Ecological Sustainability and the Green Economy

On the Implementation of the Green Economy

Bachelor Thesis Political Science

Lucie Scherpenisse
s0996289
Lucie.Scherpenisse@gmail.com

Thesis Advisor: **Dr. M.A. de Geus**
Political Science Institute
Leiden University, June 2013

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Introduction

Sustainable development has become a prominent theme on the agenda of politicians, scientists, activists and businessmen. While ecological degradation becomes more visible, and the consequences more pressing, themes as pollution, climate change, ecological disaster and the depletion of natural resources, have driven people to look for a solution.

An alternative to the concept of *Business as Usual* - the current state of economical affairs - is the concept of the *Green Economy*. This concept is founded upon the principle of an economical system in which the ecological limits are not being exceeded. It encompasses an alteration of the current economical system, so that economical enterprises will no longer breach earth's ecological limits, and subsequently further irreparable damage to the ecosystem can be prevented.

The concept of the *Green Economy* has inspired a great deal of discussion and has become highly politicized. Adversaries of the concept, such as the Belgium authors and ecological activists Anneleen Kenis and Matthias Lievens (*The Myth of the Green Economy,* 2012), argue that the concept of a *Green Economy* is merely a myth created by profit seeking businesses and overly rational neoliberals: it is merely the result of wishful thinking. In this thesis I will examine whether the concept of the *Green Economy* is truly just a myth. In order to examine this issue I have formulated a general research question:

"What are the possibilities and restrictions of ecological sustainability in a free market economy?" In order to finds answers I have formulated the following sub-questions. The first question is: which subjects currently dominate the discourse on the concept of the *Green Economy*? The second question is: which green-economic solutions do prominent authors on the subject matter put forward regarding the *Green Economy* and ecological sustainability? And the third and last sub-question is: to what extent are the proposed solutions maintainable regarding the current state of the economy? I will discuss these questions in three separate chapters.

The first chapter will provide a review of the current discourse concerning the concept of the *Green Economy* in the context of ecological sustainability. Both opposing and advocating views will be discussed. Therewithal, important conceptions within this debate, such as the costs of action, limits to growth, and collective responsibility will be highlighted and clarified. This chapter will provide the framework by which the concept of the *Green Economy* should be understood.

The second chapter will closely examine the various solutions and methods proposed by notable authors. In this chapter, the propositions will be interpreted but not yet critically examined. Underlying themes will be noted, yet the feasibility and possible errors will be discussed in the following chapter. This analysis will regard the role of various economic and political actors, such as governments, institutions, businesses and civil society. Solutions such as a Pigouvian tax, cap and trade, the implementation of trade barriers and the pressure of bottom up politics will be discussed.

Subsequently, the third chapter will critically analyse the solutions offered by the authors, as explained in the second chapter. Additionally, counterarguments suggested against the *Green Economy* will be evaluated and their use will be determined. Even though all solutions have their weaknesses, this does not mean that they are not useful.

Having examined and evaluated possible themes, concepts, and regulations associated with the *Green Economy*, the general research question will be answered in the concluding section of this thesis with cautious optimism.

It is important to note that, due to the limited space of this BA thesis the review of the discourse is not exhaustive. Similarly, the regarded proposals are not a complete enumeration of all possible solutions, but a selection of the most significant ones. Nevertheless, I have aimed to provide the reader with a detailed insight into the existing discourse of the *Green Economy*.

Chapter 1, The state of affairs within the discourse on the *Green Economy*

In this chapter the first sub-question concerning which subjects currently dominate the discourse on the concept of the *Green Economy* will be explored. The section begins with a general description of the concept of the *Green Economy* in the context of ecological sustainability.

The environment has become a notable topic in today's international politics. Ecological degradation, pollution, and the hole in the ozone layer, along with sustainability, innovation and development are prominent topics on the political agenda. Only four years after the *Club of Rome* – a major think tank on questions of sustainability and the future of mankind – was founded in 1968, they published their report *The Limits to Growth* in 1972. This report placed sustainability on the map as a vital topic and made it a major priority for the United Nations (UN) (The Club of Rome 2013). In the UN

report on the 2012 environmental conference in Rio de Janeiro sustainability has officially been defined as follows:

> *Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Seen as the guiding principle for long-term global development, sustainable development consists of three pillars: economic development, social development and environmental protection (United Nations Conference on Sustainable Development 2012).*

According to this UN definition the main goal of sustainable development is the preservation of the needs of future generations. Within the discourse this concept of intergenerational responsibility and intergenerational justice is fiercely discussed. Another issue in relation to this concept is the predictability of the future. Is it possible to say anything regarding the future? Can it actually be said that 'we owe' our future generations? To what extent do we owe anything to anyone?

The difficulty here is that notions of responsibility, justice and fairness are merely ethic questions in nature, matters that are disputable and normative. Therefore, it is difficult to address these issues pragmatically as their interpretation strongly depends on the perspective and worldviews of the addresser.

Although most scientists today emphasize their concern about the state of the environment – and stress the importance of an effective approach to mitigate current negative consequences and prevent further environmental loss and derogation – ideas on the actual solutions are not mutually coherent.

As explained in the introduction, this thesis will present and analyse various solutions within the framework of the *Green Economy*. The concept of the *Green Economy* finds its foundation in the idea of an adjustment to the current market system. Such an adjustment would not only prevent further damage to the ecosystem but would also promote sustainable initiatives. As a result the earth's ecological carrying capacity should be no longer exceeded. The United Nations has presented a definition of the *Green Economy* on the website of the *Green Economy* Initiative (GEI, 2008) as part of the United Nations Environment Programme (UNEP). They have stated the following:

> *UNEP has developed a working definition of a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive (United Nations Environment Programme 2008).*

Essential to recognize is the fact that apparently, at least according to the United Nations, social equity is an important factor in the concept of the *Green Economy* as well as in the concept of sustainable development in general. Furthermore, it is of great significance that all, or at least as many countries as possible participate and are being held accountable for their actions. Moreover, countries should not fall by the wayside due to a lack of accessibility of green pacts. In other words, sustainability consists of a notion of solidarity. According to the UNEP's definition of the *Green Economy*, everyone is taken care of; it is socially inclusive.

Nonetheless, even with such an extensive definition it is necessary to get a more workable idea of what a *Green Economy* comprises. Furthermore, this is exactly where the debate within the discourse arises.

Advocates and Adversaries of the *Green Economy*

The discourse on the concept of the *Green Economy* is distinctive in its versatility. Scientists and theorists all have their own vision on what comprises a good solution – insofar that one can speak of *a solution* – and express these visions with utter fierceness – and are therefore often highly politicized.

In order to get things straight, within the *Green Economy*, one wishes to restructure the economy and (the role of) its actors, so that the negative externalities of economic enterprises are diminished, or at least a great attempt has been made to do so. Proponents of the *Green Economy* aim to seek solutions for the on-going damage done to the environment within the current economical system. This system comprises both the financial system of tax, financial trade, and in general the circulation of monetary means, and a broader system that encompasses financial growth and the trade in commodities. It is generally contrasted with the concept of *business as usual*.[1] The advocates of the concept of the *Green Economy* aim to adjust the economic system in order to stimulate sustainable development and accomplish a decline in the degradation of the ecosystem through waste, pollution, and destruction.

According to economist Edward Barbier, the debate among the adversaries of the *Green Economy* can be classified as weak versus strong sustainability perspectives. This

[1] John Mathews provides us with a useful description of the concept *Business as Usual*: *"This is the situation we face now, as the process of globalization of industrial capitalism continues, but with increasing resource toll and diminishing prospects for longevity in its current wasteful form. This is 'Business as Usua*l" *(Mathews 2011, 873).*

distinction, Barbier notes, comes down to the possibility of regarding nature as a form of capital, similar to other capital goods. Weak sustainability allows people to regard nature as a form of human capital, and therefore allows human capital to function as a compensation for damaged natural capital. Strong sustainability stands for an opposing view, in which the possibility of substituting natural capital for human capital is being denied. He notes that these "are not easy to reconcile" (Barbier 2011, 235).

Whereas the general goals of green initiatives and the *Green Economy* are relatively known, the debate focuses on its exact elaboration. A number of prominent issues that emerge as the discussion continues will be addressed later on.

When constituting and maintaining a successful *Green Economy* system, one could ask what roles are there to be fulfilled and to which actors they should be allocated? In our society, a number of actors can be assigned a designated function. The government, for instance, is usually seen as the most directive and powerful actor, since it can enforce laws and provide polluting businesses and other damaging parties with subsidies and fines. Conversely, the power of government action is often questioned, for its limits in terms of its inertia and indecisiveness should be recognised. Institutions (governance) are usually in charge with the coordination of information and the inciting transformation in attitudes towards matters such as the ecosystem, fair trade and sustainable development (see, for instance, Elizabeth DeSombre (2011, 470-471) and Ricardo Meléndez-Ortiz (2011)). Furthermore, citizens may also play a large part in the effectuation of a shift towards ecological sustainable development. Paul Wapner (2011) for example emphasises the power of civil society in his *Fostering of a Green Economy Transition,* yet acknowledges its limitations. These actors can be used to change the most powerful actor of all: business.

Subsequent to the appointment of certain actors, the scope of green initiatives and the expected scope of their results are under debate. Especially concerns about the – practical – feasibility and their ensuing utility are often expressed. Aside from these concerns, not all parties are pessimistic about the outcome.

Another aspect that is often associated with sustainability and *Green Economy* is the concept of growth. Since "Limits to Growth" has been published the idea of putting restraints on growth has emerged (The Club of Rome 2013). Nowadays concepts as 'the ecological/carbon footprint' (Reese 1992; Gore 1995) and 'steady state economy' (Jackson 2009) have joined the environmentalist paradigm. Positive opinions toward these ideas are often accompanied by critical attitudes towards capitalism.

On the other hand there are authors who oppose this view. One of them is John Mathews who states that extensive (economic) growth should not be our primary focus, but that a mental shift should be made towards resource efficiency and the systemic recirculation of resources (Mathews 2011, 874). Moreover, Mathews stresses that we should profit from the positive aspects of capitalism, the dynamic inherent to the capitalist system that drives change, and should get rid of the short-term horizon: Capitalism 5.0 (Mathews 2011, 870).

Other, more capitalist-critical writers like Tim Jackson propagate a drastic change to the system and question the current *growth-based paradigm* (Jackson 2011, 156). Even though Tim Jackson does not perfectly fit the *Green Economist profile,* he is still mentioned in this section since his contribution to the debate has been of great significance.

Further, different strategies have been developed in order to address the process of ecological degradation. These strategies can roughly be divided into two strains of action: a market-based approach, or a more philosophical-ethical stance towards the issue. The market-based approach is often characterized by 'practical modelled solutions', mostly focussed on the implementation of financial incentives and deterrence. Writers frequently designate trade-systems, sanctions, and tax imposition as possible instruments causing change within the financial system towards more sustainable activities.

A noteworthy topic in the debate on *Green Economy* is the development of the clean energy market in China. While China is usually depicted as one of the heavy polluters in our world, there is some dissension between prominent thinkers on China's position towards sustainable development. According to John Mathews China has invested substantially in green energy markets (Mathews 2011, 873-874) as part of "Asia's new growth model" (Mathews 2011, 878). According to CNN reporter Steve Hargreaves, China nowadays has overshot the United States in their investments in renewable energy sources and is responsible for 24% of the total budget of green energy investments, versus only 13% derived from the US (Hargreaves 2013, 1).

However, this does not mean that China is a moral advocate of sustainable development. There has been a clear incentive, *profit and prospective scarcity*, to make such investment decisions (Mathews 2011, 873).

Besides these rather specific topics, there are a number of more general issues in relation to sustainability and *Green Economy* that are crucial to the approach of choice. General questions are: who can be held responsible and for what? Do underdeveloped countries have a right to pollute? How sacred is the process of democratic decision-

making in respect to its effectiveness? How do we deal with (scientific) uncertainty and unpredictability? Who are the victims of the ecological destruction and should they be compensated? Is that even possible? Can capitalism be seen as a means to improvement or a cause of destruction, or both? What characterizes these questions is that they not only call for a normative answer, but that they are also burdened with ethical considerations.

As for the adversaries of the *Green Economy*, opponents such as the Belgium authors and ecological activists Anneleen Kenis and Matthias Lievens (*The Myth of the Green Economy,* 2012) question the feasibility of green economic measures and the lack of utility that can be derived from it on a larger scale. They consider economic measures to be either merely a drop in the ocean or the result of dubious motives. Profit as a motive, for example, has been criticized heavily by Kenis and Lievens since it would inevitably result in disingenuous unfair measures, and a spurious just-for-show green image (Kenis and Lievens 2012, 118).

Peter Tom Jones and Roger Jacobs, authors of *Terra Incognita* (2007), a work on globalisation, ecology, and fairness in the matter of sustainability, express similar objections to the implementation of green initiatives in the current economic system. They identify the so-called ecological crisis as both social and economical. It is no coincidence that the financial crisis came to expression at the same time as the ecological problems started to increase – and became more pressing. In their book, Jones and Jacobs advocate an alteration of our world in a way in which all three of the current crises, environmental, financial and social, will be solved simultaneously (Jones and Jacobs 2007, 28-29).

Both Kenis and Lievens, and Jones and Jacobs reject the notion of capitalism as a viable foundation of the market system and opt for a drastic change towards a more sustainable and less profit-based economy. They associate capitalism with an essential impetus towards short-term profit, an unfair distribution of goods (both in terms of financial goods as perishable goods such as food and water) and an inevitable degradation of the ecosystem. Simultaneously, all four authors reject technological development and innovation as meaningful contributors towards a solution for the ecological problems of scarcity and pollution. Jones and Jacobs do not deny the possibilities of technological progress, but argue that both the scope and speed are limited. Additionally, there are no guarantees for technological advancement and betting

on the wrong horse could turn out quite disastrous for mankind (Jones and Jacobs 2007, 501-565).

In accordance with the adversaries of the 'strong sustainability perspectives' as mentioned by Edward Barbier (2011, 235), opponents of the idea of a *Green Economy* can often be characterised by their rejection of the notion of 'nature as a commodity'. Kenis and Lievens propose a similar argument, and argue that capitalisation of nature exceeds qualitative boundaries by subjecting it to the destructive dynamic of capitalism, which in turn can only result in devastating exploitation (Kenis and Lievens 2012, 30; 144).

A different complicating factor concerns the ecosystem itself, which is, as noted by Jones and Jacobs, inherently chaotic. In *Terra Incognita* the writers rely on the "chaos theory" when describing the current crises within the ecosystem (Jones and Jacobs 2007, 7-56). This rejection of linearity and the use of *Ceteris Paribus* in predictive models, results in the assumption of uncertainty of outcome, also associated with the "butterfly effect"[2]. This dynamic bring us in a state of intrinsic uncertainty (Jones and Jacobs 2007, 3), because of the impossibility of making reliable projections of the future and its climate structure (Jones and Jacobs 2007, 49-55). Remarkably enough, climate sceptics use this argument quite often as well, as it can also be interpreted to provide an excuse for not taking any action at all.

A central theme in the work of Jones and Jacobs is the danger of the exceedance of critical ecological thresholds, which, in their opinion, will cause irreparable damage to the ecosystem, lead to abrupt climate changes, or, even worse, may lead to ecological catastrophes (Jones and Jacobs 2007, 32-33).

In this section the topics that dominate the discourse on the concept of the *Green Economy* have been introduced. Advocates of the *Green Economy* focus mostly on economic principles and dynamics, in combination with normative questions. Adversaries of the *Green Economy* point to the complexity of the environment and the inherent uncertainty that arises from this. In their view, focussing on mere technical and financial measures is not sufficient.

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[2] Term coined by Edward Lorenz, in which he states that a model possesses intrinsic unpredictability, since a small circumstance – the flapping of a butterfly's wings' – may cause a hurricane miles away (Stanford Encyclopedia of Philosophy 2008).

Chapter 2, The Solutions

In this section the green-economic solutions proposed by prominent authors are being discussed. In doing so, the section will focus on the different actors within the economical system: businesses, governments, institutions and civil society.

In his article *Governance of International Trade for the Green Economy* (2011), Ricardo Meléndez-Ortiz describes the ultimate challenge the *Green Economy* is up against.

> *"We need a system where the incentives to protect rainforests work in tandem with policies to resolve the needs that cause communities to turn them into charcoal" (Melendez-Ortiz 2011, 479).*

Put differently, we are in need of a system that discourages pollution and other destructive means of production and encourages sustainable production processes. This deterrence from destructive methods can be accomplished in a number of ways. First, one can make use of directive financial instruments that enforce penalties and subsidies on economic actors. Another option could be the creation of an environment in which there are the least number of barriers to "*go green"*, and in which sustainable enterprises actually will be encouraged. In most cases this creation of a broader framework usually arises from the decision-making process of the government. The process of governance and the use of institutions may have great influence on the mind-set of entrepreneurs and citizens in our society. Perhaps not surprisingly, these citizens have both a political and direct power in their own right. Henceforth, these solutions will be discussed in a later section. After this deliberation the solutions will be critically reviewed.

Business and the Financial System

In the business sector, the two fundamental attributes are cost and benefit. Responding strategically to these can function as a key to change. Solutions based on these factors often work from the basic dynamics of cost-avoidance and profit seeking (Brue, McConnell and Flynn 2009, 46).

The main idea is that when industries are provided with an (financial) incentive to avoid pollution or other damages – through cost-avoidance or profit seeking – they will reform their production processes and as a result pollution (and the like) will be decreased. There should be a comparative advantage to products that have been produced via green and sustainable means over the old 'grey' means of production.

According to economics professor Paul Krugman the debate on the *Green Economy* is switching between two perspectives: a market-based approach versus the idea of 'command and control' (Krugman 2010, 3).

One of the measures often associated with a market-based approach, "regulations that give the private sector an incentive, via prices, to limit pollution," (Krugman 2010, 3) is the *Pigouvian tax*. This tax, named after 1920's economist Pigou[3], is levied on products which weigh an extra cost or cause a burden upon society: these extra costs are negative externalities. By putting a price tag on these externalities, consumers do not only pay for the basic production costs (plus interest), but also for the costs these products pose on society, or in this case, on the environment (Frank 2013, 1). As a result of this logic, by adding the Pigouvian tax a more realistic price of a product is created. In this case the added tax is a monetized expression of the environmental damage the production process entails. The necessity of this stimulation of 'honest prices' is also emphasized by Elizabeth DeSombre (DeSombre 2011, 470-471). In the section "Governance" her more specific suggestions on implementing such measures will be discussed.

Continuing his argument, Krugman critically notes that the costs of this regulation probably will be passed on to the consumers. "The political logic seems to be that the oil industry thinks consumers won't blame it for higher gas prices if those prices reflect an explicit tax" (Krugman 2010, 4). An imposed tax may perhaps not lead to an immediate decrease in production, but first to an increase in consumer prices. Then a chance for new technologies will arise to develop a similar green product for the same and later a lower price, which might tempt the consumer to buy green.

Contributing to this issue, Edward Barbier identifies a key difficulty, which he typifies as 'the funding challenge'. According to Barbier, "a huge gap remains between the global benefits that humankind receives from ecosystems and what we are willing to pay to maintain and conserve them" (Barbier 2011, 234). The issue here is that people might refuse to pay for any additional fees apart from the mere production costs. Under any circumstance, the process of levying taxes on negative externalities is a form of redistributive tax-and-transfer (Stanford Encyclopedia of Philosophy 2011): the costs on the environment are redistributed to the consumer.

Another well-known market-based approach used to control the amount of pollution that is being emitted, is the system of Cap and Trade. In this approach a cap is

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[3] Pigou, Arthur C. 1920. *The Economics of Welfare*. London: Macmillan and co. 1st edition.

placed on a certain level of emission. Subsequently a market for emission rights is created, so that industries and businesses may trade their emission permits (Krugman 2010, 3). This system enables the government to have a grip on the amount of pollution that is being emitted into the atmosphere. Simultaneously, businesses have an incentive to reduce their amount of pollution, because they can sell their surplus to other companies. Prices will rise due to scarcity and demand, so there is money to be made – this propitiates businesses – and thus an incentive is created to decrease one's pollution. Additionally, environmental rights groups or other societal organisations may buy off these emission rights from industries, reducing the total amount of pollution in the system.

A different manner in which market outcomes can be adjusted is through a system of command and control (Krugman 2010, 3), in which direct regulation is imposed on economic activities. Instead of waiting on a market to respond to created incentives, a command-and-control strategy expects direct effect through the direction of limits and sanctions on unsustainable activities. Critics argue, however, that these kinds of regulations offer businesses the opportunity to maintain and increase their emissions, as long as they are willing to pay a reasonable amount of money.

Another opportunity that is often advocated is the implementation of a non-discriminatory trade barrier. An example of such a barrier is the implementation of carbon-tariffs, which would make sure that the consumer price reflects the amount of carbon dioxide that is omitted into the atmosphere, independent from where the product comes from (Krugman 2010, 11). Elizabeth DeSombre, as mentioned earlier, also stresses the vital part that trade restrictions of a non-discriminative kind can play (DeSombre 2011, 469).

However, of utmost importance, as emphasized by both Paul Krugman and Ricardo Melendez-Ortiz, is that the solution lies within a system that provides businesses with a 'self-interested reason' to reduce their emissions, and that this system remains a trade system based on its current aims of profit-seeking and cost-avoidance (Krugman 2010, 7; Melendez-Ortiz 2011, 481). Melendez-Ortiz continues by asserting that the need for environmental policies should not become an excuse for governments to invest and enter into unprofitable discriminatory practices that would result in diminishing returns (Melendez-Ortiz 2011, 481).

Correspondingly, in his article on the naturalization of capitalism, John Mathews argues that the capitalist system can indeed be used for green ventures. He claims that

within the current system a certain dynamic of constant change is enclosed, which generates constant opportunities to direct a shift towards sustainability (Mathews 2011, 876). The main problem, again according to Mathews, lies in the fact that in our current system there is a resilient focus on a short-term horizon. Long-term consequences, environmental damage being an example, are overlooked and ignored (Mathews 2011, 878). The view of Krugman, that "[…] if you place a significant weight on the really, really distant future, the case for action is stronger than even the 2100 estimates suggest […] (Krugman 2010, 13)" is also endorsed by Mathews, who fears for resource wars and vast increasing fuel and food prices as a result of sectional interests combined with short-term greed (Mathews 2011, 878).

Mathews addresses this problem in a couple of ways. First of all, he recognizes the 'natural biospheric limits' of the ecosystem and claims that through *competitive emulation*[4] intensive growth can be achieved rather than extensive growth, as is currently the case. This intensive growth entails the recirculation of resources, resulting in a Circular Economy, "where one producer's wastes become another's input" (Mathews 2011, 869). So apparently, intensive growth is accomplished by competition under the pressure of scarcity and the necessity of keeping up with the competition, on the basis of technological innovation.

Mathews claims that this shift in focus can be accomplished through the use of the market dynamics of three sectors: the financial sector, the energy sector, and the trade sector (the commodity market). Due to the interconnections and value chains between these markets, renewable and sustainable products will be "self-reinforcing and self-propagating" (Mathews 2011, 869).

Mathews presents two principles why investors and businesses will follow this dynamic. First, he states that the inevitable shortage of fossil fuels drives both technology and investors to an alternative, sustainable energy. According to Mathews the prospected costs of an uncertain investment are higher than the investment in a new, durable form of energy. Mathews links this criterion of 'creditworthiness' to a second criterion that he calls 'eco-worthiness'. He hopes that this criterion will create public awareness of the origins of resources and provides demand for recirculated resources and materials

[4] In Colin Renfrew's handbook "Peer polity interaction and socio-political change," competitive emulation is described as a catalyst for transformation as a result of interaction between peer policies. Competitive emulation is a form of interaction in which different parties (these may be political actors, groups, individuals) try to ruff of one another in achieving a particular end. Interestingly, these achievements are usually of a similar kind and measured by a joint scale (Renfrew 1986, 8).

(Mathews 2011, 874). This process is discovered by Tom Bigg, who claims that "[…] within many countries, anticipated scarcity in access to fossil fuels and "rare earth" minerals are driving policy and technological efforts to shape alternative futures". According to Bigg, the increasing scarcity and uncertainty will drive entrepreneurs to develop alternative sustainable business models and production means (Bigg 2011, 462).

Mathews derives his second principle from the idea that, since renewable energy is not simply a product of nature, but "the fruit of human ingenuity," people will tend to conserve and reuse energy rather than waste it (Mathews 2011, 873). Mathews predicts that the *Green Economy* will be able to grow and emerge within the 'womb' of the fossil fuel economy, and then gradually taking over (Mathews 2011, 878).

Governance

In relation to the financial regulations, the task of implementing change within the economic system is often assigned to government policies and institutional action. In this section the ideas of notable authors such as Tom Bigg, Ricardo Melendez-Ortiz, Elizabeth DeSombre and Edward Barbier, who emphasize the importance of decisive governance in various political frameworks, will be discussed. Before investigating their positions, a debate on the required pace of climate action is described. Subsequently, the effectuation of climate policy in an institutional setting will be assessed.

In the discourse on climate change, the discussion on the required speed of climate action is divided between proponents of a *climate policy big bang*, which entails instant aggressive action against further emissions through a substantial increase in carbon prices, versus proponents of a *climate policy ramp*, which comprehends a gradual but exponential policy growth, with a relatively slow but accelerative rise of carbon prices (Krugman 2010, 14).

Advocates of a climate policy big bang argue that the current environmental damage is already of such a proportion – a part of the damage is already "baked-in" – that immediate large-scale action is essential. Thus they stress the preference for long-term public policies implemented by governments over the uncertainty of trusting on short-term private markets (Krugman 2010, 15).

In contrast, advocates of the climate policy ramp consider both the costs of the environmental damage as well as the costs of reducing carbon emissions. They argue that the marginal costs of extra tons of carbon dioxide today will not lay more substantive pressure on the ecosystem, and that it is therefore negligible. Furthermore, they claim that future costs should not have an influence on today's governments spending.

Within this debate, a complicating factor is that the costs of action and the costs of inaction are neither accurately computable nor comparable. Overall, there is a great deal of uncertainty that leads cost-avoiding businesses away from direct and costly action.

Returning to governance, according to DeSombre and Melendez-Ortiz public policies should be adopted that decrease the economic disadvantages of *going green*. DeSombre advocates the key role of institutions such as the World Trade Organization. She identifies three main tasks such institutions can fulfil. First, since they have large amounts of information at their disposal, institutions can provide trade markets with transparency and therefore effectuate a decrease in levels of uncertainty. This position gives institutions a certain amount of political power. Second, by coordinating the negotiation processes between states and thereby lowering transaction costs, institutions can drive trade into more sustainable areas. Third, placing trade under the scrutiny of institutions allows them to increase the probability that parties indeed will live up to their commitments. This could be established through monitoring the trade processes, creating transparency and establishing penalties. DeSombre emphasizes that the more intrusive types of monitoring that have been created more recently within existing institutions have shown to be very effective (DeSombre 2011, 467-468).

DeSombre adds a footnote to this theoretical outline by noting that it is important for different states to adopt environmental rules evenly. In order to accomplish this, a situation must be created in which it is economically attractive, profitable even, to become an early adopter of stricter environmental policies. Institutions should play a key role in this process. Through the measures described above, the coordination of trade policies and practices, the risks of adopting environmental policies can be eliminated "even when it is not clear that everyone will do so" (DeSombre 2011, 469). Apparently, DeSombre hopes to break the chain of the well-known collective action problem.

In various articles, the World Trade Organization is often put forward as the main institution that it is able to substantially influence sustainability in the trade process. Trade measures and sanctions should not be discriminatory in a sense that its policies should be evenly adopted and implemented across various actors. Since trade institutions mostly reflect trade operations between governments, these governments can substantially influence each other in adopting green trade policies. According to

Melendez-Ortiz, it is a core responsibility of the state's administration to "refit trade rules that are not working for sustainable development" (Melendez-Ortiz 2011, 482).

Apart from direct governmental action, institutions such as the World Trade Organization have substantial political power at their disposal. Through the implementation of economic sanctions and financial measures that will discourage pollution, for instance by enacting restrictions on trade, the use of countervailing duties and other financial measures such as the recalculation of national wealth (including natural resources in an unused state), trade processes can be influenced quite extensively (DeSombre 2011, 469-471).

Tom Bigg, head of partnerships at the International Institute for Environment and Development, strikingly states that the main barrier to change is not a lack of information or knowledge, but a lack of awareness and clearness on the required immediate actions that will drive the system to transform into an ecologically sustainable economy (Bigg 2011, 461). According to Bigg "we are in need of an effective governance system at an international level that can help deliver sustainable assets around the world" (Bigg 2011, 463). He recognises the presence of (trade-) barriers that prevent the world from moving towards a more sustainable trade system and thus he stresses the need of tracing those instruments that reinforce unsustainable customs (Bigg 2011, 464).

Bigg maintains that green measures can be implemented both top down, through global action, as bottom up from lower levels of governance, these levels of decision-making reinforcing each other. He claims that, when the global environment is responsible for the creation of 'green jobs', the local environment influences the coherence of environmental policies and the implementation of these green policies. Moreover, when arranged at a local level, specific social needs can be taken into consideration resulting in the prevention of conflicts arising afterwards.

In his article Bigg labels three attributes that are necessary for a substantive shift to sustainable development: the capacity to prioritize, subsidiarity, and power/agency (Bigg 2011, 464). Let us investigate these attributes further. In a world full of barriers and unsustainable practices, it is essential to recognise what issues need to be addressed first. In other words, it should be investigated which measures have the largest negative impact on sustainable enterprises and hence are the most pressing to solve. Second, Bigg stresses that the decision-making process should take place on the lowest possible levels of governance. Negotiations prove to be more difficult when discussed at a global level, as there are more interests at stake. When responsibility can be allocated towards regional

levels, the risks for governments are lower which in return has a positive influence on their decisiveness. Finally, as a law-giving institution, it is vital to back your regulations with political power. Consequently this means that someone, or some institution, has to claim responsibility for the execution of the established regulations (Bigg 2011, 464).

In addition, Bigg provides his reader with another interesting notion. Within the process of development towards more sustainable practices, the developed countries can provide the developing countries with a chance of skipping our former technological infrastructure, thereby avoiding the accompanying pollution of old-fashioned industrial practices, and "the associated patterns of social behaviour" (Bigg 2011, 462). Modernisation can take up a faster pace, both industrious as socially. And, as noted before, with the required knowledge present, it should be possible to develop industrial activity without causing additional pollution.

Civil Society

As briefly mentioned before, civil society may have a positive, bottom up influence on the realisation of environmental policies. Both Mathews and Bigg mention the strength of a local demand for change towards sustainable policies and products (Mathews 2011, 874). Paul Wapner, Professor and Director of the Global Environmental Politics Program at American University, takes this notion of civil influence somewhat further and perceives civil society as a necessary component of transition. According to Wapner consumers are not to the full extent motivated by economic profit – think of psychological considerations, altruism, et cetera – and have a so-called 'sovereignty-free orientation' on the marketplace, free from commercial directives and largely free from governmental pressures. Wapner then derives the following conclusion, namely that civil society can function as an "extra-market realm of life" (Wapner 2011, 526), hereby functioning as a more subjective control on market dynamics.

Wapner does admit, however, that the power of civil society has its limits. But even though it lacks the sufficient power of altering the entire economical system, in his analysis civil society is a necessary component and accelerant of the transformation to a *Green Economy*. According to Wapner, civil society actors can play a meaningful role in the creation of a sustainable *Green* Economy (Wapner 2011, 529).

In this section green-economic solutions as proposed by prominent authors on the concept of the *Green Economy* were discussed. The character of most solutions was quite technical in that it concerned financial measures and trade regulations. A

remarkable insight was the idea that civil society could play according to Tom Bigg, who stresses the value of implementing policy both top down and bottom up.

Chapter 3, The Analysis

In this section the proposed solutions are being critically examined and evaluated regarding their maintainability in the current state of the economy. The main challenge for the *Green Economy* is the entanglement of economic objectives such as profit and cost-reduction, and 'green' objectives such as ecological sustainability and all that it contains. This challenge is at the same time its biggest opportunity to influence market dynamics so that the main focus of industrial enterprises is directed towards sustainable means of production. For an entrepreneur to insert green measures in the production process this should either result in fewer costs or it should result in an increase of marginal profit. In contrast, the green initiatives would also be implemented when this would result in an avoidance of extra costs, for instance by avoiding a government penalty or tax. There should be a definite incentive of some sort for a business to implement such measures.

As shown before, there are a number of financial measures that could be used to discourage environment-damaging behaviour. These measures are either market-based or implemented in an after-market situation. The Pigouvian tax, the pricing of negative externalities, may create some incentives for both the industries and the consumers, as they will search for the lowest price available. However, one can wonder whether the effect of this Pigouvian tax is substantial enough to effectively deter polluting enterprises. An additional problem is the fact that, in order to put a price on negative externalities, the costs they impose on the environment will have to be measured. This is quite often a difficult task to accomplish. The cap and trade system has a similar problem regarding the levels of pollution. Even though the trade of emission permits may create an incentive to reduce emissions, in principle the total level of emission will remain equal. This means that even after climate activists have bought permits from the emission market, the total amount of pollution will not be substantially reduced. Paul Krugman illustrates this issue:

> *"If you choose to drive a hybrid car or buy a house with a small carbon footprint, all you are doing is freeing up emissions permits for someone else, which means that you have done nothing to reduce the threat of climate change" (Krugman 2010, 13).*

The basic idea is this: you will not aid the environment when you buy a environment friendly car, when there a no regulations or standards that prevent other people from having an environmentally unfriendly car. It is merely a shift of pollution, not a real solution. In spite of the cynical tone of this argument, as a footnote is has to be added

that when enough people buy that eco-friendly car, and when the demand for such cars it is continuously growing, gradually standards will shift towards a more environment friendly norm.

Command and control regulations, in the form of laws and fines, will also have a relatively small impact on polluting businesses. Evidently, to a million dollar company, a few pollution fines will not be dissuading enough to transform its entire business model. According Paul Krugman, environmentalists call for treating polluting activities as a crime rather than as a minor offense (Krugman 2010, 13).

Trade restrictions as a means to discourage the production and trade of non-sustainable commodities can be very effective indeed, as long as all countries partake. In spite of the emergence of black markets, banning those products will result in both a reduction of 'grey' products and in an increase of newly developed green alternatives. Still, there is another issue that will make people avoid the possibility of implementing trade restrictions. When speaking of trade restrictions, economists quickly associate this concept with protectionism and a weakening of the free market. The main question here is, do you want to limit the freedom that people have in trading and moving their products, and alter the main characteristic of the free market economy? Or would you rather let the market solve the problem, with help from regulations that respond well to a free market dynamic? However certainly relevant, these questions will not be further addressed due to the limited scope of this thesis.

The strength of institutions to accomplish their targets is reasonable, as argued by Elizabeth DeSombre, yet it becomes painfully clear that the actors with the most decisive power in politics are not the ones that are most democratic in nature. John Mathews has demonstrated that China of all reasonably modern countries, as a result of its five-year plans, has laid the best foundation for decisive governmental action in the field of energy policy and sustainable development. Although this is not a favourable thought to many, one can wonder whether a democratic institution is decisive enough to address the problem of ecological destruction properly.

Tom Bigg has overcome the limitations of government action in a democratic system by suggesting that the process of decision-making should take place on both the international level, as on a local level. Using the dynamic of bottom up and top down simultaneously sounds convincing. Complicating factors that could occur would be a lack of motivation on the part of the local level, while there could be a lack of decisiveness and speed on the part of the international playing field.

Recirculation as a means for intensive growth rather than extensive growth seems an interesting option. The only caveat is, whether this change towards sustainability is durable in its nature. Intrinsic growth too has its downsides and limits, which in time will result in more scarcity. In this regard it seems that intrinsic growth is foremost a temporary solution.

The problem nowadays, with the downturn of the financial markets, is that investors are afraid of investing their money. This has a disruptive effect on the usually dynamic trade system and causes businesses to postpone the high investments in new technologies and continue with their current cheap grey means of production. When perceived from this perspective, the environmental crisis and the financial downturn are reinforcing each other.

This having said, the dynamic of scarcity, investments, uncertainty and competitive emulation as discussed by Mathews, does seem to be rather logic. If investors can be persuaded to shift their investments from the prospected scarcity of fossil fuels to new green business models, green products may become more accessible and affordable. When combined with the prospect of growing returns and a growing importance of 'eco-worthiness', it is possible that investors indeed will shift their attention. However, this does not imply that the former fossil fuel markets will cease to exist. Rather a status quo would emerge, in which the sustainable energy markets would coexist with the grey non-sustainable energy markets in an ever-growing and more competitive energy market.

One of the main issues influencing the discussion is a dispute on the costs of action versus the costs of inaction. According to some, the costs of action are too high, relatively speaking, in comparison with the costs of inaction, which cannot be accurately predicted. Either way it is difficult to calculate any costs regarding climate action and pollution control.

Strikingly enough, Krugman mentions that the results of our past emissions are still present in the atmosphere, which means "[…] we still have to pay for earlier inaction" (Krugman 2010, 13). Consequently, the future costs of action will rise as a result of our past and also current inaction. On top of this inaction, our future inaction will also add to the final costs. Additionally, there is another noteworthy prospect that cannot effectively been shown in a model: the possibility of large-scale ecological disaster. Rationally, there are no costs of action high enough to meet those costs of inaction.

In his article Paul Wapner has emphasized the influence of civil society and its necessity for the accomplishment of a transformation of society towards a more sustainable basis. Despite their limits on political power, citizens do have some influence. This influence cannot only be exerted through political activities, but also through an alteration of the demand for a particular type of product. If, for instance, all citizens would demand a certain eco-friendly product, businesses would take an interest, literally, and would supply the demanded eco-goods.

A factor complicating this process is the fact that many people are not aware of the availability of alternatives. Moreover, some alternatives are not properly accessible, or there is no information regarding the products. Besides, products may also be too expensive for a large part of society. Large-scale sustainable goods need to be affordable so that they are available for civil society as a whole.

In this section it was examined to what extent the proposed solutions are maintainable regarding the current state of the economy. All proposed solutions have their specific difficulties, but in my analysis the main tendency is quite optimistic. When several solutions will be combined in a (more) comprehensive framework of the *Green Economy*, substantial action against further ecological damage is possible indeed.

Conclusion

In this thesis it is examined to what extent there are possibilities and restrictions for ecological sustainability measures in a free market economy? In order to discuss this topic coherently, the concept of the *Green Economy* has been used to function as a theoretical framework in which those free-market possibilities will exist.

According to notable authors the *Green Economy* can only function to its fullest capacity when certain measures are implemented that give businesses a self-interested reason to adopt means of production that are more resource efficient and less ecologically degrading. At the moment businesses focus on a short-term horizon while discarding the ecological threats on the long term. Another major complicating issue, as noted in chapter one, is the intrinsic uncertainty and the unpredictability of ecological models.

Within the discourse on the *Green Economy,* advocates focus mostly on financial possibilities and instruments, and try to use the market dynamics. Adversaries of the *Green Economy* emphasize issues such as insecurity, complexity and criticize the limited scope and pace of action. Moreover, critics argue that focussing on technical financial measures is not sufficient: according to them there should be an ideological transformation.

However correspondingly, among the supporters of the *Green Economy* a debate is taking place about the scope and the pace of the actions that must be taken as well. Some authors and policy makers argue for a gradual *climate policy ramp*, while others prefer a sudden *climate policy big bang*.

When regarding the *Green Economy* from a market-based perspective, measures and regulations that respond to the dynamic of *cost avoidance* and *profit search* by creating deterrence and incentive mechanisms can play a key role. The possibilities of adopting policies such as the implementation of a *Pigouvian tax* or a *Cap and Trade System* are examined. On a larger scale the possibilities within highly competitive markets as the energy market are stressed. Likewise, the emergence of a *Recircular Economy* as a result of the pressures of prospective scarcity and uncertainty are mentioned.

Similarly, institutions and governments can play a vital role in altering the legislative structures so that policies can be implemented that decrease the economic disadvantage of green enterprise. A set of rules can form a framework in which it is relatively easy and attractive to adopt ecological sustainable (production) policies. It is of great importance however, that governments and institutions claim responsibility for the

environment and therefore make a stand for the adopted policies. They also have also the task of providing information in order to make the alternatives known to the public. This can accelerate the civil awareness, which underscores the power of civil society as a sovereignty-free realm with a perspective on market dynamics that is not inherently profit-driven.

These rules and frameworks aside, when critically examining the suggested changes, numerous objections come to mind regarding the effectiveness of the adopted policies, the unpredictability of current and future ecological development, and the willingness of businesses and governments to adopt regulations that may harm their enterprises. Other objections such as fear for protectionism and the rise of black markets, and furthermore difficulties with putting a price on negative externalities are equally relevant. Another major complicating factor is the downturn of the financial system, which has caused many investors to leave the markets altogether and withdraw their investments.

Whether the concept of the *Green Economy* can offer useful dynamics and contribute to the creation of a more sustainable economy, is a question that in my view can be answered with cautious optimism. Within the bounds of the current economic system and within the limits of the world's resources, enterprises based on both (ecological) sustainability and profit, have a serious chance of survival. In my opinion, an interconnected legislative framework that consists of various sustainability encouraging and pollution deterring regulations and enterprises is needed to adequately address the problem of ecological degradation.

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