Green Business or Community Economy?

Abstract:
The paper analyzes two major ways of aiming at ecological sustainability. One is represented by the green business movement while the other is represented by different models of the community economy (community-supported agriculture, e.g.). Ecological sustainability requires quantitative and qualitative limitations both on the supply and demand sides of economic activities. Theoretical and empirical arguments show that the green business paradigm is not sufficient for achieving ecological sustainability but the community economy might be able to meet the requirements of ecological sustainability.

Keywords:
ecological sustainability, greening of business, community economy, oikonomia versus katalaxia, community-supported agriculture

1. **Ecological Sustainability**

Sustainability means non-declining natural wealth. In more exact terms ecological sustainability requires that the ecological value of the natural ecosystems be not decreasing over time.

Let $E$ be an ecosystem whose ecological value is expressed by the value function $V(\cdot)$. Ecological sustainability requires that

$$\Delta V[E(t)] \geq 0$$

that is the change of the ecological value of the ecosystem is non-negative over time.

*Robert Constanza* proposed *ecosystem health* is an operationalized measure of ecological value. It is defined as follows:

$$HI = V \times O \times R$$

where $HI$ is ecosystem health index, also a measure of sustainability; $V$ is ecosystem vigor, a cardinal measure of system activity, metabolism, or primary productivity; $O$ is ecosystem organization index, a 0-1 index of the relative degree of the system's organization, including its diversity and complexity; and $R$ is ecosystem resilience index, a 0-1 index of the relative degree of the system's resilience.

In essence, in calculating $HI$ the ecosystem's primary production is weighted by indices for relative organization and resilience. In this context, eutrophication is unhealthy since it usually represents an increase in metabolism that is more than outweighed by a decrease in organization and resilience. Artificial eutrophic systems tend toward lower species diversity, shorter food chains, and lower resilience. (*Constanza, 1992*)
There are some well-defined preconditions for economic activities to achieve ecological sustainability. *Figure 1* shows the basic ways an economic entity (a business firm or a non-profit organization or a family) interacts with the natural ecosystem. The economy derives low entropy matter-energy from the ecosystem. It changes the structural and functional characteristic of the ecosystem. Finally, it poses high entropy waste to the ecosystem. (Daly, 1996, Juhász-Nagy & Zsolnai, 1991)

Ecological sustainability requires that economic entities interact with the ecosystem in a way that the ecological value or health of the ecosystem is not damaged. This presupposes that that the *aggregate demand for natural resources is limited*, the *technologies* used by economic entities are *environmentally sound*, and the *aggregate waste* of economic entities is also *limited*.

2. **Modern Organizations**

*Modern organizations* are certainly not sustainable in ecological sense. There are several reasons why this is necessarily so. (Zsolnai, 2000)

Modern organizations are *disembedded* from their environmental and social context and mostly consider the natural environment and human persons as mere means to accomplish their own purposes and goals. The dominating *self-centered orientation* of modern organizations leads to decision paralysis that produces ecological destruction and human deprivation on a large scale.

Perverse decisions of modern organizations appear in such phenomena as decision under risk and discounting in space and time. *Prospect theory* and the *general theory of discount* can help us to describe analyze these phenomena.

The prospect theory developed by *Daniel Kahneman* and *Amos Tversky* gives us a realistic picture about the main regularities of decision under risk. (Kahneman & Tversky, 1979)
Let us study the following decision problem:

(1) Choose between making a *sure gain* $G$ and making a gain of $xG$ with $1/x$ *probability* where $x > 1$.

Prospect theory states that the majority of decision-makers prefer the first alternative (a sure but smaller gain) against the second one (a greater but unsure gain). Decision makers usually display *risk aversion* in choices involving *sure gains*.

Now let us study the inverse situation.

(2) Choose between making a *sure loss* $L$ and making a *loss* of $yL$ with $1/y$ *probability* where $y > 1$.

Prospect theory states that the majority of decision-makers prefer the second alternative (a greater but unsure loss) against the first one (a smaller but sure loss). Decision-makers usually display *risk seeking* in choices involving *sure losses*.

The next decision problem is the combination of (1) and (2).

(3) Choose between making a *sure gain* $G$ and a *loss* of $yL$ with probability $1/y$ and making a *sure loss* $L$ and a *gain* of $xG$ with $1/x$ *probability*.

Prospect theory tells us that the majority of decision-makers prefer the first pair of alternatives (a smaller but sure gain and a greater but unsure loss) against the second pair of alternatives (a smaller but sure loss and a greater but unsure gain). Decision-makers are usually *more sensitive to losses* than to gains.

Risky decisions made by corporate and governmental decision-makers often endanger the safety and integrity of the natural environment and human populations. The so-called *catastrophic risk* is a closely related phenomenon. The probability of catastrophes caused by modern, large-scale technologies is usually low but never zero. And the possible
negative consequences are horrifying: irreversible destruction of ecosystems and enormous loss of human lives.

The most tragic examples of this kind of ecological and human tragedies are the leak from the Union Carbide factory in Bophal in 1984 that killed more than 2000 people and injured over 200,000 more, the Chernobyl nuclear reactor explosion in 1986 that sent nuclear fallout across Europe increasing human and animal cancers, and the wreck of the Exxon Valdez oil tanker at the Alaskan coastline in 1989 that produced the largest oil spill in American history.

Decision-makers usually over-value things here and now in comparison with things far and later. This phenomenon is produced by the mechanism of discounting. (The Global 2000 Report)

The main regularities of discounting in space and time can be studied in the following decision problems.

(4) Choose between making a gain $G$ here and now and making the same gain $G$ far and later.

According to the general theory of discount the majority of decision-makers prefer the first alternative (a gain here and now) against the second one (the same gain far and later). "A bird in the hand is worth two in the bush" - people discount gains that are distant in space and time.

Now let us study the inverse situation.

(5) Choose between making a loss $L$ here and now and making the same loss $L$ far and later.

According to the general theory of discount the majority of decision-makers prefer the second alternative (a loss far and later) against the first one (the same loss here and now).
People put off negative things till the morrow because they *discount losses* that are *distant* in *space* and *time*.

The next decision problem is the combination of (4) and (5).

(6) Choose between making a *gain* $G$ *here* and *now* and, at the same time, a *loss* $L$ *far* and *later* and making a *loss* $L$ *here* and *now* and, at the same time, a *gain* $G$ *far* and *later*.

From the general theory of discount it follows that the majority of decision-makers prefer the first pair of alternatives (a *gain* here and now as well as a *loss* far and later) against the second pair of alternatives (the same *gain* far and later as well as the same *loss* here and now) because they *undervalue* *gains* and *losses* that are *distant* in *space* and *time*.

Decision-makers use special *discount rates* to value things distant in space and time. The *present value* of a thing is calculated as follows:

(7) \[ P_v = \frac{v}{(1 + \alpha)^x} \]

where $P_v$ is the present value of the thing $v$, $x$ is a *measure* of the *distance* of $v$ in space or in time, and $\alpha$ is the *discount rate* that is usually between 5 % and 15 %.

If the distance of a thing in space or/and in time is great enough then its present value becomes extremely small. Also, the present value depends on the applied discount rate: greater the discount rate, smaller the present value. The present value of a thing is determined by the applied discount rate and its distance in space and time.

Discounting in space and time may produce negative consequences in corporate and governmental decision-making. Decision-makers who strongly discount things in space and time, are interested neither in the solution of long-range ecological and human problems, nor in the global impacts of their activities on the natural environment and human communities.
The international trade in hazardous wastes is an illustrative case in point. American and West-European countries transport and dump hazardous wastes in distant and less-developed Third World countries, and do not display any interest in the future ecological human health impacts of these materials.

By combining the main lessons of prospect theory and the general theory of discount we can get some insight in the self-centeredness of modern organizations.

Let us consider the following decision problem.

(8) There are two alternatives for a modern organization. The first alternative is to make a sure gain \( G \) here and now, and at the same time, to make a loss of \( yL \) far and later with probability \( 1/y \) where \( y > 1 \). The second alternative is to make a sure loss \( L \) here and now and, at the same time, to make a gain of \( xG \) far and later with \( 1/x \) probability where \( x > 1 \).

Decision-makers of modern organizations prefer the first alternative (a smaller but sure gain here and now and a greater but unsure loss far and later) against the second one (a greater but unsure gain here and now and a smaller but sure loss far and later). Generally speaking, modern organizations favor sure gains here and now and unsure losses far and later while they disfavor sure losses here and now and unsure gains far and later. (Table 1)

(insert Table 1 somewhat here)

The self-centered orientation of modern organizations produces environmental and social "ills" of various kinds. One way to overcome the self-centeredness of modern organization and try to attain ecological sustainability is represented by the green business movement.
3. The Green Business Movement

Green business movement is a coalition of companies, which are more or less ecological conscious and want to make their profit with "green conscience". Green companies are influenced by ecological values to different degrees.

Greening of business might be a result of a pragmatic business policy, referring to the changes of preferences of the customers and/or to follow the mainstream development of the industry. However, there are companies, which are really centered on green values and try to realize their ecological worldview in their business activities (e.g. the Body Shop, Ben & Jerry's, Tom's of Main)

An average green company can be described by using the models and experiences reported by John Elkington, Peter Knight and Julia Hailes in their book "The Green Business Guide" (Elkington et al, 1992)

Green companies typically represent a middle way between two conflicting paradigms of our age, the industrial worldview and the ecological worldview. Table 2 shows the characteristic differences between these two competing worldviews. It is clear that the ecological worldview cannot be pursued properly and realized completely in the contemporary business world. For this reason, green companies should make some vital compromises in their daily praxis.

(insert Table 2 somewhat here)

A green company is based on their corporate vision that aims the environmentalization of the companies’ functioning. Environmentalization means that the company considers the needs of the ecosystem with which it interacts.
For example, *British Airways* want "to be a good neighbor, concerned for the community and the environment". Its policy is backed by a strategy with the following main elements:

(i)  taking account of environmental issues in commercial decision-making
(ii) working constructively with organizations concerned for the environment
(iii) communicating the company's environmental activities to staff and customers
(iv) observing environmental rules and regulations
(v)  continuously redefining and implementing the company's own set of standards over and above legislative requirements
(vi) providing support and advice on environmental matters relating to the company's operations
(vii) using natural resources efficiently.

A green companies usually implements the following crucial steps:

(I)  It cultivates and communicates its green vision.
(II) It takes a long-term view of strategic planning.
(III) It develops green scenarios for the company.
(IV) It formulates the company's environmental policy spelling out the values and procedures of the company.
(V)  It commissions an overall company environmental audit.
(VI) It develops and set specific objectives and delegates responsibility for different areas.
(VII) It allocates resources, such as finance, technology and staff with the appropriate skills.
(VIII) It motivates, manages and co-ordinates the company's response to the environmental challenges.

Greening of companies is not a costless process. Environmentalization causes additional cost on the one hand but may result in cost saving on the other hand. From a financial perspective there are different kinds of actions in greening of the company.
(α) **Little initial cost** and a *quick return on investment* (energy-efficiency schemes, investing in fuel-efficient vehicles, paper conservation/recycling schemes, e.g.).

(β) **High initial cost** with *long-term payback* (solvent-recovery systems, combined heat and power plants, improvements to logical efficiencies, e.g.).

(χ) **Straight costs** (waste disposal techniques, better chemical and effluent management, fitting catalytic converters, e.g.).

Ecologically conscious consumers demand "*lean, clean, and green*" products. Green consumer preferences are present in almost every industry in developed countries. Green companies responded to this demand by *product stewardship* policies first introduced by *Dow Corporation*.

Product stewardship means that the company feels itself responsible for the environmental and safety aspects of its products. This responsibility covers the whole life cycle of the products from design and manufacturing through sale and distribution to final use and disposal of waste.

Companies are not able to control how the customers use their products. However, they can influence their customers concerning the proper use of their products. For example, companies can inform the customers about the possible dangers and abuse of their products, initiate the recollection and reuse schemes of their products.

"*Less is more*" is certainly true in production from an ecological point of view. "*Use less energy and less raw material*" and "*Make less noise and less waste*" are objectives that are certainly relevant for green companies. By achieving these objectives companies should adopt *cleaner production* technologies.

In *project planning* ecological criteria should also be considered. *Environmental impact analysis* is a method to integrate ecological considerations into the planning process.
Brixtol Laboratory has developed a six-step methodology for *environmental impact analysis*.

**Step 1  Describe the project**

This is an overview of the project including its benefits to the company, local community and nation, and all the environmental problems that might be generated by the project.

**Step 2  Considering possible alternatives to the proposed project**

All feasible alternatives and their possible impacts should be considered including not undertaking the project at all.

**Step 3  Propose measures to reduce environmental impact**

Among the positive measures to consider are aesthetics, technicalities, and site planning.

**Step 4  List possible effects on the environment**

All possible effects should be identified. Intelligent counter-arguments against possible objections should be prepared.

**Step 5  Measure the impact of the project on people, animals and their environments**

It is worth trying to give a numerical value to certain impacts. Each alternative project is treated in exactly the same way. This give some comparative indication of which projects is likely to be superior.

**Step 6  Summarize and evaluate**

The arguments for and against the project should be summarized. These are then balanced against the arguments for taking no action at all.
As a conclusion we can say that green companies are based on their green corporate visions. Cost-effective restructuring, product stewardship, clean production technologies, and environmental impact analysis characterize the functioning of green companies. (*Figure 2*)

Green businesses are striving for a more sustainable functioning but there is no built-in guaranty that either their aggregate production or the aggregate consumption of their customers is ecologically sustainable. The "rainforest failure" of Ben & Jerry's, one of the most ecologically minded companies in the world, is an instructive case here.

*Ben & Jerry's* developed a project with the well-known Third World NGO *Cultural Survival* that aimed to make "the rainforest economically viable". In this project the Kayapo Indians in the Amazonian rainforests sold their traditionally harvested nuts to Ben & Jerry's from which the company produced its famous *Rainforest Crunch* ice cream. The product was so successful that the demand for Rainforest Crunch highly exceeded the ecologically sustainable supply of nuts by Kayapo Indians. The ecological tragedy lies here. Influenced by the market Ben & Jerry's was forced to look after additional suppliers of the nuts from Brazilian agribusiness, mainstream companies that destroy rainforest and violate human rights of their workers. A similar experience of the Body Shop with rainforest trade was also a disaster.

Ben & Jerry's and the Body Shop are among the most ecologically minded companies in the world. Their failure with the rainforest a fortiori indicate the inner boundaries of contemporary business to be able to achieve ecological sustainability. Green businesses want to make *monetary profit* with green conscience while their customers are seeking for green *commodities* for their money. Green companies promote the idea of sustainability and may be resulted in environmental improvement but they represent still the realm of *katalaxia*.

4. **Oikonomia versus Katalaxia**
Aristotle made an important distinction between oikonomia and katalaxia. Oikonomia is about activities to satisfy material needs of the family while katalaxia is to produce goods, especially food for trade outside the community. Oikonomia has a limiting principle since the material needs of the family are finite. Contrary to this, katalaxia has no limiting principle because it is driven by the commercial activity of moneymaking. While oikonomia concerns sufficiency and katalaxia concerns maximization of monetary gains.

Following Aristotle's distinction Karl Polanyi formulated his substantive theory of the economy. He distinguished between the formal and the substantive meanings of the term "economic". (Polanyi, 1977)

The formal meaning of "economic" springs from the logical character of the means-ends relationship; as in economizing or economical; from this meaning springs the scarcity definition of economic. Contrary to this, the substantive meaning of "economic" points to the elemental fact that human beings, like all other living things, cannot exist for any length of time without a physical environment that sustain them; this is the origin of the substantive definition of economic.

The substantive meaning stems from man's patent dependence for his livelihood upon nature and his fellows. Man survives by virtue of an institutionalized interaction between himself and his natural surroundings. That process is the economy, which supplies man with the means of satisfying his material needs. So in substantive sense "economic" denotes nothing else than bearing reference to the process of satisfying materials needs of the community.

The norm logically implied in the formal meaning of economic is to make the best of one's means. It refers to situations where choice is induced by an insufficiency of means, a condition of affairs, which is justly described as a scarcity situation.

Green businesses primarily follow the way of formal economizing. There is not any built in guaranty that green businesses will be sustainable in ecological sense.
5. The Community Economy

Models of the community economy belong to the realm of *oikonomia*. They represent *substantive economic activities*. Communities of producers and consumers are formed to meet the *needs* of both of them at the *lowest cost* and *minimized risk* by a long-term arrangement.

Studying dozens of actually working models *Richard Douthwaite* characterizes community economy as follows. (Douthwaite, 1996)

Community economy basically uses *local resources* to meet the needs of *local people* rather than the wants of market far away. World prices do not determine what will be produced and the key production processes need to be run entirely without inputs from the world system.

Community economy based on the idea of *self-reliance* that is closely linked to ecological sustainability. Practically, *living within limits* and sustainability are one and the same thing. Every community should achieve ecological sustainability by exploiting the ecological niche available for itself. Ideally this entails meeting some basic targets as follows.

(A) Every system used in the community should be able to be *continued*, and every production cycle repeated, without environmental deterioration in the *next hundreds years*.

(B) The *size* of the community should be *stabilized* at an appropriate level. The community economy cannot depend on economic growth for the maintenance of employment and prosperity.

(C) The community must produce at least *enough food* and *raw materials* to enable its members to live simple, comfortable lives while staying within the limits of their environment and not exploiting their parts of the world.
(D) All energy used in the community should come from renewable resources.

(E) The community could have its own currency and banking system to avoid being exploited or disrupted from outside. Capital should not allow flowing in or out, and interest rate, if any, should be determined internally.

Characteristics (A),..,(E) define the ideal type of the community economy. In the contemporary world it is not easy to approach it, however, there are many practically working models of the community economy all around the world, especially in the USA, Australia, Britain, and Ireland.

Community supported agriculture (CSA) is the prime example of community based economic activities. Its essence is simple: a group of people agrees to buy in advance, shares of a farmer's harvest of food grown in an ecologically sound manner. It is necessarily a small-scale system whose central decision making body is the group of the farmer and the consumers. CSA adopts a long-term perspective, de-commodify food and land, and reject monoculture and chemicals. CSA strives to foster trust, to build value-community and to establish people to the land and farm. (Dyck, 1994)

Achieving ecological sustainability probably requires more substantive organizational forms that radically alter the underlying structure of currently dominating configurations of formal economizing. This means de-emphasizing profit maximization and market systems and introducing small-scale, locally adaptable, culturally diverse mode of substantive economic activities.

It is not possible to achieve ecologically sustainable consumption by large-scale companies, which aim to maintain their international competitiveness, and to speed economic growth. It can be achieved by small-scale communities that rather than trading across the globe, run their own economic affairs in a substantive way to meet or make most of their requirements from their local resources. For it is if communities develop
economic cultures that enable them to live a good life within the limits of their own places and at the same time, to maintain the integrity and stability of the natural world.

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Table 1  
**Self-centered Choices of Modern Organizations**

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<th>sure, here and now</th>
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<td>gains</td>
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<td>losses</td>
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Table 2  Industrial Worldview versus Ecological Worldview

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<th>Industrial Worldview</th>
<th>Ecological Worldview</th>
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<td>Goal: domination over nature</td>
<td>Goal: harmony with nature</td>
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<tr>
<td>Nature provides resources for the economy.</td>
<td>Natural beings have intrinsic value, all species are equal.</td>
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<tr>
<td>Economic growth is desirable.</td>
<td>Resources of the earth are finite, economic growth has limits.</td>
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<td>Technology solves all the problem of mankind.</td>
<td>Science is not omnipotent; technology should accommodate to the needs of man and nature.</td>
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<td>Consumption-orientation: every wants of the consumer should be satisfied.</td>
<td>Simple life-style: voluntary control of human wants.</td>
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<td>Centralized power.</td>
<td>Decentralized power, respect for the rights of people and nature.</td>
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