



Sustainable landscapes: contradiction, fiction or utopia?

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Abstract

As landscapes change continuously in a more or less chaotic way, the concept of sustainable landscapes could be viewed as a utopian goal. New landscapes emerge with changing life-styles. Decision making for landscape planning, conservation and management use the concept of sustainability widely. To make it operational, many new associated and more specific concepts have been proposed such as natural and social capital, conservation economy and quality of life capital. Most of these are inspired by economic thinking and rarely refer directly to the landscape. This article reviews the background and meaning of these concepts and shows that landscape is not seen here as an integrating, holistic concept. As landscape changes, also its meaning and significance changes and consequently its management.

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1. Introduction

The idea of sustainable landscapes might be in contradiction to a basic definition of landscape. Landscapes evolve continuously in a more or less chaotic way and reflect social and economic needs of a particular society at a given moment. History records not only gradual changes in the landscape, but many sudden and complete transformations caused by natural disturbance and human action (Antrop, 2003), such as in coastal zones and river valleys. How to link this to the concept of a steered or planned sustainability? The idea of sustainability can be interpreted in two ways. First, the idea can refer to the conservation of certain landscape types or values and implicitly the contin-

uation of practices that maintain and organize these landscapes. Sustainability does not refer to particular landscapes. These might be natural or cultural, traditional or contemporary, spectacular or ordinary. The concept can be applied to practices to maintain traditional techniques in rural or pastoral landscapes, but it can also refer to the land qualities of remnants of natural landscape or contemporary new landscapes. Second, the idea might refer to sustainability as a main principle for future landscaping. In this case, the concept refers to the potential landscapes have to enhance sustainability, in particular in rural countryside planning and management. Sustainability also needs to be understood in the context of the irreversible processes of urbanization and globalization.

Sustainability is a very general concept that is not easily implemented in practical work. Consequently,

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many new associated and more specific concepts have been proposed to make sustainability more operational. These include natural and human capital and social capital. Can these new concepts offer some practical solutions to this discourse?

This essay explores the two perspectives of sustainability in the different domains of landscape science and how basic concepts of landscape are used in relation to common statements of natural and human capital. First, basic concepts will be analyzed and compared. This will show that an important shift in the landscape concept is going on. Second, the actual trends of landscape change will be used to evaluate the possibilities of achieving sustainable landscapes in the future. It will be argued that an applicable concept of sustainable landscapes varies according to landscape type and factors will be indicated that are important for realizing sustainable landscapes.

2. Changing landscapes, changing concepts

2.1. Landscape and heritage

The concept of landscape encompasses more than an area of land with a certain use or function. I consider landscape as a synthetic and integrating concept that refers both to a material-physical reality, originating from a continuous dynamic interaction between natural processes and human activity, and to the immaterial existential values and symbols of which the landscape is the signifier. Alexander von Humboldt defined landscape concisely as “*der Totalcharakter einer Erdgegend*” (Zonneveld, 1995). This definition implies landscape seen as a holistic entity perceived by humans and having a distinct character or identity. Thus, different landscapes can be recognized and this variation defines regional diversification. Naveh (2001) stresses also the holistic character of multifunctional landscapes in the context of the Total Human Ecosystems perspective. The interaction between nature and culture is considered as an essential characteristic of landscapes (Naveh, 1995; Antrop, 1997, 2000; Palang and Fry, 2003) and forms an important property of sustainability in traditional agricultural landscapes (Austad, 2000; Goudie, 2000; Haines-Young, 2000; Grove and Rackham, 2001). Change is an essential character of landscapes (Antrop, 2003).

Most of these concepts are basically included in the definition of the European Landscape convention: “Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors” (Council of Europe, 2000). No distinction is made between natural or cultural landscape, neither between extraordinary, spectacular, outstanding landscapes and ordinary landscapes. Also in this definition, the character of the landscape is considered as the expression of a unique identity of a region or country shaped by people who live there. Landscape thus refers to a home of a community (Pedroli, 2000) or to a country (Olwig, 2002) as well. The perceivable, scenic landscape and its cognitive meaning is intimately linked to the landscape as a tract of land owned and organized by people (Cosgrove, 2002). Therefore, the ever faster changes to landscapes are experienced by an increasing number of people as a threat. They feel uneasy in the new highly dynamic environment and may have difficulty adapting to a continuously changing landscape (Lorzing, 2001; Lemaire, 2002). The concern about the vanishing traditional cultural landscapes and new emerging landscapes has become a recurring topic in most of the recent international scientific conferences and workshops (Klijn and Vos, 2000; Mander et al., 2000; Pedroli, 2000).

Also from the perspective of the study of traditional rural landscapes, the actual changes are considered as a threat because the current changes are characterized by the loss of diversity, coherence and identity of existing landscapes, which are considered as heritage values (Antrop, 2005). The natural and rural landscape stands for traditional heritage values and stability and is often associated with qualities such as tranquility, health, ecological soundness and authenticity (Lowenthal, 1997). Many of these Arcadian qualities were used as basic principles in creating landscapes and the art of landscaping (Jellicoe, 1975; Hill, 2002; Olwig, 2002). Even protected landscapes or sites and designated areas appear not to be safe from ongoing changes (Holdaway and Smart, 2001).

The preservation of landscapes fits in the framework of the protection of cultural and natural heritage. Many organizations are involved in this: the UNESCO World Heritage Center, the Council of Europe (European Landscape Convention), the World Conservation Union (IUCN), the International

Council of Monuments and Sites, the International Association of Landscape Ecology, the International Federation of Landscape Architects and others. The expert meeting of the World Heritage Committee in Vienna (UNESCO, 1996) on the European Cultural Landscapes of Outstanding Universal Value, made the distinction between following groups of landscapes.

Organically evolved landscapes, where a distinction is made between “living” and “fossil” or “relict” cultural landscapes. *Living cultural landscapes* are defined as embodying past ways of life and as being viable in modern times, and as cultural landscapes are considered as dynamic, the way changes can be accommodated in these landscapes is of the greatest concern. *Fossil or relict landscapes* are often extraordinary (Stonehenge is given as an example), but also past industrial and mining landscapes belong to this category. Rural landscapes belong to this group and are considered as defined by both economy and society. The conservation and protection of living rural landscapes that lose their economic viability is questioned (Antrop, 2004a).

Associative cultural landscapes are landscapes that are signifiers for cultural values (symbolic, religious, artistic and aesthetic) or witness or remember important achievements. Thus, the Lake District in the UK is considered an associative cultural landscape because it was the place where the ecological concept of respecting nature and landscapes was born (UNESCO, 1996). Also, natural landscapes may have an additional cultural value, which enhances the heritage value. Good examples are the first two cultural landscapes included on the World Heritage List: the Tongariro National Park (New Zealand) and Uluru Kata-Tjuta National Park (Australia).

Designed cultural landscapes are defined in a broad context of interaction between nature/landscape and cultural history and people. The originality and scenic quality are considered important characteristics. The concept of designed cultural landscapes should therefore not remain restricted to historical gardens and parks.

Clearly, landscapes are part of the cultural heritage of humankind and heritage is considered as a sort of intellectual capital. Although no economic production is considered here, sustainable preservation of these landscapes is often based upon developing new functions that have economical significance. Thus, cultural

tourism is a growing sector and monuments, sites and landscapes are the main attractors. Indirectly they offer potential to sustain rural areas and contribute to the local social and natural capital. Tourism and recreation are typical examples in the debate on sustainability. Vos and Klijn (2000) described it as the recreation and tourism paradox: unspoiled rural and natural landscapes are very attractive for recreation and tourism and the associated economic development most often means the destruction of the original qualities. Coastal and mountain areas, which have also important ecological values, are affected most. The loss of natural capital is obvious here, but changes in the social structure and local traditional economy affect the human capital as well.

Sustaining ordinary traditional landscapes based upon rural economies such as agriculture, stock raising and forestry demands an adapted policy and supporting actions. Austad (2000) formulated six strategies for agriculture to maintain cultural landscape values. First, in the best-maintained and most ‘authentic’ cultural landscapes, semi-natural vegetation types should be protected and preserved, as traditional agricultural systems are valuable because they were sustainable for centuries and can be models for the future. Second, revitalization and intensification of the outfields and low-intensity farming systems should be stimulated. Third, more incentives and substantial financial support are needed for farming that maintains biological-historical values. Fourth, organic farming and agro-forestry should be encouraged. Fifth, local knowledge and traditions should be combined with concepts of landscape ecology to develop ‘new’ cultural landscapes and agro-systems. Sixth, more research is needed on traditional sustainable agriculture as well as more applications of its results.

These strategies all focus upon adapted use and functionality of the landscape based upon knowledge of its historical development and past functioning. Examples of subtle integration of agrarian practices and landscape ecological functioning have been demonstrated in landscapes with a strong historical tradition (Vos and Stortelder, 1992; Pinto-Correia, 2000; Vera, 2000; Grove and Rackham, 2001). Historical geography and historical ecology join forces in this context to designate priorities for conservation (Rackham, 2000). However, Cosgrove (2003) recognizes two different landscape discourses. The ecological approach

focuses upon the interactive processes between nature and human activity, where the latter is increasingly considered as disturbance to the ecological balance. This discourse fits with the idea of natural capital. The second landscape discourse is called semiotic and focuses on the cultural meanings, context and processes in the shaping of the landscape. This approach clearly relates to concepts as human, social and intellectual capital.

In this context it is interesting to remark that the term “sustainable landscapes” often refers to very specific applications of (landscape) ecological principles in landscape design and architecture (Thompson and Sorvig, 2000) and in landscape management and good agricultural practice (van Mansvelt and van der Lubbe, 1999).

Towns and cities and urbanized landscapes are omitted in this discourse. Nevertheless, settlement places form essential elements in structuring the landscape and the transition between urban and countryside is often fuzzy. Settlements have a varying impact on the evolution of the surrounding countryside. Numerous organizations and programs are dealing with sustainable urban landscapes (SUSTLAND, 2003), or development (Regional Environmental Center for Central and Eastern Europe, 2003; Sustainable Urban Neighborhoods Program, 2003; UN HABITAT, 2003), and call it even sustainable placemaking (HTA, 2003). Based upon the Aalborg Charter of 1994, the European Union launched a European Sustainable Cities and Towns Campaign (European Commission, 2001). The following definition was developed at the URBAN21 Conference in Berlin, July 2000 (Regional Environmental Centre for Central and Eastern Europe, 2003) to define sustainable urban development: “Improving the quality of life in a city, including ecological, cultural, political, institutional, social and economic components without leaving a burden on the future generations. A burden which is the result of a reduced natural capital and an excessive local debt. Our aim is that the flow principle, that is based on an equilibrium of material and energy and also financial input/output, plays a crucial role in all future decisions upon the development of urban areas”. The focus lies upon the long-term improvement of quality of life and environmental quality, which is based on maintaining or improving the natural capital.

The holistic basis of landscape implies the integration between natural and human aspects in a sustainable

manner. Recent changes are seen as a threat to existing qualities and thus the conservation of these is both an aim in itself as a means to achieve sustainability. The protection of heritage values (both cultural and natural) of landscapes focuses upon the sustainability of existing values and is confronted with urbanization and tourist and recreational pressure. Considering traditional rural landscapes, other challenges are important as a consequence of the polarization between intensification and extensification of the land use and the changing meaning of the landscape concept. Here the two perspectives of sustainability are clearly included simultaneously. These landscapes possess heritage values and traditional knowledge that should be preserved and qualities that offer a potential for future sustainable development.

2.2. Emerging future landscapes

The main trends of actual landscape change are clear and indicate a polarization between more intensive and more extensive use of land. There is a continuing concentration of people and activities in rather small, highly intensive and densely crowded areas, while vast areas of land become disaffected or even abandoned (Vos and Klijn, 2000; Antrop, 2005). Land use and consequently landscape structure change accordingly.

Vos and Klijn (2000) recognized the following trends of the transformation of the European landscapes: intensification and increase in the scale of agricultural production transforming wetlands and natural areas into agricultural land; these are likely to occur in densely inhabited areas; continuing urban sprawl and growth of infrastructure and functional urbanization; specific tourist and recreational forms of land use developing at an accelerating speed in coastal and mountainous regions; extensification of land use and land abandonment is likely to continue to affect remote rural areas with less favourable and declining social and economical conditions and poor accessibility.

Today, landscape change is highly determined by the globalizing economy, in particular by the geographical situation and accessibility of places in the global networks of the megacities (Sassen, 2000). The main driving forces are changing mobility patterns related to accessibility of places, processes of urbanization, decisions affecting large areas that overrule local decisions and finally also calamities (European Environmental

Agency, 2003; Antrop, 2005). Most of these are linked. Urban core areas or foci of transportation and networks control how the global economy works spatially. Population is concentrated here and the impacts of hazards are most severe in these areas. Nowadays, from 60% to more than 80% of countries' population lives in urban centers and the population in rural areas is still declining (Frey and Zimmer, 2001; Antrop, 2004b; UN HABITAT, 2003). The rural countryside became a vast open space for a wide variety of needs of the urbanites. Lowenthal (1997) refers to it as the '*rural residue*'. The polarization between urban and countryside creates different landscape domains of landscape change controlled by the accessibility of the place and its situation in the global urban network (Van Eetvelde and Antrop, 2001; Antrop, 2004b). The concept of functional urban regions describes the changing relationship between the urban and the rural (Cheshire, 1995; Study Programme on European Spatial Planning, 2000). The rural landscape becomes a space with much more different functions than previously. The meaning of landscape shifts here more towards the concept of *location* than its more original significance as *place* (Tuan, 1974). As "The countryside is becoming a place for living, not for making a living" (Lowenthal, 1997), the relationship between the resident and their environment is changing completely. This is expressed by the architecture of the house and the shaping of the garden as a domestic interface with the rural landscape (Paquette and Doman, 2001).

Each of these specific conditions defines a different context regarding evaluation of natural and cultural assets and the sustainable development of landscapes. Haines-Young (2000) describes this as setting the boundaries of sustainability for a whole set of landscapes that are in different sustainable states.

3. Capital and sustainability

Haines-Young (2000) proposed the concept of natural capital as a new paradigm for landscape ecology, in particular when applying landscape ecological principles in sustainable development and landscape management. It fits the second perspective addressed in this article. In the geographical tradition, landscape science is seen as the integration of natural and social sciences. To link science to people living and using

the landscape, the use of the natural capital concept is proposed.

Hawken et al. (1999) refer to natural capital as the natural resources and the ecological systems that provide vital life-support services, in particular to all economic activities. Basically, the term services refer to the potential utilities natural resources can offer. These services are of immense economic value. Many are literally priceless since they have no known substitutes. Yet current business practices and public policies typically ignore their value and focus on the consumption of resources only. As a result, natural capital is being degraded by the wasteful use of energy, materials, water, fiber, topsoil, and ecosystems. This definition of natural capital is similar to the term "carrying capacity" which was first used in rangeland evaluation (Zonneveld, 1995). Also, this definition of natural capital fits the second perspective on sustainability.

In a similar way human capital refers to human resources that can be monetized, such as education and labor, and "social system services", culture, wisdom and a whole range of values and behaviors that are not easily monetized but define our humanity. Also human resources can be exploited in a sustainable way or not. Non-sustainable use of human resources can result, for example, in an overworked but undervalued workforce. Sometimes human capital is divided into economic and social capital, more or less separating the monetized and unmonetized services.

Hediger (1999, 2000) proposed, mainly from an economic perspective, another categorization, which differentiates between mutually exclusive "strong" and "weak sustainability" and regroups aspects from natural, economic and ecological capital. Strong sustainability is maintaining the ecological capital intact. Weak sustainability refers to the principle of maintaining a combination of economic activity and environmental quality. Natural capital refers to all resources, renewable or not, that are essential for the ecosystem. Economic capital includes the non-renewable resources from the natural capital as well as human capital. The "strong" sustainability fits the first perspective, while the "weak" sustainability corresponds better to the second perspective discussed.

Ecotrust (2003) proposes the concepts of natural and social capital in the general frame of "conservation economy". Thus the focus is clearly placed upon the economic significance of all these resources and

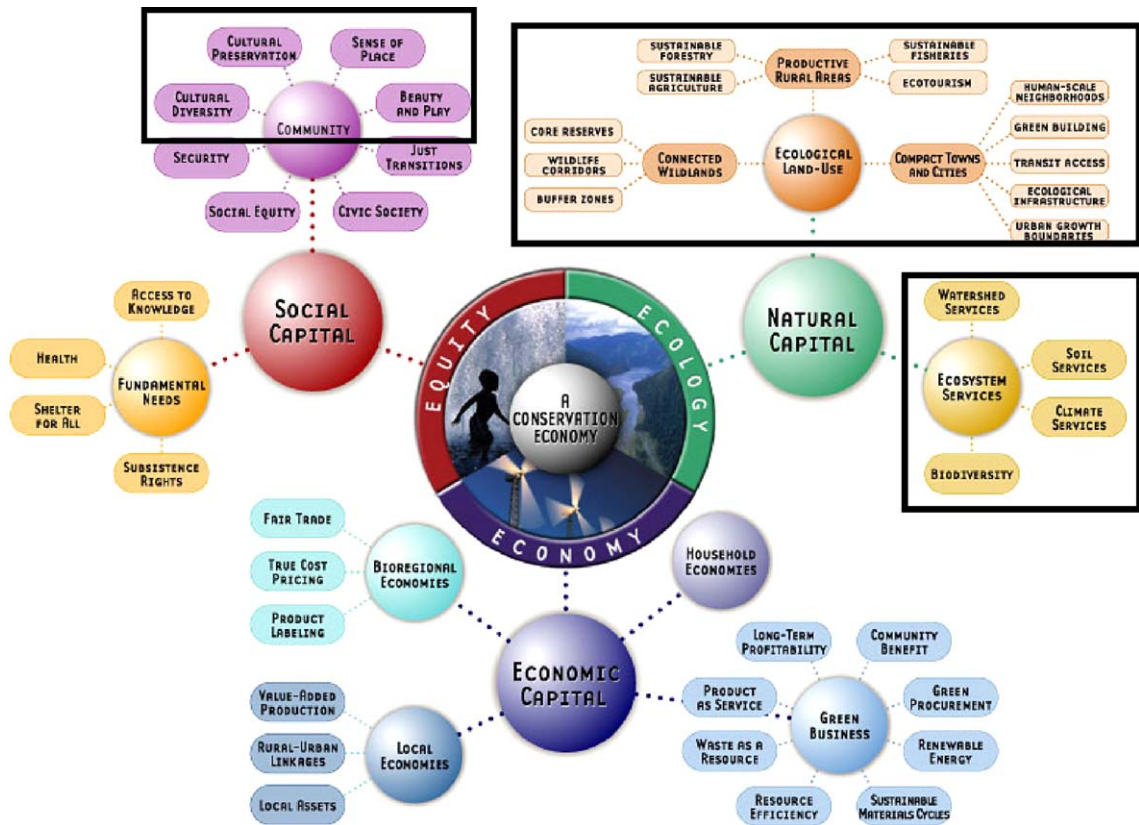


Fig. 1. The patterns map of conservation economy by Ecotrust (2003). The rectangular boxes indicate the areas where landscape aspects are implied. Landscape is not seen as an integrating, holistic concept.

services. The essential goal is to guarantee and stimulate a sustainable economy. Although “conservation economy” says it is based upon the principles of economy, ecology, equity, it remains essentially economic in its final goal, as can be seen from analyzing the synthetic patterns map that is used as a framework (Fig. 1). Natural capital is considered as the basic pattern of ecology. Two sub-patterns are considered: ecological services and ecological land use. Ecological services consist of water, soil, climate and biodiversity. Ecological land use patterns are divided in to three groups: “connected wildlands”, “productive rural areas” and “compact towns and cities”. The names given to these are significant and reveal the economic value of the related landscapes. The “connected wildlands” are further specified as “core reserves”, “wildlife corridors” and “buffer zones”, referring to basic principles in nature conservation and landscape ecology.

“Productive rural areas” consist of “sustainable agriculture”, “sustainable forestry”, “sustainable fisheries” and “ecotourism”, all putting emphasis upon economic sustainability. The “compact towns and cities” cover aspects of “human-scale neighborhoods”, “green building”, “transit access”, “ecological infrastructure” and “urban growth boundaries”. Clearly the concept of landscape does not appear here explicitly. The principle of equity refers to the “social capital” where two groups are recognized: the “community” and the “fundamental needs”. The “community” encompasses “social equity”, “security”, “cultural diversity”, “cultural preservation”, “sense of place”, “beauty and play”, “just transitions” and “civic society”. The pattern “fundamental needs” consist of “access to knowledge”, “health”, “shelter for all” and “subsistence rights”. Although no explicit reference to landscape is found in these groups either, many of the social services refer

to certain landscape aspects, such as the diversity of cultural landscapes, the sense of place and aesthetics. Clearly, landscape is not seen as an integrating holistic concept, but fragmented aspects of landscape are included in some places in the pattern map.

In a similar way the World Resources Institute (Doering et al., 2002) discussing “Tomorrow’s markets in the scope of globalization”, refers to three components of the natural capital: ecosystems, agriculture and freshwater. Nevertheless, the searchable database of the institute includes data of protected areas, natural monuments and world heritage sites.

The final report on “Natural capital indicators for OECD countries” (United Nations Environmental Programme – World Conservation Monitoring Centre, 2000) investigates the possibilities to implement the Natural Capital Index framework, as proposed by the Subsidiary Body on Scientific, Technical and Technological Advice to the Convention on Biological Diversity (United Nations Environmental Programme, 1997a,b). In particular this indicator is meant to assess changes in the “amount” (meaning the extent) and quality of natural ecosystems only, and urban and anthropogenic agricultural landscapes are not considered at all. However, the land cover categories considered include forest, grassland, wetlands, (semi-)desert and tundra and refer to certain landscape types that are to various extents influenced by human activities as well and contain important economic resources. However, in this report the meaning of the concept natural capital is severely reduced.

In the UK, the Countryside Agency, English Heritage, English Nature and the Environment Agency joined forces to promote an integrated approach to sustainable development. This integrated approach is referred to as the Quality of Life Capital and is seen as a tool for maximizing environmental, economic and social benefits as part of any land use planning or management decision (Countryside Agency, the English Heritage, English Nature and the Environment Agency, 2003). In their overview report, it appears that the concept of Quality of Life Capital was a broadening of the earlier concept Environmental Capital developed by CAG Consultants and Land Use Consultants (Countryside Agency, the English Heritage, English Nature and the Environment Agency, 2001a). Essentially, the approach stands for maximizing the benefits for human well-being through integration

of environmental, social and economic issues at all planning levels and procedures. Several application guides have been published (Countryside Agency, the English Heritage, English Nature and the Environment Agency, 2001b). The checklist of the components of the Quality of Life Capital for practitioners does not contain any explicit reference to landscape, and nor does the “What Matters and Why Matrix”, which is the basic tool. However, the criteria of the environmental component contains: “distinctiveness”, “quality”, “rarity”, “representativeness”, “setting/context”, “historical continuity”, “recorded history”, “accessibility” and “popularity”, many of which are closely related to the landscape. In the proposed toolkit for decision making and planning, the emphasis of the landscape concept is on landscape character and types. In the application guide on “Managing Change on Individual Sites” the emphasis of the landscape shift towards more scenic/perceptive and aesthetical properties, such as “landscape/sense of place benefits”, which consist of “wilderness”, “seasonal change/color”, “health”, “mosaic/variety of landform”, “dramatic scenery”, “tranquility” and “openness/freedom”. The descriptions related to the landscape are rather vague and are not integrated in a holistic theory of the landscape itself.

The examples discussed above show that the two perspectives on landscape sustainability exist. The first perspective emphasizes landscape as an integrator for qualities and values that need to be sustained. The second perspective focuses to sustain partial activities in the landscape, which is not considered as an integrating whole.

4. Keys for sustainable landscapes

The first question is sustaining what? The first perspective focuses upon the preservation of inherent landscape qualities and values. These are both natural resources, such as biodiversity, habitats and water, and cultural heritage consisting of material objects in their landscape context and immaterial values such as the sense of place, the *genius loci*. A sustainable preservation of these qualities demands maintaining traditional practices and functions, and keeping the necessary knowledge to do so. The second perspective focuses upon sustaining rural economies by using ad hoc combinations of natural and human capital.

The second question relates to the type of landscape to sustain. The general polarization of land use creates two groups of landscapes, with a different link towards sustainability. Intensification of land use in urban, suburban and industrial landscapes has a different meaning than in industrial agriculture and fisheries or tourist and recreational development. Extensification of land use occurs in depopulating areas resulting in land abandonment, and in areas of land degradation and environmental deterioration. The first perspective on sustainability will attempt to steer this development in such way endangered landscape values need external support to be conserved. The second perspective will explore the long-term new possibilities these developments offer. In intensifying areas, sustainability will focus upon economic, social and environmental aspects. In extensifying areas, a potential to enhance the natural capital can be an issue.

The third question relates to the scale and time horizon of sustainability one is aiming at. Both are related and values are also scale-dependent (Antrop, 2004a). Small local actions are likely to be realized as soon as possible, while large projects will take much longer. Linked to economy comes the write off of investments and the Best Available Technology Not Exceeding Excessive Costs principle. Sustainability is a principle fitting into a larger economical context and its interpretation may shift with technological advances. Setting scale and time horizons are important to define how to monitor and evaluate changes in the concept of sustainability. The first perspective on sustaining traditional landscape values, clearly relates to long-term and mostly unmonetized values, which are hard to monitor in a numerical way. In contrast to the economic sector, the discussion about estimating or proposing a time horizon for sustainability in landscape or heritage preservation is absent. Time or planning horizons in an economical way are a priori defined to the realization of the project. They define the willingness to invest and engage for a predefined period of time. No such scopes are defined in preserving landscape qualities and values, nor sustaining the natural and social capital. In these fields, the implicit time horizon seems to be 'as long as possible into the future'. All violent conflicts during history showed the very poor and relative protection all 'soft' qualities possess, and this includes landscape, heritage and ecology. The number of world

heritage sites that are listed as threatened is rapidly growing (UNESCO, 2004).

The second perspective on sustainability implies the formulation of guidelines for future development, planning and design. In this context, Potschin and Haines-Young (2003) suggest the use of the German *Leitbild* concept as a framework for the formulation of visions in sustainable landscape management. Modern, rapid change is created mainly by numerous development projects and public works. These are mainly sector specific and most often lack coordination. An overall integrated and long-term vision is missing. Although, environmental policy and planning rules demand increasingly better and more adequate integration of all new infrastructure and development into existing landscapes, this is rarely realized. Nevertheless, landscape design is becoming more important as landscape architects broaden their appreciation and understanding of landscape. New projects can express some individual creativity or reflect a common imposed style. Also, landscaping and landscape art have become important issues again (Nohl, 2001; Cosgrove, 2002; Hill, 2002). The integration of landscape ecological principles in scenic landscape design is a new challenge (Steinitz, 1990; Nassauer, 1997). Ecological awareness is growing in design projects, but their integration with cultural and aesthetical attributes of the landscape remain vague and disputed (Daniel, 2001). An integrated approach and good communication is essential here (Tress et al., 2003) and new tools for visualizing scenarios for future landscape development are needed (Tress and Tress, 2003). Implementing changes in sound traditional rural landscapes results in a similar discussion as in urban planning: How to integrate modern new structures into existing historical landscapes? How to define new (multi)functionality for existing structures without such a fundamental change that they destroy their identity and affect their morphology and appearance? It also opens up the debate about authenticity, the meaning of landscape restoration and the value of new works of landscape art for the future (Lorzing, 2001).

5. Conclusions

The concepts of natural and human capital basically focus upon sustainable economies. No explicit

and direct relation is given to the landscape. Indirect links can be found with the qualities of the rural countryside that refer to traditional (organic) sustainable agriculture and forestry, and to the countryside as a pleasant place to live or a space for leisure. However, the integrated and holistic perspective of the landscape is missing, in particular the integration of economy with ecological and historical heritage values.

The meaning of the concept landscape is also in a profound transition. Landscape no longer refers solely to traditional rural countryside (in European tradition) or to spectacular nature (in the American tradition). Profound reorganization of the land to adapt to changing societal needs is resulting in rapid changes to our environment. Ancient landscapes become fragmented and disappear gradually while new ones emerge. Consequently, many landscape ecologists see human activities as landscape disturbing processes. Vanishing traditional rural landscapes can be sustained with different objectives, such as preserving ecological functioning and diversity, continuing or reintroducing traditional practices that proved to be sustainable, maintaining and enhancing the quality of life for the local population to prevent land abandonment. In areas of increasingly intensive land use and concentration of people and activities, new landscapes must be designed to fit the multifunctional use of space in a more sustainable manner. The visions are somewhat different and rely upon different ecological and semiotic discourses. Considering preservation of inherited natural and cultural values ‘as long as possible’ demands a different strategy than sustaining landscape qualities for continuing economic benefits. Based upon the paradigm that only functional structures in the landscape will persist, sustaining heritage values is often linked to enhancing economic benefit, which might lead, in cases of over-use, to a deterioration of these initial qualities. Sustainable urbanized landscapes imply completely different aspects than sustainable rural ones.

Thus the concept of landscape broadens and differentiates according to the context. Concepts such as natural, human, social or quality of life capital are principally expressions of this broadening. They are attempts to formulate new frameworks adapted to specific visions or conditions of the landscape. Sustainable landscapes are no fiction if the landscape qualities are well defined and the context of change and future functioning is set right and fixed. Sustainable landscapes

will remain utopist if too precise time horizons for landscape management are set.

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