, high quality of life and innovation. Rather every target area now combines all three of these principles. This bears potential to formulate socio-ecological policy measures. Additionally, it is interesting that some of the goals stated in the previous version of the strategy are reformulated in the second version. The aim of “reducing the per capita greenhouse gas emissions in Vienna 35% by 2030 and by 80% by 2050 (compared to 1990)” [5] reads in the second version “Vienna reduces local per capita greenhouse gas emissions by 50% until 2030 and by 85% until 2050 compared to 2005” [6]. While the relative reduction goal seems to be more ambitious on first glance, the adjustment of the reference year would make it less ambitious in absolute terms. At the very least this casts poor light on the environmental ambitions of the authors of the SCWR.

Another novelty in the second version of the paper is that all target areas are aligned and linked with the SDGs. This increases the focus on the environment. However, as mentioned above, the SDGs stem from a green economy discourse themselves. Thus, while the quality of work is explicitly mentioned in this version of the SCWR, corresponding to the SDG of “decent work and economic growth”, it is so under the target area “economy and work”. Accordingly, the productivity of the city’s economy is still seen as “the bases for prosperity, resource efficiency and competitiveness”, where “a high productivity of work enables to finance higher wages and thereby material wellbeing” [6]. Nevertheless, it is surprising that there is also a goal formulated that makes explicit reference to the quality of work: “Income and job satisfaction of the people of Vienna increase continuously, while social inequality decreases” [6]. Further, it is elaborated that “The possibility to take an active part in the labor market is a decisive factor for high quality of life. In a growing city there have to be enough jobs for everyone that adhere to the criteria of “good work”: non-temporary, compensated to the extent that (it) secures one’s livelihood, consisting of a self-chosen volume (e.g., halftime/fulltime, adequate models of

parental leave, etc.) and corresponding to collectively agreed regulations” [6]. Further, subjective job satisfaction is to be raised and access to the labor market should be non-discriminatory, career chances and income the same for men and women and educational chances appropriate for the demands of the labor market [6]. Here, with the exception of the dimension dealing with health-related issues, all dimensions of quality of work are touched upon. Even more remarkable is the fact, that—as the importance of the possibility to participate in the labor market for quality of life is stressed—this version of the SCWR clearly breaks with the disutility of labor theory. However, while there is a connection made between economic and social goals, no similar connection is made with environmental goals. Bringing in the potential of environmental values as providing meaning for environmentally beneficial work could not only constitute a more concrete measure on how to increase subjective job satisfaction, it could also be a truly eco-social policy.

That this connection is not made is partly due to the strong emphasis put on the economy and the associated priority given to the integration of social with economic over ecological goals. The fact that both versions of the SCWR remain firmly within the green economy paradigm contains several additional issues. On the one hand, potential goal conflicts between economic, environmental and social issues are not addressed. This results in very broad and blurry goals that are not followed up by concrete and binding policies. This is expressed in the preface of the 2014 version of the strategy paper, where it is stated that the “concrete way is in many regards yet to be developed: the goal, however, is clear: Vienna wants to reduce its use of resources. At the same time the city has to continue to provide the highest quality of life and security for all citizens” [5]. Furthermore—and this might be even more telling—experts within the construction industry, including a representative of a big construction company in Vienna, expressed almost unanimously the wish for environmental goals to be followed up by binding political measures, as the construction industry is perceived as rather passive and hostile towards innovation due to strong cost reduction pressures. A representative of the Chamber of Labor criticized (within the context of an expert interview) the lack of clear objectives, measures and timeframes as well as the drafting process of the strategy itself. The first version of the SCWR is seen as a paper written entirely by bureaucrats without any involvement of experts or political actors. The social partners were involved in the revision process only via topic-centered workshops from which they could only choose one. There was no transparency on how the topics were defined or what was done with the results.

## 4.2. Stakeholders' Perceptions

### 4.2.1. The Green Economy Paradigm

In the workshops and interviews conducted, all stakeholders expressed high awareness of environmental issues. However, with the exception of some progressive members of the unions and the Chamber of Labor as well as some researchers, the stakeholders widely framed their concerns within the green economy paradigm. While economic growth as a primary goal of policy making was not drawn into question, opinions on how much the state should intervene in order to achieve sustainability varied. A representative of the Austrian Federal Economic Chamber (WKO) stated that the state should keep intervention to a minimum as the market would bring forth solutions to ecological problems by itself as soon as there was enough demand for it within society. Hence, state activity should focus on guaranteeing unrestricted competition and on reimbursing businesses for potential losses related to environmental policies. While this position might not be surprising from a representative of business interests, a similar view was expressed by a representative of the city in regard to sustainability policies within the transport sector.

### 4.2.2. Quality of Work and the Environment

This resulted in the majority of stakeholders applying a very narrow conception of work, conceiving it strictly in terms of (paid) employment. Issues of quality of work were hardly addressed and if so,

it was mostly done in quantitative terms, like income levels and working time. It is thus not surprising that in accordance with the disutility of labor theory hardly any reference was made to work as a source of meaning. A notable exception here were progressive unionists and academics.

When we asked explicitly for potential connections between quality of work and the environment, reference was often made to improvements of general working conditions. A high-level employee of the Viennese public transport company Wiener Linien told us, for example, that through the ban of poisonous material the health of the employees improved. There was also an awareness that stronger environmental regulation in combination with digitalization could lead to a change in the job market, with businesses demanding different qualifications from employees. The same employee of the Wiener Linien told us that many more low-skill and high-skill jobs would be needed in the future, but fewer jobs in-between. He did not see this as a problem as he did not assume low-skill jobs without much inherent meaning to necessarily reflect negatively on subjective job satisfaction. This is in line with the neoclassic narrative, which does not consider work as a potential source of meaning. A representative of the work council of a company producing motors and transmissions told us that the meaningfulness of work was of great importance, but that through digitalization tasks became more and more repetitive and meaningless. Interestingly, she did not see jobs within the company threatened through environmental legislation. While educational opportunities were frequently raised, this was done primarily in relation to training one's skills to secure employability in the face of a changing labor market, whereas the question of the consequences of such changes for the employees was not raised. A representative of the work council of the Viennese public energy company Wien Energie told us that working conditions within the traditional energy sector—and in the city-owned company in particular—were very good, as the energy sector is characterized by a high degree of organization, good collective agreements and big public enterprises that generally favor good working conditions. With the rise of the renewable energy sector characterized by small businesses and a relatively low degree of workers organization, the question arises what consequences this will entail for workers.

#### 4.2.3. Measurement Problems

There was a lack of agreement on how to measure local sustainability and hence how to target it. In the transport workshop the question was raised of how to include Vienna's hinterland and product supply-changes in sustainability discussions as associated traffic reaches beyond city boundaries. In this regard, the accuracy of job-related statistics was drawn into question, as there is frequently a gap between the location at which people are registered to work and the location at which they actually work. Big supermarket-chains, for example, have their headquarters often in the hinterlands but supply Vienna, making it hard to attribute jobs to a specific location. The idea of focusing on services rather than production or to convert jobs into CO<sub>2</sub> equivalents was also raised. However, there was no agreement on measurements. In the expert workshop on construction, similar issues were raised. Developments in the city of Vienna thus also concern suppliers in the hinterlands or other countries and vice versa. This made it difficult to find common ground for a discussion on potential impacts of environmental regulation.

#### 4.2.4. The SCWR as an Eco-Social Policy

Most stakeholders did not conceive of any part of the SCWR as connected to quality of work. Representatives from the unions were the notable exception in this regard. This is not surprising since "decent work" is a concept put forth mainly by unions. Correspondingly, an expert from the Chamber of Labor (AK) expressed that such a connection could be of benefit to both employers and employees since it would make jobs more attractive. This is especially true for jobs within public transport, such as subway driving jobs, which are highly monotonous and therefore face high turnover. He pointed out that a similar strategy is already successfully applied by the Swiss railway and Vienna's garbage disposal company. As it is mainly the AK and unions that see a connection between environmental issues and the quality of work, whether the concept of decent work can be put on the political agenda

as part of an eco-social policy will at least partly depend on their political strength. However, they have been increasingly in the defense due to a decrease in members, newly emerging branches not covered by collective agreements (such as renewable energy) and the shift in Austria to a right-wing government in 2017.

#### 4.2.5. Measures Put Forth in the SCWR

All in all, stakeholders seemed to be pessimistic about the question of whether the goals of the SCWR will be reached. In the transport sector, some stakeholders pointed out that the modal split in Vienna has recently even developed in the wrong direction, as the maximum of public transport and bike use seems to be reached in the inner districts and infrastructures for cars are too tightly rooted in the outer districts. A representative of the Viennese mobility agency expressed concerns for the strength of the automobility lobby in the political arena. Accordingly, bike lanes are often not built if their construction would cause a loss of parking spaces. The respective stakeholders had diverging views on the measures put forth by the SCWR, seemingly reflecting a varying degree to which they were rooted within the green economy paradigm. Accordingly, a representative of the WKO told us that rules should generally be substituted by positive sanctions and reward-systems as this makes economic activity, as well as adherence to environmental principles, more attractive. On the other hand, a representative of the AK criticized that the measures put forth by the SCWR are merely directed at fighting symptoms. In relation to work, the representative thought that changing the structure of work arrangements and transport structures should be talked about, such as shifting or avoiding traffic. In the construction sector, on the other hand, there was an almost unanimous wish for stricter environmental regulation. Another member of the AK even referred to the SCWR as a marketing strategy designed without any serious involvement of politicians, social partners or experts and thus lacking any concrete goals. This is in line with our analysis of the SCWR and stems at least partly from the strategy paper's embeddedness in the green economy paradigm.

## 5. Discussion

Our results show that sustainability has made it from the margins of the political discourse to its very core. The SCWR commits itself to making the city of Vienna more sustainable. Likewise, stakeholders from the highest CO<sub>2</sub>-emitting sectors in Vienna showed a high awareness of environmental issues as well as of the importance of including them in political strategies. However, there is a big gap between the political sustainability discourse and its concrete implementation into practice.

The SCWR is being promoted as an ambitious and holistic strategy paper, which gives priority to environmental and social issues. A press release of the updated version of the SCWR from 26th June 2019 reads: "In the Smart City Vienna Framework Strategy, Vienna sets its goals for a sustainable development until 2050. The strategy paper cuts across topics in order to answer current global challenges, which can be done only in a comprehensive and holistic way. Emphasis is put on climate protection, digitalization, participation and social inclusion" [43]. Accordingly, the SCWR is presented as an ambitious eco-social policy. However, while the second version of the strategy paper takes into account many of the shortcomings of the first version, it remains rooted in the green economy paradigm and does not address potential goal conflicts between economic, social and environmental issues. As a result, priority is given to economic and social concerns, the goals put forth remain abstract, and no concrete policy measures or auditing procedures are suggested. The alignment of the SCWR's goals with the SDGs is a positive improvement but it is done only selectively. Further, it needs to be considered that the SDGs are themselves stemming from a green economy discourse.

These shortcomings become obvious with regard to work, which the SCWR thus discusses under the same heading and in relation to the economy. Despite the fact that the strategy explicitly addresses quality of work in almost all of its dimensions, it fails to connect it with environmental issues or values. This can be seen as a missed opportunity for the SCWR to meet its own claims of putting forth truly holistic policy measures.

With regard to the first set of research questions posed in the introduction, it can thus be said that the SCWR does not live up to its potential for serving as an eco-social policy. In this context, the question also arises of how serious policy-makers are in their ambition to design a “comprehensive and holistic” strategy for the city of Vienna for a sustainable transition. This impression is enhanced by the reformulation of goals, making them appear more ambitious than they are. Policy-makers are well advised to address these shortcomings if the SCWR is to become more than a marketing paper.

This gap between theory and practice was mirrored in the expert workshops and interviews. While environmental issues were seen as being of highest importance and while stakeholders from the construction sector even called for stricter environmental regulation, concrete suggestions on how such policies could look like were rarely made. Work was primarily discussed in its quantitative aspects and issues of quality of work were hardly raised. The connection between issues concerning the environment and those concerning work was only made by academics, representatives of the Chamber of Labor (AK) and some unionists. Representatives of businesses and the Austrian Federal Economic Chamber (WKO) were only aware of such a connection in terms of a changing work environment and associated problems of a shortage in skilled labor and market competition. Consequently, the SCWR was by no means perceived as an eco-social policy, and participants had trouble thinking of potential impacts the SCWR could have on the quality of work even if explicitly asked. Both positions are—from the stakeholders’ perspectives—inherent to their respective position within the current economic system. Thus, in order to promote a connection between environmental issues and quality of work, it has to be put in relation to the respective logics.

A similar tendency became apparent in how the respective experts assessed the SCWR. With the exception of some progressive representatives of unions and the AK as well as a representative of the Viennese mobility agency, all experts related their arguments to the green economy paradigm. Further, almost all experts seemed doubtful that the goals of the SCWR will be reached. However, how its measures were evaluated depended on the degree to which the respective experts were embedded within the green economy paradigm. Stakeholders favoring market mechanisms were more concerned with being subjected to too many regulations and market distortions, while those giving priority to environmental over economic goals viewed them as too broad and not far-reaching enough. With regard to our second set of research questions, it can thus be said that the majority of stakeholders do not perceive the SCWR as an eco-social policy and do not see any implications of the paper for issues of quality of work. At the same time, they voiced other issues associated with the strategy.

Consequently, a representative of the AK criticized the lack of involvement of social partners. In order to create concrete eco-social policy measures, the city of Vienna would be well advised to make the development process more transparent and involve the social partners more substantially. In this regard, it remains to be seen what effects the recent change in Austria’s federal government, where the Green Party has replaced the right-wing populist Freedom Party (FPÖ) in the coalition government with the Christian-democratic Austrian People’s Party (ÖVP), will have. If this change results in a less restrictive treatment of the social partnership, there might open up room for more progressive politics.

Another issue the SCWR faces is related to the lack of data. The expert workshops portrayed a lack of agreement on how to operationalize issues of sustainability on a local level and how to define which jobs are impacted by different policies targeting activity in respective economic sectors. This mirrored the problems we encountered in trying to attribute jobs to the respective CO<sub>2</sub>-emitting economic sector and the general lack of comparable empirical data. The situation is even worse when it comes to the quality of work. As mentioned above, there is no universal definition or operationalization of the concept, and there is a lack of comparable empirical data. However, if one is to take the implementation of the SDGs and the formulation of comprehensive sustainability strategies seriously, there has to be a systematic collection of corresponding data. In order to develop concrete eco-social policy measures and to avert negative effects of a socio-economic transformation on the quality of (paid) work, policy makers need to know what kind of jobs are concerned and what steps need to be taken to ensure their quality.

The problems associated with the SCWR and voiced by different stakeholders could be counteracted by opening the discourse to ideas from the degrowth movement. For this to happen, however, the degrowth movement needs to offer a stronger alternative conceptualization of work and to explicitly connect issues of quality of work to environmental issues and values. This paper has aimed at offering some ideas about what this stronger conceptualization could look like.

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