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A literature review

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Keywords:

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Abstract:

This report is a literature review about sustainability and sustainable development in general and in an urban context. It focuses on theoretical issues and debates in scientific literature and aims at analyzing the different dimension of sustainability, namely social, ecological and economic sustainability. There are different conflicts between those dimensions of sustainability. Furthermore, there are different theoretical approaches to this topic. This report shows that much of the literature about economic and ecological sustainability does not involve critical and theoretical reflections of the term itself, but focus more on practical field-studies, like measurements of emissions or studies that promote initiatives of congestion charging. The critical discussions about the term sustainability and the theoretical aspects are often found in literature concerning social sustainability. However, there are some models and visions about the sustainable city, which give hope to bridging the gap between the three dimensions of sustainability.

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Preface

This report, produced within HASTA (Sustainable Attractive City), constitutes the basic elements for the continuing work with sustainable urban development and sustainable transportation. The aim of this report is to generate essential understanding of the terms sustainability and sustainable development in an urban context.

The framework project HASTA is carried out by Traffic and Roads, Department for Technology and Society at Lund University. Research within this framework focuses on the city and its qualities and problems. One basic quality is safety, but other important qualities are perceived safety and security, accessibility, comfort and environment. HASTA's vision for the sustainable and attractive city is a city that provides, within the frames of the society, its inhabitants' different and changing needs, without compromising future residents' needs. The societal frames are defined by ecological, social, and economic sustainability.

There are several ongoing HASTA related projects. This report is written for the project "Development of sustainability indicators, which aims at producing indicators for measuring sustainable urban development, with a focus on transportation. Two other research projects within HASTA are "Strategies for increased and safer walking and biking" and "The speed problem in Swedish municipalities".

HASTA is financed by The Swedish Governmental Agency for Innovation Systems (VINNOVA), the Swedish Association of local Authorities and Regions (SKL) and the Swedish Road Administration (Vägverkets Skyltfond).

This report is written by Till Koglin, with comments from András Várhelyi and Åse Svensson, all working at Traffic and Roads, Department for Technology and Society, Lund University.

Lund, May 2009

This report is written for the project HASTA (Sustainable Attractive City)



Sammanfattning

Denna rapport är en litteraturstudie om hållbarhet och hållbar utveckling, generellt och i en urban kontext. Studien fokuserar på teoretiska aspekter och debatter i den vetenskapliga litteraturen och analyserar de olika dimensionerna av hållbarhet, nämligen social, ekologisk och ekonomisk hållbarhet. När det gäller hållbar utveckling finns det konflikter mellan de tre olika dimensionerna. Vidare finns det olika teoretiska angreppssätt för att hantera hållbarhet och hållbar utveckling i praktiken. Denna rapport visar diskussioner och olika teoretiska problem med hållbarhet och hållbar utveckling. Dessutom visar rapporten att mycket av litteraturen om ekologisk och ekonomisk hållbarhet inte involverar kritiska och teoretiska reflektioner om begreppet hållbar utveckling, utan fokuserar mer på praktiska fältstudier, så som mätningar av emissioner eller studier som stödjer införande av vägtullar. Istället finns dessa kritiska och teoretiska reflektioner i litteraturen om social hållbarhet.

Slutligen kan det slås fast att det finns olika modeller och visioner om den hållbara staden som förknippar de tre olika dimensionerna med varandra, men det finns behov av mer forskning. Denna rapport ger också slutsatser om hur olika problem och konflikter med begreppet kan hanteras i stadsplanering och vilken forskning som kan vara av intresse för framtiden.

Summary

This report is a literature review about sustainability and sustainable development in general and in an urban context. It focuses on theoretical issues and debates in scientific literature and aims at analyzing the different dimension of sustainability, namely social, ecological and economic sustainability. There are different conflicts between those three dimensions of sustainability. Furthermore, there are different theoretical approaches to this topic. This report shows the discussions and different theoretical issues of sustainability and sustainable development. Moreover, this report shows that much of the literature about economic and ecological sustainability does not involve critical and theoretical reflections of the term itself, but focus more on practical field-studies, like measurements of emissions or studies that promote initiatives of congestion charging. The critical discussions about the term sustainability and the theoretical aspects are often found in literature concerning social sustainability.

However, there are some models and visions about the sustainable city, which give hope to bridging the gap between the three dimensions of sustainability, but further research is needed. The report gives also some conclusions how to deal with those issues and conflicts in urban planning and what research could be of interest in the future.

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1 Introduction

Sustainability and sustainable development are two terms that are frequently used in academic articles and books, in research, in policy documents and in the daily press. Much has been written about the terms and the practical use of the concept of sustainable development. But as one goes more and more into the different discussions about sustainability and sustainable development it becomes clear that there are also contradictions and many different arguments about the use of the terms and how they can or should be applied in research and practical work or policy documents.

Due to the broad application of the terms it is of interest, when dealing with research about sustainability and sustainable development, to get a deeper understanding of what the terms mean and what complications and contradictions there are when dealing with those terms.

2 Aim

This literature review will focus not only on sustainability and sustainable development in general, but more specifically in an urban context. The urban context is also of special interest, because much of the practical work in sustainability is set in an urban context and done by urban politicians and planners. Today more than half of the earth's population is living in cities and urban regions and this will in the future, according to the United Nations, continue. Cities are growing, especially in the developing world, which makes sustainability and sustainable development even more interesting when those terms are put in an urban context (Banister 2005). This study is part of the work of the Swedish research group HASTA (sustainable and attractive city), and focus on Swedish conditions.

The aim of this literature search and review is to make an overview of how sustainability and sustainable development is defined today and what implications can be connected with sustainability generally and with urban planning more specifically and what the consequences are. The goal with this study is also to get an idea of the contradictions of the terms sustainability and sustainable development in scientific research. Furthermore, the aim is to highlight critical research and critical discussions about the oppositions of the terms sustainability and sustainable development. This study seeks to analyze the general aspects of sustainability and sustainable development, but also highlight the difference between mainstream forms of sustainability and sustainable development and critical discussions about the two terms, in order to give a complete picture of what sustainability and sustainable development is.

Important questions are:

- How is sustainability and sustainable development defined today?
- What are the controversies with the definitions and the use of the concept of sustainability and sustainable development in urban planning?

3 Method

The field of sustainability and sustainable development is very large today and there is a wide range of reports, articles and books. It is of course impossible to look through all of the literature. Therefore delimitations, exclusions and selections must be done. This work focuses mainly on an urban context in connection with sustainability and sustainable development. I tried to get a grip of the more important aspects of the sustainability literature, which include the critical discussions about the contradictions and the term itself and how sustainability and sustainable development is defined today. The literature search was carried out through a systematic search in the scientific search engine ELIN from Lund University and TRANSGUIDE, a search engine from VTI (the Swedish National Road and Transport Research Institute).

The keywords for the search in ELIN were Sustaina* AND Urban (3315 hits). Furthermore a search was carried out with the words Sustaina* AND Urban AND Social OR Econom* OR Ecolog* (3315 hits) and finally Sustaina* AND City OR Cities (61077 hits). In this search the number of hits was very large, therefore not all found articles could be analyzed. The articles that seem more theoretical and include more general discussions about sustainability and sustainable development in an urban context were selected.

For TRANSGUIDE the key words were mainly the same, Sustaina* AND Urban (0 hits), Sustaina* AND City Or Cities (130 hits), Sustaina* AND Social (0 hits), Sustaina AND Econom* (0 hits) and Sustaina* AND Ecolog* (0 hits), but in TRANSGUIDE were no hits for those key words. This systematic literature search was only one part. Much of the literature was also found in the references from articles and books, but also through personal contact with other researchers and earlier studies.

4 Sustainability and sustainable development

Today, sustainability and sustainable development play a major role in discussions, research and planning. Krueger and Gibbs say that:

“The discourse of sustainability is being more widely deployed as an urban and regional development strategy than ever before.” (Krueger and Gibbs 2007: 1)

However, the dominating position of the concept sustainability and sustainable development is not without criticism. Much has been written on sustainability since the term sustainable development was launched by IUCN, UNEP and WWF in 1980 in their report “World Conservation Strategy: Living Resource Conservation for Sustainable Development”. In 1981 Lester Brown took up the threat in his book “Building A Sustainable Society” where he describes several environmental problems and how we can solve them in order to create a more sustainable society (Brown 1981). But the term sustainable development became more common and a “bandwagon” for many western scientist and politicians with the report “Our common future” written by the World Commission on Environment and Development, also called the Brundtland Commission and published in 1987. In this report the commission states that:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development 1987: 43)

Zundeu (2005) defines sustainable development as “Current development should not harm the interests of future generations” (Zundeu 2005: 461), which comes very close to the definition of the Brundtland Commissions version of sustainable development.

Further the term sustainable development and sustainability implies today three different aspects or dimensions of sustainability, namely social, economic and ecological or environmental/ecological sustainability. Those dimensions are the basic element of sustainability and sustainable development (Munier 2005, Basiago 1999). It is also important to notice that sustainability sometimes can be seen as sustaining the present. That is not what sustainability is about and not what it should be about. Sustaining the current situation would mean that the destruction of the environment and inequalities should go on like they are (see Buckingham 2007).

The three aspects of sustainability are used in different ways. The most vital discussions about the terms sustainability and sustainable development and the theoretical use are most often carried out by critical scientists. They examine the relation between economic solutions and ecological and social problems. Much of the research in the economic and ecological field of sustainability is more “hands on” research with focus on the environmental problems and solutions to those problems.

4.1 Ecological Sustainability

Ecological sustainability, often also called environmental sustainability, in an urban context often means in-field measurements, for example of air pollution, like in the article “Life satisfaction and air quality in London” (2008) by MacKerron and Mourato, or, on a more regional level studies about the industrial metabolism, which means the material flows and transformations caused by different industries. In many articles the term environmental sustainability is not discussed, rather it is focused on direct environmental problems. Although the mentioned article about air quality in London connects ecological and economic measurements with social aspects, it has no theoretical discussion about ecological sustainability (MacKerron and Mourato 2008). Generally, ecological sustainability can be described as “Environmental protection” (Munier 2005: 10). As examples of ecological sustainable research can be mentioned the book “Old Sins - Industrial metabolism, heavy metal pollution, and environmental transition in central Europe” (2000) by Anderberg et al. which focuses on material flows of heavy industries and environmental destruction in central Europe. However, the term sustainable development is not theoretically analyzed and there is no discussion about sustainability as a concept, but rather a focus on real environmental problems (Anderberg et al. 2000).

Another example on ecological sustainability research is the article by Priewasser (1999) “Ecological sustainability and personal behavior: relations demonstrated by the decision-making process of selecting a certain transportation mean” which also has a connection to transportation. Priewasser examines different models for ecological-oriented traffic modes and different aspects for the car-use. Even though the article, as the book by Anderberg et al., has a theoretical frame, much builds on ecological or psychological theories on people’s choice of transport

mode and which mode is better for the environment, but there is no theoretical discussion about what ecological sustainability is (Priewasser 1999). The same conclusion can be drawn from other research works focusing on environmental problems and ecological sustainability such as the article “Global Change and the Ecology of Cities” (2008) by Grimm et al. where different environmental problems are analyzed in an urban context, but the term ecological sustainability is not further theoretically discussed (Grimm et al. 2008). One could therefore say that ecological sustainability builds on scientific evidence of environmental problems and the analysis of those problems (Ekins et al. 2008).

The article “Modelling the Carrying Capacity of Urban Ecosystem” (2008) by Xu et al, offers a more theoretical perspective on ecological sustainability. The authors explain ecological sustainability through the urban ecological system that connects social-economic-natural/ecological aspects to a complex system. It is this system that must be sustainable and in order to analyze that the authors use the concept of the carrying city, which for example means how much pollution a city can carry, to develop a theoretical model that can be used in analyzing urban ecological sustainability. This theory can be seen in connection with the utopian vision of the eco-city which connects all aspects of sustainable development (Xu et al. 2008).

Blewitt’s book “Understanding Sustainability” (2008) offers a general overview of sustainability and sustainable development and also over the ecological dimensions of those terms. First of all, Blewitt divides the actors who define sustainable development into four groups, namely Market liberals, Bio-environmentalists, Institutionalists and Social Greens. Those groups differ much in their opinions about how to act sustainable and what measurements should be taken in order to create a sustainable society or sustainable development (Blewitt 2008).

Blewitt defines deep and shallow approaches to ecological sustainability, which means that in different areas like pollution, resources and the like there can be actors defining solutions on a deep ecological scale or on a shallow one. This also means that there are not only ideological differences between the approaches in ecological sustainability but also practical differences when it comes to the point of how far we want to go in environmental protection. Those different groups act of course differently and they often oppose each other. The deeper approaches are often connected with the Social Green and Bio-Environmentalists groups, and they criticize not only the environmental destruction in the world, but also the economic system and globalization, which in their opinion is highly connected to environmental problems and ecological sustainability. It is also here we find more radical analyses about the state of the world. The analyses are, however, not limited to the effects of for example pollution on humans, but rather take the whole biosphere into account, which also means effects on animal-life, climate, the whole flora and fauna and the like. When it comes to the shallow approaches they can be connected to the Market-Liberals and Institutionalists groups, which promote stronger regulations to correct the free market, technological progress and more market oriented solutions to today’s ecological problems. Furthermore there are also theoretical approaches to ecological sustainability in form of Eco-feminism, Bio-regionalism and Social Ecology, which form the basis of the approaches of the social green and the bio-environmentalists. But they also criticize the deep ecological approaches for missing the link between social and ecological thinking. They see social aspects as the most important ones. Moreover a focus on only ecology is not the solution because the environmental problems can only be solved together with social problems. In Blewitt’s book one can find a theoretical discussion about ecological sustainability that also connects it with economic and social sustainability in different ways (Blewitt 2008).

To conclude on the ecological dimension of sustainability, it became clear that there are different approaches and many different practical solutions proposed in different articles when it comes to ecological sustainable development. Only a few authors have theoretical discussions in their work about the term ecological sustainability. Furthermore there are many different views of what ecological sustainability is. This contributes to the different interpretations of sustainability and sustainable development.

4.2 Economic Sustainability

The literature about economic sustainable development is in the theoretical dimension similar to the literature about ecological sustainable development, which means more “hands on” concepts that build on development theory and theories from economics that show how cities, regions or states can create sustainable economic development and economic progress. But the difference between ecological and economic sustainability is that the theoretical approaches in economic sustainability are grounded on more general theoretical models and views than ecological sustainability. The term economic sustainability can be defined as economic growth and economic progress, although as Munier (2005) says

“Economic growth does not necessarily mean a better living...” (Munier 2005: 17)

What Munier further means is that economic sustainable development is growth that puts the profit into action in order to create a more sustainable society, such as higher wages, ecological modernization, more effective technologies and so on. But the economic growth or progress must be sustainable also for future generations, so that also those generations can have work and economic progress (Munier 2005, Ekins et al. 2008). That means that natural capital, which cannot be replaced by human-made capital should be preserved also for future generations. It is also important to mention that economic progress is important for questions of welfare and therefore also for social sustainability. The economic aspects are often analyzed with theories from classical economics and much builds on the development of new technologies which still continue to generate economic growth and progress, but with less effect on the environment and the earth’s eco-systems. One could therefore say that this economic dimension often has a technocratic approach to environmental problems (Blewitt 2008). What economic sustainability also means is growth in productivity and economic development. This should finally lead to the so called Trickle Down effect, which means that in the end even the poorer parts of the society, will gain from economic growth, through for example the creation of jobs and more taxes for welfare.

Economic sustainable development means also that not only monetary capital must be considered but also natural and social. This theoretical framework comes from development theory in economics, which is also why solutions are often seen in more market and the problems often seen as market failures (Basiago 1999). There are theoretical models that try to combine the different aspects of sustainability, from an economic point of view. One of those models is the four-capital-model, which helps to evaluate if regions or cities develop in a sustainable way. This model comes from economics and builds on social, manufactured, human and natural capital. The analysis builds on the flows of benefits, which are generated by the different capitals (Ekins et al. 2008). This means in connection to sustainable development:

“Meeting human needs and increasing quality of life (through consumption, satisfying work, good health, rewarding personal relationships and well functioning social institutions, and the full range of environmental goods and services) may be regarded as resulting from the flows delivered by the capital stocks. Doing so sustainably requires that these capital stocks are maintained or increased over time.” (Ekins et al. 2008: 66)

In conclusions one could say that economic sustainability sees the solutions of the earth’s problems (both social and ecological) in the market, which generate both competition and trickle down effects. The research in this field is also, like in ecological sustainability, more about practical aspects, but it has often theoretical discussions drawing on economic and development theory.

4.3 Social Sustainability

Social sustainability is less represented in the hands-on literature about sustainable development, but more frequent in vital discussions about social problems in general, in urban and regional contexts and in theoretical/ideological perspectives. The literature about the other two perspectives/dimensions of sustainability is more practical and less critical about the development of societies. Furthermore the other two dimensions of sustainability are also more policy oriented. Here researchers focus more on solutions and measurements than on critical investigations about the state of the systems we all live in. Social sustainability is often related to problems such as poverty, social exclusion, unemployment (although this has also to do with economic sustainability), inequalities and the like for present, but also for future generations (Ekins et al. 2008, Partridge 2005). Social sustainability can, on a general or basic level, also be seen as:

“...a system of social organization that alleviates poverty.” But

“In a more fundamental sense, however, ‘social sustainability’ establishes the nexus between social conditions (such as poverty) and environmental decay...” (Basiago 1999: 152)

In a broader sense social sustainability is also a reaction against the economic dominance in the sustainability discourse and furthermore, in an international perspective, as Blewitt puts it:

“...the absence of war, serious civic violence and state oppression of citizens which destroy community and undermines a people’s sense of hope and meaning.” (Blewitt 2008: 21)

It is also about reducing poverty and creating dialogues between people and between people and policy makers. In short it is about the disempowerment of people, which means that people have less power to decide over their own situation (Blewitt 2008). This can also be seen as an overall aspect of sustainability and sustainable development in general, because in the end a sustainable society cannot be without the involvement of the people and without people’s understanding of the different issues of sustainability and sustainable development (Bell and Morse 2006). But there are little scientific models and conceptual frameworks for analyzing social sustainability. Much is developed by policy makers, such as the public services and so forth (Partridge 2005).

What is important when it comes to social sustainability is that there is a difference between social sustainability and social sustainable development. Sustainable development is highly connected to economic growth/development, but sustainability takes away that focus and gives more room to the social aspects, like poverty, exclusion and so forth (Partridge 2005). In general Partridge argues that the social sustainability has been taken less into considerations by scientists and by policy makers than economic and ecological sustainability. Furthermore Partridge writes

“The conceptual framework for social sustainability is widely acknowledged as underdeveloped.” (Partridge 2005: 6)

There are not many concepts to handle social sustainability, although social problems are addressed in different social science disciplines, little has been connected to social sustainability. What has happened is that researchers in the sustainability field have not acknowledged the social dimensions, just like social scientists have not acknowledged the concept of sustainability in their work on social problems. This problem emerges also because there is a lack of understanding between social and natural scientists, but also between the social sciences. Nevertheless it seems that the overall goal for social sustainability is social justice in one way or the other. Aspects that seem important, too when one tries to define social sustainability and to develop models of social sustainability are quality of life and accessibility (Partridge 2005). One more general notion of what urban social sustainability is given by Chan and Lees in their article “Critical factors for improving social sustainability of urban renewal projects” about urban renewal projects (Chan and Lee 2008). In this article Chan and Lee connect social sustainability with urban design in an urban planning context. They define urban social sustainability very equal to Zundeau’s definition (Zundeau 2005):

“Social sustainability refers to maintenance and improvement of well-being of current and future generations” (Chan and Lee 2008: 245).

In conclusions one could say that there are different approaches to reach the goal of social justice and equity. Many authors mean that it is the economic system that prevents today’s societies of being just. Vital discussions about the sustainability discourse are going on in the social sciences with a focus on the injustice, equity and poverty.

5 Critical aspects of sustainability and sustainable development

The theoretical notions about sustainability can be seen as vague because they leave too much room for interpretation of what sustainability really is. The vagueness of the term sustainability leads also to further problems. It is hard to see what sustainable development really is. As Partridge (2005) argues:

“In fact ‘sustainability’ has become so widely adopted (and co-opted) by mainstream interests that it could be argued it has lost its ability to signify a more radical agenda. Angst over which the term is preferable will not prevent the chosen concept from being manipulated.” (Partridge 2005: 4)

Furthermore the term can be seen as consensus politics, which does not have any effect on the practical work. Sustainable development is good and needed. But by the consensus politics there can be an empowerment of already marginalized groups in the society and a control of development by elitist group, especially in urban planning and transportation planning. The definitions and interpretations of sustainability and sustainable development leave room for too many different concrete definitions and definitions so vague that the concept loses its connections to real problems (Jahnke and Nutzinger 2003).

Furthermore the strategies and promoting measures about sustainability are quite often focused on ecological and economical sustainability, where social sustainability and therefore social problems and inequalities are not mentioned frequently. Moreover there is also a problem of transferring sustainability from a global to local or urban scale. Zundeau writes:

“However, the question is knowing to what extent, and in particular below which spatial level, non-sustainability is justified in terms of the sustainable development of a larger territory” (Zundeau 2005: 461)

It is therefore not always easy to combine larger strategies for sustainable development on a national or maybe continental level with urban strategies. This is an interesting point made in a context where local actions are seen as a solution for global problems. Further Zundeau notes that sustainability on a more local scale most likely leads to social conflicts, in form of for example not in my backyard actions. Additionally there could be a range of problems that cannot be dealt with on urban or local levels, because it would be inefficient. In those cases national or international solutions and approaches are the ones one should seek (Zundeau 2005).

The inequality of today's society needs to be addressed. Sustainability includes also social justice, which is very important on a local, but also on a global scale. However sustainable development is set in the existing economic system, which promotes competition, also between cities and regions and which therefore makes it difficult for cities and urban regions to focus on social and environmental issues. This is in conflict with the different dimensions of sustainable development because it leads to inequality between different regions and also in a city itself. Zundeau concludes that with a question:

“... does sustainable development demand a change in an economic system or a change of that economic system?” (Zundeau 2005: 468)

With this question Zundeau is not alone. There are many other authors that conclude; in order to achieve a sustainable society we need a shift in the economic system – less market more state one could say (see for example Foster 2002).

5.1 The economic system and its effects on sustainability

The term sustainable development is strongly connected to western societies' economic thoughts and does, for example not take third world problems and the problems of marginalized groups into account. In order to criticize this, Baeten (2000) means that:

“Capitalism does not solve environmental contradictions but shifts them around the globe” (Baeten 2000: 71).

Western societies use sustainability to state that we are on a good way and the real issue is the environmental crises in the developing world. Therefore it can be concluded that the lack of social aspects, which are seen as one of the most important issues in the Brundtland report, marginalizes different groups in all societies. The focus on economic aspects and the trust in capitalism is also problematic in an urban context and, as Baeten shows, also in for example transportation planning, because it allows the neo-classical thoughts, which do not take social aspects into account to rule over marginalized groups (Baeten 2000).

The role of capitalism and ecological/environmental problems is also discussed in Foster’s book “Ecology against capitalism” (2002), where Foster argues that environmental problems cannot be solved with capitalistic measures and that we need a shift in the economic system to create a more just and environmental friendly society (Foster 2002). Basiago (1999) sees the holistic view of economics in the core of sustainable development. This means that economic growth should not harm the natural resources, but produce a stable economy where the natural resources can renew themselves (Basiago 1999). Furthermore, Basiago seems to have economic development and growth (for example job growth) as the basis for sustainable development. Later in his article he connects economic, social and ecological sustainability to urban planning (Basiago 1999). It is a good attempt, but the focus on economic sustainability can be criticized. It is namely precisely the focus on capitalist economic development that Foster criticizes in his book mentioned above. He sees the economic capitalist system as a problem and thinks that in today’s system a true sustainable society cannot exist (Foster 2002). In the capitalist system economic growth and the use of natural resources are the main aspects. This leads almost automatically to the destruction of the natural environment and to an unequal society. The economic system is not able to deal with the social and environmental problems of today’s society. Further Foster writes:

“Nature, meanwhile, is exploited absolutely, by a system that accords little or no direct value to natural reproduction. ... The living planet is dismembered, as land becomes real estate, forests become lumber, oceans become fisheries and sinks.” (Foster 2002: 55)

Foster also notes that:

“Profits, competition, ever increasing productivity, economic growth, inequalities in economic rewards, high levels of consumption, and an everyday life in which each individual is free to pursue his or her atomistic self-interest, oblivious to the needs of the larger social and natural communities, will remain the defining traits of a free-market system that is suddenly no longer in conflict with environmental requirements. This is the promise of the idea of “sustainable development” in its dominant formulation.” (Foster 2002: 55-56)

This can be seen as a rather harsh critique by Foster, but he also points out that this is critique against the dominant view of sustainable development, where it is seen that free-market solutions and more market liberalization will, in the end, lead to a better environment, which, historically, is proved to be wrong (Foster 2002). Foster writes also that the dominant view of sustainable development “should not be confused with the genuine sustainability, which would have to be concerned with the reproduction of entire ecosystems.” (Foster 2002:57)

Although Basiago later in his article mentions that the common definitions of sustainable development and sustainability ignores the market forces and the social problems that are behind today's environmental problems, he still finds the market solutions best and in general means that the market has to be modified in order to prevent environmental problems, which stands in contrast to the arguments by Foster that the economic system fails to acknowledge environmental and social problems and therefore needs to change (Basiago 1999, Foster 2002).

Another perspective of sustainable development is its connection of the concept to neo-liberalism, which occurred in the 1990s and in the beginning of the 21st century. The shift from a social and environmental centered concept to a more economic centered concept has in different ways to do with the emerging of neo-liberalism in a globalized economy. This can also be connected to the criticism mentioned by Foster and Beaten (see Foster 2002 and Beaten 2000). The connection can be made when looking at the fact that much of today's practice in sustainability focus on economic sustainability and on economic solutions. Instead of regulating and planning for a sustainable society the development in recent years has been towards deregulation, more market and more growth, which clearly stands in contradiction to the social and ecological aspects of sustainability and, if one thinks about the financial crises today, also in contradiction to economic sustainability. But the fact that many solutions for a more sustainable development are found in the market and economic solutions, means that sustainability has gone over to or has been incorporated into neo-liberalism. The movement of deregulation and more market is commonly known as neo-liberalism (Baeten 2008, Swyngedouw 2008). For a broader introduction to neo-liberalism one could read Saad-Filho and Johnston 2005 and Harvey 2006 and for an introduction to neo-liberalism and nature see McCarthy and Prudham 2004.

One of the major events where sustainability was turned into a neo-liberal project was the Rio earth summit conference 1992 where the local agenda 21 was created. This event shifted the discussions of sustainability from a critical analysis of the global capitalist system to local and urban development. Through that the way was open for a neo-liberal approach of sustainability. Urban renewal projects and local growth strategies were developed in order to support the capitalist market system and to reach the goal of economic sustainability. That has led to the fact that many governments are in favour of sustainable growth and capitalism, instead for a sustainable environment, which means environmental and social justice (Blewitt 2008, Keil 2007). Furthermore, in the Rio declaration it is partly promoted to modernize local environments in order to create a better environment. What is missed here is that:

“Globalized neo-liberal economics and free trade will destroy cultural and biological diversity, not conserve it. Pollution and other externalities are caused, not cured, by modernization and development...” (Blewitt 2008: 18)

The concept of sustainable development has many negative interpretations, but has also positive aspects, such as democratic reforms, social equity and so forth. But the broadness of the term makes it easy for neo-liberal thoughts to influence the discussions and above all the practical use of sustainable development. This has also to do with the fact that many governments were influenced by neo-liberalism during the last years and that of course affect also the work with sustainability and sustainable development. The fact that neo-liberalism has influenced decision makers at different levels has also lead to the dominance of economic solutions in the discourse of sustainable development (Raco 2005). As Gibbs and Krueger put it:

“As the ideology of neoliberalism continues to hold sway, economic decision making increasingly dominates the political agenda and thus maps directly onto the sustainability agenda. Because of this inescapable engagement with capitalist social relations, the true intent of “sustainable development policies” is frequently marginalized.” (Gibbs and Krueger 2007: 117)

In contrast to the notion above on how the global system no longer is criticized, stands the interpretation of sustainability as a concept “for people by people” and that it is therefore important to involve people on a local level to establish a common understanding of the environmental and social problems and to establish a democratic sustainable society. This goes in the direction of Baeten’s article where sustainable development is seen as an undemocratic concept (Bell and Morse 2006, Baeten 2000). Public participation is a significant instrument in this process. The people of cities should be involved in early stages to decide what they see as problems in the environment. By that a deeper understanding of the problems will be achieved and the process is more democratic than decisions by urban planners and politicians alone (Bell and Morse 2006).

5.2 Marginalized groups, gender and the democratic problems with sustainability

In his article Baeten (2000) argues that the complexity of transportation planning and the different conflicts are not acknowledged and covered up by the use of the term sustainable development. The decisions are made in a non-democratic way and therefore the needs of marginalized groups are ignored. The author exemplified his arguments with the construction of a new highway between two small towns in Belgium. The project Baeten uses to exemplify the problems of sustainable development, like in many other projects in urban planning and transportation planning, created conflicts between different groups of the society, in general those who are for and those who are against the project. But those conflicts are invisible in the discourse of sustainable development and in discussions about sustainable transportation-systems and transportation planning (Baeten 2000).

The different groups, like planners, politicians or policy-makers try to bring their own aspects into the definition of sustainable development. Further the different conflicts between the three dimensions of sustainable development are not part of the discussions. For example it can be economically very good to build the highway, but an ecological disaster. This leads to, also due to the vague definition in the first place, that almost all opinions can be classified as sustainable. Baeten illustrates that in the case of transportation planning, where the socio-political aspects are not included in the definitions and discussions of sustainable development, the marginalized groups are left out of the process. Further, this broad application of sustainable development and consensus politics can lead to a definition of transportation problems, which does not take social problems into account (Baeten 2000).

Sustainability and sustainable development also has a gender perspective in several ways. An important question here is what should be sustained. Sustainability and sustainable development should not mean sustaining today’s social hierarchies, but instead gender equality in societies today. The hierarchies in today’s societies cannot sustain as they are, because no gender equality is achieved so far. In other contexts, like ecosystems, it is logical to talk about sustain-

ing those, because here is something worth sustaining. This cannot be related to today's way of living, consuming, producing and organizing societies, which includes gender as well as the marginalization of different groups. Buckingham puts it like this in the book chapter "Micro-geographies and Microruptures – the Politics of Gender in Theory and Practice of Sustainability" (2007):

"...for one thing society definitely does not need is for gender relations to be sustained in the unequal forms in which they currently exist." (Buckingham 2007: 66)

The concept of sustainability can also be seen as a political concept, but the problem is that little research theorizes the power relations of the concept. This problem is also addressed, as mentioned above in Baeten's article (2000). Decision making is still the dominion of men and since much of the activities in the field of sustainability have to do with decision making, women are often marginalized and an understanding of gender concepts is often missing.

However, it is not only women who are marginalized. As Baeten shows in his article, the concept of sustainability also leads to the marginalization of the world's poor countries for example (Baeten 2000). The structures of decision making in urban planning and also in the environmental field consist of inequalities, which can be seen in the representation of different groups and women in planning professions, parliaments, businesses and even in environmental groups, especially when it comes to positions of decision making. What also is striking is the link between poverty, environmental injustice and gender (Buckingham 2007). That means women are often overrepresented in poor communities with poor environmental conditions. In general it can be said that 70 % of the world's poorest people are women (Bhatta 2001). Those conditions and power relations in many of today's societies are not worth sustaining and therefore can the concept of sustainability or sustainable development not be seen as the best starting point for handling gender issues in connection to environmental issues or in connection to power relations. Furthermore the social inequalities are an important part of environmental issues. Some suggestions for improving the environment create more gender inequalities and therefore do not take the social dimension into account. Gender issues are very important in order to decrease the social inequalities instead of increasing them (Buckingham 2007). From this discussion Buckingham draws the conclusion:

"...legislative and policy changes alone are insufficient to the task of forging an approach to intertwined environmental and social inequalities that will enable these to be readdressed." (Buckingham 2007: 90)

The same criticism is also addressed by the concept of "Eco-feminism". In this concept it is argued that deep-ecological approaches to sustainability and sustainable development have been blind to gender aspects and power relations in society. What is needed according to the concept of eco-feminism is not the general male-dominated, westernized thinking of sustainable development or deep-ecology, but the acknowledgment of the gender differences in today's societies. Humans are connected to nature and therefore the social aspects, such as gender, have to be recognized when dealing with sustainability and the environment. The focus only on environmental problems or economic growth without considering the experiences of women and without issuing gender differences is therefore highly problematic (Blewitt 2008, Nightingale 2006). As Blewitt puts it:

“In this way, eco-feminism should deny the nature-culture divide but retain the capacity to recognize differences between people, and between humans and the non-human world, while maintaining a respectful attitude to both.” (Blewitt 2008: 33)

Another aspect when analyzing the relationship between sustainable development and gender is that the focus within sustainable development often had been on growth in order to diminish poverty. But since the 1970s gender issues and inequalities in general have played a larger role in the discussion about poverty, environmental problems and development, especially when it comes to developing countries. During the 1980s and 1990s the United Nation developed the term “Sustainable Human Development” which includes gender issues and has a stronger focus on social aspects than only sustainable development. Gender issues play a major role in this, because women all over the world are overrepresented in poor areas, low-paid jobs and areas with poor environmental conditions. A lack of gender perspective in sustainable development, therefore, means that the problems cannot fully be understood and therefore also not be solved. Policies must consider gender issues in order to create a just and also a more environmental friendly society. This means also that women cannot be marginalized in decision making processes, which today in the sustainability discourse often is the case (Bhatta 2001, Baeten 2000 and Buckingham 2007).

It is also important to notice that it is difficult not only to define sustainability, but also unsustainability. Different groups have different meanings of what a sustainable city should look like and what unsustainable development is. This can be related to the production of nature and also to the production of urban nature. That means that nature and urban nature or landscape and the environment is imaginary. It is a production of people’s interpretations of what nature is and therefore also what kind of nature needs to be protected. Due to that it is almost impossible to reach a common understanding of sustainable development and sustainable cities, which include of course the protection of nature and the environment. This of course can also be connected, again, to the vague definition of sustainability in the first place. It can be summarized that there is no single nature and that this leads to further problems when one wants to create a sustainable environment, which always involves nature at some stage. The processes of defining nature, urban nature, sustainability and urban sustainability can be seen as struggles of power relations (Swyngedouw 2003, Swyngedouw 2007). As Swyngedouw puts it:

“All of these processes occur in the realm of power in which social actors strive to defend and create their own environments in a context of class, ethnic, racialised and/or gender conflicts and power struggle.” (Swyngedouw 2003: 900).

And he notes further that:

“From these perspectives, there is no such thing as an unsustainable city in general. Rather, there are a series of urban and environmental processes that negatively affect some social groups while benefiting others.” (Swyngedouw 2003: 901)

This shows that sustainable development has much to do with struggle over power in urban life. The discourses of sustainability and sustainable development create a post-political climate where consensus politics rules over conflicting discussions about how societies should develop. This can also be seen as post-democratic, because the decisions are often made by technocrats, elitist groups and undemocratic non-governmental-organizations (NGOs) and not by democratic elected parliaments or representatives of the public. The decisions of the urban future are

made in an entrepreneurial way that shows the shift in urban politics from government to governance (Harvey 1989). This implies that there is no room for alternative solutions or future urban images. The current hegemony of sustainable development set in the neo-liberal economic system cannot be questioned and that leads to the marginalization of groups who oppose the current situation and those who want a different future or a different nature. As Swyngedouw puts it:

“This form of ultra-politics pits those who ‘participate’ in the consensual order radically against those who are placed outside, like the sanspapiers or the marginalized.” (Swyngedouw 2008: 66)

Furthermore Swyngedouw writes:

“The post-political consensus, therefore, is one that is radically reactionary, one that foretells the articulation of divergent, conflicting, and alternative trajectories of future urban possibilities and assemblages.” (Swyngedouw 2008: 66)

Finally Swyngedouw says:

“The consensual times we are currently living in have thus eliminated a genuine political space of disagreement. However, consensus does not equal peace or absence of fundamental conflict.” (Swyngedouw 2008: 65)

From those statements one could draw the conclusion that sustainability and sustainable development offers a platform for technocrats and elites to create an exclusive forum where they push their vision of the environmental future, the urban future and also the economic future through and where different groups cannot participate.

Another way to define the term sustainable development could be through the triangle of sustainable development that Campbell developed already in 1996. When it comes to sustainable development Scott Campbell (1996) sees the core in the conflicts between the three aspects of sustainability, social, ecological and economic aspects. Campbell brings the three aspects of sustainability together and shows that the conflicts between ecological, social and economic aspects are the core issues for urban planners.

5.3 Bringing the contradictions together

The three aspects, which Campbell (1996) calls economic development, environmental protection and equity and social justice, are in constant conflicts to each other, but the concept of sustainability brings those conflicts also on the table and urban planners are forced to work with all three aspects and the conflicts between those. The problem is that the three different dimensions of sustainability often are treated separately, which leads to the focus on one dimension and excludes the other two. Campbell also sees the main problem in the separation of the conflicts, especially when it comes to social and ecological sustainability. Nature and human beings should be integrated and not seen as two different things. Campbell is not alone with this kind of thinking. The sociologist Foster (2002) also means that the natural environment cannot be parted from social environment. In order to come to terms with ecological problems one must also solve the social problems, which Foster sees as a result of the excessive forms of

the capitalistic western societies. The organized capitalism, as it is today, explores the natural capital without any considerations of the effects on the environment or the social problems, particularly in the third world. In order to handle the problems a more general shift of the economic system is needed, means Foster (Foster 2002).

The term sustainability has been a driving force when it comes to the connection between social and ecological problems, but Campbell mentioned that in the later stages sustainability has been reduced to the lowest common denominator, which resulted in solutions that do not really handle the existing social and ecological problem. Even Campbell sees that this problem, just like Baeten, partly is a result of the vague definition of sustainable development. But if planners recognize the conflicts and try to connect them, like Campbell's figure below shows, sustainability also could be a good starting point in urban planning. Campbell's figure shows the conflicts in urban planning when it comes to sustainability, but shows also how those are connected to each other (Campbell 1996).

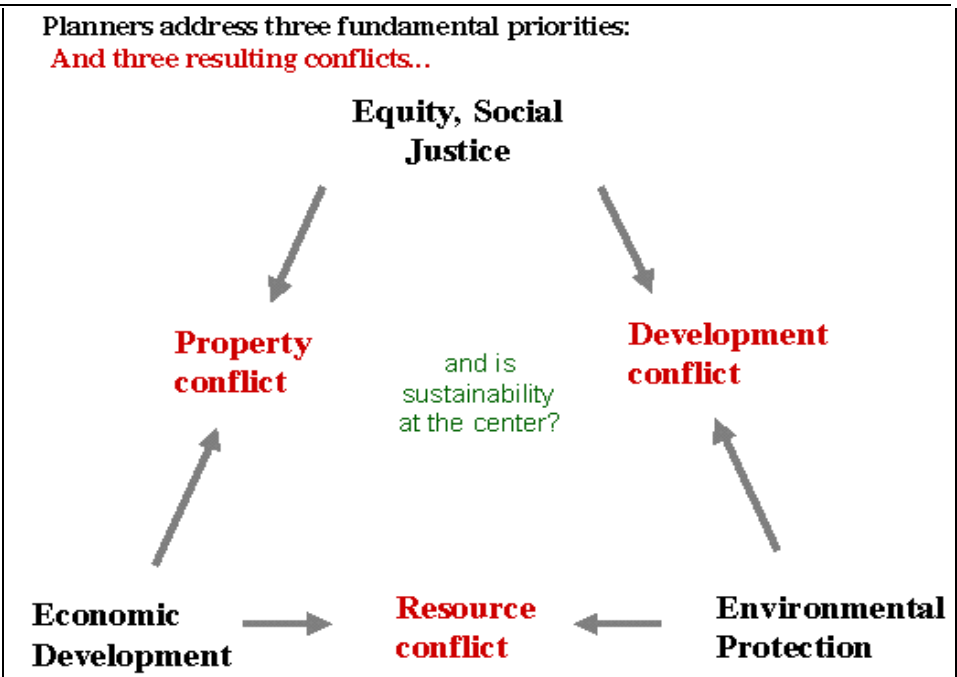


Figure 1: Planning triangle, source Campbell 1996

Further, it must also be acknowledged that the very vagueness of the term sustainable development and sustainability can be used in order to find practical solutions fit for situations and urban areas. One can redefine the term in order to strengthen the ecological and social development in a certain region or city for example (Bell and Morse 2006). So it seems that the urban context matters when it comes to sustainability and sustainable development.

Although the variety of the definitions of sustainability are many and that leads to many different problems, as shown above, Gibbs (2000) points out that most definitions have certain principles that unite the definitions and that build in one way or the other on the definition of the Brundtland report. Those principles are:

- quality of life (including and linking social, economic and environmental aspects);
- care for the environment;
- thought for the future and the precautionary principle;
- fairness and equity;
- participation and partnership

(Gibbs 2000: 10)

With those principles Gibbs mentions (Gibbs 2000) the dimensions and definitions can be modified when one is dealing with sustainable development and urban sustainability in order to provide a clear definition and define the most important dimensions for the practical work in urban planning to contribute to a more just and ecological sustainable city. But what one also must think of is that the definitions of what urban is and if urban sustainability can be achieved are not easily analyzed. Questions of urban sustainability are also questions of to what extent sustainability can be achieved on an urban level or rather on a national or global level, which includes therefore the geographical scale of sustainability. This is connected to the notion of Xu et al (2008) that the system must be sustainable. Therefore some individual parts do not necessarily have to be sustainable, as long as the system as a whole is sustainable. Furthermore it is important to think about if urban sustainability should be seen as if the whole city should be sustainable, which means everything or only parts of it. There are many different aspects to this and those must be considered at one point or the other.

The criticism is not about not to have a sustainable society, but about the common use of the terms sustainability and sustainable development in connection with economic theory and consensus politics. One of the goals with sustainability and sustainable development is environmental and social justice, but the problem is that today's sustainability, despite the focus on social and environmental aspects in the Brundtland report, is highly influenced by neo-liberalism and economic solutions to many social and environmental problems all around the globe. This influence happens due to the lack of a stronger definition in the first place by the Brundtland commission, which today leaves room for far too many interpretations. The critical literature is often written by social scientists and criticizes the lack of social aspects in the discourses of sustainability and sustainable development. In that sense my hypothesis of the lack of social sustainability is not fully confirmed here. Although the direct connection to urban social sustainability is not really mentioned often, there is a great deal of literature dealing with social aspects in sustainability such as gender, social exclusion or economic inequalities and the like, at least at a theoretical level.

6 Models of the sustainable city

One way of bringing the different aspects of sustainability together is to find visions and models of the sustainable city that connect all the aspects of sustainability and sustainable development. From the different aspects of sustainability and sustainable development, various models or visions of the sustainable city are developed by different researchers. Those visions and models are for example the models for sustainable urban development (Haughton 1997) and eco-cities (Roseland 1997). Roseland describes in his article "Dimensions of the eco-city" (1997) the concept of the eco-cities and brings the different aspects of sustainability together. The concepts of urban sustainable development models presented in Haughton's article "Developing sustainable

urban development models” (1997) are concerned with local sustainability. The different models can be described as:

- “the redesigning cities”, where planning involves including nature in urban life and not harming the existing nature if possible.
- “the self-reliant cities”, which propose to restore nature where it was destroyed and a better balance between human actions and effects on the nature and ecology
- “the externally depended cities”, which means a lighter and more market oriented version of a ecological city, where market regulations are adjusted so that disturbing the environment is being paid for
- “the fair shared cities”, which means that the political, social, environmental and economic circumstances should be considered in terms of fair trade. This includes also which resources are traded and how and how waste is managed in considerations of the urban hinterland.

(Haughton 1997)

Haughton concludes that the different models stand in ideological conflict to each other and that a change in the political, social and economic system is needed in order to create a sustainable city according to the models (Haughton 1997). Those visions of the sustainable development city are not easy to achieve, but still present a basic idea of how cities should develop and what could be done for a better future.

The concept of the eco-city means to restore damaged urban environments, revise land-use, promote urban greening projects and the like. Roseland (1997) identifies totally ten aspects. Those are:

1. revise land-use priorities to create compact, diverse, green, safe, pleasant and vital mixed-use communities near transit nodes and other transportation facilities;
2. revise transportation priorities to favor foot, bicycle, cart, and transit over autos, and to emphasize 'access by proximity;'
3. restore damaged urban environments, especially creeks, shore lines, ridgelines and wetlands;
4. create decent, affordable, safe, convenient, and racially and economically mixed housing;
5. nurture social justice and create improved opportunities for women, people of color and the disabled;
6. support local agriculture, urban greening projects and community gardening;
7. promote recycling, innovative appropriate technology, and resource conservation while reducing pollution and hazardous wastes;

8. work with businesses to support ecologically sound economic activity while discouraging pollution, waste, and the use and production of hazardous materials;
9. promote voluntary simplicity and discourage excessive consumption of material goods;
10. increase awareness of the local environment and bioregion through activist and educational projects that increase public awareness of ecological sustainability issues
(Roseland 1997:197-198)

Further, the eco-city concept promotes harmony between human actions and nature and also that disturbance of ecological systems by humans should be reduced. From that perspective different utopian visions of the city can be developed. The eco-city concept builds on the ten different aspects in order to create an eco-city. The revised transportation aspects offer here a different solution also for traffic and transportation aspects, such as planning more for pedestrians and bicyclists and reduce the car-use in urban areas. From the eco-city concept different dimensions for the utopian sustainable city can be developed. Roseland talks for example about social ecology, which also brings social sustainability on the agenda, something that is rare in articles about sustainability. In general the eco-city concept promotes harmony between human actions and nature and also that disturbance of ecological systems by humans should be reduced (Roseland 1997). All those aspects and dimensions mentioned in Roseland article are utopian, but there are different actions that can be taken in order to make this utopian theory more practical, because the utopian vision of the eco-city can offer a frame from which urban planners and practitioners can work and make today's cities more sustainable (Roseland 1997). Roseland (1997) put it like this:

“Eco-cities, or sustainable communities, represent a goal, a direction for community development – not simply a marketing slogan.” (Roseland 1997: 201)

In the article “Determining a sustainable city model” (2006) Egger describes a model for how a sustainable city could be achieved. He starts with the notion that cities do not automatically have to grow for achieving development. But cities also must be seen as part of the global ecosystem and that cities are very complex systems that interrelate with the global ecosystem. Due to the complexity of the cities' systems a sustainable city model differs from city to city depending on many different variables such as politics, culture, history, climate and so forth. But the core of the sustainable city models is the conditions of human life and high quality of life over time, but not at the expense of the same components in other areas around the globe. A sustainable city as Egger puts it includes

“...equitable access to basic services, beauty in its arts and architecture, resource efficiency and minimal ecological impact, ease of contact, mobility, integrated and compact communities and diversity.” (Egger 2006: 1239)

Those fragments of a sustainable city could be interpreted as quality of life, but there is more to a sustainable city than that. There is a conflict between the cities' international competitive situation and the satisfaction of everyday needs of the citizens of the city. Only if a city can reach a balance between those conflicting aspects a city can be sustainable according to Egger. In order to reach that Egger sets up various indicators and goals to measure and reach a sustainable city. It is important to measure different aspects of urban development in order to see where a city stands. Those indicators and goals include measurements of natural resource effi-

ciency, open society (freedom of press, freedom of speech, refugees – numbers per capita emanating from a particular city), measurements of air quality and the like (Egger 2006). Egger further notes that:

“A city may only be considered sustainable if its structure and operation acknowledges the indivisibility of the planet.” (Egger 2006: 1239)

This indicates that it is also important to measure the city’s global impact or its impact on the planet. Therefore measurements of resource efficiency, transport emissions or the cities impact on deforestation are also important to get an idea and an understanding of the cities global impact (Egger 2006).

In order to bring the aspects of sustainability together one could combine all of the models and visions mentioned in this chapter for a better way of creating a socially, ecologically and economically sustainable city.

7 Conclusions

It became clear throughout this literature study that much has been written about sustainability and sustainable development in many different articles and books and by many researchers. The variety of literature and researchers shows also that the terms are used differently. The term sustainability and the term sustainable development, first developed in the 1980s, were from the beginning vague and left much room for interpretations and different meaning. That made room for many conflicts between the different interpretations of those terms. It is the system that is to be sustainable. There will always be different conflicts between all aspects and dimensions of sustainability, but if one could create a sustainable system not every part must necessarily be sustainable. As long as people are included in the process and social and environmental problems are addressed the system could in the end be sustainable. The conflict between the different dimensions of sustainability must also be highlighted, in order to make the conflicts visible. Through that process the discourse of sustainability and sustainable development becomes more usable in practical and theoretical contexts. The problem with sustainability today is the focus on economic sustainability and economic solutions for social and environmental problems. That fixation creates often inequalities and generates rather than reduces social and environmental problems.

Furthermore, there are conflicts between the different aspects/dimensions of sustainability, which is not the direct problem as long as those conflicts are discussed and analyzed. One problem is that the different interpretations of the terms sustainability and sustainable development together with the concentration on economic solutions create consensus politics which do not address the different conflicts when dealing with sustainability. This is certainly the case in urban planning and transportation planning, where many different groups have different ideas about decisions considering urban development and transportation. Sustainable development and sustainability is used by different elitist groups to create a form of post-politics where conflicting discussions leave room for consensus politics that excludes and marginalizes all kinds of groups and individuals and empower them of their own future of the environment, nature and their city. Conflicts are on the other hand a vital aspect in urban planning and it is important to be aware of different aspects of certain developments in the city or of different images by diverse groups. Conflicts are essential in democracy and it is important not to create a consensus climate where only the ruling opinion matters. That would be bad for democracy and would lead to the marginalization of people. When it comes to the marginalization of different groups, a gender perspective can also be applied to sustainable development. Many women today live in poverty and in poor environmental conditions. Further, gender inequality is very seldom addressed by policymakers and urban planners. The exclusion of women from decision-making is also an aspect that needs to be addressed, when dealing with sustainability and sustainable development.

This literature study showed also that sustainable development is connected to neo-liberalism and used to push free market and economic solutions forward in order to cope with today's environmental and social problems. The influence of the economic system on sustainability and sustainable development is crucial to the definition of sustainable development, because many policymakers use the economic system as a frame or a reference in order to define sustainability and sustainable development. This has led to much criticism by social scientists, because many see the economic system as a part in the environmental and social problems in the world today and that means that the system, which is more and more influenced by neo-liberalism, cannot

contribute to solutions, but must instead be changed and modified in order to create a real sustainable society.

In the end it can be said, that there are many different interpretations of what sustainability and sustainable development means and how it should be applied in a practical context in urban planning. But due to the broad definition of sustainability and sustainable development the different interpretations are often in conflict with each other and mean many different things, which lead to problems when dealing with sustainability and sustainable development in urban planning.

It might be better in some cases to not use the terms sustainability and sustainable development and instead talk about social or environmental justice, economic growth or economic development and environmental problems. The terms sustainability and sustainable development might just complicate more concrete approaches and problems instead. Instead of dealing with the problems the vague concepts of sustainability and sustainable development blur the real problems and make it sometimes more difficult to deal with the existing problems, such as inequality or environmental degradation. However, the use of visions and models for the sustainable city could present a way to create more sustainable cities, because those visions and models often bring the three dimensions of sustainability together and create a forum where different ideas can be discussed and analyzed.

When dealing with those models and visions of the sustainable city it becomes clear that further research about the measurements of sustainability is needed. One aspect that often is neglected in these visions and models is urban transportation and how that can contribute to a more just and environmental friendly city. Although some parts of transportation is considered, there is more to urban transportation and transportation systems than only emission, and the like. In transportation planning, as in urban planning, different groups are often marginalized, such as women or low income-people. Elitist groups of planners and politicians are often man-dominated and ignore the need of marginalized groups. Democratic aspects are important in order to achieve a sustainable city, which is why people and groups have to be involved in the planning and implementing processes. Therefore further studies are needed to analyze more in detail what urban sustainable transportation is, how it could be measured and monitored, what sustainability indicators should be used and how it can contribute to a more sustainable city and how different groups are involved in planning processes and how more democratic practices could contribute to the sustainable city

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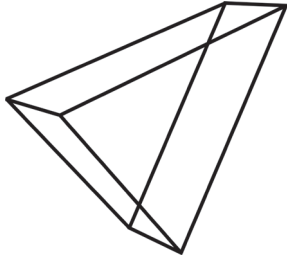
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The framework project HASTA (Sustainable Attractive City) is carried out by Traffic & Roads, Department for Technology and Society at Lund University. Research within this framework focuses on the city and its qualities and problems. One basic quality is safety, but other important qualities are perceived safety and security, accessibility, comfort and environment. HASTA's vision for the sustainable and attractive city is a city that provides, within the frames of the society, its inhabitants' different and changing needs, without compromising future residents' needs. The societal frames are defined by ecological, social, and economic sustainability.

This report is written for the project "Development of sustainability indicators, which aims at producing indicators for measuring sustainable urban development, with a focus on transportation. The report constitutes the basic elements for the continuing work with sustainable urban development and sustainable transportation. The aim of this report is to generate essential understanding of the terms sustainability and sustainable development in an urban context.

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