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Norman Backhaus, Claude Reichler, and Matthias Stremlow

Conceptualizing Landscape: An Evidence-based Model with Political Implications

Alpine landscapes arouse emotions and yearnings: feelings of belonging, freedom, or holidays. Images and notions about Alpine landscapes not only influence landscape experiences, they also play an important role in decision-making processes and conflict mitigation. Different stakeholders—ie locals, tourists, tourist entrepreneurs, politicians, farmers, hunters, etc—regard Alpine landscapes with different eyes, yet there are also connecting elements: these are referred to in tourism marketing and in political dialogue. The present article develops a conceptual model landscape perception consisting of 4 poles—'nature' and 'culture' as well as 'individual' and 'society'—that contributes to a better understanding of the meanings that landscapes have for different people. The model helps to find existing commonalities among stakeholders and overcome obstacles. It is exemplified by 6 dimensions with distinct foci on landscapes through which researchers look at Alpine landscapes. The article concludes with recommendations for ethical landscape development practice and policy.

Keywords: *Landscape; Alps; nature; culture; perception; stakeholders; Switzerland.*

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Introduction

Landscapes are a result of people's interactions with their environment. In order to formulate shared aims for development of landscapes, comprehensive knowledge about processes of perception of landscapes is needed. In this paper we present a new conceptual model of landscape perception that helps to better structure this process, in order to avoid omissions and misunderstandings in landscape development projects and to emphasize interdisciplinarity (Fry 2001) and transdisciplinarity (Naveh 2001; Tress and Tress 2001). This model is based on 4 poles that encompass the different approaches to landscapes: nature, culture, society, and the individual. This makes it possible to locate different dimensions—ie the corporeal-sensual, aesthetic, identificatory, political, economic and ecological dimensions—which allows for efficient and thorough analysis of landscape perceptions and landscape-related processes.

The model was developed within the Swiss National Research Program 48 "Landscapes and Habitats of the Alps" (NRP 48) in order to synthesize perception-related projects (Table 1). Although it was developed for the Alps, the model is also applicable to other mountain areas and other kinds of landscapes. In contrast to most other mountain areas, the Alps (sometimes referred to as the "European Alps") are rather densely populated and quite heavily visited by tourists and people seeking recreation. Therefore, tourism infrastructure is an important feature of Alpine landscapes. Moreover, the history of the Alpine region is unique in terms of perception and the meanings attributed to the Alps, especially in Switzerland (Stremlow 1998; Reichler 2002). Nevertheless, like other mountain areas, Alpine regions suffer from structural changes due to increasing competition on the (world) market for agricultural goods, and few job opportunities, causing people to migrate (Müller-Böker 2005). And like other mountain areas, the Alps are appreciated for their unique and beautiful landscapes, great biodiversity, spectacular physical aspects, and special cultural manifestations. Hence, mountains are often perceived as especially affected by change and their landscapes are deemed to be particularly vulnerable (Bätzing 2005).

Our model and a discussion of its dimensions are presented below, illustrated with research projects that contributed to the NRP 48 (Backhaus et al 2007a, 2007b). In the final section we make recommendations for landscape development practice and policy. We begin with a few introductory remarks about "landscape" in order to clarify the concept.

Conceptions of landscape

It is well known that conceptions of landscape are numerous and vary greatly in the scientific community as well as in everyday discourse. For many, landscapes consist of the world as it appears, as environment, or as a view into the distance. For others, landscapes are only a construct perceived as the result of natural processes that is subsequently altered by people, resulting in cultural landscapes. The conceptions themselves also change with the alteration of landscape realities (Stremlow 1998; Antrop 1999; Tress and Tress 2001; Reichler 2002; Kienast et al 2007) and thus new images and landscape values are required. Our model makes different approaches to landscape apparent, in order to avoid misunderstandings based on different perceptions of landscapes.

If people stick to their old ideas and values, a gap will open between the mental world of individuals and the changed environment. Therefore, landscapes have to be conceived of as relative and dynamic (Antrop 1999), and not as something carved in stone to remain unchanged forever (Tress and Tress 2001). Hence, we cannot provide a conclusive definition of landscape. What we can say is that landscape has a mediatory function between people and the natural environment. Consequently, it is more important to ask what purposes this mediation serves and how it works, than to define landscape. Most landscape-related research does not

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TABLE 1 NRP 48 projects selected for examination in the Thematic Synthesis I. The short titles are referred to in the text, in the description of the landscape perception model's 6 dimensions.

Short title	Full title of NRP 48 project	Head of project
Landscape's Social Field	Landscape's social field—Representation and legitimacy in the use of mountain habitat	Yvan Droz
Breathing Fresh Air	Breathing fresh air—A scientific and cultural history of air as component of Alpine landscapes	Claude Reichler
Fiat Lux!	Fiat Lux!—The making of night landscapes in the Alpine area	Jon Mathieu
English Alps	The rise and fall of the English Alps—The role of the English and of English-speaking peoples and cultures in the invention of development and perpetuation of the Alps	Neill Forsyth
Mountaineering	Mountaineering in Switzerland and its impact on the perception and uses of the Alpine landscape in a historical perspective	Jakob Tanner
Conflicting Expectations	Conflicting expectations and objectives regarding the development of Alpine landscapes—Psychological background, societal mechanisms, and possible ways to a sustainable landscape development in the Alps and outside	Marcel Hunziker
Lifeworlds	Work and lifeworlds—Memory, change and present	Hans-Ulrich Schlumpf
Power of Images	The power of images—Their creation, reproduction, and strategic use in the shaping of Alpine future	Norman Backhaus
Transformation	Transformation rates of Alpine landscapes and surrounding areas—Potential threats and benefits to people and selected species	Felix Kienast
Flood'Alps	Floodplains of the Alpine Arc between security and biodiversity—Changes in representations, decisions, and management	Jean-Michel Gobat

start with a definition of the concept, but with landscape-related problems that need to be analyzed and solved. Most researchers in the NRP 48 (but also others, eg Fry 2001; Naveh 2001; Tress and Tress 2001) have stated that only a multidimensional approach, in which insights are shared and connected across the boundaries of disciplines, can achieve this. Since landscapes can be considered a common cultural commodity or public good (Antrop 1999; O'Neill and Walsh 2000) these analyses make clear that the participation of people concerned by decision-making processes is very important. Therefore, the results of landscape research, as well as perceptions and conceptions of landscapes, should be communicated as clearly as possible in order to raise awareness and initiate processes of participation, and thus serve as a contribution to ethical discourse on landscape development (Hanssen 2000).

The 4-pole model of landscape perception

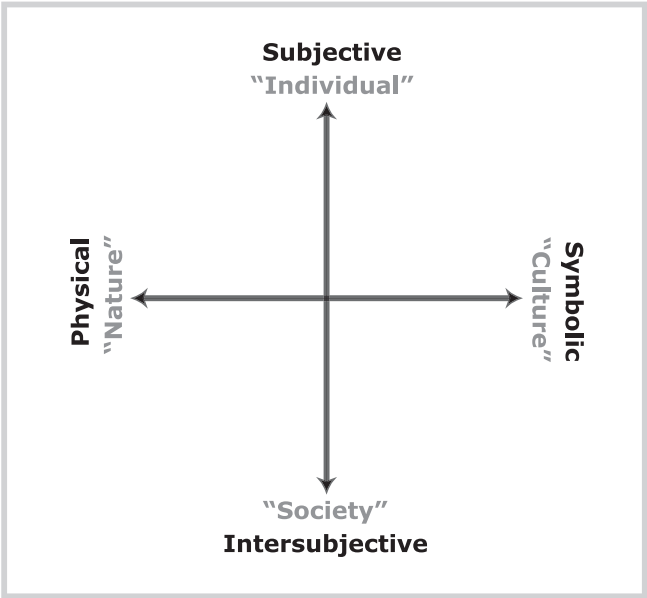
The role of landscape in mediating between the natural environment and human activity is not immediate and spontaneous. Rather, it is dependent on acquired rules, models, and cultural patterns. Consequently, we can locate landscape perception between the poles of *nature* and *culture*. Focusing only on human beings, we can detect another polarity, namely between the *individual* and *society*—the former characterized by their perceptions of landscape and the latter by the way space is organized, managed and appropriated by different social groups. Thus, we have 2 polarities that can be displayed in a scheme with 2 axes (Figure 1).

Of course one could argue that this polarity is a construction, for even engagement with the physical aspects of landscapes is based on social norms (Müller 2007). But that is not the point. In order to be able to talk about the different aspects of landscape, it is necessary to present a model that different stakeholders can relate to and that is close to their everyday experiences. This is one of the reasons why we did not use Actor Network Theory (ANT). Another reason is that we are not attempting to write about the ontology of nature–culture relations, but rather about how different facets of landscapes can be approached in a structured way.

Depending on their specialization, scientists and experts who deal with landscapes tend to gravitate

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FIGURE 1 The 4 poles of landscape perception. (Source: Backhaus et al 2007a, p 41, adapted for this paper)



towards one of these poles and to emphasize its supremacy over the others, according to their discipline or field of interest. Naveh (2001) calls this the "disease of specialized deafness." Therefore, the respective definitions of landscapes and notions about their development depend on one's position within this grid. Biologists, geomorphologists, or ecologists, for instance, tend to focus on natural aspects and neglect aspects that belong to the realm of the social sciences and the humanities. Psychologists and behaviorists tend to concentrate on the individual and on expressions of individual sensations, without which perception is not possible. Sociologists and economists put the intersubjective pole at the fore, because they argue that landscapes are mainly the result of social processes. Cultural scientists, who analyze the meaning of aesthetic models and representations, are drawn to the cultural pole.

Tensions occur within this field that result in an unstable balance (ie between the natural sciences and the humanities, but also between quantitative and qualitative approaches; Fry 2001). This conflicts with the notion of an "absolute landscape" formulated between the ages of Enlightenment and Romanticism and that is in line with Augustin Berque's (1986) 3 layers of landscape: the biophysical, the subjective, and the social layer (Reichler 2002). The introduction of a fourth layer or pole—the differentiation between the intersubjective and the cultural poles—offers the possibility of better showing where the socio-cultural tensions, rifts, and disruptions are that determine landscapes today. The model also shows the breadth of the concept of "landscape." Moreover, it is dynamic and thus does justice to the fact that landscapes and conceptions of landscape undergo continual change.

The physical pole

What people generally perceive first when they behold a landscape are its physical elements: meadows, forests, settlements, roads, animals, machines, etc. Without these things landscapes would merely be ideas. However, the physical evidence of these objects should not lead to the reification of their meanings, in the sense that landscapes are what they look like. In fact it does not make sense to conceive of a landscape *per se* without considering the different points of view from which landscapes are perceived. One such view is taken by the natural sciences, whose aim it is to closely describe biological and physical elements, and to analyze human impacts on natural processes.

The subjective pole

The subjective aspect of the pole of the individual has two meanings. The first refers to the *subject* as the center of emotions, sensations, and perceptions; landscapes appear to subjects when the latter open themselves to the outside through their senses. Landscapes would not exist if subjects did not approach them with intentionality and the ambition to grasp their surroundings. Although the visual aspect of this process is increasingly important, it is not the only way subjects perceive landscapes. The visual sense is also coupled with other senses and the rest of the body, and is therefore more than just an "optical device" for detecting the environment. Hence, the development of a landscape theory that encompasses all the senses is called for.

The second meaning of the subject refers to the individual as part of society. Individuals—conceived of as agents who make their own decisions (regarding action theory, see Werlen 1992; Searle 1995; Treibel 2000; Münch 2002)—retain a certain degree of freedom of action that includes judgments and choices. Therefore, individuals choose the aspects of landscapes that arouse their interest and consequently tell their own story when talking about landscapes.

The symbolic pole

The symbolic pole refers to approaches based on the conception of cultural patterns, aesthetics, and symbols. These approaches depend on the fact that people perceive the world—and also landscapes—as it is mediated through visual and linguistic patterns, which they attribute to meanings related to their cultural environment (Roger 1978). The role of art—and today of the media—is to transmit patterns that are not merely instruments of perception but also systems of interpretation. They are passed down from one generation to the next and, at the same time, they are altered by social changes and symbolic standard values (Schama 1995; Stremlow 1998). In this manner, art and literature on the one hand conserve qualities attributed to land-

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FIGURE 2 *Return of the Animals* by Ludwig Kirchner (1919). (Reproduced with kind permission of Sammlung Eberhard W. Kornfeld)



scapes. On the other hand, they also discredit stereotypical notions and renew our view of landscapes. The introduction of perspective to painting in the 15th century, for instance, or the invention of photography and the artistic revolution represented by expressionism (see for example Ludwig Kirchner's *Return of the Animals*; Figure 2) and abstraction shook up conceptions of landscape. Hence, landscape became a carrier of identity, and especially of national identity in modern Europe (Walter 2004), particularly in Switzerland.

The intersubjective pole

At the social pole landscape is defined as a product of social practices (Cosgrove and Daniels 1988; Jackson 1994; Corbin 2001). These practices (ie sport, leisure, agriculture, trade, etc) are analyzed in relation to their social and economic determining factors. Economic evaluations of landscapes (Simmen et al 2007) regard them as a resource that has a certain use value (ie for agriculture and tourism) or market value (ie exploitation of land ownership, added value of spectacular vistas, etc). Others are more connected to a sense of belonging that is linked to discussions about the authenticity of landscapes (Kianicka et al 2006). And authenticity is in turn connected to the social history of landscape representations, for example seen from an insider's as opposed to an outsider's perspective, or as a natural landscape versus a cultural landscape.

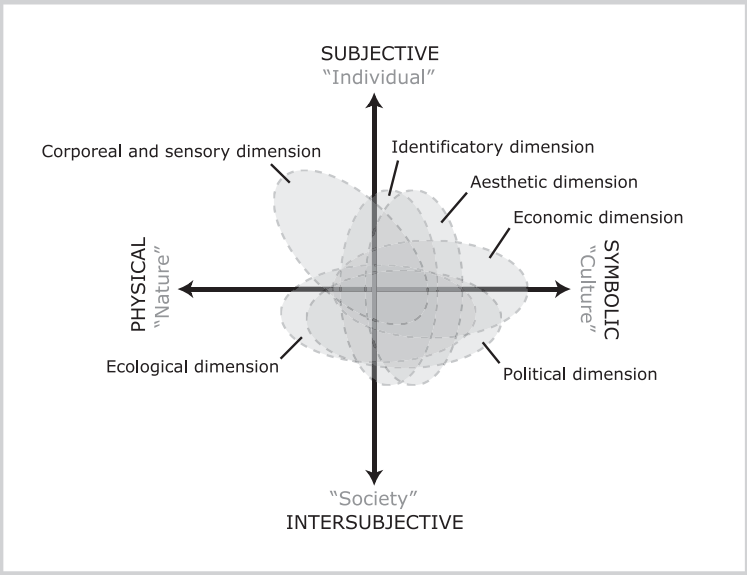
Political aspects of landscapes also belong to this pole because of decisions by the authorities that can have a great impact on landscape development. Moreover, landscapes can be a source of conflict about the differing demands of different stakeholder groups, all of whom want to influence and define landscape development.

The 6 dimensions of landscape

Within the model of the 4 poles, different possibilities for locating standpoints influencing landscape perceptions can be conceived of. One typology could be deduced from the connections between the poles. However, in the present project we wanted to establish different zones or foci within this field. To identify them, we used the topics of the NRP 48 and examined the results of research projects (Table 1). We analyzed these

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FIGURE 3 The multidimensionality of landscapes. (Source: Backhaus et al 2007a, p 102, adapted for this paper)



projects' different approaches to landscapes, and by compiling and structuring them we succeeded in differentiating between 6 dimensions of landscape on which people may focus, depending on the angle of their perception. Interviews with practitioners in the field of planning and research confirmed the usefulness of distinguishing between these dimensions. Figure 3 shows that the 6 dimensions overlap, going through the center of the field to a greater or lesser degree. The dimensions can also be perceived as flashes that illuminate and unveil landscape perceptions at the same time.

The corporeal and sensory dimension

The corporeal and sensory dimension is the dimension of sensory impression and perception. Landscape is basically a matter of seeing, and the visual sense is therefore regarded as the central affected sense. For art historians landscapes are a genre in painting like the portrait or the still life. But is landscape only a view delimited by the frame of our visual faculty? Some researchers expand this position by aggregating different viewpoints that enhance the inter-visibility of landscapes (Ormaux 2005). From this diversity of viewpoints, the NRP 48 project "Landscape's Social Field" deduces diverse justifications for specific landscapes and calls them 'postures'—in line with Bourdieu's terminology. Other researchers develop a multi-sensory conception, for example Bingley (2003), who emphasizes touch, or the project "Breathing Fresh Air" (Reichler 2005), which includes sensations of the skin. It perceives notions about mountain air not only as a health factor but also as a landscape component. In its analysis of the consumption of nocturnal landscape by illumination—for streets, advertising, and monuments—"Fiat Lux!" (Zumthor et al 2006) emphasizes the importance of the sensory dimension.

The aesthetic dimension

The aesthetic dimension is expressed in the relationship of the cultural pole to the other poles. It can refer to the subjective pole if it emphasizes the value attributed to beauty, to personal pleasure, or to intellectual discoveries and sensations. Connected with this is familiarity with specific landscapes. In relation to the intersubjective pole, learned patterns are emphasized through which the "neutral" elements described by the physical pole become a landscape, as expressed in the German term *Stimmung* (mood, sentiment) used by Georg Simmel (2001). Consequently, perception is directed by social systems of estimation (Roger 1978). Both sides of the aesthetic dimension are connected and appear in different contexts of Alpine research.

"English Alps" analyzed the aesthetic meaning the Alps had for the English (and others) in the 19th century, and how this led to the development of Alpinism, which is also the topic of "Mountaineering" (Wirz 2007). There, the history of appropriation of mountaintops by women is depicted as a difficult endeavor that was contested by male Alpinists and consequently revealed their aesthetic notions about mountain peaks and the path to the top (see also Siegrist 1996). "Breathing Fresh Air" tells the story of the rise and fall of Alpine health resorts. Their appeal also depended on the aesthetics of their surrounding landscape, as described by Thomas Mann in his novel *Der Zauberberg* (Mann 2004 [1st edition 1924]). Of course aesthetics were relevant not only to the 19th century; they are also important for current landscape perceptions and expectations for future development. "Conflicting Expectations" analyzed the landscape preferences of insiders and outsiders.

The identificatory dimension

This dimension concerns the feeling of belonging—in the sense of the German *Heimat*—that landscapes can trigger. Landscapes are thus perceived as carriers of the common history of a community (Nora 1993); people recognize themselves in these landscapes, which become a symbol that goes beyond materialism and the visual. "Lifeworlds"—two films about the past and present lives of people in the Hinterrhein (Röösli 2005) and the Valais (Risi 2006)—and "Transformation," a study of identity and identification with landscapes (Rufer 2005), are 2 projects that show how complex and intricate identification processes can be. The image analysis of "Power of Images," moreover, revealed that identification with a region (and its future landscape) also includes people who stand for or against a certain form of development (Müller 2007; Müller and Back-

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haus 2007). This dimension is extraordinarily rich and encompasses socially and individually experienced space and spatial relations.

The political dimension

If landscapes are a consequence of human actions, they are also political. Different interest groups each try to shape spaces according to their needs and desires. Consequently, many research projects focus on these needs and wishes, and conduct surveys in order to detect (potential) conflicts and make recommendations for policy makers. Common interest groups are locals, tourists, owners of second homes, farmers, hunters, hotel owners, men, women, different age groups, etc (Droz and Miéville-Ott 2005, "Landscape's Social Field"). Although these groups often have common interests, people's opinions depend on the specific context and their personal situation. In conflicting situations and in cases where decisions have to be made, the role of experts and administration become important. As outsiders or "neutral" persons, they should provide know-how that helps to solve conflicts or to make equitable decisions. However, experts and policy makers also have an opinion with which they enter "the game." Hence, the role of these experts is debatable and their opinions can differ from those of the people concerned (Hunziker 1995; "Conflicting Expectations").

The economic dimension

The economic dimension is at the center of the model. It is revealing that the development of the modern economy is closely linked to the delimitation of private landownership, which is also central to the development of landscapes. The economic dimension was important in discussions about the beauty and usefulness of landscapes in the 18th century (ie private *landscape gardening* or the development of *enclosures* in England). It was present as well in the construction of sanatoriums in the 19th century, where Alpine landscapes and fresh air became an economic resource. Today, Alpine landscapes are regarded more than ever as an economic resource, for example as tourist areas, locations for leisure activities, space for sustainable agriculture, or as places to live (Simmen et al 2007). While there is a tendency to measure such landscape functions in monetary units—which is certainly useful for the assessment of different functions—not everything that is important about landscapes can be expressed in dollars, euros or francs (for example identification, aesthetic delight, biodiversity, or environmental quality).

The ecological dimension

This dimension concerns all aspects related to the ecological aims of sustainable (landscape) development. It is relevant when decisions regarding protection or use of landscapes have to be made, for example when tourist infrastructure threatens an area's biodiversity or when flood protection, restoration of rivers to their natural course (revitalization), and agriculture have to be coordinated (Junker and Buchecker 2006; Zaugg Stern 2006). Ecological questions also become important in discussions about people's preferences regarding wilderness, which paradoxically—at least in the Alps—can only exist when it is carefully protected and delimited (Stremlow and Sidler 2002).

Conclusion and recommendations

In summary, we can ask ourselves what is new about this conceptual model of landscape perception. First, the distinction between 4 poles—instead of a 'nature–culture' dichotomy, 3 levels: 'biophysical–subjective–social' (Berque 1986), or 3 spheres: 'bio-, geo-, and noosphere' (Tress and Tress 2001)—emphasizes the distinctions between cultural, social, and subjective aspects of landscape perception. At the same time the model can locate different approaches within the field it opens up. Second, the concept of poles rather than layers shows the dynamics of landscape research and perception, rather than suggesting with "layers" or "spheres" that landscape is *per se* a whole and should only be regarded as such. Third, the introduction of the 6 dimensions (which in themselves are not new) into the model of poles shows the 'lenses' or 'foci' with which landscapes are approached and discussed. The list of 6 dimensions is not meant to be final. Depending on the context, other dimensions are possible. Nevertheless, we think that our dimensions cover most kinds of landscape perception.

Although they are not similar, the dimensions come close to the notion of landscape ethics—ie preserving landscapes for their "aesthetic value," "intrinsic worth," and "utility" (Soper 1995 in Hanssen 2000). This is important when we look at processes of landscape planning, where different stakeholders emphasize different aspects of landscapes, often without naming them. Here the model can help to make people aware of their own position and that of others, and serve as a starting point for inter- and transdisciplinary research (Fry 2001). The model also offers a foundation for an ethical discourse about landscapes (Hanssen 2000).

Thus, based on the 6 dimensions we can develop an ethical discourse that includes a mandate for the protection and shaping of landscapes. According to this, landscapes must be developed on the basis of intersubjective agreements. These should be based on democratic dialogue and deliberation rather than on preference calculations (Arler 2000, p 301). Landscapes should please the people, offer familiarity,

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bring long-lasting revenue, and be ecologically stable (Haber 2006). In order to move towards this future-oriented understanding of landscape development, we would like to present a few considerations based on our model:

- Landscape development should be designed as a social process that includes the different interests and claims of concerned stakeholders. These different notions represent both opportunities and risks—the former because new ideas are generated and discussed, the latter because unsolved conflicts tend to become more entrenched and broader. Simmen et al (2007) discuss different instruments for reaching intersubjective agreements and solving conflicts.
- People associate emotions with landscapes that are connected to recollections and to individual and collective notions. In fact, this emotional content determines a great deal of people's interest in landscape topics. Therefore, this emotional approach must be better reflected on in participatory processes, and discussed along with models, plans, and scientific insights.
- The analytical (and detached) approach of planning processes must be combined with one that is oriented towards experience and identification. Art projects, which emphasize a reflection on perception and representation of landscapes *per se,* can help to bridge the gap between these approaches.
- Landscapes are never completed. Rather, they are constantly being built and rebuilt through people's engagement with their inner images and with their physical environment. Therefore, questions regarding landscape policy are embedded in changing social, cultural, and individual contexts. As a consequence, 'inner' landscapes and their implicit evaluations must be made transparent (Bingley 2003).

For landscape development and planning, material and immaterial aspects are important. Our model tries to present a way in which these aspects can be made transparent and therefore negotiable.

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