

**How to reach true sustainable development:  
Green Growth or Steady State economics?**

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# ABSTRACT

This thesis will highlight the main differences between green growth and steady state economics to determine which school of thought is better apt in achieving environmental, economic and cultural sustainable development. These findings will be used to clarify what sustainable development is and to find what factors are essential in achieving it. How can businesses today ensure sustainable development and by what means can this be achieved? This will be exemplified by studying the Sahara Forest Project (SFP), a Norwegian limited liability company aimed at achieving true sustainable development. I reveal which school of thought the company most resembles, what factors have been or must be considered and in what way can they change business and production processes to best achieve sustainable development.

The methodology used in this thesis is a combination of hermeneutical science and literature studies. The empirical data is collected from literature found on the SFP's website and from company brochures.

I found 3 factors to be essential in achieving true sustainable development. The first factor is a company's preanalytic vision of the economy. The second essential factor is determining if the company operates within the boundaries of strong or weak sustainability and the third factor depends on what image of man the company has established. The SFP shared a similar preanalytic vision of the economy and image of man to that of steady state economics. I was unable to determine if the company operated within the boundaries of strong or weak sustainability.

The main conclusion is that the Sahara Forest Project has yet to prove it is achieving true economic, environmental or cultural sustainability. This cannot be determined until it gives the general public full access to its accounting records.

## **ACKNOWLEDGMENT**

This assignment is the final step of a Master of Science in Business degree at the University of Nordland. The master's degree is part of a 4 year study within business management where the student's last year requires a written thesis within a specialized field of study. My specialization is in the field of ecological economics.

My topic of choice originates from my veneration for nature and for all the joy and splendor it has given me. Seeing the direction in which neoclassical and growth economics is heading has personally led me to explore and search for new ways to see how mankind can coexist along with the rest of nature. I am especially interested in uncovering how our thought processes sculpt our perception of the world around us and what influence this has on economics as well as on everyday life. How we can use this knowledge to deepen our understanding of mankind's place in nature and in the universe, and, perhaps, regain and restore a respect for nature upon which contemporary economics seems to have only neglected.

I would like to thank the Sahara Forest Project and their commitment towards true sustainable development. I truly hope to see more companies display an equal dedication in the future. I would like to thank my guidance counselor Ove Jakobsen for the invaluable feedback and support received throughout this process and the center for ecological economics for helping me see economics in a new light.

## SUMMARY

This thesis will highlight the main differences between green growth and steady state economics to determine which school of thought is better apt in achieving environmental, economic and cultural sustainable development. These findings will be used to clarify what sustainable development is and to find what factors are essential in achieving it. How can businesses today ensure sustainable development and by what means can this be achieved? This will be exemplified by studying the Sahara Forest Project (SFP), a Norwegian limited liability company aimed at achieving true sustainable development. I reveal which school of thought does the company most resembles, what factors have been or must be considered and in what way can they change business and production processes to best achieve sustainable development. Additionally, I wish to answer 3 research questions.

1. *“What is sustainable development?”*
2. *“What is green growth economics and how does it differentiate itself from steady state economics?”*
3. *“How can businesses implement steady state economics and survive in today’s competitive market?”*

To answer these research questions I have based findings on theoretical framework found in ecological economics, business management and from the teachings of Eckhart Tolle.

The first section 2.1 answers my first research question. What is sustainable development? Here, I give an extended version of the definition found in the Brundtland Report by adding 3 additional factors essential in achieving sustainable development. I call these factors the 3 pillars of sustainable development.

To answer my second research question I have used theories found during my studies in ecological economics. I compare green growth and steady state economics to each other by studying where the two schools of thought lie in regard to the 3 pillars. Green growth economics have a fundamentally different preanalytic vision of how the economy works, they operate in terms of weak sustainability and have a different image of man to that compared to steady state economics. This, in turn, leads to two completely different approaches as to how the two schools of thought go about in terms of achieving sustainable development.

The last research question is answered partially in section 2.1.7 and exemplified in section 5.4.

The main conclusion is that the Sahara Forest Project has yet to prove it is achieving true economic, environmental or cultural sustainability. This cannot be determined until it gives the general public full access to its accounting records. Accounting records reveal if companies separate natural capital from manmade capital, if this is not disclosed the public can never conclude whether or not they operate within strong or weak sustainability. I can therefore not draw any conclusions as to the companies standing in terms achieving true sustainable development.

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## LIST OF DEFINITIONS & ABBREVIATIONS

**Anthropocentric:** Placing humans at the center of something, giving preference to humans above all other considerations.

**Awareness:** Pure consciousness void of thought.

**GGE:** Green Growth Economics

**Metaphysics:** The branch of philosophy that deals with *the nature or characteristics of existence, truth and knowledge.*

**Ontology:** The branch of philosophy that deals with the nature or *characteristics* of existence.

**Empiricism:** The use of experiments or experience as the basis for your ideas.

**Epistemology:** The theory of knowledge as a field of study.

**Entropy:** Energy that is present but that is not available for work.

**Hermeneutics:** The study or theory of the methodical interpretation of text.

**SSE:** Steady State Economics.1 Introduction



## **1.1 Background**

Several responses to questions on how to obtain sustainable development have emerged over the years (as well as questions to responses). The conventional approach is to call for “green growth” economics (GGE) and methods of “decoupling”. This is a method of continued economic growth without corresponding increases on environmental pressure. As nice and good intentioned as this may seem, steady state economists (SSE’s) suggest that green growth economics and methods of decoupling are in fact primary contributors to environmental and social instability - much like treating the symptoms but not the cause.

In a system in which economic stability depends upon economic growth it is fair to say that politicians have a reasonable mandate to promote economic growth. Economic growth leads to economic stability and economic stability leads to social stability - in theory. However, after the financial crisis of 2008, we see a different outcome has emerged than originally intended by GGE’s as environmental and financial disparities seem to only increase in severity. It is not a pessimistic statement to conclude that imbalances exist between economic activity and ecosystems on the planet - it is but a mere accurate observation.

SSE’s acknowledge a paradox between economic growth and sustainability. This is, however, recognized by neither government nor the private sector to any significant degree. This could be partially explained due to the fact that the term “sustainable development” has, one could say, in many ways become equivalent to words such as “terrorism” or “peace” – in the end people find them to be so overused, subjective and vague that they are quickly discarded from the minds of the general public, and people quickly establish negative associations towards them. This is, however, risky business. When individuals lose interests in difficult topics they conveniently delegate these responsibilities onto the shoulders of policy makers. Governments then attempt to solve these issues by imposing laws and regulations onto society to their best effort. This, of course, creates conflicts as sacrifices are made on the behalf of opposing groups, where we, in the end, find ourselves turning to government for more intervention and resolution. And so the cycle continues. One could almost conclude that humans are inevitably destined to juggle between opposing interests in an arena where governments act more or less a referees in a continuous boxing match with virtually infinite rounds.

Of course, we can also say that this, too, is a severely pessimistic outlook of the human condition. Personally, I am absolutely fascinated by the multitude of “world views” each and every human being possess on the planet. The world is undoubtedly multifaceted. At the same time, I am equally fascinated by the similarities we all share. This interest in individual as well as collective commonalities is my own personal optimistic outlook on the human condition and has led me to the school of ecological economics. Sustainability is an issue of great interest to me, since all beings on our planet both influence and *are* influenced by it all at the same time. Maintaining economic and ecological sustainable development is crucial to *life itself*, thus, in my opinion, an important; if not *the* most important challenge the world has ever encountered.

## **1.2 Purpose and problem statement**

I wish to conduct an in depth study on the differences between GGE’s and SSE’s in terms of sustainability. Environmental policies set by government often guide business activities toward reaching overall goals of sustainable development. These policies, in most cases, follow models that encourage economic growth. However, since heterodox economists criticize economic growth models, who is to say how accurate policy makers and businesses are in actually reaching goals of sustainable development? Through this thesis I hope to uncover the major differences between green growth and steady state economics, but most importantly discover alternative ways towards social, economic and environmental sustainability - other ways than placing all our bets on economic growth models. It is my belief that it is always better to have several evacuation plans if a fire erupts. A good way to do this is to compare two economical disciplines representing opposite sides of the spectrum in terms of sustainability: namely green growth economics with steady state economics. To achieve this I must first describe what sustainable development is and then compare it green growth and steady state economics, respectively. Defining sustainability will take place through combining theories from ecological economics, introducing the concepts of weak/strong sustainability and on the image of man as explained by Eckhart Tolle. As such, this will be a theoretical study. I will then proceed to illuminate the differences between GGE’s and SSE’s by comparing these findings to the Sahara Forest Project AS, a limited

liability company with aims to achieve ecological, economic and social sustainable development.

Through this approach I hope to disclose how and why businesses, as well as governments, can reach goals of sustainable development through uncovering what I believe to be commonalities that exist between mankind, nature and economics, features that are inherent in the very definition of sustainable development. Are we doing enough today? Are we way off target or are we on the right track? Analyzing businesses today, in whatever field, is a good way to get a feel for where we stand in terms of sustainable development, since economical paradigms highly influence human activity and thus, simultaneously, our footprint on ecosystems. It is, however, of equal significance to study individual as well as collective human behavior and the worldviews they inhabit since it is, after all, human beings that create economic activity and not the other way around. The problem statement to this thesis is will be divided in to 3 research questions:

- 1. What is sustainable development?*
- 2. What is green growth economics and how does it differentiate itself from steady state economics?*
- 3. How can financial institutions implement steady state economics and survive in today's competitive business market?*

### **1.3 Limitations & Theoretical Material**

This thesis will be written in as part of my specialization in ecological economics at the University of Nordland (Bodø, Norway). My scope of research is limited to time limits set by educational requirements. As such, I will only select 1 research target, the Sahara Forest Research Project AS. I can therefore not generalize my findings for all economical institutions. I will then use this company to explain green growth and steady state characteristics by analyzing actual business activities undertaken by the company in an attempt to show how both economic paradigms differentiate themselves from one another in practical terms. Empirical evidence will be found in mission statements and other official and theoretical material pertaining to my research subject.

## **1.4 Structure**

The so called “3 pillars of sustainable development” represent the theoretical framework by which my analysis will take place. Here, I compare theoretical data to empirical findings. Through these comparisons I will conclude my research and thus answer my problem statement and research questions.

## 2 Theoretical Framework

The purpose of part 2 is to illuminate problem statement 1, 2 & 3:

1. *“What is sustainable development?”*
2. *“What is green growth economics and how does it differentiate itself from steady state economics”*
3. *“How can businesses implement steady state economics and survive in today’s competitive market”*

The theoretical framework from which my research will be based upon will be these 3 research questions.

### ***What is sustainable development?***

I wish to investigate what sustainable development is to create a deeper understanding of my field of research.

Defining sustainable development and the effectiveness of my research subject in terms of obtaining it will take place through findings from my studies in ecological economics. I have therefore limited the definition of sustainable development to what I call to be the *3 pillars* to sustainable development. These are

1. A Preanalytic vision of an economy (Economy)
2. Strong and weak sustainability (Nature)
3. The image of man (Social/Culture)

These pillars will represent the core of sustainable development and thus the drive behind all business activities pertaining to sustainable development. I will then research how GGE’s and SSE’s operate within these pillars through analyzing The Sahara Forest Project and their business activities relating to their own concept of sustainable development. The intention

here is to show and illustrate how and why businesses “do what they do” in terms of sustainable development and how successful they are at reaching it as explained by the 3 pillars.

***What is green growth economics (GGE) and how does it differentiate itself from steady state economics (SSE)?***

Here, I will base my findings on theories that originate from neoclassical economics and steady economics. First, I will show how each economic discipline defines sustainability, their pre-analytic vision of the economy and how they view mankind’s relation to nature. Then, through my empirical findings I show how these pillars reveal themselves in “the real world”. The objective here is to highlight different approaches towards sustainable development so the reader can become aware of the existing different schools of thought and then choose for him or herself which approach is more reasonable.

***How can businesses implement steady state economics and survive in today’s competitive market?***

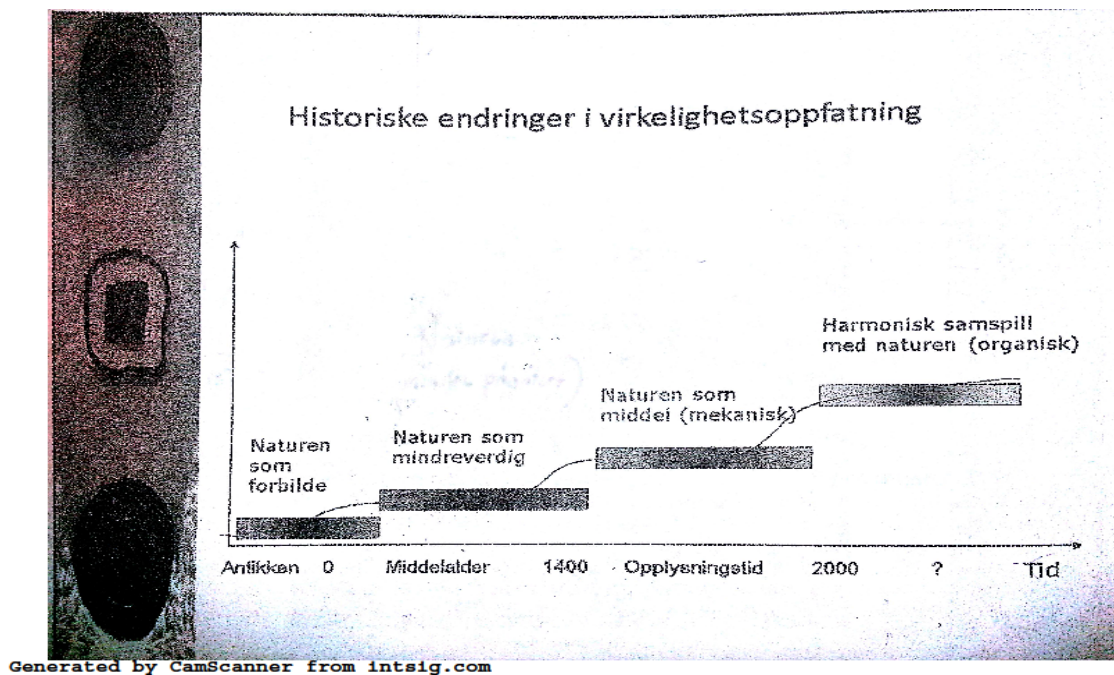
Here, I will first show the mindsets and tools of implementation meant to compliment and realize the steady state economical paradigm. Then, I will describe specific actions taken by the Sahara Forest Project. Here, I will be looking at mission statements and showing how they represent the 2 different schools of thought, namely green growth economics (GGE) and steady state economics (SSE). Then, I will compare these findings to the 3 pillars of sustainable development and thus determine how close they are at obtaining it. Finally, I will look at theories from the school of ecological economics and use them to suggest ways in which SSE can be implemented and practiced in order to survive in today’s competitive business arena. The objective here is to show the different mindsets, methods and approaches available to overcome present and future challenges pertaining to sustainable development.

## **2.1 Sustainable development & the 3 pillars**

### **2.1.1 A new mindset**

Mankind's place in nature, or at least *his perceived place in nature*, has changed over time (Figure 1). According to the ancient Hebrews mankind was considered to be the pinnacle of God's creation and was meant to rule the earth: "*And God said: Let us make man in our image, after our likeness: and let them have dominion over the fish in the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth the earth*". (Første Mosebok, Det Norske Bibelselskap, 1993). In ancient Greece, Aristotle believed in a "cosmic harmony" and that human activities should mirror this harmony. The goal of human life was to fulfill the human potential by becoming virtuous or by gaining moral excellence. Virtue was seen as a golden mean (middle) between too much and too little of something (Dybvig, D., 2011). In this way, mankind is seen as *a part* of nature, not *apart* from it. During the middle ages the church combined knowledge of faith with rational knowledge derived from Aristotle creating a worldview where nature plays a less significant role in the eyes of mankind. After the Lutheran reformation of 1537, the church is separated from politics (seculization) and gradually a more business-friendly theology emerges. Our current worldview, one could argue, gives nature primarily instrumental value, it is used as a means to an ultimate end of satisfying human desire, and, in this way man *separates* him/herself from it. This will be discussed in more detail in the analyses of differing economic disciplines.

Figure 1 Historical changes in worldview.



Today's market economy build's its very foundation around a perceived worldview where nature, society and economics are comparable to advanced clockworks where the market is viewed as a machine in which all of its components (nature) can be replaced without any detrimental effects on the world as a whole. This could be called a mechanistic worldview (Ingebrigsten & Jakobsen, 2011). This creates an environment where market and price mechanisms validate objective priorities, making room for hand-offs between manmade capital and natural capital.

However, new worldview's are emerging. Man is beginning to question, as he has so many times before, his position in regard to nature, society and economics. He is beginning to question if global capitalism is at all synonymous to economic, social and ecological sustainability. Nowadays, people are demanding stricter environmental standards, eco-friendly business practices and green technology, all which can be seen as signs that people are in fact becoming more conscious and concerned with how their own actions impact nature directly or indirectly. The question is rather or not these changes actually suffice in the quest towards ecological, economic and social sustainability. Individuals such as Richard Wellford, James Lovelock, Alfred North Whitehead and others call for a fundamental change on humanity's



perceived worldview, one where deeper understanding and systemic change is needed to reach goals of sustainability, as well social and financial stability. They state that we need to change our worldview from perceiving the market as a “network of machines” to a so called “ecological network” and to expand our perspective on the economy’s role in connection to nature as well as culture. The interaction between the economy, society and nature is often called “the triple bottom line”. I will describe this connection in more detail later in this thesis.

### **2.1.2 Sustainable development – History and general definition**

During the 1960’s, pollution and the environment became evermore conceptualized to the general public. Books were being published on the impact of pesticides, dangers of nuclear fallout, waste disposal, chemical fertilizers and detergents. In addition, the dramatic increase in world population and the question of the sufficiency of food and other resources led to increasing focus on the question of sustainable development. The Malthusian concern over resources once again resurfaced the political agenda during the 60’s and 70’s. The discourse on energy and its relation to resources became central from the beginning of the 1970’s, especially after the oil price shock in 1973 (Røpke, 2004). However, it wasn’t until the 80’s that the concept of sustainable development came into fruition through research made on the connection between industrial/economic development and environment. I have chosen to use the definition of sustainable development derived by the Brundtland Report (aka Our Common Future), which was targeted towards multilateralism and interdependence of nations in the search for a path in reaching global sustainable development. It states:

*“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to their own needs”* (Our common future, 1987).

The report emphasizes that economic growth needs to change in order to achieve sustainable development through stabilizing world population at a sustainable level, reducing consumption and to allow the environment to “take part” in decision making processes. Several follow up’s on this report have taken place over the years. The “Rio declaration” held in Brasil in 1992 resulted in the action plan known as Agenda 21, the climate convention, the

bio and diversity convention and a declaration that all forestry shall take place sustainably. The two latter conventions later developed into the Kyoto and the Cartagena protocol. The Kyoto protocol is the only official, multinational commitment in the reduction of climate gasses (Lindegaard & Økstad, 2011).

In 2002 a meeting was held in Johannesburg, South Africa. The result became a joint responsibility to develop and strengthen sustainable developmental initiatives. Here, the commission aimed at uniting 3<sup>rd</sup> world countries towards obtaining financial growth and increased social development while simultaneously keeping the worlds environmental challenges in mind. These commissions view sustainable development as the primary need to be fulfilled within an ecologically sustainable framework. The normative concept is vital, where solidarity between generations and the relationship with 3<sup>rd</sup> world countries are key (Nystad, Jaminion, & Jakobsen, 2008).

One of the most important subjects within sustainable development is the relationship between economic growth and increased environmental problems and how they reinforce each other. This was one of the main highlights during the conference in Johannesburg and an important topic for Norway and the EUs sustainability and environmental strategy, whereas the conference held in Rio emphasized the change needed in the areas of production and consumption. The Marrakesh process was created to ensure follow up on sustainable production and consumption by introducing an action plan as a frame of reference.

The definition of sustainable development derived from the Brundtland report has more or less been the accepted definition by the general public, there are, however, many disagreements as to how it ought to be executed. Although sustainable development is a normative concept, there are differing viewpoints within the normative. What is to be considered as right or wrong action in the pursuit obtaining sustainable development for existing and future generations? Who is to say whether or not we have the right to set limits of production and consumption on a population? There is no clear cut definition as to what is to be deemed as right or wrong when exploiting natural resources for the use of mankind. The definition derived from the Brundtland Commission should probably be used as a guideline as to what is to be achieved rather than to be considered an actual definition.

There are, however, some limitations within the natural world that can help set boundaries as to what humans can and cannot do, limitations that help guide what can lead to “right” or

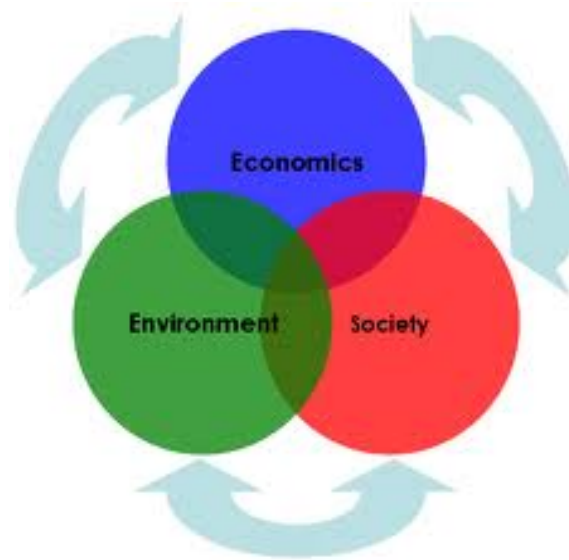
“wrong” action in the quest towards sustainable development. These natural limitations are represented by what I call the 3 pillars of sustainable development. First, I will be looking at how GGEs define sustainable development and secondly how SSEs define the same concept. Then compare them to the 3 pillars to sustainable development.

### **2.1.3 The 3 pillars: An expanded definition of sustainable development**

Although there are many definitions of sustainable development, I have chosen the definition derived by the Brundtland commission as mentioned earlier. However, anyone could claim to operate sustainably within this definition just on pure *belief* that they are actually doing so. It is therefore necessary that the Brundtland definition encapsulates specified boundaries that secure and govern the actual obtainment of its own definition. I have chosen to limit these specific boundaries into what I call the 3 pillars of sustainable development. These 3 pillars set a standard, representing a minimum prerequisite needed in obtaining sustainable development. Of course, there does exist many other factors influential to sustainable development, however, due to the time confinement as well as the high level of influence each “pillar” has on sustainable development I have limited these standards to only 3 factors. Why I have chosen these 3 factors will be explained in more detail in my description of them, but I have chosen them primarily on the basis that they fit within what I believe to be *natural limits within sustainable development* – nonnegotiable limits set by the physical and natural world. Why these “pillars” fit within these natural limits will also be explained in my description of them.

Before I continue describing each pillar of sustainable development, I must mention that each “pillar” represents a single aspect of the triple bottom line concept. As mentioned, “the triple bottom line” is the mutually dependent and dynamic relationship between society, economics and nature (people, profit, planet). “The pre-analytic vision of the economy” will here describe a fundamental feature in sustainable economics, “weak/strong sustainability” represents a key element in the sustainability of nature and finally the “image of man” embodies a key feature in how man views himself in regard to nature. For it is the dynamics of society, economics and nature that truly determines if or how sustainability efforts on our planet are on the right course.

Figure 2 Triple bottom line dynamics.



#### **2.1.4 Pillar 1: The Preanalytic Vision of the Economy**

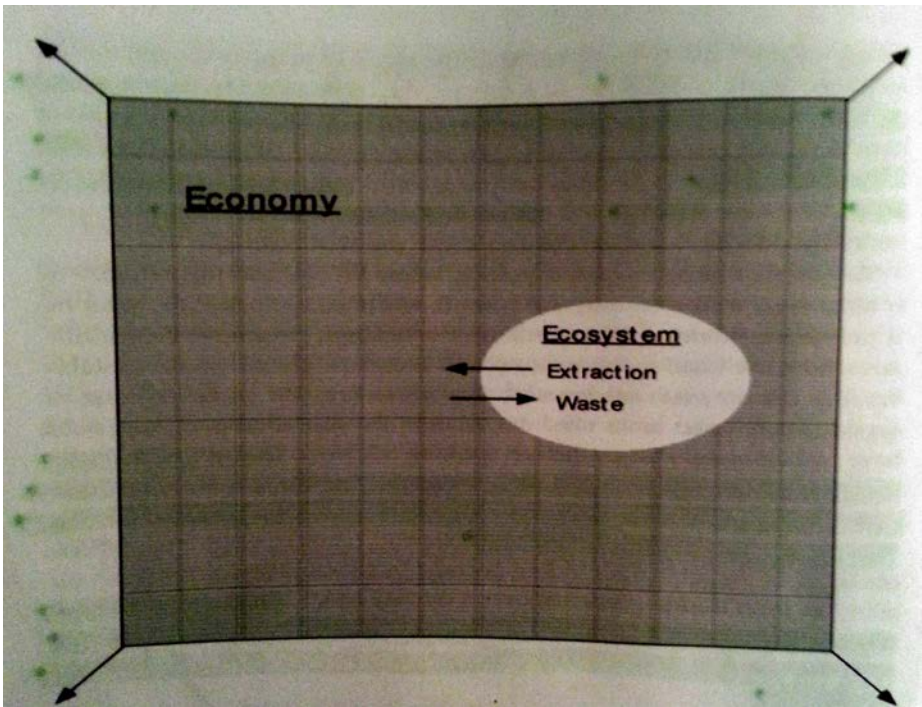
The preanalytic vision of the economy is interpreted as an aspect of the image of man, yet it is nonetheless useful to begin describing it to make a solid distinction between the two economic paradigms chosen. As we shall see, our accumulated thoughts create our perceived reality and represent the image of how we ought to execute the interplay between society, economics and nature. I will show how thoughts represent a conceptual reality, but that it should not be mistaken to be reality itself. This is also explained by Alfred North Whitehead in what he calls “The Fallacy of Misplaced Concreteness” (Daly, H., Farley, J., 2011) which is described as “mistaking the map to be the actual territory”, although he used the term in a somewhat different context. Yet, like a cartographer, an economist attempts to describe the economic reality as accurate as possible to better orientate him or herself in the economic world we inhabit. It is the blueprint by which we conduct our business activities and thus, the blueprint by which we take measures in achieving sustainable development.

Differing economic disciplines often describe their preanalytic vision of the economy to be different from one another, ergo; they have differing thoughts as to how the economic reality should be perceived. In this section, I will be looking at how the preanalytic vision of the economy differs between GGE’s and SSE’s.

**GGE’s and their preanalytic vision of the economy**

As we have seen, the preanalytic vision of the economy is the map by which economists orientate themselves in the world of economics and business - it is their conceptual world, so to speak. To a green growth economist, the fundamental map shows that the ecosystem is a subsystem of the total economy (Figure 3).

Figure 3 The ecosystem as a subsystem to the economy.

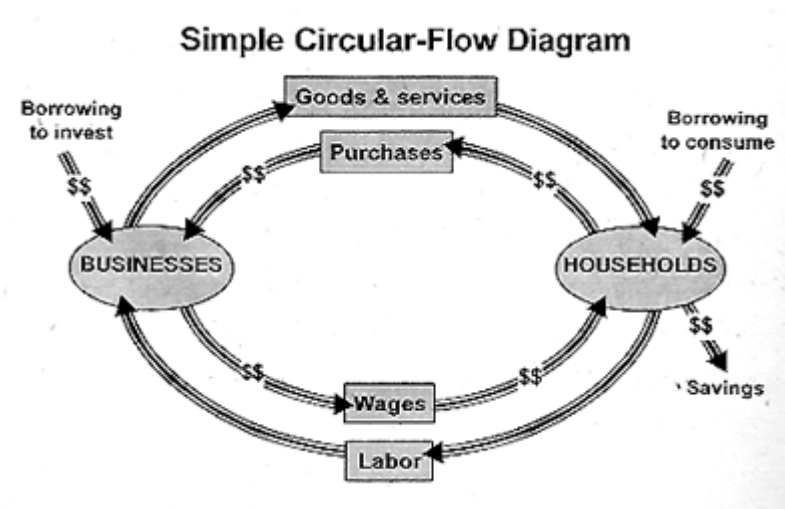


The entire macroeconomy, is then considered to be the whole. To the extent that nature and the environment are considered at all, they are thought of as parts or sectors of the macroeconomy – forests, fisheries, grasslands, mines, wells, eco tourist sites, and so on. In this system, the ecosystem represents the extractive and waste disposal sector of the economy. Growth can continue forever even when ecosystem services are scarce because technology allows us to “grow around” the natural capital by substituting it with manmade capital. Nature, in this view, is substitutable and superabundant. The only limit to economic growth is technology itself, and since we can always develop new technologies (our imagination is limitless), there is thus no limit to economic growth. The very notion of “uneconomic growth” makes no sense in this paradigm. Since the economy is the whole, the growth of the economy

is not at the expense of anything else; there is no opportunity cost to growth (Daly, H., Farley, J., 2011).

The preanalytic vision of the economy also sets the stage for how to analyze the economy. It is important to note that even if the preanalytic vision of an economy differs between two existing theories of economics, it is still possible for them to share certain tools of analyses. GGE's use the circular flow of economics to study and analyze the economy (Figure 4).

Figure 4 The circular flow of the economy.



In this view, the economy has two parts: the production unit (firms) and the consuming unit (households). Firms produce and supply goods and services to households; households demand goods and services from firms. Firm supply and household demand meet in *the goods market* (lower loop), and prices are determined by the interaction between supply and demand. At the same time, firms demand factors of production from the households, and households supply factors to the firms (upper loop). Prices of factors (land, labor, capital) are determined by supply and demand in *the factor market*. These factor prices, multiplied by the amount of each factor owned by household, determine the income of the household. The sum of all these factor incomes of all the households is National Income. Likewise, the sum of all goods and services produced by firms for households, multiplied by the price at which each is

sold in the goods market, is equal to National Product. By accounting convention, National Income must equal National Product (Daly, H., Farley, J., 2011).

The upper and lower loops are thus equal, and in combination they form the circular flow of exchange value. This is a very important vision. It unifies most economics. It shows the fundamental relationship between production and consumption. It is the basis of microeconomics, which studies how the supply-and-demand plans of firms and households emerge from their goals of maximizing profits (firms) and maximizing utility (households). It shows how supply and demand interact under different market structures to determine prices and how price changes lead to changes in the allocation of factors to produce a different mix goods and services. In addition, the circular flow diagram also provides the basis for macroeconomics – it shows how the aggregate behavior of firms and households determine both National Income and National Product. In short, the circular flow model is used by GGE's in analyzing the flow of exchange value in an economy.

When green growth economists say that the economy is growing, they are usually referring to an increase in overall GDP, which is an increase in National Income and National Product. Another use of the word “growth” in economics pertains to profits and costs. When the profits obtained by a specific venture or activity exceed the overall costs pertaining to that activity, we can say that that venture or activity has grown in profitability. Whatever the business is doing, it is then considered to be an economically viable business activity.

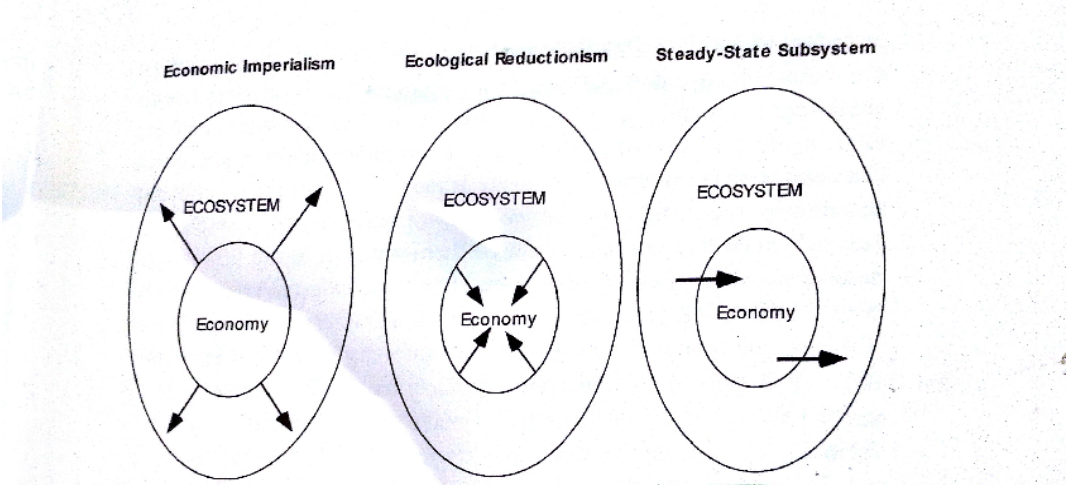
### **SSE's and their preanalytic vision of the economy**

The idea of a steady state economy comes from classical economics and was developed by John Stuart Mill (1857), who referred to it as the “stationary state”. The main idea was that population and capital stock were not to grow and the constancy of these two physical stocks defined the scale of the economic subsystem. Birth rates would be equal to death rates and production rates would equal depreciation rates, so that both the stock of people (population) and the stock of artifacts (physical capital) would be constant – not static, but in a state of dynamic equilibrium. Most classical economists during his time believed this to be the end to

progress, but Mill believed this was a chance to make things *better*, instead of constantly being preoccupied with making things *bigger*.

It was, however, Herman Daly who reintroduced and conceptualized steady state economics in modern times and described the economy as a subsystem of the ecosystem (Figure 5), and not the other way around as described in neoclassical economics. In this system, the economy is primarily concerned with the throughput of energy and materials by which the ecosystem maintains and replenishes the economic subsystem. In order to maintain a balance between economic activity and ecological health SSE's believe there must exist an optimum economic subsystem within the ecosystem as a whole.

Figure 5 Three strategies for integrating Ecology with Economics.



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Today's steady state economists emphasize on throughput in terms of energy and matter. One noticeable feature of the circular flow model and economic imperialism (Figures 4 & 5), as used by neoclassical economists, is that the economy is viewed as an isolated system. Nothing enters from outside the system and nothing exists outside the system. SSE's recognize that an isolated system has no outside, thus no environment. Since neoclassical economists see the



economy as a whole, the economy has no environment seen from their point of view. They can therefore not analyze any relation of the economy to its environment – it has no environment. In reality, what is flowing around and around in the circular flow vision (Figure 4) is only abstract exchange value, the purchasing power represented by all things. A second noticeable feature of this vision is that it does not generate waste. If this is the case, then the system should be considered a perpetual motion machine, which is a contradiction to the 2<sup>nd</sup> Law of Thermodynamics. All common sense tells us that a perpetual motion machine does not exist, so the economic system cannot be the whole. It must be a subsystem of a larger system, the Earth-ecosystem. What has been left out of the circular flow model is the linear throughput of matter-energy by which the economy lives off its environment.

Linear throughput is the flow of raw materials and energy from the global ecosystem's sources of low entropy through the economy, and back to the global ecosystem's sinks for high entropy wastes. Entropy can be defined as energy that is present but that is not available for work. Low entropy means that there are high amounts of useful energy present. Mines, wells, fisheries and croplands are considered to be low in entropy. High entropy means that there are low amounts of useful energy present. Waste is a good example of something that is high in entropy, since there are low levels of energy present for practical use.

The law of entropy states that energy and matter in the universe move inexorably towards less useful states. An entropic flow is simply a flow in which matter and energy become less useful. As an example, an animal eats its food and secretes waste and cannot ingest its own waste products (or, it can, but it wouldn't be very useful for the animal). The same is true for economics.

The linear throughput is in physical units and is strictly subject to the laws of conservation of mass and energy and the law of entropy. Neoclassical economists have abstracted throughput from the circular flow model, which can be seen as the metabolic flow from raw material inputs to waste outputs. The throughput is in physical units. Consequently, the laws of physics apply to it.

By the 1<sup>st</sup> Law of Thermodynamics, the conservation of matter and energy, we know that the throughput is subject to a balance equation:

$$\text{Input} = \text{Output} + \text{Accumulation}$$

If there is accumulation, the economic subsystem is growing. In steady state subsystem, growth and accumulation would be zero (Figure 5). Input flow would then equal output flow. In other words, all raw material inputs become waste outputs. The throughput has two ends: depletion of environmental *sources* and pollution of environmental *sinks*. Ignoring throughput is the same as ignoring depletion and pollution. Unlike exchange value, the flow of throughput is not circular, it is a one way flow from low entropy sourced to high entropy sinks. This is a consequence of the 2<sup>nd</sup> Law of Thermodynamics, the entropy law. We can recycle materials, but never 100 percent. Energy, by the entropy law, is not recyclable at all. More precisely, it is recyclable, but it always takes more energy to do the recycling than the amount that can be recycled.

The circular flow gives us the false impression that the economy is capable of direct reuse. Neoclassical economists do not believe in perpetual motion, they use the circular flow model to show the importance of replenishment; of how the economic process reproduces itself and keeps going for another round. However, SSE's make the point that this replenishment must come from outside the economic system. This is a point neoclassical and conventional economists tend to neglect, and it leads to the mistaking of the part as being the whole. If the economy is the whole, then it has no outside; it is an isolated system.

As we can see from figure 5, a SSE affirms the fundamental necessity of drawing the boundary to the economic subsystem within the ecosystem. It says that the scale of the economic subsystem defined by the boundary has an optimum and that the throughput by which the ecosystem maintains and replenishes the economic subsystem must be ecologically sustainable. They also believe that once we have drawn this boundary in the appropriate place, we must further subdivide the economic subsystem into regions where the market is the most effective means of allocating resources and regions where it is appropriate. These regions are then determined by the inherent characteristics of different goods.

The main idea of a steady state economy is to maintain constant stocks of wealth and people at levels that are sufficient for a long and good life. The throughput by which these stocks are maintained should be low rather than high, and always within the regenerative and absorptive capacities of the ecosystem. Only then can the system be sustainable and continue for a long time. The path of progress in the steady state economy is no longer to get bigger but to get better (Daly, H., Farley, J., 2011).

To achieve this, SSE's encourage small scale projects across large areas. They also encourage energy efficient solutions where pollution is virtually non-existent. This requires societal commitment and labor intensive initiatives. In this way, they are able to create new workplaces by developing green technology, protecting ecosystems and creating new environmental friendly infrastructure.

### **2.1.5 Pillar 2: Strong & weak sustainability**

Zadek and Daly have defined strong and weak sustainability as follows:

*“Weak sustainability requires that the overall stock of capital assets should remain constant over time. This means that as long as one asset grows, other assets can decrease without coming into conflict with the goal of sustainability, e.g. polluting the environment could be compensated by economic growth. Weak sustainability paves the way for “trade-offs” between different elements of environmental stock, and indeed between environmental and other capitals, i.e the social and economic (Zadek, 2001).*

*Strong sustainability entails that it is sufficient to protect the overall stock of capital because some sorts of environmental and social capital are non-substitutable. It is the integrated combination of factors, the irreversibility and uncertainty that counts in the definition of strong sustainability. Strong sustainability requires that manmade and natural capital each be maintained separately, since they are considered complementary. Weak sustainability requires that only the sum be maintained intact, since they are presumed to be substitutes (Daly, 1999).*

If we fuse these definitions into the Brundtland Commissions definition we quickly notice that it is hard to secure possibilities for future generations under weak sustainability. When it is possible to make trade-offs between environmental capital with economic/social capital we risk envisioning a world entirely void of environmental capital and replaced completely by economic/social capital. In terms of accounting, this would in theory validate a total collapse of the planets ecosystems, where pollution and eco-systemic degradation can be compensated by economic growth, hence the term “weak sustainability”. In this thesis, I can therefore not define business activities that fall under the notion of weak sustainability as viable efforts towards sustainable development. It is simply not possible to uphold economic activity when

there are no natural resources. In order to sustain the development of ecosystems, and thus uphold and maintain economic activity, the foundation of an economic model cannot make it possible for an ecosystem to collapse. It must not exceed natural and eco-systemic boundaries. Where the boundaries between economic and ecological activity actually exist is controversial, but the general agreement is that human activities must never lead to biological and ecological collapse on a global scale.

Business activities characterized within the notion of strong sustainability, however, will be accredited “successful” in terms of sustainable development. Strong sustainability makes it impossible for businesses to make trade-offs between non-substitutable environmental stock and economic/social capital. In this way, eco systems are ensured existence since economic growth cannot, in this scenario, replace non-substitutable environmental capital.

### **Green growth economics and strong/weak sustainability**

Although GGEs and SSEs share the same general definition of sustainable development, GGEs believe that sustainable development should go about through means of what is known as “decoupling” – continued economic growth without corresponding increases in environmental pressure. Based on their view as nature being a subsystem of the economy, as we have seen in GE’s pre-analytic vision of the economy (the circular flow model), it is therefore possible, in theory, to continue unlimited growth since manmade capital can replace natural capital. Under these terms, I conclude that GGE’s fall under the notion of weak sustainability.

### **Steady state economics and strong/weak sustainability**

SSE’s expand on the definition from the Brundtland Commission as follows:

*“Sustainable development is achieved by changing systems that enhance the total life-quality of its population, existing and future, while simultaneously ensuring that the consumption of resources and waste do not surpass nature’s source and sink capacities”.*

Sustainable development, in this sense, also requires that the whole biosphere, processes and species are not harmed, and that to some extent, the intrinsic value of sentient non-human beings are respected. Here, human capital and its generation is restricted and has been given a specific limit by which it must adhere. Natural capital cannot be replaced by human capital under this definition and it therefore falls under the category of strong sustainability.

### **2.1.6 Pillar 3: The Image of Man**

Before we delve into what the “Image of man” is it is important that we understand what economics is. All economists agree on a general definition which states that “*economics is the study of the allocation of limited, or scarce, resources among alternative, competing ends*” (Daly, H., Farley, J., 2011). Economic theories differentiate themselves from each other in terms of *how* to actually distribute these goods and services among competing ends. This “how” is either directly or indirectly reflected in how people perceive the world around them. In this way, we can say that how we do business is a reflection of our image of man: How we perceive ourselves in relation to the world around us.

The *Image of Man* is, in this thesis, synonymous to what A.N.Whitehead would call an individual’s “categoriel scheme” (Jakobsen & Ingebrigsten, 2011) and represents a frame of reference by which people interpret the world around them. It consists of presuppositions on what we ought to look for, which relations are accountable and what methods are relevant in the study of reality. It states that if these presuppositions do not coincide with reality then our understanding of it will become diminished. Throughout history the image of man has changed, as seen in figure 1. Currently, one of the primary discussions in economic theory is precisely how man perceives himself in relation to nature and reality. This is often highlighted in debates where man is either deemed as rational or irrational. This is significant because it is through individual and/or collective worldview’s that *the basis for human activities* is determined and thus *how* we actually execute sustainable development efforts. It tells us how and by what means we should balance society, economics and nature. Leif Holbæk Hansen explains that many of the idea’s behind our actions are established through inherited *thought processes* that we use more or less unconsciously without ever reflecting over its credibility nor relevance (Jakobsen & Ingebrigsten, 2011). In this way, our actions are guided by what he calls “ordemballerte og ordmaskerte tankebaner”, or roughly translated, by words with “hidden thought processes”.

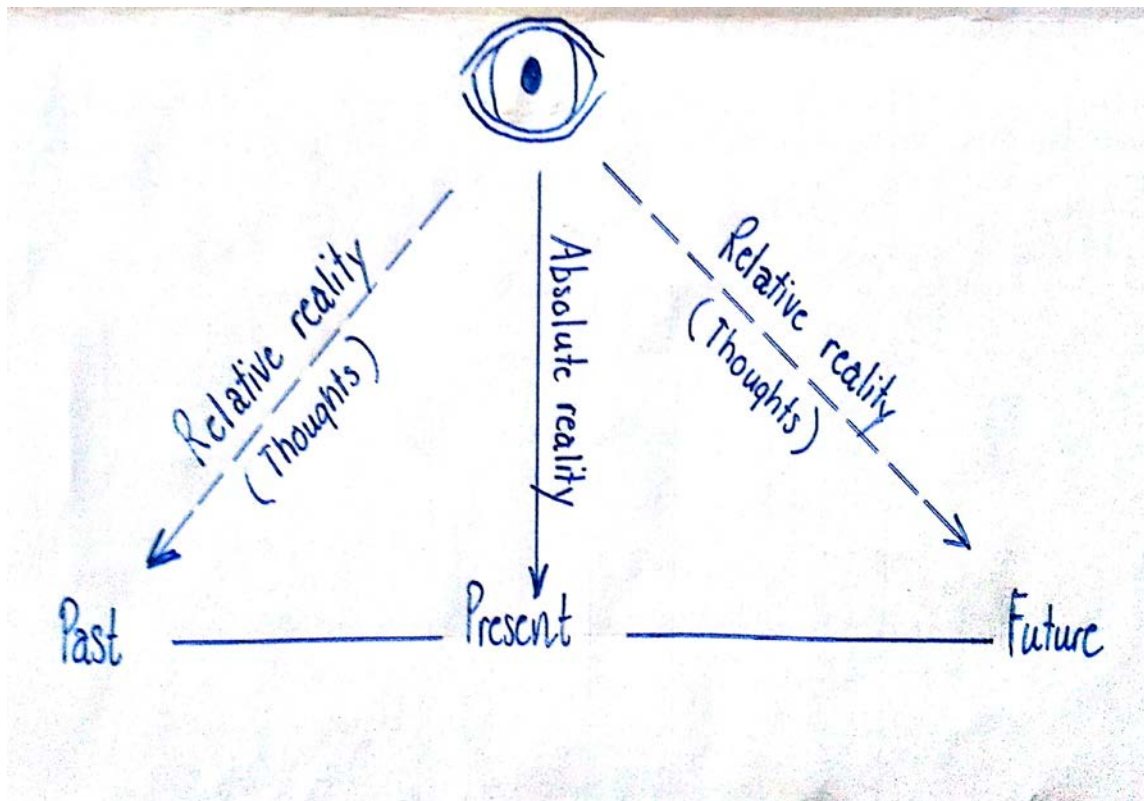
In this section I argue that the changes in the image of man can be explained as a development in accordance with the “mind-identification process” described by Eckhart Tolle. It represents a frame of reference by which individuals develop their categorical scheme. Although there exists as many explanations as to how this process actually takes place as there are people on the planet, this explanation is carefully chosen due to its unbiased and indiscriminate description of one’s “self-image” which can so easily turn into potential heated debates between differing ideologies in people as well as conflicting ideological institutions. The image of man presented in this light is not subject to contradictory views such as “I am right” and “you are wrong”. It is therefore of no consequence if one perceives him or herself as egocentric, ecocentric, religious or to be an atheist. This gives the reader a chance to follow the text without needing to defend his or her ideological or religious/non-religious positioning. Bear in mind, I am not trying to convert the reader into believing anything new, but just to understand two different perceptions of time and thus an understanding of two different realities.

According to Tolle, a person’s worldview is created through a conditioning process where an individual’s sense of self (or self-image) is rooted in what he calls “identification with one’s thoughts” (Tolle, 2005). It begins in early childhood where an ultimately fictitious sense of self begins to grow. This illusory sense of self is called the ego (the ego is referred to as many things in psychoanalysis, but here it simply means identification with your mind/thoughts). He states that if we do not understand the mechanics of the ego and not recognize it for what it is we will continuously and erroneously interpret the ego to be “who I am”. If we, however, recognize this false sense of self just to be thoughts, not who we actually are, we automatically go beyond it and recognize the “true self”, which is described as unconditioned or pure consciousness itself. There is no longer “a perceived image of man”, but just simply a human being. A person then does not perceive him/herself in their own image, but to be *awareness itself*, untainted by any thought of who they think they may or may not be. So to Tolle, understanding the mechanics of “the illusory self” is essential in the understanding of the image of man.

He also mentions how thoughts relate to our perception of time. He explains that there are two notions of time: Clock time (past and future), which is a perceived sense of time, and the present moment (no time or the field of now). In order to use thought one has to use clock-time, which are the notions of past and future (Figure 6). Past and future, however, are only a

conceptual reality. You can never experience it. You will never experience the past or future, since the present moment is all there ever is. You can only think of the past and future, and you do so in the present moment. Thought is viewed to be a valuable tool. It is what makes our species so successful at survival, and to deny it would be absurd. But just like any tool, you set it down after it is used. The “problem” only arises when we attach or identify our sense of self to our thoughts, which causes these thoughts to become incessant and compulsive and we mistake our thoughts to be of *absolute* reality, not of *relative* reality as figure 6 illustrates. Identification to our thoughts creates an incessant mental stream which he calls “the ego” that apparently corrupts and distorts reality. As such, he describes two different reality’s: A conceptual (irrational) reality and a non-conceptual reality (rational), all depending on where your awareness or attention is positioned and if you are identified to them or not. If your attention is identified with thought, then “you” or your sense of self dwells in the *conceptual* realm of reality. If you, however, accept the present moment and whatever surrounds you without identifying with thought then your attention/sense of self resides in the realm of *reality*. In this sense, one can say that a person is to be considered rational or irrational depending on where their attention is in relative to time. If your sense of self is in the present moment, you are rational. If your sense of self is located in past or future, you are irrational. This is illustrated in figure 6. A person is to be considered rational, only when he or she identifies with the present moment, which means being identified with “no thought”. You can still have thoughts, you use them as tools. However, when you are identified with your thoughts, the thoughts use you; they take you over so to speak, where your focus of attention lies in past and future. This is the meaning of identification with thoughts.

Figure 6 Awareness/attention in relation to time.



Here, he makes a distinction between what he calls *identification with the mind* and *identification with no mind*. If reality can only be found in the present moment, than an individual can only be considered rational when his or her attention is aligned with the present moment. In this state, the mind does not label, judge, condemn nor criticize whatever form arises in their space of consciousness, yet it is free to play around and experiment with thought as much as one see's fit. When an individual's sense of self is aligned with past and future, then he is aligned with non-reality, a so called "mind-created", conceptual reality, where the mind "takes you over" and begins to label, judge and criticize whatever form arises in his or her space of awareness. The person is then no longer aligned with reality. Your conceptual reality then eats up reality and you inhabit a world of unease since your space of awareness is no longer are aligned with reality. This is why Lao Tzu wrote in his famous book the Tao Te Ching: "*He who stands on tiptoe does not stand firm*". "Standing on tiptoe" here means your attention is somewhere in the future, you are *here*, but wanting to be *there*. An example would be worrying about something that may or may not happen in the future. Even hope is ultimately considered an illusion. Neither anticipation nor worries are considered to be rational behavior, since you are making a thought (a conceptual reality) of greater importance



than reality (whatever is around you) of this moment. You no longer see the flowers on the wayside, so to speak. You no longer perceive yourself to be a part of nature. Your mind has obscured your connectedness with it. This is what the mind does: It cuts things up into pieces, separates, and analyses. This also implies that if an individual is identified with thoughts then that person also separates him or herself from the totality of reality.

The question is: how does this influence business and sustainable development? Remember, the two economical models distinguish themselves by two major features: growth and steady state equilibrium. According to Tolle, these economic structures are an outer reflection of an inner state of awareness. How we do business, then, depends on our sense of self and its relation to nature, let it be identified with thoughts or not, since it ultimately sets the foundation for how we perceive the world around us and our sense of belonging to it.

### **“The Image of Man” as perceived by GGEs.**

Each theory of economics, should it be classical, neoclassical or ecological etc., are guided by a code of ethics which stems directly from their “image of man”. It is their “bible” from which their “commandments” are derived. In this thesis, the moral reasoning of a GGE is considered to stem from neoclassical economics and I will use the metaphor “social man” (Ingebrigsten & Jakobsen, 2009) to describe GGEs’ moral character.

In classical economics, Adam Smith argued that individual self-interest secured the best outcome for a society. To be used as a useful abstraction in economic analysis, John Stuart Mill characterized this individual as “economic man” where an individual acts according to the ideas of ethical egoism.

Yet, in neoclassical economics the image of man is expanded a bit further. Although Menger, Jevons and Walras are often seen as the founding fathers of neoclassical economics, Alfred Marshall is credited for codifying these ideas for modern economists in his *Principles of Economics*, published in 1890 (Ekelund Jr., R.B., Herbert, R.F., 2002). He also used the concept “economic man”, but he insisted economists deal with, *“man as he is: not with an abstract or “economic man”; but a man of flesh and blood (...) being chiefly concerned with*

*those aspects of life in which the action of motive is so regular that it can be predicted, and the estimate of the motor-forces can be verified by results, they have established their work on a scientific bases*” (Marshall, 1920, I.II.33). In other words, Marshall considers “economic man” to be real; he is a man who is “*largely influenced by egoistic motives in his business life (...); but who is also neither above vanity and recklessness, nor below delight in doing his work well for its own sake, or in sacrificing himself for the good of his family, his neighbors, his country; a man who is not below the love for a virtuous life for its own sake*” (Marshall, 1920, I.II.33). The methods used by neoclassical economists to achieve this “virtuous life” are Pareto optimality and cost-benefit analysis. In a Pareto efficient economic allocation, no one can be made better off without making at least one individual worse off. Given an initial allocation of goods among a set of individuals, a change to a different allocation that makes at least one individual better off without making another individual worse off is called Pareto improvement. An allocation is defined as “Pareto optimal” when no further Pareto improvements can be made. In this way, neoclassical economists believe this method is synonymous to efficient allocation of goods and services. From this, I can conclude that the ethics behind these principles is utilitarianism which is considered to be a consequential ethics developed by J. Bentham, J.S. Mill and H. Sidgwick. Utilitarianism is a theory of normative ethics holding that the proper course of action is the one that maximizes utility, specifically defined as maximizing happiness and reducing suffering. It is an impartial or impersonal moral view and it is accepted that morality is agent independent. Criteria such as pain and pleasure, are the sole good and bad things in human lives (ethical hedonism), and ends can justify the use of means (Ingebrigsten & Jakobsen, 2009). This “social man” characterizes neoclassical economics. This description is given by both Etzioni and Marshall. It states: “*(...) economists study the actions of individuals, but study them in relation to social rather than individual life; and therefore concern themselves but little with personal peculiarities of temper and character*” (Marshall, 1920, I.II.33). The social man attempts to find solutions leading to the highest possible utility for most people (Ingebrigsten & Jakobsen, 2009). In this image, in order to decide what kind of behavior is morally right, we need to compare the social consequences of actions. Both Pareto and cost-benefit analysis are examples of this. The idea inherent to utilitarianism is Bentham’s “the greatest happiness” principle i.e. to produce the highest happiness to the greatest number, or to produce pleasure and to avoid pain.

So how does this fit in to Tolle's self-identification process and how does it influence business and sustainability? To answer this we must interpret the image of man as perceived by GGE's in the light of Tolle's identification process. To start off, neoclassical economists, and implicitly GGE's, follow ethical hedonism and utilitarianism. As mentioned, ethical hedonism suggests that pain and pleasure are the sole good and bad things in human lives and ends can justify means. This very belief justifies many unwanted means by which business should take place; i.e. ruthless acquisition of power and market share to uphold a competitive edge, social vice in the pursuit of profit, saving capital by dumping toxic waste into rivers and other innumerable "unethical" ways toward monetary gain. But what does unethical mean and how do you categorize it? Is it not only natural for people to avoid pain and gain pleasure where and whenever they see fit? Who can judge what is right to each individual? To answer this I rephrase the famous quote by the Dalai Lama: "Pain is inevitable. Suffering is optional." What does this actually mean? Suffering implies that one's sense of self is linked to a thought in some way. This takes place when "your need to be right" is of utmost importance, your idea of what is right or wrong is "under threat" instead of accepting the reality of what is at this moment. As we have seen, when our attention is focused in either past or future and our sense of happiness becomes conditional (as opposed to unconditional), presuming that our attention is completely absorbed in past or future and utterly unaware of the present moment. When a person suffers, his or her sense of self feels threatened in some way since it fears its own annihilation. Someone who chooses to dump toxic waste into a river does so out of the need to avoid the pain of losing money and to gain the pleasure of a better financial result from a purely logical standpoint, but ultimately that person identifies with the idea that "if I do not do this it will lead to pain", which is a thought. In this state the present moment hardly exists at all. So what is right or wrong? To paraphrase another known historical figure: "Nothing is right or wrong, but thinking makes it so" (Shakespeare). One could even paraphrase Jesus and say: "Thou shall not judge". Ultimately, all judgment is a thought in one shape or another, where your attention has taken hold of your sense of self and the "thought entity" has taken you over: you believe it to be "you". It's as almost as if you are possessed without knowing it, like believing a dream to be real.

But perhaps the most significant link between seeking a sense of self through thought and GGE's image of man is the incessant need for growth. The mind made sense of self is in constant search for more since it continuously seeks to strengthen itself. It derives a sense of self through the content in the mind. It begins with our name, which represents the basket into

which we accumulate more content, more thought of “who we are”. A child will for instance experience massive pain when its’ toy breaks or is taken away. This is because the child has invested a sense of self to the thought of owning that toy. The child will soon enough lose interest in the toy as it gets older, only to be replaced by other thought forms which with it identifies. An adult “toy” would be a car. Great suffering happens to many adults when their car is damaged in some way. They have invested the thought of ownership in their vehicle to their self-image, so they feel pain when something undesirable happens to it: “Look what happened to my car!” This is just one example of the innumerable ways the mind will cling a thought form to their sense of self. It continuously wants more - to grow - and it is never satisfied for long. In neoclassical economics, people are obsessed with the notion of growth. Even when there is a recession it is referred to as negative growth. Corporations can be looked upon as collective mind-structures that are perpetually seeking to enhance their image through increased market share, securing increased sales and customer consumption. It says “We are not big enough, we need to expand, we must gain a competitive edge” and so forth. They also search for a stronger sense of self, to add something to the content of “who we are and what we represent”. It might be through mergers and acquisitions, more assets and capital, stronger relationships and business partners. Although there is nothing wrong with mergers and acquisitions, relationships and business partners in itself, the problem arises when it invests its sense of self to it. Only then does aggression and ruthless competition take place in order to defend its self-image. “Give me more time so I can be more complete” is what these institutions are telling themselves. They are obsessed with the future, and the present moment is only a means to an ultimate end.

In conclusion: If people, corporations or even nationalities identify with their thoughts the ends justify whatever means. If they do not, the means and the ends are one and the same.

## **SS & Image of man**

As described earlier, the image of man describes how we perceive ourselves in relation to the world around us. Herman Daly uses ecological economics as a means of achieving a steady state economy. Ecological economics depart from the neoclassical and thus mechanistic worldview (where the world is the sum total of individual parts) and moves towards a more

*organic worldview* where individuals and nature are seen as a network of interrelated patterns and relations.

The organic worldview can be credited to several individuals. Alfred North Whitehead’s “Philosophy of Organism” explained that life exists for its own sake and, therefore, all life is considered to have intrinsic value. We can therefore not understand the physical world or life itself unless we consider all species to be essential factors of the universe at whole. In this way, the individual and society create each other and depend on one another simultaneously. To give mankind and other highly evolved species special emphasis would then not be compatible with the understanding of the universe.

James Lovelock and his GAIA theory explains that the world is a self-regulating system where evolution is not primarily a result of “survival of the fittest” but more a result of a dynamic cooperation based on relations, creativity and innovation. Insight into this “web-of-life” yields deeper understanding into how this complex network operates and both inspires and creates incentives to develop a new holistic science.

The principle of relativity also states that all entities are defined by their relation to other entities. A consequence of this is to accept that all existence is bound together and that society cannot be reduced to autonomous social atoms.

Figure 7 Mechanic VS Organic Worldview.

<b>Mechanic</b>	<b>Organic</b>
<b>Competition</b>	<b>Cooperation</b>
<b>Objects</b>	<b>Relations</b>
<b>Atomic</b>	<b>Network</b>
<b>Structures</b>	<b>Processes</b>
<b>Linearity</b>	<b>Circulatory</b>
<b>Top down</b>	<b>Bottom up</b>

One can say that from these ideas, and others, came the birth of ecocentrism. The ethics of steady state economics is, however, hard to define and this is one of the main criticisms of this branch of economics. Herman Daly and colleagues seem to have a kind of dogmatic belief in the existence of objective values ordered as “an objective hierarchy of end ordered with reference to some concept of the ultimate end” (Daly and Farley, 2004). But as noted by Ingebrigsten & Jakobsen, they have difficulties in specifying what this value is. Following their line of reasoning, it is reasonable to conclude that the ultimate end is found with the fields of philosophy or religion. Daly tries to develop an ethical principle for steady state economics as a link between religious knowledge on one hand, and economics on the other. This means that the end is closer to the “ethical good” than to the physiological or psychologically felt utility. The challenge of ecological economics and steady state economics is to find solutions that use the actual means efficiently and wisely in the service of the ultimate end (Ingebrigsten, S., & Jakobsen, O., 2009), thus they lack an official ethical frame of reference by which to conduct means of achieving a steady state economy. It is fair, nonetheless, to say that SSE’s see the world from an ecocentric perspective and are thus able to use this view to approximate and agree upon different means of achieving the end goal of a steady state economy.

When comparing the image of man as perceived by SSE’s to Tolle’s mind identification process many parallels can be drawn. He explains that when we know thoughts to be an expression of consciousness, and do not mistake them to be who we are, then we do not perceive ourselves to be separate entities from the rest of existence. We then recognize that we are a part of a whole, a part of the universe and not separated from it as in the mind identified state. In this state of consciousness, all sentient beings and creatures are perceived to have intrinsic value. They become “essential factors of the universe at whole” as Whitehead puts it. The anthropocentric view then dissolves and is replaced by understanding mankind to be at one with the rest of nature.

Tolle calls this state a state of pure consciousness, a state of being untainted by thought. Problems cease to exist, although challenges still occur. An important feature of this state of awareness is the end of fear and suffering. Problems only arise in the realm of thought, where our consciousness is directed into either the past or future. To worry or fear of what “may” or “may not” happen is to be trapped in clock-time. In the state of pure consciousness, a person

accepts the present moment completely without generating any thoughts of what can, should or may happen. This does not mean you do not use the mind to get things done. But there is no longer “a me” attached to the thought of what may or may not happen. When fear, suffering and worry cease to exist, the “joy of being” can be felt. Only then can people be creative in the deepest sense of the word. He also explains that people no longer struggle to “compete” against others through the need to uphold the illusory sense of self, the mind-created self. Competition in itself can still exist, but not through aggression, fear or other emotions generated by the egoic state of modality. Here, aggressive competition is replaced by cooperation allowing for a true communicative arena to emerge. This “joy of being” cannot come to people through any form, possession, achievement, person or event – through anything that happens. That joy cannot come to us – ever. It emanates from the timeless dimension within every human being, from consciousness itself and thus is one with who we are. When this dimension of consciousness is felt, supposedly, each person feels the emanation of life that exist in all beings, and you recognize yourself to be at one with the rest of existence. One could say that that man then inhabits a “steady state” of consciousness where you feel at ease, whole and in equilibrium with the universe.

Conclusion: I find SSE’s image of man to be compatible with Tolle’s dis-identification with the mind. How this process actually takes place will not be discussed in this thesis and I leave it up to the reader to explore this process or not.

### **2.1.7 Form conceptualizing a Steady State Economy to actualizing it**

One of the necessary steps in achieving a steady state economy on a global scale, which is imperative since throughput is a global phenomenon, is that areas where throughput exceeds nature’s ability to act in accord with its assimilation processes of source and sink capacities need to undertake so called de-growth socio-economic policies. Areas that are, for instance, extremely impoverished and where the throughput of matter and energy in that economy does not exceed nature’s ability to assimilate its sink and sunk capacities would be encouraged to enforce socio-economic growth policies (as long as these economic activities happen within nature’s ability assimilate source and sink capacities). Steady state economics is not an anti-growth economic movement; growth is actually encouraged under certain circumstances and conditions. Steady state economists demand “zero-growth” or non-growth on the

macroeconomic level, not necessarily on the microeconomic level. On the microeconomic level, market forces will ensure that efficient businesses expand while less effective businesses go “belly up”, allowing new businesses to emerge (note that the “death” of exponential growth economics on the macroeconomic level is not equivalent to the “death” of supply and demand market forces in a SSE!). It may seem that certain businesses under this economy must drop everything they are doing and rearrange their infrastructure entirely to meet zero-growth on the macroeconomic level, although this must not be the case since market-demands can ensure a gradual, healthy transition towards a steady state economy. Although some economists may claim that achieving a steady state economy is an impossible task, others argue that it is quite feasible. SSE’s argue that it is not only feasible, it is absolutely critical if long term sustainability is to be achieved. Before, I explain how these infrastructural changes can be made, we need to first understand some fundamental differences between mainstream and steady state economical thinking.

In mainstream economics the only way for the economy to be in a state of health is by consuming more and more products, thus more and more resources (energy and raw materials). This is due to the assumption that if human beings are to become happy, they must continuously gain increasing access to purchasing power in order to acquire evermore goods for consumption (as the image of man in this economic paradigm highlights). This means that the more throughput of energy and materials for production of goods and services will eventually lead to evermore happier human beings. The more we produce, the better off we are. This is reflected in BNP growth which gives us an approximate estimate of the physical volume of goods and services produced in a country during a given period. If BNP is declining, we experience a recession. If it is expanding, we experience economic progression (It is also worth noticing how the media makes sure the general public “knows” how terrible this is as well). However, SSE’s notice that many “not-so-good” activities have a positive impact on BNP.



Figure 8 BNP - What counts and what does not.

<b>What is accounted for in BNP</b>	<b>What is not accounted for in BNP</b>
<b>All monetary based transactions</b>	<b>Activities not measured in monetary terms</b>
<b>War</b>	<b>Peace</b>
<b>Judicial Trials</b>	<b>Quality of education</b>
<b>Healthcare</b>	<b>Health</b>
<b>The cost of pollution</b>	<b>Living ecosystems</b>
<b>Injuries</b>	<b>Voluntary work</b>

SSE’s notice two types of growth: Good growth and bad growth. Good growth happens through efficient production processes where manufacturers internalize their costs, such as using renewable energy, zero emissions, re-use and recycling processes that are coherent with the earth’s ecosystems. Bad growth takes place when growth in production and consumption trends externalize their costs, for example in conjunction with use of fossil energy, improper disposal of toxic substances, overuse of natural resources and irreversible damages to the planets ecosystems.

One could say that a steady state economist believes that the term production has been misused. Through conventional economic thinking it is easy to believe that new things or objects are created through production when a substance or form of energy is converted into another. In reality, we can only say something is produced when *the value of a substance is higher than the value of what was destroyed*. In this sense, it would be better to refrain from production in cases where it leads to overuse of natural resources or where irreversible

destruction to ecosystems take place. Steady state economists believe, therefore, that it is necessary to distinguish between production that leads to increased “wellbeing” and production that does the opposite. An important misperception of the preanalytic vision of conventional economics is that it leaves the reader with the false impression that exponential growth is possible, where in fact this is physically impossible since the earth only has a finite amount of resources. On the same note, operating in conjunction with today’s current economical paradigm makes limiting growth seem impossible, since it is considered to be synonymous to economic disaster. But as Herman Daly describes this in his own words: “The physically impossible is more impossible than the merely politically impossible”.

As such, we can understand why steady state economist’s stress that the consumption of renewable resource processes must never outweigh its own ability to regenerate itself if true sustainable development is to be achieved. Likewise, the use of non-renewable resources must never exceed what is possible to be replaced by cultivating renewable substitutes, since doing so would produce more high-entropy waste than the earth’s assimilation of source and sink capacity. Using fossil fuels as a primary energy source is an example of such a case since they are non-renewable resources. The use of renewables is imperative if natural vegetation and ecosystems in critical shape are to exist for future generations, as the definition of sustainable development demands (according to the one adapted by the Brundtland Report). Steady state economists believe more in qualitative improvements than the conventional belief in quantitative consumption of matter and energy.

We can now look at ways in which a steady state economist may go about in terms of achieving a steady state economy through production. Ecological economics and circular economics have developed creative and feasible ways to make production compatible with a steady state economy.

Høyer and Næss suggest that society in its present form does not necessarily need to be changed, as pressures from customers, environmental groups, and legislators etc. will eventually force organizations to take environmental responsibility and come up with technological solutions. (Ingebrigsten & Jakobsen, 2011). Market signals suggest that this is actually taking place today as ever more consumers are demanding further more environmentally friendly practices and products. However, there are two ways in which technology can be used in regard to sustainable development. On one side, technology makes it possible to consume more natural resources and thereby increase the growth of throughput

of matter and energy in an economy. On the other hand, it can also contribute to more efficient resource use by facilitating the recycling of materials, increasing the durability of products, reducing amounts of industrial waste and thus help reduce environmental hazards.

Ecological economists suggest that a steady state economy can be realized through cooperation and by decentralizing collaborative networks. Kennet Boulding states that networks perform better than through what is possible through enormous global power structures (Ingebrigsten & Jakobsen, 2011). Likewise, Schumacher claims that production from local resources for local needs is a more rational way of life. Through these means, it is easier to produce within the earth's assimilation of source and sink capacities and thus approximating a steady state equilibrium as closely as possible.

So, in terms of production, a steady state economy is comprised of a constant magnitude of physical goods (human made capital) maintained by a resource flow consistent with the generative and waste assimilative capacities of our ecosystems. In this way, the population of human beings is constant. It can also be considered to be dynamic, creative and stimulating by increasing efficiency, improving environmental management and by changing consumption habits. The aim is to create a societal oriented, work intensive, non-polluting environment. By developing green technology, protecting ecosystems and developing environmentally friendly infrastructures it is possible to create enough jobs for everybody.

In cases and areas where de-growth is needed, the aim is to obtain an equitable downscaling of production and consumption that ensures human well-being and enhances ecological conditions at the local and global level, in the short and long-term. Steady state economists aim at promoting wellbeing through social justice, solidarity, joy of life, the pursuit of relational goods rather than Marshall's conception of happiness being the blind pursuit of evermore material acquisition. This also helps strengthen and cultivate human relations, instead of separating them through ruthless egocentrism and competition.

De-growth leads to reduced production and consumption, however, this does not mean a reduction in the quality of life. More well-being is thought to be achieved through spending more time with family, friends, nature and society. A constant focus on consuming more and more products will never create more time for the above. Steady state economists believe wellbeing is achieved through enhanced quality of life, not by consuming more in quantity.

On the individual level, de-growth implies a voluntary simplicity in one’s way of life. On a global level, de-growth implies relocating economic activity to reduce the dependence on fossil fuels and to reduce the global ecological footprint. It is easy to draw the conclusion that a reduction in dependency of fossil fuels would mean a reduction in BNP, this is, again, not necessarily the case. Through planned reductionism of fossil fuels, it is possible to maintain a high level of BNP through focusing on institutional changes and cooperative solutions. De-growth can under certain conditions and policies, increase welfare and improve environmental conditions (Ingebrigsten & Jakobsen, 2011).

As we can see, although sustainable development under a steady state economy has to stop producing quantitatively when the limits of source and sink capacities have been reached, it does not mean end to qualitative development. In this sense, not quantitative growth but qualitative growth is encouraged. Steady state economists believe such growth leads to a richer life. It is a growth comprised of increased complexity and maturity. Quality is then developed through new processes and patterns; adding deeper insights into this complexity as it moves along. It is an economic paradigm based on continuous learning and doesn’t aimlessly strive towards conceptual ideals, but rather strives to adapt to reality. Figure 9 shows the transitional path towards a more qualitative future.

Figure 9 Developmental possibilities.

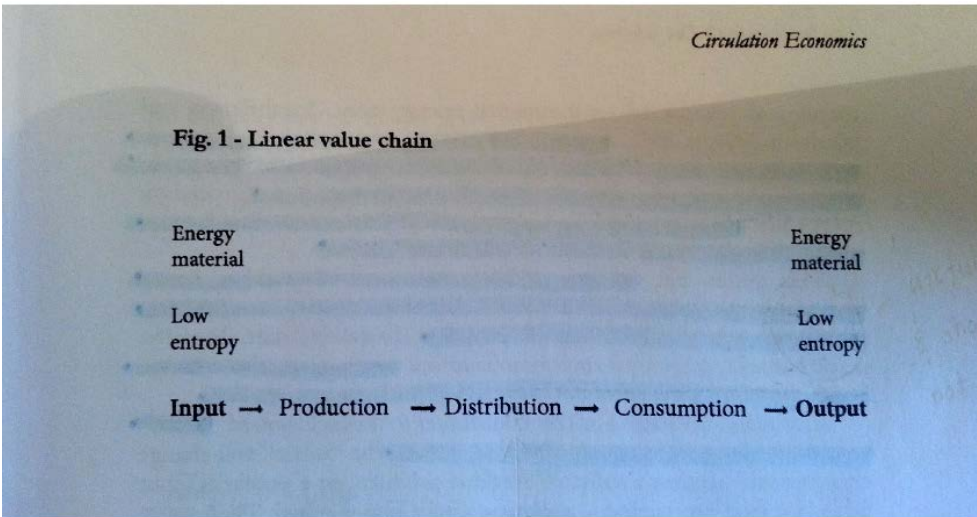
<b>Green Economics</b>	<b>Steady State Economics</b>
<b>Economic Growth</b>	<b>De-growth</b>
<b>Green Growth</b>	<b>Qualitative growth</b>

As this qualitative growth is achieved, SSE’s envision a more qualitative society in terms of everyday life, where the local community is strengthened through establishing arenas for dialog, creativity and learning. They envision a network of metabolic processes where society

transports nutrients and waste. Here, dignity and mutual responsibility is developed by strengthening ties between individuals, where an integration of economic and social institutions are geared towards specific functions within an ecological context and environment. This can be achieved by deducing the distances between production, distribution, consumption and redistribution.

Such a model has been created by another branch of economics known as circulation economics. Circulation economics is an economic model inspired by the principles found in the philosophy of organism, which describes the world in terms of an organism and is characterized by interrelatedness and processes of change (Ingebrigsten, S., & Jakobsen, O., 2011). An important aspect of circulation economics is to use resources in an efficient manner; where a holistic and contextual view of resource and waste management is put into action. Resource (Input) and waste management (output) must be seen in context with each other, and not seen as isolated events in a linear value chain as practiced in conventional economics. Figure 10 shows how resources flow through an “open-ended input/output” economy, where the value chain starts with production and ends with consumption.

Figure 10 Linear value chain.



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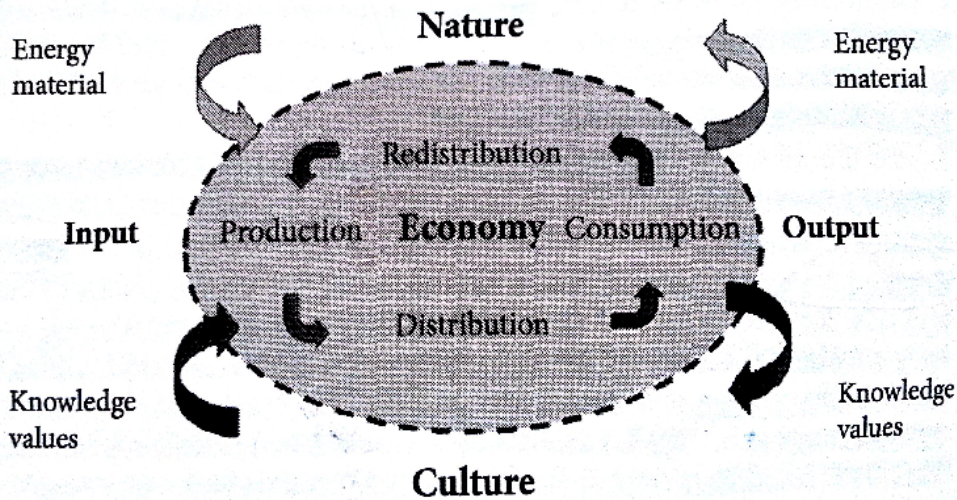
One of the many downfalls with this system is that there exists a great chance that neither matter nor energy is optimally utilized, since the level of entropy on both the input and output side are low and virtually identical, indicating inefficient use and untapped potential. Georgescu-Roegen argued that that waste was previously omitted from economic considerations, since waste by definition has no value (Georgescu-Roegen, 1971).

A general goal of circulation economics is to introduce systems that lead to increased production while simultaneously decreasing the extraction of raw materials. Thus, reducing amounts of waste produced and in this way reducing the throughput of energy and matter extracted from nature for production purposes, making it compatible with the idea of a steady state equilibrium (production processes compatible with the earth's assimilation of source and sink capacity). It encompasses everything related to production, distribution, consumption and redistribution of goods and services, where the most efficient solution to a problem facing one company can be found in cooperation with one or more actors in a different part of the circular value chain. Instead of describing the market as an aggregate of autonomous actors the market is described as inter-connected ecosystems in which energy and matter circulate (Ingebrigsten, S., & Jakobsen, O., 2011).

When systems are established in a way that contributes to the inclusion of “waste” as an input factor in a new production process, the “waste” will change character and become a valuable “residue product” or a potential input factor for new production – replacing virgin raw material. In this way, waste is seen as a product that has real value and can be sold based on the need for different waste fractions of the waste. This requires waste to be sorted out in fractions that are needed to be used in a new production process. This creates an entirely different value chain, from a linear model to a circular model (Figure 11).

Figure 11 The circular value chain.

Fig. 2 - The circular value chain



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This means that input and output activities are interconnected, where an element of redistribution is added to the value chain allowing matter and flows of energy to move in the opposite way. The circular processes in circular economics are inspired by the processes in nature. As in nature, resource-efficient solutions have been developed based on the principle of matter and energy circulating in closed and open circles within and between ecosystems. Resource efficiency is based on the different species having developed specialized qualities ensuring maximum utilization of the amounts of matter and energy available. As an illustrative example, CO<sub>2</sub> is a waste product from animals which constitutes an important nutrient for plants and can thus be considered both a waste agent and a nutrient.

In circulation economics, the perspective has to be elevated from the *micro* level: the individual actor or individual firm to the *meso* level: the industry level. Solutions here are not linked to the individual actor but to the interaction between the actors in specified (integrated) circular value chains. Solutions are considered to be preferable if these solutions lead to a positive effect for the cycle, even if they do not generate a sufficient degree of profitability for

the individual actor. By changing the focus from the micro to the mesa level, it is possible to implement measures conducive to increased resource efficiency, thus ensuring profitability in other areas of the cycle than where the measures are implemented. In this way, it focuses on the connections between all the actors involved instead of studying the various actors separately.

This also requires a change at the structural level. It is important to establish an arena where the actors involved can coordinate planning to achieve the best possible output. In addition, it will be necessary to establish a framework for economic decision making characterized by cooperative interaction. This framework exceeds the traditional market and commando (state) economy as it represents a *communicative rational interaction between independent actors* at the meso-level. It is important to mention that the communicative action should not replace strategic action in all fields and that it is important to clarify what areas actors should coordinate their activities and in which areas they should compete in order to achieve the best possible social, economic and ecological results. Within a competitive market economy it is difficult or, perhaps even, impossible to handle problems concerning the interplay between economy, nature and culture, since the market is limited to dealing with cases in which the alternatives can be compared on a one-dimensional economic scale (i.e. where monetary profit is the only value measured), whereas integrated problems presuppose pluralistic values (Ingebrigsten, S., & Jakobsen, O., 2011). To deal with these integrated problems, where such pluralistic values take place, requires adherence to sets of values held in common between people and with the organization. In order to make the circular value chain work environmental values must have a more fundamental standing in economics.



### 3 Methodology

The methodology of choice depends heavily on what my research questions are and what my own personal worldview is. I have the following 3 problem statements:

1. *What is sustainable development?*

Here, I have used theoretical frameworks for my answer.

2. *What is green growth economics (GGE) and how does it differentiate itself from steady state economics (SSE)?*

To answer this question I have used theoretical frameworks to highlight the primary differences between these two different schools of thought.

3. *How can financial institutions implement steady state economics and survive in today's competitive business market?*

Here it will be necessary to implement a methodology which gives my research reliability. As such, it was important to establish a theoretical foundation by which my research can be compared, yet I do believe it is important to show how these theories can be applied to real-life examples; by examining current practices in the business sector and looking for ways by which steady state economics can be applied.

I have chosen a qualitative method which enables me to emphasize the interpretation of material such as observations of various practices aimed at achieving sustainable development and through gathering text to be analyzed. The qualitative method is based on various theories of interpretation and through human experiences (Easterby-Smith M., 2008).

The theory of interpretation used in this thesis and the philosophy of science it represents is hermeneutics. Hermeneutical science seeks to understand subjects, text or text-analogue as opposed to explaining objects. This is due to the assumption that value-neutral research is difficult to practice, especially pertaining to research within the science of man. The main

objective of hermeneutic reflection is to reveal information about empirical data, in this case in the form of texts used, which is not explicitly articulated, such for instance knowledge in relation to ontology and epistemology. It is used as an approximation in understanding people, culture and nature; in areas where one element cannot stand alone without the other and where mutual dependency creates the whole. Here, knowledge is extracted and created from the context from which it is based (Nyeng, 2008). The objective here is for my research to create a deeper understanding on the topic of sustainable development by looking at two different schools of thought and approaches towards it. For my research, hermeneutics is the best methodological approach since I will be reflecting on practices found in the business community pertaining to the image of man, strong and weak sustainability and pre-analytic visions of the economy.

Hermeneutics takes place when we interpret something and give it meaning. This creates a spiral-like motion between “part” and “whole” and enables understanding to continuously expand outward as knowledge and wisdom are accumulated. It is the one interpreting who gives the research meaning and it is common to find traces of subjectivity added to the interpretation. This is often called the hermeneutical circle and essentially means that the individual parts cannot be understood in the absence of the whole and vice versa (Easterby-Smith, Thorpe, & Jackson, 2011). In this thesis, I interpret theoretical concepts (the 3 pillars) in the context of sustainable development while simultaneously interpreting how the business community interprets sustainable development and finally how these interpretations reflect these theoretical concepts. I demonstrate how each of these concepts can be understood individually, but it is only by connecting the dots between them that truly gives these concepts meaning. In this way, the parts (concepts) are understood in the context of the whole (sustainable development) and vice versa.

### ***3.1 Gathering data***

In this section I will explain what data I have used and how this information has been gathered. I have chosen to write about The Sahara Forest Project AS, a Norwegian limited liability company aimed at doing business within a sustainable developmental context. Neoclassical economics is by far the most popular and used school of economic thought, yet I

have been looking for businesses that seek a more “pure” approach towards unifying business with sustainability efforts: this being an approach that resembles steady state economics and that possess similar characteristics to strong sustainability and eco-centrism. It was by mere consequence that I stumbled upon The Sahara Forest project, yet after reading parts of their website that I saw the above mentioned characteristics being addressed and put into action, it was then I decided to use them for this thesis. I have therefore used information available on their website along with informational brochures (pdf’s) as my primary data. It is this data that has been used to find links between The Sahara Forest Project and where they find themselves in relation to the 3 pillars to conclude their approximate position in regard to steady state or green growth economics.

### ***3.2 Study of literature as a methodology***

Since hermeneutics is the philosophy of science I will be using in this thesis, I will be studying literature on The Sahara Forest Project and use this for further analysis in conjunction with my theoretical framework, more specifically the 3 pillars of sustainable development. The literature will hopefully help highlight the significance of the 3 pillars and show how they operate within any given company, organization or institution. I hypothesize that they can even be implemented down to the individual level, yet I will not be exemplifying this statement here.

I have not found other approaches similar to the one I am using in this thesis, so the theoretical aspects of it serves as the most significant foundation and point of reference when analyzing the literature. Much time has been spent on analyzing the literature from these theoretical aspects, and I have therefore limited the literature found on the SFP to deepen my understanding of the text. I have used theories retrieved from the school of ecological economics, neoclassical economics and combined them with the teachings of Eckhart Tolle. Combining all these factors and theories implies limiting the literature used to highlight main features and aspects. Time constraints also play a contributing role here. The overall goal here is to increase insight and awareness into the many different aspects of sustainable development, not necessarily correct understanding.

### **3.3 Validity**

Validity is a criteria used to determine the quality of the research being conducted. Validity explains how well a person can measure what he or she sets out to explore (Nyeng, Vitenskapsteori for økonomier, 2004). Here, we are trying to determine how credible my interpretation of the data actually is and if the result of my research is properly represented in my research.

There is a distinction made between internal and external validity (Easterby-Smith M., 2008). The internal validity asks how credible the conclusions are and if the research actually answers what it sets out to find. Here, I have analyzed text and interpreted from my own point of view as hermeneutics allows me to do. It is, however, questionable how credible this internal validity is since I have used the 3 pillars as determination factors in interpreting the material found. Yet, the 3 pillars themselves are constructed from very objective grounds and I, therefore, believe my internal credibility to be fairly strong. The external validity seeks to determine if conclusions can be generalized to any significant extent and how transferable it is (Easterby-Smith, Thorpe, & Jackson, 2011). In this case, the question is how well my findings can determine the degree of sustainability in any given business, if it approximates green growth economics or more to steady state economics. The SFP is a relatively newly established company and we have yet to see how successful the company is in terms of the goals it sets out to achieve. On these grounds I believe my external validity to be fairly weak.

### **3.4 Strong & Weak points**

I have yet to discover other attempts made to determine the image of man for individual companies, finding material to compare with is virtually nonexistent. Asking employers and employees if they identify with thoughts or not is a relatively personal matter, so I should have conducted in depth interviews to classify the different images of man on both an individual and collective level to clarify where the SFP stands in this regard. My conclusions can therefore be interpreted as vague. Although attempts were made to reach individuals and ask questions, the company is young and has been perhaps a bit reluctant with regard to answering questions from external media since information on projects are limited to time confinements. This has also made it impossible for me to determine whether the company operates within the requirements of strong or weak sustainability, making my assessment

standpoint difficult to determine. Finally, I would have liked to have analyzed multiple companies from a wide range of sectors to validate my approach towards finding where companies stand in regard to sustainable development and the 3 pillars, yet time constraints make this difficult to conduct.

The company has, however, been relatively transparent in terms of revealing information to the public through their webpage, making it possible for me to draw conclusions. The hermeneutical approach enables me to scrutinize the material from many different angles, allowing me to gain a deeper holistic view of the overall activities that take place within the SFP.

### ***3.5 Summary***

The methodological section of this thesis has revealed what approach I have taken towards answering my research questions and why they have been chosen. Since I have chosen hermeneutics and the analysis of literature as methodological approaches, I have spent more time studying text material and I have explained why I have done so. I have also looked more closely at the validity of my research. Finally, I have summarized what I view to be strengths and weaknesses with my research.

## **4 Empirical data**

In this chapter I will be taking a closer look at my primary research subject, The Sahara Forest Project, and where it stands in terms of sustainability by finding out which school of economic thought it resembles most. This company is chosen on the basis of primary its goal which is to obtain a pure initiative towards sustainable development. They can provide accurate predictions of the general direction of sustainable development by revealing trends and practices towards this achievement.

### ***4.1 What is the Sahara Forest Project (SFP)?***

As described on their website The Sahara Forest Project AS is a Norwegian limited liability company with the primary objective to create profitable, innovative and environmental solutions within the food, water and energy sector (SFP, 2013 a). This is made possible by bringing their technology to the market in relevant countries.

The company recognizes current challenges with regard to the sustainable provision of food, water, and energy for an ever increasing world population. These challenges also represent many opportunities and market potentials for companies seeking to invest in solutions to meet these challenges. As such, the company seeks to find solutions that not only address them individually, but also address multiple challenges simultaneously. This is achieved by utilizing synergies between technologies that span across industry sectors, combining already existing and proven environmental technologies, such as solar power technologies, saltwater cooled greenhouses and technologies for establishing vegetation in unproductive areas (SFP, 2013 a). The company is designed to use what the world has enough of to produce what the world needs more of, using desert, sunlight, saltwater and CO<sub>2</sub> to produce food, water and clean energy. This synergetic system of technologies enables the waste stream from one process to become a resource for another. This process is inspired by nature and provides what they deem to be “truly sustainable economic value creation”. This is exemplified through:

- Making use of waste heat from Concentrated Solar Power plants to provide heat and desalinate water for greenhouse operations.

- Algae production and greenhouse operations share costs of infrastructure and land by co-locating.

These are two of many ways the company brings together technologies to make each one more efficient and profitable than they are alone.

The main goal for the company is to ensure that activities need to be good for the environment, good for social development and to provide long-term economic benefits to investors. This represents their triple bottom line approach. It is achieved through close social and scientific cooperation with universities, think tanks and NGOs and through joint ventures with commercial companies.

### **Ethical Guidelines**

Ethical guidelines for commercial initiatives are set out by the Sahara Forest Foundation, which facilitate and promote research, knowledge and use of technologies through seeking a holistic approach to resource management. They acknowledge that traditional production systems are set up as a linear process, where resources are turned into products and often create waste-streams. To counteract this, they integrate technologies so that waste-streams from one industrial process are used as a resource for another. They claim that this allows for *a kind of growth that goes beyond being simply sustainable*; calling it “Restorative Growth” and define it as re-vegetation and the creation of green jobs through profitable production of food, water, biofuels and electricity. The Foundation acts as an incubator for new initiatives that bring their concept of Restorative Growth and The Sahara Project technologies out to the markets. These initiatives must operate on the basis of a true triple bottom line approach, where its activities are good for the environment, good for development, and provide long term economic viability (SFP, 2013 b). If these requirements are met, then initiatives are allowed to use the name and logo of the SFP under the approval of the Foundation. It has also established a set of ethical guidelines (Appendix 9.1) applicable to all commercial SFP initiatives. Their website concludes that the foundation is funded by philanthropic donations.

The framework of ethical guidelines has been made to ensure that no initiatives undertaken by the SFP partake in any unethical activities or emissions. These are defined as activities that

violate human rights, corruption or damage to the environment. The guidelines basically state that the company is committed towards restorative growth initiatives through profitable production of food, water, biomass and electricity. They comply with all applicable laws and regulations and that if differences exist between those and SFP ethical guidelines that the highest standards consistent with applicable local laws should be used. Work safety and non-discriminatory employment is also enforced. “Green-washing” is prohibited. An annual report will be issued stating its compliance to ethical guidelines.



## **5 Analysis**

The goal here is to determine whether or not the SFP is to be considered to operate within the green growth or steady state economical paradigm, or a combination of both. This will be determined on the basis of my empirical findings and place them within the theoretical frameworks I established in my previous research. This will represent my analyses.

First, I will look at my empirical findings and seek to determine the company's preanalytic vision of the economy by comparing it to Pillar 1. Secondly, I will determine whether or not the company falls under the category strong or weak sustainability by comparing the findings to Pillar 2 and then discuss what image of man the SFP most represents by comparing text to Pillar 3. Finally, I will make suggestions as what changes the company can make to even more approximate a steady state economy, this because the author himself believes steady state economics to be the more successful approach towards sustainable development.

### ***5.1 SFP & Pillar 1: Preanalytic vision of the economy***

The SFP acknowledges the need for a more holistic approach towards economic activity and sustainable development. The need to move from linear production systems, where waste-streams are created through the process of turning resources into products, to move towards production cycles that mimic nature. They therefore seek to use synergetic systems of technology to enable waste-streams from one process to become a resource for another process. This vision is highly compatible with the preanalytic vision of the economy as seen by SSE's, where the economy is viewed as a subsystem to the larger ecosystem as a whole. It allows the earth's assimilation process of sink and source capacities to take place at a natural rate creating a steady state economic and ecological flow. This also resembles the circular-value chain of production we saw in figure 11 presented by circulation economics. Here, re-distribution of waste is used in several cases through the synergies between production processes. One example is given by the synergy between the saltwater infrastructure and the use of concentrated solar power (CSP). CSP systems use mirrors to concentrate the energy from the sun to create very high temperatures which produce super-heated steam that can power a conventional steam turbine (SFP, 2013 c). The SFP combines CSP facilities with

saltwater infrastructure to create synergies by, for instance, using saltwater for the cooling of CSP which increases power production. Both the greenhouse structures and the outside vegetation provide so-called “dust arresting”, protecting the surfaces of solar panels from dust accumulation. Less dust in a CSP-field means more sun reaching the mirrors, thus producing more useful energy. Freshwater from the greenhouse facilities is also used for cleaning the mirrors of CSP’s. Electricity from CSP’s is used for running pumps and greenhouse equipment. In addition, waste-heat from the CSP facility is used for evaporating more water vapor from seawater to be distilled back into freshwater. In this way, waste-heat is redistributed back into a new production cycle, making this process compatible with the circular value chain introduced in circulation economics.

In chapter 2 we showed how GGE’s consider the entire economy to be the whole and where the ecosystem is viewed as subsystem to the economy. In this vision of the economy growth can continue forever even when ecosystem services are scarce because technology allows us to “grow around” the natural capital by substituting it with manmade capital. Nature is then considered to be substitutable and superabundant.

SFP uses technology to utilize resources that are relatively abundant, in this case seawater, CO<sub>2</sub> and deserted land, and transforming them into new products that the world currently considers to be scarce in quantity; such as energy, fresh water, and biomass. Here, technology is not allowing us to grow around natural capital, but rather views natural capital as an element that has been neglected and misused in the quest for capital gain. Restorative growth is defined as re-vegetation and creation of green jobs through profitable production of food, freshwater, biofuels and electricity. As in SSE’s, triple bottom line dynamics and interaction between economics, nature and culture complement each other. In this scenario, nature helps generate profits simultaneously as the economy helps support ecological health and sustainability. This can be considered to be a form of qualitative growth, not a growth primarily aimed at profit at the expense of ecological health.

Conclusion: Based on these findings, I conclude that the pre-analytic vision of the economy is compatible with steady state economics.

## **5.2 SFP & Pillar 2: Strong or weak sustainability?**

As we have seen, in order for a company or an economy to be considered strong in sustainability, then it must make a distinction between natural and manmade capital to disable trade-offs between them, since doing so could potentially jeopardize ecological sustainability on the behalf of generating manmade capital.

However, the SFP is in its initial stages of operations and have not yet documented any sales. I therefore have no empirical evidence indicating that natural capital and human capital are distinguished between in accounting procedures. Conclusions as to whether or not the company engages in strong or weak sustainability are too premature to make due to insufficient information. I can only encourage the company to strongly consider implementing accounting practices that differentiate between natural and manmade capital to ensure no trade-offs between them are being made.

Conclusion: Undecided.

## **5.3 SFP & Pillar 3: Image of man**

As mentioned, the pre-analytic vision of the economy in this thesis is considered to be an aspect of the image of man. We have seen that the SFP's vision shares many commonalities with SSE's in terms of qualitative growth, circulation economics and the ecosystem as representing the whole of the economy.

It is not common for businesses or companies to reveal, at least not directly, how they themselves view the role of man in relation to nature. It is, however, possible to get a general feel for where it lies when analyzing the empirical evidence collected. Tolle explains that our thoughts dictate our reality. So what thoughts do the SFP have on the interplay between business activities and sustainable development?

The company acknowledges the need to replace the traditional extractive use of resources with restorative practices. One can interpret this pursuit as a need to rebuild areas in nature where mankind has caused damage. They mention how Julius Caesar conquered much of the African territory north of the Sahara, turning forests into farmland and that for some 200yrs North Africa supplied around two-thirds of Rome's total grain supply. This resulted in

deforestation, increased salinity in the soil and loss of minerals (SFP, 2013 d). The SFP is an attempt to restore what modern economical thinking has destroyed. But they also indicate that they wish to stand as an example in general for what is possible, what mankind can accomplish if the blind pursuit of profit by whatever means is replaced by cooperating with nature. This cooperation can be viewed as a movement away from the anthropocentric worldview towards a more ecocentric worldview, where the intrinsic value of life forms other than human are acknowledged and respected, although they do not express this explicitly.

The ethical guidelines also give us a glimpse into their image of man. In their first paragraph they announce that the guidelines are established so that no SFP initiatives take part in *unethical activities* or *omission practices*. These are defined as *unacceptable violations on human rights, corruption or damage to the environment*. How these violations are actually dealt with is described in paragraph 4. Here they state that:

**“§4 Sahara Forest Project (SFP) Initiatives will comply with all applicable laws and governmental rules and regulations. Should there be differences between such laws, rules and regulations and the standards described in the Ethical Guidelines for SFP Initiatives, the highest standards consistent with applicable local laws shall be applied.”** (Appendix 8.1)

The fact that their own standards can be compromised by local laws can be interpreted as a weakness since their own ecocentric view of the world could in theory be replaced by egoic and anthropocentric values. Yet, it would be foolish to ignore the fact that neoclassical economic thinking is the dominating school of economic thought and companies may be forced to compromise their own values to make overall goals work. We can only hope that by introducing more business models compatible with steady state economical thinking will eventually “catch on” the minds of the general public and become the dominating school of thought in the not-so-far future. One thing for certain is if nothing is done, nothing will change.

## **5.4 SFP & Recommendations from the author**

Since SFP accounting records have not yet been made public, I can only make suggestions as to how the company may proceed in achieving true economic, environmental and cultural sustainability based on my empirical findings and by viewing them in the light of the theoretical framework used in this thesis.

### **How the SFP can change their preanalytic view of the economy (Pillar 1).**

Through their synergetic systems approach and following circular production cycles the company share's a preanalytic vision similar to that of steady state economics. I do, however, suggest that they specifically articulate, visualize and advertise all economic activity to be a subsystem of the larger ecological whole. In this way, the public can more easily see the significant interplay between everyday economic activity and its impact on the global ecological environment (Figure 5, Steady state subsystem). Likewise, the company also states the need to mimic synergies found in nature. Why not also show how these synergies mimic nature as shown by circulation economics? These models serve as excellent reminders as to where all economic activity should stand in regard to interactions with nature. If the SFP were to add, for instance, a new division or line of production to their business activities, they can easily use these models to brainstorm new ideas and synergies that comply with true sustainable development. Too many times do companies get sidetracked by the demand for increased sales and profits on behalf of ecological health, this done either consciously or unconsciously. These models also explain why it is important to internalize costs, such as using renewable energies to reduce waste streams instead of using fossil fuels. Although the SFP have internalized these costs, it never hurts to be reminded once and awhile. They have done so by using green technology for more efficient use of resources for production by facilitating the recycling of materials, reducing the amounts of industrial waste and thus help reduce environmental hazards. Another way to do this is to encourage more durable products and machinery to decrease the rate depreciation and thus help reduce even more waste streams.

Stronger cooperation with distributors and local manufacturers is also encouraged. The SFP does cooperate with local government, but they do not mention any incentive to purchase

components in the production process from local manufacturers. Businesses need to partake in planned reductionism to reduce the general use and dependency of fossil fuels with the help from both government and other market competitors. Advertising the need for local manufacturers in conjunction and support from national and local government can help stimulate more local products for local needs and help create new jobs. Cooperation between competitors to help achieve goals of sustainable development is also highly recommended. Businesses today need to focus on where they want to go (create long term environmental, economic and social sustainability) and less on what they fear (losing profits to competition). Here, we can focus on more dynamics between actors in the market and not just base our activities on individual actors. These actors must also adhere and presuppose pluralistic values where environmental values have a fundamental understanding in economics.

### **How the SFP can fit within the context of Strong Sustainability (Pillar 2).**

As for what the SFP can do in terms of reaching strong sustainability, I can only strongly encourage implementing a division between natural and manmade capital in their accounting procedures. This practice can help business and government to operate within a steady state context and help maintain a constant flow of material and energy through the economical subsystem. Only in this way can the planet stay ecologically healthy by making the tradeoffs between natural and human capital an impossibility. And it is only in this way that the earth can remain truly sustainable for present and future generations.

### **How the SFP can change their image of man (Pillar 3).**

In terms of their image of man the SFP seems to generally follow an ecocentric worldview, yet the company should make a stronger official visual statement indicating their position in this regard. Would it be “risky business” for companies to advertise the intrinsic values between mankind and the rest of nature and existence? The fear of being labeled “an environmental fanatic” or “tree-hugger” can definitely motivate businesses to refrain from defining ecocentrism any further than merely “going green”. Yet this is an important point and makes defining the image of man so important if the world is truly interested in achieving a steady state economy. In my previous writings on the image of man in section 2.1.6, I introduce how GGE’s and SSE’s differ in this regard, where GGE’s follow a form of ethical hedonism and SSE’s follow a more ecocentric image of man. Yet if we look at these images

of man in the light of Tolle, we see some interesting similarities. Tolle sees the image of man established in two ways. On one side, man is identified with thoughts and on the other hand, he or she is not. So where do GGE's and SSE's stand in terms of being identified with thoughts or not, and what does this mean in terms of sustainable development?

As described in section 2.1.6, GGE's follow ethical hedonism and utilitarianism, where ethical hedonism suggests that pain and pleasure are the sole good and bad things in human lives and ends can justify means. SSE's lean towards ecocentrism, but has difficulty defining what these values should include. What these two different ideals have in common is the fact that they are both merely belief systems. Belief systems, in turn, can be said to be a bundle of thoughts that establish a conceptual reality in a person's life. It is the view by which you interpret the world around you. The question is not "*who is right and who is wrong*" but rather the extent to which individuals *identifies* with these ideals and belief systems (thoughts). What do I mean by this? To illustrate I will give an example from a fictitious individual representing the image of man from a GGE standpoint and one taking the position of SSE's.

Let us say Mr. GGE strongly believes that "all men and women are better off following utilitarian economics" and Ms. SSE claims that "all creatures have intrinsic value and should ecocentric economic models". Now if both make economists strongly identify with these beliefs, then that means they believe these statements represent "*who they are*". Tolle would say both belief systems are not founded in reality whatsoever. To consider oneself to be "utilitarian" or "ecocentric" are both unconscious statements and represent fictional realities. This is because they have made a thought form of who they are more important than the reality of the present moment itself. In section 2.1.6 I describe 2 realities. One "image of man" identifies to thoughts (a conceptual reality) and the other identifies "with no thought" (reality). A person who does not identify with either statements can believe in utilitarianism or ecocentrism, yet he or she does not attach his or her sense of self to them. In other words, you can believe a statement to be of relative reality, yet you never give it absolute reality. This person would know him or herself to be awareness itself, free from any thoughts of who they may or may not be. Tolle describes this sense of self as identification with pure consciousness, a state where you know yourself to be at one with all things. He describes that only in that state can a person truly give all creatures, vegetative or animal, intrinsic value. When a person, on the other hand, identifies with their thoughts they then separate themselves with the rest of nature. This is because in that state one perceives him or herself to be an isolated entity from the rest of existence. This identification breeds animosity since people

then establish belief systems - thoughts - that are different from others. Thought is the ability to separate, analyze, cut up into little pieces, to differentiate between “right and wrong”. When we identify with thought, we also separate ourselves from our fellow men and women, and from the rest of nature.

The question boils down to whether or not the SFP identifies with their thoughts or not. Difficult to say, yet it is my belief - my conceptual reality - that it is possible for the SFP to take a standpoint from an ecocentric image of man without attaching their sense of self to it. Perhaps in this way can they avoid the fear and mind-created threat of ruthless competition and go about business from a place of joy and quality, since Tolle describes the state of pure consciousness, what he calls presence, as the end of fear and human suffering, a place by which the joy of *doing* comes from just simply *being*. With this said, I can only recommend the SFP to find the balance between dealing with their conceptual reality with their non-conceptual reality. This will hopefully create a “steady state” within the organization, since when all said and done, the world we inhabit is nothing but an outer reflection of our inner reality.

## **5.4 Summary**

### **5.4.1 The SFP & The 3 Pillars**

The SFP shares a preanalytic vision of the economy similar to the vision presented by steady state economists. This through the company’s use of synergetic systems of technology to redistribute waste to become a resource for a new process allowing the earth’s assimilation process of source and sink capacities to take place at a natural rate, creating a steady state economic and ecological flow. By combining abundant resources such as seawater, CO<sub>2</sub> and deserted land with green technologies the company avoids replacing manmade capital with natural capital enabling a steady flow of throughput through the economic subsystem allowing nature to regenerate itself at a natural pace.

The SFP has not, however, disclosed any information as to whether or not they operate within the definition of strong sustainability making it impossible for the author to draw any conclusion in this regard.



Through following an infrastructure based on reuse of waste, regenerative growth and acknowledging the economy to be a subsystem to ecological whole the company I find the SFP to operate within the realm of ecocentrism making it compatible with a steady state economy. To the extent as to whether or not they are identified with thoughts are not is left undecided, since the author is in no position to draw any conclusion in this regard. It is my “belief” that judgment is synonymous to identification with thoughts and to do so would be pointless in itself since it can never embody the absolute truth.

## 6 Conclusion

The primary goal of my research was to compare green growth and steady state economics to each other and determine which school of thought is best apt at reaching environmental, economic and cultural sustainability. Do companies truly contribute to sustainable development? I have established 3 research questions.

### *1. What is sustainable development?*

To define what sustainable development is I expanded on term defined by the Brundtland Commission by adding 3 additional factors which I called “The 3 Pillars”. These are:

Pillar 1: The preanalytic vision of the economy

Pillar 2: Strong & Weak sustainability

Pillar 3: The Image of man

These pillars were described in section 2. I’ve concluded that in order for a company to achieve true economic, environmental and cultural sustainable development they must:

A. Follow a steady state preanalytic vision of the economy to secure a steady flow of throughput through the economic subsystem.

B. Operate within the definition of Strong Sustainability to ensure that natural capital is never replaced by manmade capital since doing so could potentially destroy ecological systems at the expense of economic demands.

C. Operate within ecocentrism, where intrinsic value of all life on earth is respected. Since ecocentrism fails to define what these values actually are, I introduced the teachings of Eckhart Tolle as a way of explaining how our images of man and our worldview’s are established. This is done to give the reader insight into how identification with thoughts (past and future) creates an illusory sense of self that separates people from the rest of existence. I further explain how directing our attention in the present moment restores our sense of oneness with the rest of existence to regain true respect for all sentient/non-sentient beings.

I then proceed to conduct my comparative study of green and steady state economics by asking research question 2.

### *2. What is green growth economics and how does it differentiate itself from steady state economics?*

This question is answered in section 2, where I compare these two different schools of thought in light of the 3 pillars. By doing this, I attempt to give the reader better insight into some prerequisites that must be in place if companies wish to truly achieve environmental, economic and cultural sustainability.

Finally, I look at ways in which companies can change their approach towards achieving sustainable development by asking the 3<sup>rd</sup> and final research question:

*4. How can businesses implement steady state economics and survive in today's competitive market?*

To answer this I gave some examples given by individuals at the forefront of steady state, ecological, and circulation economics. I have then further attempted to show how this can be done by analyzing the Sahara Forest Project and given examples as to how they can change their business activities to fit steady state economic thinking. I suggest the company should differentiate between manmade and natural capital in their accounting procedures to obtain strong sustainability. They should advertise and inform the general public how the macroeconomy is a subsystem to the larger earth ecosystem and how this interplay works to increase public awareness. I advise them to use circulation economical models and the circular value chain as a standard in conducting present and future business. They should internalize costs through the use of clean energy to reduce our dependency on fossil fuels and to reduce waste streams. I also recommend strengthening cooperation with distributors and local manufacturers to help reduce emissions through transportation and to generate more green jobs. Finally, I advise the company to balance their conceptual reality with their non-conceptual reality to stay rational where others get carried away and “lose themselves” in the evermore demanding competitive market for increased sales and market share.

By establishing a steady state preanalytic vision of the economy, strong sustainability and an image of man compatible with ecocentrism, I find companies are better apt to achieve environmental, economic and cultural sustainable development. In determining whether or not the SFP operates within these criteria I am left undecided due to insufficient information. The company fulfills requirements set by pillar 1 and 3, yet since the company has not disclosed their accounting records I am unable to conclude whether they achieve true environmental, economic or social sustainable development.

## **7 Future Research**

Through my research I have disclosed several areas conducting further research on.

It would be interesting to research what other factors may play a role in achieving true sustainable development on both an individual or organizational level.

It would also be interesting to take a closer look at companies operating from a green growth economic point of view and discover hidden potential, ways in which the company can change to become even more successful in achieving ecological, economic and social sustainability.

How government can take a more active part in achieving sustainable development.

## 8 Citations

Daly, H., Farley, J., (2004): *Ecological Economics, Principles and applications*, Island press, Washington, pp. 42.

Daly, H., Farley, J., (2011): *Ecological Economics, Principles and applications*, Second edition, pp. 1.

Daly, H., Farley, J., (2011): *Ecological Economics, Principles and applications*, Second edition, pp. 22.

Daly, H., Farley, J., (2011): *Ecological Economics, Principles and applications*, Second edition, pp. 25.

Daly, H., Farley, J., (2011): *Ecological Economics, Principles and applications*, Second edition, pp. 28 - 55.

Daly, H.E., (1999): *Ecological economics and the ecology of economics: essays in criticism*. Northampton: Edward Elgar Publishing Limited.

Dybvig, D., (2011): *Innføring i økonomiens filosofi*, Unpublished manuscript, University of Nordland, Bodø.

Easterby-Smith M., T.R., (2008): *Management Research*.

Easterby-Smith, M., Thorpe, R., & Jackson, P.R., (2011): *Management Research*. London: SAGA Publications.

Ekelund Jr., R.B., Herbert, R.F., 2002: *Retrospectives. The origins of neoclassical microeconomics*. *Journal of Economic Perspectives* 16 (3), 197 – 215 (summer).

Første Mosebok kap 1.vers 26 (1993): Det norske Bibelselskap Oslo: 7. opplag.

Georgescu-Roegen, N., (1971): *The Entropy Law and the Economic Process* (Harvard University Press, Cambridge Mass.).

Ingebrigsten, S., & Jakobsen, O. (2011): *Circulation Economics – An Ecological Image of Man Based upon an Organic Worldview*, pp. 261, 262, 266.

- Ingebrigsten, S., & Jakobsen, O. (2009): *Moral development of the economic actor*, pp. 2780.
- Ingebrigsten, S., & Jakobsen, O. (2011): Unpublished manuscript, Universitetet i Nordland, Bodø.
- Lindegaard, A., & Økstad, E. (2011, 14 15): Klimaendring verdens “allmennings tragedie”. *Magma*, pp. 66-69.
- Marshall, A., (1920): *Principles of economics*, 8th edition. Macmillan & Co., Ltd., London.
- Nyeng, F. (2004): *Vitenskapsteori for økonomier*. Oslo: Abstract Forlag.
- Nyeng, F. (2008): *Vitenskapsteori for Økonomer*. Oslo: Abstract Forlag AS.
- Nystad, Ø., Jaminion, L., & Jakobsen, O. (2008): I Ø. Nystad, *Kompendium i Miljøledelse* (p. 15-34). Bodø: Handelshøgskolen i Bodø.
- Røpke, I. (2004): The early history of modern ecological economics, *Ecological Economics* 50, (pp.297).
- SFP, (2013 a): *Achieving a triple bottom line*, <http://saharaproject.com/company.html>, (retrieved 05.05.13).
- SFP, (2013 b): *Creating new development*, <http://saharaproject.com/foundation.html>, (retrieved 05.05.13).
- SFP, (2013 c): *SFP Intro*, <http://saharaproject.com/news/downloads.html>, (retrieved 10.05.2013).
- SFP, (2013 d): *Qatar Folder*, <http://saharaproject.com/news/downloads.html>, (retrieved 10.05.2013).
- Tolle, E. (2005): *A New Earth*, Penguin Books Ltd, London.
- Zadek, S. (2001): *The Civil Corporation – The New Economy of Corporate Citizenship*.

## **9 Appendix**

### **9.1 SFP Ethical Guidelines**

**§1** A set of Ethical Guidelines is hereby established to ensure that no Sahara Forest Project (SFP) Initiative takes part in unethical activities or omissions such as unacceptable violations of human rights, corruption or damage to the environment.

**§2** The founders, members of the board, managers and other employees of Sahara Forest Project (SFP) Initiatives as well as others acting on behalf of SFP Initiatives will act in accordance with the Ethical Guidelines in SFP-related activities.

**§3** Sahara Forest Project (SFP) Initiatives will contribute to restorative growth through realization of projects for revegetation and profitable production of food, freshwater, biomass and electricity.

**§4** Sahara Forest Project (SFP) Initiatives will comply with all applicable laws and governmental rules and regulations. Should there be differences between such laws, rules and regulations and the standards described in the Ethical Guidelines for SFP Initiatives, the highest standards consistent with applicable local laws shall be applied.

**§5** Sahara Forest Project (SFP) Initiatives will provide a safe, healthy and respectful workplace free from discrimination based on race, color, religion, gender, age, nationality, sexual orientation, marital status or disability.

**§6** Sahara Forest Project (SFP) Initiatives will only enter into employment relationships that are freely chosen and free from threats. SFP Initiatives will only employ persons of an age that are considered acceptable under the definitions given by the ILO Minimum Age Convention 1973 (C138)<sup>1</sup>.

**§7** Sahara Forest Project (SFP) Initiatives will each year issue a report describing its compliance with the Ethical Guidelines. This report will be issued to The Sahara Forest Project Foundation. Breaches to the Ethical Guidelines that requires immediate attention will be reported to the SFP Foundation promptly.

**§8** Sahara Forest Project (SFP) Initiatives will contribute to the creation of values for local communities, such as employment, access to resources and improvements of infrastructure, in the societies in which they operate.

**§9** Sahara Forest Project (SFP) Initiatives will not contribute to deceptive use of green PR or green marketing in order to promote a misleading perception that a company's policies or products are environmentally friendly (i.e. greenwashing).

**§10** Sahara Forest Project (SFP) Initiatives will support and respect the guidelines for business practices set out by the UN Global Compact and the OECD Guidelines for Multinational Enterprises<sup>2</sup> in their commercial and business activities.