LIVING IN LANDSCAPES: KNOWLEDGE, PRACTICE, IMAGINATION

Foreword

For countless centuries we as *Homo sapiens* lived and sustained ourselves in semi-wild and wild landscapes. So did the ancestral lines preceding us, all the way back to the first creatures emerging from oceans and seas. They certainly did not conceive of their surroundings as landscapes. That concept came into being during the last tiny fraction of time in our evolution. Life in landscapes was dangerous, but it must have felt like home, for it was well known to the inhabitants. Today's Inuits who still live in the traditional way feel at home in one of the most inhospitable landscapes on earth. It is their home and they know it well.

When organizing the 2010 Permanent European Conference for the Study of Rural Landscapes (PECSRL), to be held in Latvia, one of the first tasks was to establish a theme that would address a major contemporary issue. As in previous conferences the idea was to have themes that would be of current interest and thus lead to ideas and methods for guiding the care of valuable rural landscapes of the past and rural landscapes of the future.

Identified was the major contemporary issue of ever more rapid urbanization, which puts pressure on rural landscapes for mass recreation, mass housing, transportation systems, and other uses. In short, the expansion of urbanization and urban lifestyles into rural landscapes as a major issue. Many urbanites, while attracted to rural landscapes, hardly recognize them as home. Their values and perceptions are urban not rural and often conflict with those of local inhabitants. Therefore "Living in landscapes" was established as the overarching theme for the conference. "Landscape as home" became one of the principal sub-themes.

*

The papers for this issue were selected on the basis of peer reviews of scholarly qualities. They were also selected for how well they fit into the major thematic issues debated at the conference. They are divided into four broad categories:

Living in landscapes. In this segment the papers address humanistic issues as well as practical ones. The formative aspects of Latvian rural landscapes are included.

Historic landscapes. Addressed are past formative processes, the incursion of new, transformative processes, and questions of how to harmonize past, present, and future landscapes. Also included are discussions of how to make people aware and sensitive to these historic and contemporary realities.

Contemporary landscapes. This segment contains current processes of landscape creation as public sector planning issues. Also included is identification of particular landscape characteristics as values for their own sake.

Subjective landscape values. As held to be important by people in the past and today.

Edmunds Valdemārs Bunkše,
PhD. Dr.h.c.
Visiting Professor, University of Latvia
Professor Emeritus, University of Delaware
Head, Scientific Committee,
PECSRL Latvia 2010

24TH SESSION OF PECSRL — PERMANENT EUROPEAN CONFERENCE FOR THE STUDY OF RURAL LANDSCAPE

LIVING IN LANDSCAPES: KNOWLEDGE, PRACTICE, IMAGINATION

Riga & Liepāja, Latvia, 23–27 August 2010

The Conference gathered 193 participants from 33 countries. Latvia, Germany and the Netherlands were represented by 20 participants each, followed by Sweden (16 participants), Norway (13), Belgium (11), Italy (10, Estonia (9) and Japan (7).

During the five-day conference, participants shared worldwide experiences in landscape research and participated in lively discussions. Conference Programme consisted of 156 paper presentations including 6 plenary lectures, 140 oral presentations and 10 posters. The large number of keywords (more than 400 in total) testifies the variety of subjects. Among most often used keywords were "landscape" (13×), "landscape change" (8×), "historical geography" (7×), "cultural heritage" (5×), "perception" (5×).

On behalf of all those who have contributed to the organisation of this Conference, we thank all participants for attending and sharing their ideas and experiences.

Scientific editors:

Inese Stūre
Head of the Organizing Committee

Oļģerts Nikodemus
Dean of the Faculty of Geography and Earth Sciences,
University of Latvia

PLENARY ADDRESS

POETICS OF THE LATVIAN LANDSCAPE

Edmunds Valdemārs Bunkše, PhD. Dr.h.c., Professor
Arts and Humanities Cultural Geography, University of Delaware
Visiting Professor, University of Latvia

Key words: *neuroscientists, art, landscape aesthetics*

Why poetics?

Plato may have discredited poets (Murdoch, 1977) to establish reason as the only reliable source of truth and beauty. Today, however, neuroscientists have discovered that reason alone, without subjectivity and the emotions, makes the individual (Damasio, 1994; Sacks, 1987; 2003) an incomplete witness of the experience of landscapes. Consequently, truth and beauty is not only visual, but may reside in what is perceived through other senses (Bunkše, 2007).

The importance of poetry to national identity is well known. The stereotypical view of poems is that they are works of imagination and tend to express human emotions. It is true that poetry can be merely sentimental. Nonetheless, the best will encompass factual and emotional truths about the human condition, including being in landscapes. Many will resonate with the experiences of another human being (Bachelard, 1964) or a nation (Bunkše, 1990; 2004; 2007). Such poems become epiphanies that lead the reader or listener into new imaginative, emotional, and factual experiences of landscapes (Bachelard, 1964). And epiphanies *diminish the distance between the internal and external worlds of a human being* — distance being a condition of contemporary mobility, when many are visitors, especially to rural landscapes.

A role of all the arts and all the senses

"*Poēsis*, literally, 'invitation to discovery' (Heidegger, 1975) is not the sole domain of poets" (Buttimer, 2010). All the arts — literature, sculpture, music, painting, architecture, et al. — *may* bring us closer to discovering the emotional and perceptual realities of landscapes, albeit not always with equal efficacy. Music, which Kant called "the quickening art" may be the most effective in uniting a human being with self and cosmos, as Oliver Sacks (1987) recounts a traumatic episode on a mountain in Norway:

> Then, all of a sudden, with no warning whatever, into the cold, starry, impersonal cosmos — the equally cold and impersonal micro-cosmos of the mind — came *music,* warm, vivid, alive, moving, personal.

Scents, especially subtle ones, may take longer to kindle awareness (Bunkše, 2007). In any case, the arts will engage all the senses, not just the visual, as is the assumed practice within much of geography, planning, architectural design, landscape architecture, and theories of tourism, in which "the ideology of sight" (Cosgrove, 1984) dominates.

Unique personal and national landscapes

The choice of "Poetics of the Latvian Landscape" is based on my own personal history vis-a-vis Latvian landscapes and on the dominant historic role of folk poetry in Latvian culture.

Pēteris Bankovskis, a Latvian writer (2010), has captured the essential characteristic of the Latvian landscape as "an absolute, irregularity that is impossible to predict." Just when one has grasped an element of the landscape, "a field metamorphoses into forest, forest into bog, bog into field. In the center of a field, either a lake or a great oak or a power pole may appear, but beyond the field, [there may be] a mist-filled valley and clouds that seem like mountains."

Geographers and planners generally refer to the Latvian landscape as a mosaic — indisputably true from spatial and land use perspectives. Bankovskis' evocation is of a landscape experienced at ground level. Moreover, he thinks, and I agree with him, that the attraction of Latvian landscapes can best be discovered slowly. "It seems to me," he writes, "that for reasons unknown, most truly good things can only be enjoyed slowly — a slowly read and re-read book, a slowly savored meal... a stroll, not a run, a bicycle versus a car, train versus a plane..."

For me, as it was for William Wordsworth, being in the landscape, walking in it, can lead to poetic imagination and even poetic rhythms (Solnit, 2001). In others, walking spurs scientific imagination. Thus a human being is in the landscape and it is the perceptions of that being which matter most. As already hinted, this changes the definition of what a landscape is in the social and exact sciences. Carl Sauer (1925) advanced the classic definition of a cultural landscape as the visual expression of the mutual interaction of a culture and its physical environment over time. A human being in the landscape means that the landscape is *apprehended with all the senses as a unity by that human being* (Bunkše, 1976; 2007).

It is a Cartesian versus a life-world or existential and phenomenological stance toward the landscape. The late Denis Cosgrove referred to the former as "a visual ideology" (Cosgrove, 1984).

My attitudes toward the Latvian landscape are evolving, ever since I first returned here from exile in 1990. They are a complex mix of insider-outsider perceptions. Paul Bankovskis (2010) has expressed this very well: there are aspects of the Latvian landscape "that only we can see through the blindness of love, but cannot hide that which others will notice." I both love the Latvian landscape and am repulsed from what I know "others will notice."

The role of folklore

Another reason for poetics of the Latvian landscape is the historic fact that ancient folklore, or folk poetry (i.e. the *dainas)*, has been the source of Latvian history, ethnography, national literature, and identity. It is closely bound up with the Latvian landscape and specific ideas of the landscape as home (even though the word 'landscape' never appears in the folk poetry). Folk poetry was the mainstay of Latvian culture during some seven hundred years of German colonial rule. Poetry, with its subtexts, served well during the long Soviet occupation of Latvia, especially in the subtle works of the unofficial poet-laureate, Imants Ziedonis (1995–2002). The values of honesty, hard work, respect for nature, and humor were brought out in his prose and poetry.

In my own biography, a childhood interest in literature, writing, and poetry culminated in doing a doctoral dissertation on nature-landscape attitudes based on Latvian folk poetry (Bunkse, 1973).

What it means to have a poetic approach to landscape

Unlike the social and exact sciences, which strive for a single, universal meaning or truth, in the poetics of landscape, many versions of landscapes are possible, many kinds of narratives, evocations, and emotions may emerge. Good art enlarges and widens perceptions, enriches them. It serves the human imagination in this particular way.

Music is perhaps the most extreme in this regard, with some exceptions. When a definite landscape is labeled for a composition, when there is specific, representational evocation of sounds and moods in nature, then the listener is, more or less, close to the composer' s intent. An excellent example is Charles Ive's New England small town street scene sounds, evoking a rambunctious *Fourth of July* (i.e., Independence Day) celebration. Even more explicit are operatic musical scenes, with explicit visual stage designs, such as the rich, lively Paris bistro street landscapes in Puccini's *La Boheme.*

Much more open to varied interpretations are certain compositions by current composers of classical music. Their music may be inspired by a particular landscape or situation in nature, it may set moods, but the music is often abstract and open to the imagination and mood of the listener.

As an introduction to the poetics of the Latvian landscape I have chosen to play a short excerpt by the contemporary Latvian composer, Pēteris Vasks. Vasks is part of a broader "New European" classical music movement, which encompasses the Estonian Aarvo Paart, John Taverner, an Englisman, and Georgs Pelēcis, another Latvian. The Latvian musicologist, Inese Lūsiņa (Lūsiņa 2008), thinks that all of these composers evoke archetypal, eternal truths. Landscapes figure in some, if not all the works of these composers. Taverner believes, "That even if we live during a dark age, nonetheless we have the opportunity to heal the world through art" (translated from the Latvian).

Peteris Vasks is inspired to evoke nature and landscapes in his compositions, especially Latvian ones. At the same time, global contexts are important to him. "Never will I cease to extoll the beauty of the earth..," he says, "and the small plot of land that is Latvia in the big map of the world" (Vasks, 2010). At the same time he finds possibilities "within human interiority" for local, national, European, and global concerns. In short, inner and outer landscapes are unified in Vask's Landscape compositions. This latter notion is a theme that I will pursue later on. The following two minute excerpt that I shall play for you is taken from Vask's composition (Vasks, 2002) "Plainscapes," which he calls a meditation. Although rolling upland landscapes are canonized by Latvians, the central part of Latvia consists of a relatively large plain (Zemgale), which is an extension of the Gulf of Riga. There are plainscapes in Latvia also elsewhere.

The excerpt follows about ten minutes of slow, quiet, non-rhythmic contemplation, into an awakening of life on the plain. The awakening is abstract and not imitative of any particular sounds of nature. From the very beginning there is a sense of a quiet vastness, soft and non-threatening, evoked by violins, but not exclusively so. When a chorus of voices, without words, joins in together with a cello, the light of dawn is sensed. This is confirmed in a relatively moderate crescendo of abstract sound. Again, nothing natural is imitated, but an awakening of nature in a vast landscape is clear. Then follows a silence. I had absorbed the external landscapes with a sense of intimacy in immensity. The external landscape had become a part of me through the ritual of listening — one of the leading themes of this essay. Others will have day dreamt of different impressions of a landscape.

An example from poetry

Ziedonis represented the epitome of Latvian Soviet era poets. He achieved a status not uncommon for poets after the death of Stalin, similar to rock stars, when reading their works in public. His poetry and prose writings carried implicit messages for Latvians of hope and the ethics of work, honesty, and responsibility. He also engaged in prolonged actions over a number of years by a group of volunteers to "save the oaks" — once sacred — as well as large erratic boulders, from the encroachment of brush and forest that was occuring during Soviet occupation (Bunkše, 2004).

A prose poem — an epiphany (1978) — evokes two archetypal Latvian landscapes, the border between the sea and the land:

> ...to walk around something... no matter what — around a blossom or the sea. The blossom's as large as the sea. Not to run straight into the sea; not to trample the blossom; not to climb into the soul of another. But to be close, by the side, walk all around; remain close.
>
> In the daytime the sea is full of light, which it receives from the sky. At nighttime the sea is full of warmth, which it received from the day. I walk by the sea on a summer's night and warmth comes from it. I walk on the very edge, my arms outstretched like wings. One arm in the midnight fog of the land, the other, over the sea. I call that nearness... I walk around the sea on stormy nights. The waves come from the dark of the sea. I hear them, but do not see them yet. When they roar, on the shoals, for a moment a white line lights up, like laughing teeth, then disappears and the dark is there again. There is no shore, no distance, only darkness without depth...

Although the poem is hardly Ziedonis' entire *ouvre,* it does represent the conflation of the sublime (the sea) and the pastoral (the land) into a dominant pastoral attitude toward landscapes and nature in Latvian perceptions (Bunkše, 2001).

Later in the same prose poem there is the previously mentioned slowness of movement, revealing the character of the Latvian landscape:

> At times I feel awkward going straight into a stranger' s farmstead. It's like breaking into an unknown soul. Thus I first walk around the farmstead. Each home radiates its own light, perhaps an aura. For some the rays are diminutive, close to the window, the front door. At other homesteads the rays meet you from a kilometer away. They flow over fences, through tree-lined alleyways. I walk around such a homestead, along the invisible border where the nearness of home begins. Far shines the farmstead where bees are kept. It shines as far as the paths of its bees... These are places of great goodness. Here I would bring children for their noonday nap...

By an invisible border Ziedonis does not imply anything mystical. Rather, it is a poetic way to indicate entering into an ineffable realm of quiet diligence, patience, and harmony that beekeeping demands and represents. Overtly he declares that these are "places of great goodness" where children can be safe. He is lauding the rural landscape as a repository of national values. It is a pastoral ideal that reaches back to Virgil, Horace, and Hesiod. It is also the ideal upon which the Latvian nation and the idea of a particular "Latvianness" is founded.

Invention of the Latvian nation

The 19th century was rich in the invention of nations and tradition in Europe. Art played a major role in developing national consciousness based on often imagined pasts.

It all began with James MacPherson (1736–1796) and the creation of Scottish myths. He came out of the mountains of Scotland, ostensibly with Gaelic poems composed by Ossian in the third century AD (*Encyclopedia Britannica*, 1965). Although later debunked, he exerted a strong influence on the imaginations of several European writers. A major influence to Latvia came from Finland, where Elias Lönnrot (1802–1884) had collected Finnish and Karelian Finno-Ugric folklore and compiled it into a national epic, the *Kalevala* (1835). It marked the beginnings of modern Finnish literature.

Similarly, in Latvia folklore and folk life became the principal foundations of Latvian literature, idea of a Latvian nation, and national landscapes. Inspirations in Latvia came from "Counterenlightenment" (Berlin, 1999) thinkers, such as Johann Georg Hamann and especially from Johannn Gottfried Herder. Herder was in Latvia for some five years (1764–1769), heard folk song singing and included several in his *Stimmen der Volker in Liedern* (1778–1779), a seminal work that argued for histories of ordinary folk, excluded in the histories of great events and leaders (Bunkše, 1973).

These and other influences led to the First National Awakening during the1850s, which was begun at Tartu by some thirty ambitious Latvians (Balodis, 1990). This movement led to the collection of Latvian folk songs, known as the *dainas,* during the 19th and early 20th centuries*, eventually constituting a massive source of historic Latvian folk life.* The first national Song Festival was held in 1873 in Rīga. The key figure, who devoted most of his life to the *dainas* was Krišjānis Barons.

Barons sorted, catalogued, and readied the *dainas* for publication as well as to archive them. From an anthropological standpoint, he was remarkably modern in his approach, not trying to change them or using them for an epic story (Bunkše, 1973). He did, however, reject urban folklore, which he considered sentimental and foreign. In addition, he classified the *daina*s according to basic and derivative songs and organized their publication in terms of two leading themes: (1) the yearly cycle of work and life, and (2) the lifecycle of a human being. That did remove them from the way that individual singers or song callers might string them together at particular occasions, but their texts were accurately recorded and published (Bunkše, 1973).

The originals, as written down by numerous collectors and delivered to Barons, are gathered in *Dainu Skapis* — the Cabinet of *Dainas* — a national treasure treated like crown jewels or a national constitution.

What is a *daina*?

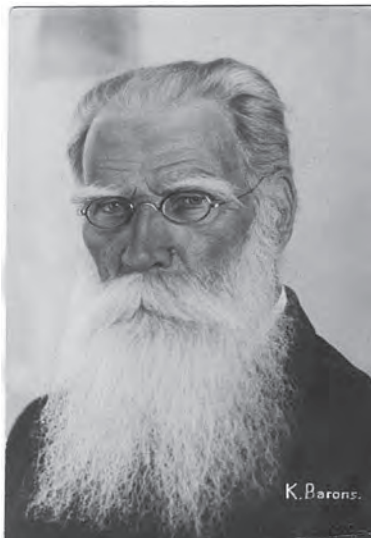
A *daina* is a short four-line, independent song or quatrain. There are exceptions and somewhat longer songs do exist. The quatrain consists of a thesis and an antithesis. Most are matter-of-fact and unsentimental. The following are two examples:

Arājs ara kalniņā,
Avots tek lejiņā.
Netrūkst maizes arājam,
Ne ūdeņa avotam!

On a hill plows the plowman,
In the valley below a brook flows.
For the plowman no want of bread,
Nor water for the brook!

Kam tā sēta uz tā kalna,
Astrām jumta istabiņa?
Tur saulīte miglu meta,
Miglainā rītiņā.

On that hill, whose farmstead,
The house roofed with astras.
On a foggy morning,
A fog-cloud rises in the sun.



Krišjānis Barons (1835–1923)

The second *daina* is unusual in its aesthetic evocation, enigmatic, and difficult to translate poetically, which is true of most *dainas* due to the frequency of diminutives and simplicity of the prosody. This is true even in Latvian, as the word *'astra'* illustrates. Its literal meaning is a horse's, or perhaps mare's tail hairs — clearly a metaphor to heighten the beauty and prosperity of a farmstead.

Moreover, the rhythms of the *dainas* have proven difficult to imitate, even for Latvian poets. They depend on the use of syllables and diminutives. The latter give the *dainas* a softness and melodious expressions of kindness. But diminutives may also serve for sly, hidden mockery of feudal lords, dangerous animals, or storms at sea (but usually when the danger from the animal or the storm has passed will there be sly mockery).

The *dainas*, Latvian national culture, and the *beau ideal* of rural landscapes

When Latvian national identity was formed during "The First Awakening," the *dainas* figured strongly as a rich source of past and present rural life and life on the seacoasts and rivers; and as the basis for the emergence of national literature and the arts. Large song festivals began in 1873 and became a strong factor in galvanizing pan-Latvian unity. Choruses were drawn to the capital Riga from all of Latvia, from the smallest hamlets. Since many characteristics of farmsteads and rural and forest landscapes are evoked in the *dainas*, they reinforced rural, pastoral sensibilities, especially the image of the independent family farmstead, isolated between fields, birch groves and forests. Even though Latvia had villages in its southeastern borderlands, the dominant settlement pattern was held to consist (and still is believed to be thus by many) of dispersed rural farms in rolling uplands, with a country church and pub (*krog*s) as centers of sociability.

Rural sensibilities and idealized rural cultural landscapes became the bedrock of Latvian national identity during the 19th and much of the 20th centuries. This in spite of numerous prose and poetry writings, as well as paintings about the Baltic Sea and its coasts. Indeed, Blaumanis' novella *Nāves Ēnā* (In the shadow of death) (1959) depicting a dark moral drama played out by fishermen adrift on an ice floe in the Baltic Sea, led me to a lifelong passion of reading about the oceans and seas, as well as to sailing.

Family farmstead landscapes were wrecked by the Soviets after they occupied Latvia in 1940 and again in 1945. As a landscape ideal they were nurtured as subtexts by poets such as Ziedonis, and the ideal remerged during the Second National Awakening in the 1980s and early 1990s. Though less ardently, they still figure as a pastoral landscape aesthetic ideal. Sublime characteristics in Latvian landscapes and nature are largely ignored, conflated with pastoral perceptions, or not sought out at all (Bunkše 2001).

Dainas today

Today the *dainas* continue as a record, a treasure trove, of past landscapes, life, and perceptions. Although the word 'landscape', i.e. *ainava,* never appears in the *dainas*, nonetheless they have been shown to have remarkable persistence and stability over time, so that cautiously, they may be regarded as a record that is close to representing the late Midde Ages (Bunkše, 1973).

According to Zariņa (2010), the word *'aina,'* i.e. 'scene,' was introduced into the Latvian during the 1880s, probably from the Liv (Finno-Ugric) word for hay meadow. It is significant that there is no hint of 'land' attached to *aina,* only the feminine gender suffix *'-ava'.* The idea of land is a separate and powerful theme in the cultural-political history of the Latvians, which requires much further study.

The other rural landscape

What about the other rural landscape, "the landscape we cannot hide?" It is, of course the ubiquitous, largely decaying Soviet-created industrial farmscape. It has inspired all kinds of commentary, it represents problems of abandonment and ruin. We would like for it to not be there. We learn to ignore it — most of the time.

"The sound of big stones dreaming": Inner and outer landscapes

I wish to end by returning to the philosophic leitmotif of this essay, namely the human being in the landscape, specifically the general concept of the individual striving for *unity of outer and inner landscapes.*

Barry Lopez has inspired this notion for several decades in a number of essays, books, and fictional writings (1976, 1986, 1989, 1999). In the essay, "Landscape and Narrative" (Lopez 1989), his thinking is inspired in part by the "beautyway" of the Navajo Indians: "I think of two landscapes, one outside the self, the other within."

Navajo rituals aim specifically to unite the inner and outer landscapes of an individual, ultimately to attain inner peace from the order of the outer landscape. The landscape is apprehended through all the senses and it manifests itself in relationships. "Ultimately a human being becomes familiar with a landscape not by knowing the names and identities of all that it contains, but by *perceiving relationships* [italics mine]." In the desert it is the smell of a creosote bush, resiliency of a palo verde bush twig when a black-throated sparrow lands on it, and "the fluttering whirr of the arriving sparrow"; how sand crumbles underfoot in an arroyo; by the sound made when two pebbles are knocked together; or the light feel of "the desiccated dropping of a kangaroo rat." The key is perceiving the relationship "between the sparrow and the twig" (Lopez, 1989).

By inspiration from Navajo Indian ceremonies and thought, Lopez is advocating neither a return to their way of life, nor literally emulating their ceremonials. Rather, he is looking back into their cultural mores, in order to find ways for contemporary individuals to connect with landscapes with as much affective harmony as is possible (and implicitly, to create landscapes that would lend themselves to such relationships). Lopez (1976) shows what he means when he speaks of "the invisible landscape." He writes: "...that is why we're here, I thought — to change. That is why I came into the desert." He tells of covering himself in the evening with an Indian blanket woven some hundred years ago:

> Here everything is... elementary. It is unimportant to move. You must wait... listen carefully. At last, before dawn, you will hear quiet music. This is the sound of the loudest dreams, the sound of big stones dreaming...
>
> Listen, until you are able to hear the

dream sounds of dust, which falls on your head...

I listen all night. I hear nothing. But during this time I am able to separate all the scents that have gathered deep within the threads of the blanket. And the sounds, that still reverberate within them. That is what I search for.

I am able to smell the heat of the day in the cracks of the earth...

I hear the flight of a gray eagle. It is impossible to see him[, sic] but I hear the sound of wind flowing through his feathers.

Inga Ābele

In Latvia, it is the talented young writer, Inga Ābele, currently known in the wider European world as a playwright and prose stylist, who independently, without any connection with Lopez, evokes a unity of inner and outer landscapes and perceptions by several senses.

The following excerpt is taken from her short story "Bird" (Ābele, 2010). It is self-explanatory and requires no further comment:

> ...1 tried to feed you and give you warmth, but you died the next day. I found you lying on your back. In your crooked, yellow fingers you were clutching emptyness. That's all. No, actually everything began on that day — I broke my finger nails tearing at the earth's crust, splitting the iron-hard clay, digging you a grave. The clay gave in and broke, revealing the damp core of the earth. Revealing my character. Revealing death. Your death, bird, was my first great rebellion. I roamed through meadows and loathed the grasses, weeping and cursing like an evil dwarf with a horrid red face, roaming through fields of greying dandelions — a tiny, hate-filled speck amid the green indifference of nature, who has just discovered powerlessness.
>
> Conscious of the moment, when the bodily heat of life crashes like a bird against the crystal clear surface of the spirit and glides down to earth on powerless wings.
>
> Next day, as I was sitting on a hillside beneath wind sound filled silken birches, a fast tremor ran over the far flung landscape. It seemed as if the sun had fallen, like a star. I knew that when a star falls, you must wish for something. I chose hope. Otherwise I had no chance to continue living without losing my pride — with a choking disdain for The One Who Has Left Us So Painfully. It was only an unexpected, swift burst of light, perhaps the shadow of a fast moving cloud, perhaps only a simple caress of eyelashes by the wind. But I felt different, stood up, brushed away the ants from my legs. It was then that I realized that nature gives no answers, because nature is our green-matted inside. That each morning we come to ourselves from the outside.

References

Ābele, I. (2010). Putna atmiņa [Remembrance of a bird]. Grām: *Kamenes un skudras* [Bumble-bees and ants] (199.–213. lpp.). Rīga: Dienas grāmata.

Bachelard, G. (1964). *The Poetics of Space*. Boston: Beacon Press.

Balodis, A. (1991). *Latvijas un latviešu tautas vēsture* [A history of Latvians and the Latvian Nation]. Rīga: Netakarīgā Teātra "Kabata" Grāmatu Apgāds. Originally published in Sweden.

Bankovskis, P. (2010). Lēni, lēni [Slowly, slowly]. *Kutūras Diena. Pielikums.* 12–209, 1.

Blaumanis, R. (1959). *Nāves ēnā* [In the shadow of death]. Rīga: Latvijas Valsts Izdevniecība. Originally published in 1899.

Bunkše, E.V. (1973). The Earth, the Forest, and the Sea: Nature Attitudes of the

Latvian Folk. Doctoral Dissertation. Berkeley: University of California.

Bunkše, E.V. (1990). Saint-Exupery's geography lesson: Art and Science in the Creation and Cultivation of Landscape Values. *Annals of the Association of American Geographers*, 80(1), 96–108.

Bunkše, E.V. (2001). The Case of the Missing Sublime in Latvian Landscape Perceptions and Ethics. *Ethics, Place and Environment* (UK). 4(3), 235–246.

Bunkše, E.V. (2004). *Geography and the Art of Life.* Baltimore&London: The Johns Hopkins University Press.

Bunkše, E.V. (2004). Of Oaks, Erratic Boulders, and Milkmaids. Palang, H., et.al. (Eds.). *European Rural Landscapes: Persistence and Change in A Globalizing Environment*. Dordrecht/Boston/London: Kluwer Academic Publishers.

Bunkše, E.V. (2006). *Intīmā bezgalība* [Intimate immensity]. Translation of *Geography and the Art of Life.* Cielēna, M. (translator). Riga: Norden.

Bunkše, E.V. (2007). Feeling is believing, or landscapes as a way of being in the world. *Geografiska Annaler*, 89B(3), 219–231.

Buttimer, A. (2010). Humboldt, Grano and Geo-poetics of the Altai. *Fennia*, 188(1), 11–36.

Cosgrove, D. (1984). *Social Formation and Symbolic Landscape*. London: Croom Helm.

Damasio, A. (1994). *Descartes's Error. Reason, Emotion and the Human Brain*. New York: Avon Books.

Encylopedia Britannica (1965). 14, 545.

Heidegger, M. (1975), cited in Buttimer, op. cit. p. 11.

Herder, J.G. von. (1778–1779). *Stimmen die Volker in Liedern.* Halle a.d.s.: Verlag von Otto Hendel.

Lopez, B. (1976). *Desert Notes*. *Reflections in the Eye of a Raven.* Kansas City: Sheed Andrews McMeel.

Lopez, B. (1986). *Arctic Dreams. Imagination and Desire in a Desert Landscape*. New York: Charles Sribbners Sons.

Lopez, B. (1989). Landscape and Narrative. *Crossing Open Ground*. New York: Vintage Books, pp. 61–71. Originally published in 1984.

Lopez, B. (1999). *Winter Count*. New York: Vintage Books. Originally published in 1976.

Lūsiņa, I. (2008). Mūžīgās saules noslēpums [Mystery of the eternal sun]. *Kultūras Diena*, 14(156), 10.

Murdoch, I. (1977). *The Fire and the Sun. Why Plato Banished the Artists*. Oxford: Oxford University Press.

Sacks, O. (1987). *A Leg to Stand On*. New York: Harper & Row, Publishers.

Sacks, O. (2003). A Neurologist's Notebook. The Mind's Eye. *The New Yorker, 2*8 July, 48–59.

Sauer, C.O. (1925). *The Morphology of Landscape.* Berkeley: The University of California Publications in Geography, 2(2), 19–53.

Solnit, R. (2001). *Wanderlust. A History of Walking*. New York: Penguin Books.

Vasks, P. (2002). Plainscapes. Veltījumi jauniešu korim [Dedication to the youth chorus "Kamēr"). CD.

Vasks, B. (2010). Bez savas zemes nespēju dzīvot [It is impossible for me to live without my country]. *Ieva*, 43(678), 10–13.

Zariņa, A. (2010). *Ainavas pēctecīgums: ainavu veidošanās vēsturiskie un biogrāfiskie aspekti Latgalē* [Path dependence in landscapes: historical-biographic aspects in Latgalian landscapes]. Dissertation and promotion publication. Rīga: Latvijas Universitāte.

Ziedonis, I. (1978). Apiet apkārt [To walk around something]. *Epifānijas*. Rīga: Liesma, pp. 12, 15.

Ziedonis, I. (1995–2002). *Raksti*. Riga: Nordik. 12. vols.

THE EUROPEAN LANDSCAPE CONVENTION — REBALANCING OUR APPROACH TO LANDSCAPE?

Paul Selman
Department of Landscape, University of Sheffield,
Arts Tower, Western Bank, Sheffield S10 2TN, UK
p.selman@shef.ac.uk

Key words: *landscape policy, landscape objectives, multifunctionality, futures*

Landscape policy has tended to be very conservative and has often concentrated on retaining traditional cultural landscapes. However, in many cases, these landscapes have lost their primary economic and social functions and can only be maintained through payments to farmers or by direct purchase. Whilst this is appropriate in some circumstances, it cannot be a general solution for all European landscapes in the 21st century. The European Landscape Convention (ELC) affirms that landscape planning is about "strong forward-looking action to enhance, restore or create landscapes"; it defines protection and management in equally positive ways. The ELC is also emphatically concerned with "ordinary" places in town and country that people experience in their daily lives, as well as with exceptional rural landscapes. In the 21st century, we are becoming more positive about the inevitability of landscape change in relation to "drivers" associated with a range of future scenarios. This requires new scientific capacity in order to facilitate strong forward-looking action that is related to sustainability, multifunctionality and stakeholder participation. This paper will address the progress that needs to be made in relation to landscape objectives in order to pursue legitimate future strategies for planning, protection and management. In a context of cultural, economic and environmental uncertainties, the paper will consider how the ELC can provide a basis for accepting and influencing landscape change rather than simply seeking to preserve the inherited patterns.

Introduction

Interest in landscape as an object of government and voluntary activity principally emerged during the 19th century. This reflected both a romantic concern about the cultural and picturesque landscapes of the "Old World" in the face of industrialisation, and a proto-ecological concern for the sublime landscapes of the "New World" in the face of conquest. During the 20th century, this evolved into a more scientific and administrative concern to delimit and safeguard designated spaces as cultural heritage or biodiversity refuges. Scientific knowledge further supported a growing interest in the reclamation and restoration of damaged landscapes in areas of industrial decline (Selman, 2010). In these expert activities, there was relatively little scope for community involvement in design, planning or management.

In recent decades, there has been rapid diversification of the landscape agenda — essentially shifting it from a sectoral, visual and

static entity to an integrative, functional and dynamic one. Thus, there is a trend to represent landscape not as a policy sector, but as an integrative system. It is no longer seen as simply one more natural resource to be factored in alongside others such as biodiversity, forestry and hydrology, but as an overarching framework that synthesises the "services" (Termorshuizen and Opdam, 2009) delivered by all these social-ecological subsystems. Further, there is a growing realisation that landscape is everywhere and matters to all people (Natural England, 2008a), often in subconscious ways. Landscape policy has historically focused on scenic hotspots, and has either overlooked or physically sanitised "the urban centre, the (sub)urban fringe and the rural countryside of the urban network" (Antrop, 2004). Now, we are moving towards the orchestration of a green infrastructure that connects people and place across entire territories (CABE, 2009). There is also a growing importance attached to the multifunctionality of landscape — it is not just something to be spectated, but something that regulates water quality and quantity, helps adapt to and mitigate climate change, supports biodiversity and natural resource production, sustains soil fertility, promotes health and wellbeing, gives delight, supports sustainable economic activity and energy production, and helps people to attach themselves in time and place (Gill *et al*., 2008; Landscape Institute, 2009; Selman, 2009). Along with this more functional view of landscape, comes a more dynamic one. Thus, landscape actions increasingly acknowledge the inevitability of contemporary economic and cultural drivers (Natural England, 2009d). Rather than trying to stop landscapes changing, the focus is now on securing appropriate rates of change, from slow to fast, and trying to ensure that drivers are sensitive to local character and scale. More positively, we may even seek to couple contemporary drivers to the creation of new multifunctional social-ecological systems. Alongside all this, is our growing competence in mapping stakeholders, of involving them in assessments of landscape character and value, and engaging them in decisions about landscape protection, planning and management.

The European Landscape Convention as a change agent

Into this changing context has come the ELC. I would like to suggest that the ELC will accelerate substantive changes in theory and practice regarding the European cultural landscape. However, it is an instrument whose effect may be evolutionary and subtle rather than revolutionary and dramatic. Over the past century, our approach to landscape has essentially been twofold: recognising the finest cultural landscapes as heritage, and protecting them through legal measures; and implementing various improvements in ordinary or damaged landscapes. Further, we have provided and managed large areas of urban open space, although we have often not regarded them as strategically connected landscape. Some actions, such as landscape protection and visual impact assessment, have been systematised in law, whilst others have often been opportunistic and reliant on intermittent finance and enthusiastic project officers.

A central issue associated with the present European landscape is the problem that many of our finest cultural landscapes are economically and socially obsolescent. The drivers that spontaneously and serendipitously produced them have largely disappeared, and we are apprehensive about what the new drivers are bringing. Our cultural landscape is therefore changing and it cannot be ubiquitously cocooned, even though it is of profound importance to our shared heritage and identity.

I argue that the ELC is making us look again at the meanings and implications of protection, management and planning, whilst

at the same time subtly mainstreaming landscape into policy, practice and governance. I suspect that its effect may not be dramatic and perhaps not easily disentangled from other influences. Indeed, when we evaluate the ELC we may be disappointed in its lack of measurable and directly attributable impact on legislatures and budgets. However, I think the effect of the ELC will be subtle yet profound: first, in the ways we think about landscape as an integrative framework, principally by liberating it from the policy silo that we associate with "scenery"; and, second, through raising our consciousness about the need for landscape actions, in both town and country, that respond to contemporary drivers in positive, democratic and imaginative ways.

In the text of the ELC, the Preamble promotes what is essentially a multifunctional perspective, referring to sustainable development, culture, ecology, environment, society, economic activity, heritage, well-being, identity, quality of life, rural resource production and civil society. The Convention also uses a generic term for policy and practice interventions, namely, "actions". These actions comprise a combination of protection, management and planning conducted over mappable territories. Parts of a territory can be protected, parts may be intentionally adapted, and all of it can be managed in various ways (Council of Europe, 2008; Land Use Consultants, 2009a–c). This terminology subtly draws us away from our inherited mindsets and practices. In particular, it reminds us that conservation of our finest cultural landscape heritage, important though it may be, is not the be-all-and-end-all. Indeed, somewhat to our surprise, conservation does not even constitute "planning", but is "protection" — "planning" is defined as something altogether different. I suggest that there are three ambushes that the ELC sets for the traditional landscape professional. First, it promotes a modern view of landscape as a multifunctional system providing a rich variety of landscape services that are not only desirable for people's enjoyment, but essential for human wellbeing. Second, it democratises landscape by emphasising the role of civil society, often in challenging and unsettling ways. Third, it re-balances our actions, away from an excessive concern for scenic heritage protection, towards more urbanised landscapes and the active accommodation of change. Landscape actions may be protectionist, but they may also be radically adaptive, stimulating the emergence of new cultural landscapes by working with the grain of inescapable economic and cultural drivers.

The UK as a case study

I suspect that the UK Government's approach is fairly typical in relation to the ELC: presenting an argument that it is already compliant, and that any supplementary action is based on goodwill rather than obligation. In this perspective, refinement and targeted exemplary action are desirable, but no urgent substantive changes are needed. Thus, the Government's expressed priority is to raise awareness of existing measures and to make the statutory and regulatory framework more fully effective at different administrative and spatial scales. When key policy areas are being reviewed — for example, planning, energy, marine, agri-environment, heritage, forestry, housing, infrastructure etc. — the Government's intention will be to "raise the bar". There is an acknowledgement of the scope to improve, but no suggestion of any need for a paradigm shift. The nature of the UK response to the ELC can now be tracked through several policy documents, research studies and action plans that have recently become available.

Policy guidance in England (Natural England, 2009a) suggests that implementation of the ELC will entail:

- Improving performance within the current legal and regulatory frame;

- Influencing future legislation, regulation and advice, and identifying any gaps;
- Improving the understanding of landscape character and dynamics, and monitoring changes and trends;
- Engaging people through activities that raise awareness and understanding, and more generally through, promotion, education & training.
- Sharing experiences and best practice.

If effective, this should allegedly mean that: "all England's diverse landscapes are valued and well looked after… all landscapes will be more effectively planned, well-designed and sensitively managed with people in mind." This will be promoted through a series of action plans within different organisations in order to:

- strengthen institutional frameworks — promoting a landscape perspective to influence spatial planning, land use and resource management nationally, regionally and locally.
- create an inclusive, people centred approach — raising public awareness and fostering community engagement, as well as working with professionals, specialist bodies and politicians.

In England, the production of action planning is initially centred on three organisations, Natural England, English Heritage and The National Forest (Natural England, 2008, 2009; English Heritage, 2008; National Forest Company, 2008).

Some of the clearest evidence of the UK's current landscape policy position has been made available through a qualitative content analysis of national and regional documents, undertaken by Newcastle University (Roe *et al*., 2008). This study revealed the degree to which policy documents espoused the intent of the ELC, and it reminds us that one of the most subtle yet telling impacts of the ELC will be the way that it leads to changes in the language of official landscape discourses. Nuances of meaning can transform the status of landscape from a cosmetic optional extra to an holistic framework. By subjecting key documents to "intent assessments", the Newcastle study found that even the more progressive documents often only made implicit references to landscape, because they used proxy terms, such as environment or countryside. The use of terminology typically reflects the focus and intended audiences of particular departments, so that even if they use the term "landscape" it may not necessarily convey the human-landscape interactions that are central to the ELC. The researchers found that "the environment sector tends not to use the term *landscape* or other proxies in a way that provides a reflection of the Convention's intent", and hence it would be desirable to introduce:

- stronger use of landscape-related language generally;
- more consistent and precise use of language, providing greater clarity in documents;
- explicit use of "landscape" instead of "environment" or other proxies more generally, especially whenever the holistic meaning is indicated;
- specific use of ELC terms, particularly referencing the definitions set out in Article 1.

We could speculate that one consequence of the more explicit use of ELC terms could be a foregrounding in policy of modern ideas about landscape as an integrating framework.

Another research study, by the International Centre for Protected Landscapes (ICPL) (2008) for the Scottish Landscape Forum, centred on an assessment of what makes for "quality"[1] and "good practice" in the context of landscape protection, management and planning. The study drew particular attention to the capacity of the ELC to mainstream landscape into decisions, and to ensure that

it is fully built-in to the process at the outset, rather than as a late entrant. The ICPL study related the idea of mainstreaming to whether signatory countries had:

- a strategic policy vision for landscapes;
- public involvement in landscape matters (ideally supported by legislation);
- indicators to help measure improvements in the quality of people's lives; and
- measures to conserve the natural and cultural diversity of landscapes.

To date, these ingredients are rarely made explicit, and so the researchers had to detect them as "silver threads" running through policies, programmes and projects. The study identified a number of good practice exemplars and sought to explain the reasons for their success.

It also undertook SWOT[2] analyses of landscape policy in Scotland and other countries' experiences in implementing the ELC. Success appeared to be principally dependent on a willingness to pursue integrated initiatives, and exemplary action was frequently associated with individual champions, active and iterative public involvement and ownership, and ongoing political support and funding. Even so, there appeared to be a widespread reliance on episodic "initiatives" rather than embedded practice, and on rural (rather than territorially inclusive) expressions of landscape. Strengths and opportunities mainly related to: the intrinsic popularity of landscape and its capacity to engage people and connect them to place; the evolution of a more holistic view of landscape; the emergence of landscape as a policy driver in relation to topics such as climate change and spatial planning, and the emergence around Europe of some excellent new approaches towards landscape protection, planning and management. Weaknesses and threats, though, included inconsistent approaches towards implementing the Articles, the tendency towards elitist "no change" landscape agendas, dilution of the landscape message because it is dispersed between professions and departments, widespread perception of landscape as a bolt-on rather than a mainstream factor, scarcity of clear national policies, traditional assumptions that landscape is restricted to "fine countryside", and a perception of landscape as something that is used by objectors to oppose development.

A further research study (Roe *et al*., 2009), undertaken for Defra and other UK departments analysed how the requirements of the ELC were being met across numerous sectors and identified areas of implicit and explicit landscape coverage. The study found:

- There is a sufficient but somewhat limited basis for "recognising landscapes in law", particularly through National Parks legislation (natural beauty) and planning policy guidance (amenity and townscape);
- Actions concerning "landscape protection" are relatively strong, notably the designation of key areas (e.g. Areas of Outstanding Natural Beauty) and features (e.g. Tree Preservation Orders), safeguarding of amenity through general planning controls, and minimising visual intrusion of development through environmental impact assessment;
- "Management" provisions are also strong in places, such as direct implementation (e.g. nature reserves) and indirect care (farmers and foresters). This involves a range of incentive and penalty based approaches, and there is some evidence of a landscape-scale approach in the wider countryside. In towns and cities, there is a strong tradition of greenspace provision, but until the recent emergence of green infrastructure strategies there has been little appreciation of it as a coherent landscape;
- Delivery of "landscape planning" is variable, but landscape design occurs as an element within urban design, there is a growing awareness of green infrastructure,

there are isolated initiatives to create new urban and peri-urban landscapes and some of these are at the landscape-scale (e.g. central Scotland forest network), and some restoration programmes have been at the landscape scale;

- There has been some integration of landscape into spatial planning policies, though these often focus on fairly traditional "protection" measures. There is some recognition of the importance of landscape within other policy areas — such as health and wellbeing, climate change, biodiversity and inward investment;
- There is very little explicit development of Landscape Quality Objectives as a result of which it is difficult to say whether things are getting better or worse, or whether the ELC is having any impact. Whilst there are extensive procedures for public and stakeholder participation, these rarely touch upon landscape or lead to the production of LQOs.

Overall, the study found that provision for "protection" is broad and deep though predominantly rural, whilst provision for management is somewhat unsystematic, and provision for landscape planning tends to refer to "set pieces".

Once again, the weak articulation of explicit LQOs makes it difficult to pursue actions that are appropriately balanced between conservation, reinforcement, restoration and creation — partly as a result of which landscape policy tends to default towards preservationism rather than work with the consequences and opportunities of "change drivers". Some individual local authorities are now starting to adopt new criterion-based spatial planning policies and these have the potential to diversify our landscape actions. For example, the Shrewsbury and Atcham Council has published a "model" planning policy on Landscape Character, which states that:

The landscape character of the district shall be protected, conserved and enhanced. Proposals for development shall take into account the local distinctiveness and sensitivity of each character area. Development will only be permitted if it protects and enhances and does not adversely affect:

i) The landscape character of the area including its historical, cultural and ecological qualities and sensitivities and its tranquillity;
ii) The setting of, and relationship between, settlement and buildings and the landscape including view corridors;
iii) The pattern of woodland, trees, field boundaries, vegetation and other features;
iv) The special qualities of watercourses and waterbodies and their surroundings;
v) The topography of the area including skylines and hills.

It will be interesting to see how such policies are interpreted in practice, and whether consistent and imaginative decisions are now taken that reflect a range of possibilities in relation to fast and slow landscape change.

Discussion

From the Council of Europe's own workshops, and from various research studies, it appears that there is an adequate current level of compliance with the ELC. Indeed, there are some instances of very commendable action in all areas. However, realising the full opportunity of the ELC will involve considerably more than "raising the bar". What evidence can we see that changes of a more radical nature are evolving?

First, the political requirement to demonstrate a respectable response to the ELC coupled with the rising prominence of the landscape agenda generally, are leading some organisations to set out their credentials as landscape champions. They are reassessing their capacity to deliver landscape objectives, anticipating that an enhanced

and modernised landscape portfolio might increase their institutional resilience. For example, English Heritage (2008) has seized on the ELC as a vehicle to promote their role in relation to "place", both re-asserting what they already do and re-directing their efforts towards areas that are seen to be growing in political and social significance. Thus, they define their aspiration as wishing to establish themselves as "a centre of excellence for the historic dimension of landscape in town and country, and in the marine zone".

Second, the ELC is having an effect in shaping new legislation. In a few cases this may be primary legislation. More commonly it is likely to be secondary legislation and guidance. Most signatories concede that, whilst they have little primary legislation on landscape itself, they can brigade a range of other legislation which can be construed as satisfying Article 5a. For example, in England, the Draft National Planning Policy Framework reflects a multifunctional approach to landscape (DCLG, 2011), although it is not always explicitly worded as such. A substantial section on "Planning for Places" draws together various expressions of landscape in relation to climate change, flooding, coastal change, valued landscapes, biodiversity and historic environment. It recognises complementary roles for protection, restoration and re-creation, along with the need for landscape-scale biodiversity measures and green infrastructure networks. The National Planning Framework for Scotland (Scottish Government, 2009) both recognises the importance of new drivers, such as climate change, in promoting landscape changes such as afforestation, and advocates various ways in which building environmental capital at a landscape scale can deliver important benefits for the economy and communities.

Third, the ELC is having an effect in the democratisation of landscape, specifically the wider inclusion of civil society. This is not an area in which we have been traditionally strong, and even now many of our attempts to involve non-experts in landscape assessment, planning and design seem simplistic and unsystematic. However, in relation to the ELC requirement for awareness-raising, English Heritage (2008) aims to "use the ELC as an opportunity and context to expand public initiatives to promote the historic environment at landscape level." Within their in-house staff development programmes, they aim to "integrate the ELC concept of landscape into training and related initiatives." More generally, the public is encouraged to take an active part in landscape management and planning, and to feel it has responsibility for what happens to the landscape. However, this is an area in which practice is often still primitive apart from, perhaps, in the assessment of local landscape character. Our relatively few attempts at involving people in landscape evaluations and decisions have sometimes been platitudinous and patchy. We will need to develop far more effective and systematic approaches to engaging the public in landscape options, and here the substantial rhetoric of the ELC may have a slow but insistent effect. There are effective ways of engaging people in the imaginative exploration of landscape possibilities (Moore-Colyer and Scott, 2005) and harnessing latent energy in the management and maintenance of green infrastructure, but expertise and resources are very unevenly spread at present.

Fourth, the ELC is opening a crucial debate about what we mean by landscape quality and how we set objectives in relation to this (CoE, 2007). Whilst we have made tremendous progress in mapping landscape character, structure and even change, we have achieved little consensus about landscape quality and the setting and monitoring of quality objectives. In regard to Landscape Quality Objectives (LQOs), even the ELC is inconsistent, stating at the outset that these

comprise "the aspirations of the public with regard to the landscape features of their surroundings", a statement which is subsequently abated to one of LQOs being formulated by public authorities "after public consultation". The latter view seems to prevail and indeed seems more realistic and workable. I would argue that the setting of LQOs is the key area in which the ELC will promote evolutionary change to revolutionary effect. Landscape planners face a peculiar problem: in most areas of public policy there is a self-evidently desirable "direction of travel", for example we would not want to see an increase in homelessness or traffic congestion, or a decrease in educational attainment. However, except perhaps in relation to a small number of "perfect' cultural landscapes which we want to preserve intact for posterity, the desired direction of future travel for present landscapes is not necessarily obvious. Even apparently degraded landscapes may have important attributes that "insiders" value and want to retain rather than remediate, whilst significant cultural landscapes might properly be allowed to fade into a vestigial "remanence" rather than be conserved. We know that landscapes are changing but it is not always clear whether they are getting better or worse, or even what better of worse really means. The need for, and success of, landscape actions can therefore only be judged in relation to carefully negotiated and articulated objectives for that particular locality. Perhaps the biggest impact of the ELC will be to force us to develop explicit LQOs for all areas, ascertain their democratically informed "direction of travel", and create broad and local strategies against which the nature and speed of change can be benchmarked.

Fifth, the ELC's definition of landscape applies to the whole territory of states including all urban and peri-urban landscapes, towns, villages and rural areas, the coast and inland areas. It applies to ordinary or even degraded landscape (Ling *et al*., 2007) as well as those areas that are outstanding or protected. This sheer inclusivity of definition will, I suggest, have a far-reaching impact on our theories and practices. In effect, it is promoting two lines of action in relation to the "ordinary". On the one hand, we are beginning to recognise that "all landscapes matter": although this principle is now quite effectively articulated, it is rarely being given real meaning in front-line practice. Most practitioners still tend to think of landscape action as largely referring to the conservation of special rural areas, or to the design of urban public realm. Techniques such as Landscape Character Assessment, Seascape Assessment and Historic Landscape Characterisation are at least helping us to document and describe all landscapes including the mundane. On the other hand, having affirmed that local and undistinguished landscapes matter because of their associative and utilitarian uses for local people, what actions do we take in respect of the ordinary? We cannot promise to preserve every patch of "common ground" in perpetuity. We cannot offer to shower taxpayers' money nor subsidise community actions in respect of them all. In sum, the ELC has underpinned an awareness that "all landscapes matter", but it has exposed lacunae in terms of what we do about this.

Sixth, the ELC is subtly re-focusing the way in which we think about change. Whilst planners and managers have endorsed the notion of landscape change at a cerebral level, our frontline practice has tended to be very conservative in relation to the acceptable types, directions and rates of change. Few landscape planners are brave enough to really embrace contemporary drivers of change and couple them to the emergence of new and potentially very different landscapes. In some contexts slow change is desirable, but in other situations our conservative tendency towards the inherited landscape may exert an unhelpful inertial drag. Landscape is a dynamic, complex system of which the

reality, representations and perceptions have changed through history in response to physical processes and human intervention. The rate of change in the future is likely to accelerate further driven by natural environmental processes, induced climate change, technological advancement, economic and market trends, social and cultural trends, changing values, and policy and regulatory interventions (Land Use Consultants, 2009a). These drivers are strongly inter-related: most changes in the landscape are attributable to more than one root cause and their acceptability is filtered by changing social values. The need for creative and adaptive approaches towards landscape as a dynamic system are essential yet there is little in legislation or policy guidance to help or guide us about options for change.

Future prospects

There are mixed views about whether the ELC will have any real long-term impact on important areas of governance and enterprise. This paper has suggested that its effect may be subtle and gradual, perhaps only initially detectable in the use of more explicit terminology. However, it is quite likely that new and important things will be said, written and done as a consequence of the ELC, slowly leading to some fundamental shifts. Not least, the ELC, whether intended or not, is making us face up to some difficult problems associated with responding to contemporary drivers of landscape change, involving stakeholders and the wider public, celebrating the "ordinary" as well as the "special", and negotiating measurable and place-sensitive objectives for landscape quality.

Returning to the title of the paper, I suggest that these shifts will be reflected in a re-balancing of some key landscape practices. First, the ELC awakens us to the fact that our actions must combine protection, planning and management. It forces us to re-think what we mean by these distinct yet complementary activities and how we might strike a more even balance between them. In particular, it reminds us that landscape is not something that is simply inherited, but something that is constantly being managed, enhanced, restored and created.

Second, the ELC is leading us to find a new balance between conserving Europe's outstanding landscape heritage, and giving meaningful expression to the axiom that "all landscapes matter". Landscape is now seen as a multifunctional system that delivers a wide range of ecosystem services to diverse communities in all geographical settings. The realisation of these essential services cannot be left to scattered short-term projects, and they merit the same systematic attention that we have given to our national and regional parks.

Third, the ELC is promoting a new balance between insiders and outsiders in landscape. We have very good experience of expert management of special areas, scientific restoration and remediation of post-industrial landscapes, assessing landscape quality and impact, and designing public realm. We have become quite good at involving local people in the more fine-grained aspects of landscape character assessment, and have undertaken some research into people's local landscape preferences. There are a number of good practice case studies of community level action to manage open space. However, I think we are a good way off really understanding how people perceive and value everyday landscapes, and of factoring this information into landscape quality objectives. The ELC requires a step change in this area, and will require new theories about subconscious appreciation of the landscape and people's acceptance of change — otherwise I think the "public" input will tend to be banal and anti-development.

Fourth, the ELC is forcing a reassessment of the balance between town and country. In

popular mythology, the landscape is something beautiful and rural. In reality, landscape is everywhere, from the metropolitan centre, through the urban fringes and edge cities of polycentric urban clusters, to the remotest mountains. A major future task for landscape planners will be to re-connect social-ecological systems that have been severed, and to blur the boundary between urban and rural so that nature and food production sweep through the green infrastructure of cities.

Finally, the ELC requires a new balance between protectionist and proactive approaches. By distinguishing between the actions of protection and planning, the ELC firmly reminds us that the safeguard of our finest landscape heritage is only one side of the coin. Creating future landscapes, often by working with "change drivers" is going to be increasingly important, especially as we seek to re-connect systems in order to respond to environmental drivers such as climate, biodiversity, and the problems of too little or too much water.

The ELC, therefore, whilst perhaps only a background ripple on the overall political scene, has the potential to gradually bring about substantive changes in our science and policy. One further re-balancing effect that I think it will have is to establish Europe as a greenprint (McEwen and McEwen, 1987) for other parts of the world. Presently, there is an over-emphasis on the cultural landscapes and greenspace systems of the "old world". These, of course, are incredibly important — but so are the urban and rural landscapes of the rapidly developing countries. There, the growth of megacities and intensification of agriculture pose major threats to landscape services, with profound implications for sustainability and liveability. I anticipate, therefore, that a new balance will be struck between the attention given to the landscapes of developed and developing countries. One lesson of the ELC is that Europe's landscapes are so important that we need to share good practice in all areas of protection, planning, management and education. Another lesson is that this experience is too important to keep to ourselves, and that we must encourage the rest of the world to access our greenprints.

References

Antrop, M. (2004). Assessing multi-scale values and multifunctionality in landscapes. In: J. Brandt and Vejre, H. (Eds.). *Multifunctional Landscapes: Theory, Values and History.* Volume 1. UK: WIT Press.

Commission on Architecture and the Built Environment (CABE) (2009). Grey to Green, How to shift funding and skills to green our cities. London: CABE. http://www.designcouncil.org.uk/Documents/Documents/Publications/CABE/grey-to-green.pdf

Council of Europe (2007). *Proceedings of the 5th Meeting of the Workshops of the Council of Europe for the implementation of the European Landscape Convention. Landscape quality objectives: from theory to practice.* Girona, Spain. Strasbourg: CoE Publishing.

Council of Europe (2008). Recommendation CM/Rec(2008)3 of the Committee of Ministers to member states on the guidelines for the implementation of the European Landscape Convention. http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/versionsorientation/anglais.pdf

de Groot, R.S., Alkemade, R., Braat, L., Hein, L., Willemen, L. (2009). Challenges in integrating the concept of ecosystem services and values in landscape planning, management and decision making. *Ecological Complexity*. doi: 10.1016/j.ecocom.2009.10.006.

Department of Communities and Local Government (DCLG) (2011). Draft National Planning Policy Framework — a Consultation Draft. http://www.communities.gov.uk/publications/planningandbuilding/draftframework

English Heritage (2008). English Heritage Action Plan for Implementation of the

European Landscape Convention. http://www.helm.org.uk/server/show/nav.20574.

Gill, S.E., Handley, J.F., Ennos, A.R., Pauleit, S., Theuray, N., Lindley, S.J. (2008). Characterising the urban environment of UK cities and towns: A template for landscape planning. *Landscape and Urban Planning,* 87, 210–222.

International Centre for Protected Landscapes (ICPL) (2008). Identifying Good Practice From Countries Implementing The European Landscape Convention. Final Project Report submitted by ICPL, Project Reference: ICP/001/07.

Land Use Consultants (2009a). Guidelines For Implementing The European Landscape Convention, Part 1: What Does It Mean For Your Organisation? Prepared for Natural England by Land Use Consultants. http://www.coe.int/t/dg4/cultureheritage/heritage/cemat/compendium/UKGuidelinesPart1.pdf

Land Use Consultants (2009b). Guidelines For implementing the European landscape Convention, Part 2: Integrating the intent of The ELC into plans, policies and strategies. Prepared for Natural England by Land Use Consultants. http://www.coe.int/t/dg4/cultureheritage/heritage/cemat/compendium/UKGuidelinesPart2.pdf

Land Use Consultants (2009c). Guidelines For implementing the European Landscape Convention, Part 3: Preparing an ELC Action Plan. Prepared for Natural England by Land Use Consultants. http://www.coe.int/t/dg4/cultureheritage/heritage/cemat/compendium/UKGuidelinesPart3.pdf

Landscape Institute (2009). Green Infrastructure: connected and multifunctional landscapes. http://www.landscapeinstitute.org/PDF/Contribute/GreenInfrastructurepositionstatement13May09.pdf

Ling, C., Handley, J., Rodwell, J. (2007). Restructuring the Post-industrial Landscape: A Multifunctional Approach. *Landscape Research*, 32(3), 285–309.

McEwen, A., McEwen, M. (1987). Greenprints for the Countryside: the Story of Britain's National Parks. London: Allen and Unwin.

Moore-Colyer, R. & Scott, A. (2005). What Kind of Landscape Do We Want? Past, Present and Future Perspectives. *Landscape Research*, 30, 501–523.

National Forest Company (2008). European Landscape Convention Action Plan 2008–13. http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/compendium/NationalForestActionPlan.pdf

Natural England (2008a). All landscapes matter: Draft policy for consultation. http://www.naturalengland.org.uk/Images/naturalenglanddraftpolicynebpu0805_tcm6-3639.pdf

Natural England (2008b). Natural England's European Landscape Convention 2008/2009 Action Plan. http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/compendium/NaturalEnglandActionPlan.pdf

Natural England (2009a). European Landscape Convention: A Framework for Implementation in England. http://www.coe.int/t/dg4/cultureheritage/heritage/landscape/compendium/ELCFramework09.pdf

Natural England (2009b). European Landscape Convention: Natural England's 2009/2010 Action Plan. http://www.naturalengland.org.uk/Images/ELC-actionplan0910_tcm6-20278.pdf

Natural England (2009c). Experiencing Landscapes: capturing the *cultural services* and *experiential qualities* of landscape Commissioned Report NECR024 (The Research Box with Land Use Consultants & Rick Minter). http://naturalengland.etraderstores.com/NaturalEnglandShop/NECR024

Natural England (2009d). Global drivers of change to 2060. Natural England Commissioned Report NECR030. SAMI Consulting, St Andrews Management Institute and the Centre for Urban and Regional Ecology (CURE) at Manchester University.

http://naturalengland.etraderstores.com/NaturalEnglandShop/NECR030

Roe, M., Jones, C., Mell, I. (2008). Research to Support the Implementation of the European Landscape Convention in England Contract No. PYT02/10/1.16. Final Report of A Study for Natural England. http://www.naturalengland.org.uk/Images/ELC-NE-Research-March2008_tcm6-23598.pdf

Roe, M., Selman, P., Jones, C., Mell, I., Swanwick, C. (2009). Establishment of a baseline for, and monitoring of the impact of, the European Landscape Convention in the UK. Research Contract: CR 0401. http://www.naturalengland.org.uk/ourwork/landscape/englands/character/lcn/resources/elcresources/elcmonitoring.aspx

Scottish Government (2009) National Planning Framework for Scotland. http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/npf

Selman, P. (2009). Planning for landscape multifunctionality. *Sustainability: Science, Practice,* & *Policy*, 5(2), 45–52. http://ejournal.nbii.org/archives/vol5iss2/communityessay.pselman.html

Selman, P. (2010). Landscape planning — preservation, conservation and sustainable development. *Town Planning Review*, 81(4).

Termorshuizen, J.W., Opdam, P. (2009). Landscape services as a bridge between landscape ecology and sustainable development. *Landscape Ecology*, 24,1037–1052.

Notes

[1] "Quality" was interpreted in the report as relating to quality of process in protection, planning and management, rather than landscape "quality" *per se.*

[2] An analysis of Strengths, Weaknesses, Opportunities and Threats.

HISTORICAL CONTEXTS AND DEVELOPMENT PATHS OF LATVIAN LANDSCAPES

Aija Melluma

Key words: *landscape development, fracture points, landscape time scale, people's presence in landscapes*

The report focuses on the history of Latvian landscape development. Brief background information on natural and historical conditions has been given as well as on the landscape development path in the course of time. The conclusion is that this process can be characterised as interchanging of fractures and stabilisation periods in landscape development. Fractures are always connected with sharp changes in political, economical and social conditions. During the 20th century, four major fractures have affected Latvian landscapes and peoples' lives, which is shown in provided landscape time scale. The issue is addressed about the connection between the stages in landscape development, which is manifested as inheritance and which can also be reversive. Peoples' presence in landscapes has been emphasised, as well as the significance of peoples' activities in the landscape development process, which allows to speak about activity landscapes.

I have had the opportunity over more than 50 years, in various ways, to conduct research on Latvia's landscapes, or to use the landscape approach in other forms of research. But apart from that — having lived in these landscapes for a longer time, to see fractures and changes, evaluating their causal relationship and seeking explanations as well. This is the foundation for a system of views to be gradually developed, which brings us possibly closer to understanding of the essence of Latvia's landscapes.

From here on — about Latvia's landscapes.

Background information

I will draw your attention only to those moments or facts, which seem significant specifically in the context of landscape history, or which have influenced and influence some attitude toward this as well. This relates to history, nature and people, that together and through extended interaction actually create a landscape's history.

History

The presence of people in the territory within the borders of the current Latvian state began after the glacial retreat, in a period when the Baltic ice lake existed. The first settlements were related to the archaeological period. Initially, Palaeolithic and Mesolithic (8500–4500 BC) settlements appeared, after that — Neolithic ones creating a number of localizations, mainly next to lakes.

Changes in the economic development and along with this — development in the distribution of population took place two thousand years BC, when animal husbandry and agriculture began to develop requiring larger areas of land.

During that time, settled places —

hill-forts and non-fortified settlements — developed in places where larger areas of land were available, as opposed to the shores of lakes which were used earlier.

Later, in the 5th–10th centuries, the Baltic tribes (Cours, Zemgalians, Selonians, Latgalians), the Baltic Finnish people (Livs and Estonians) separated off in the Baltic region, and the regions they lived in and their localization has in broad strokes remained with us even until today. Latvians and Livs are the two primary nations in the Latvian state.

Before the invasion by the German Crusaders in the 12th century, territorial formations existed in the territory of Latvia — there were settled lands and areas around castles, the names of which have been retained even today in place names. In 1198, the Holy Wars against the Baltic peoples began, which only finished at the end of the 13th century in the territory of Latvia. The conquered Latvian and Estonian lands became known as Livonia.

During the 13th century, battles between the Order of the Brothers of the Sword (Livonian) and the Christian Church's formations took place for political influence, as a result of which the land was divided up into spheres of influence. New elements appeared in landscapes — stone castles, cities, churches and roads for traffic connecting the centres which had been created.

Over the next centuries, a battle for influence took place between the West and the East. This was accompanied by wars, often very long ones, which devastated the land and people. During that time, Latvia's territory (actually, the whole Baltic region) became marked as a border region, where the interests of the West and the East met, which is still observed even in today's political landscape.

After the 16th and 17th century wars, the almost routine division of the Polish super power took place in 1629 and a new nation-

Fig. 1. Political processes after Polish–Swedish War, 17th and 18th century (Latvijas vēstures atlants, 1998)

al or territorial administrative structure was developed (Fig. 1). It had a long lasting and continuing influence over all of Latvia's later history. Namely, today's Latvian territory was split up into three parts, three national formations, which fell under different masters: the Duchy of Courland (Kurzeme) and Zemgale (a vassal nation of Poland–Lithuania), Swedish Vidzeme (under the control of Sweden) and Polish Vidzeme or Inflantia (under the control of Poland–Lithuania).

Interistingly, the Duchy of Courland period, especially during the rule of Duke Jacob, remained in people's memory, just like the Swedish times in Vidzeme. Later, after the recurring wars of the 18th century, these national formations were incorporated into Czarist Russia as separate provinces: in 1721 — Vidzeme, in 1772 — Latgale, in 1795 — Kurzeme.

After the First World War, in 1918, Latvia became an independent nation. Kurzeme, Vidzeme and Latgale made up their territorial foundation, and are symbolized by the three stars of Latvia which crown the Freedom Monument. Later Kurzeme, Vidzeme and Latgale were considered as cultural historic counties being the custodians of their regional characteristics. Many generations have felt and still feel belonging to one of theses counties.

Latvia's border position kept influencing events in the 20th century as well. It is known that the Molotov–Ribbentrop Pact was signed in 1939, but in June 1940, Soviet Russia's armed forces entered Latvia, and Latvia was incorporated into the Soviet Union. The Second World War started soon, which was followed by life under the Soviet system, until the renewal of independence in 1990 and 1991.

Nature

Nature conditions, particularly the development of climatic conditions and the relief of Latvia's territory, are connected with the great retreat of the ice cover and the formation of the Baltic Sea. The shore of the Baltic Ice Lake is a significant environmental border, which separates the sea coast as an original formation in today's landscape structure.

At various depths under the quaternary deposits, there are Devonian deposits. From the landscape aspect, the border of the distribution of the reddish Devonian sandstone is significant. Sandstone outcrops in river valleys and in places on the sea coast provide evidence of this.

Rolling highlands and flat lowlands lying in the west–east direction stand out in the Latvian territory's relief. Various deposits — clayish moraine, sand etc. shape the surface of the land. Together with the variety and changes in the relief from place to place, a large variety of ecological conditions form the land's surface. These also determine the landscape's biologically diverse character and visual features.

We live in a mixed forest zone, and humans have cut down forests here from times immemorial to form clearings and living spaces. That is why in the context of landscape one should speak not just of a forest zone, but a fields–forest zone. The significant presence of forest, not only in the past, but also today (about 50% forest) affects and in many places determines the landscape's visual image.

People

People have lived on the territory of Latvia for thousands of years. When compared to the lifetime of a person this period of time is too great to conceive. An insight into the most ancient times is provided by archeologically excavated materials and reconstructions based on these. For example, on the Neolithic and Mesolithic settlements by Lake Lubāns, which were significantly populated in the distant past. Another example, relating to a later time, is the reconstruction of the village built on Lake Āraiši island.

However, we cannot find answers to some other questions through information from archaeological investigations: how did they feel in their homes, their farms or settlements, and later — for hundreds of years as serfs? From where did they get their creative energy? How was our cultural heritage created — the oral folklore, craft work and country farmsteads?

Observations of people have been preserved in chronicles, letters and travel notes. Still up until the 19th century, there were mainly the views of foreigners. Researchers of cultural history indicate that there are two types of written sources. The first express quite a belittling attitude, emphasizing poverty and a low level of culture, but the others — empathy towards people's harsh living circumstances and a desire to help them.

Without getting into discussions about this emotional theme, it seems important to emphasize one unchanging sign, which characterizes people over the whole course of history. Namely, this is work, activity. It is specifically people's economic and domestic activity (the home, existentially necessary activities), later — a specialized economic activity, which has been the creative force creating landscapes, and which over the passing ages has also maintained the landscapes, facilitating their renewal through centuries. This has also created everything that the Lithuanian researcher Alfonas Basalykas, in his time, called the landscape's cultural robe (people's constructions, crafts, work tools, clothing etc.) and which has been an object of ethnographic research already for many centuries.

In 18th century description of a Latgale's manor's inventory, the simple words — "farmers in the field" and in the autumn "farmers collect the harvest" — attracted attention. This was the presence of people in landscapes, a direct connection, which, alongside their physical strength and endurance, also required a capacity to observe, analyze and search for new methods. The word *dzīvot* (to live) is a synonym for the word *strādāt* (to work) in one of the Kurzeme dialects. However, as soon as a person in the landscape is deprived of the ability to work, or a person declines to, a process of changes inescapably begins (both in the landscape and the person).

Bearing in mind people's role and activity in the creation and maintenance processes of the landscape, the landscapes we see today can be called ***activity landscapes.***

Perhaps the fact that today work is perceived as a way of ensuring our existence, that a specialization of activities has taken place, and that these are no longer so closely linked with specific places affects our deepest understanding of the human notion of work.

Earlier, in the 1970s and 1980s, researchers discussed the fact that in forest zone situations landscapes were maintained by two conflicting processes: 'anthropogenization' or the overall effect of people's activities, and 'renaturalization' or building up of the landscape and changes of its structure under the influence of natural forces, in other words, restoration of the forest. These processes affect and determine the localization of landscapes which are at various stages and often subjected to other influences (location by cities, outskirts effect and others). It should be noted that renaturalization processes dominate in large areas specifically during transitional periods, for example, after wars.

Overall landscape development pace

Research reveals that the overall pace of landscape development is not even and upward in the sense that the changes that are occurring, or have taken place in each period, can be evaluated as progressive.

In it (in the pace of development) periods of stabilization can be observed, when concordance has developed (in the landscape's spatial structure, cycles of activity, interrela-

tionships etc.) between the dominating economic and activity form, on the one hand, and various conditions (legislation, ownership relations etc.), on the other hand. Every so often these are disturbed by drastic changes in political, economic, or social life. They are *points of fracture,* followed inescapably by changes in landscape (population distribution, land use etc.). But after some time, adaptation to the new circumstances occurs, life stabilizes, and as a consequence, the landscape structure stabilizes in a new image.

It has not been studied how much time is required for the landscape structure to adapt to new relationships. Furthermore, it is doubtful whether it can be even feasibly or sufficiently reconstructed, as it is not possible to retrospectively conduct research in an environment which is already different now, when compared to one from an earlier time. Judging by how the transformation in the landscape in Latvia occurred during the 20th century (and it was possible to observe and document this), the stabilization period could be about 40–50 years.

In evaluating the accessible historical information methods and scope in the specific situation of Latvia, I would like to discuss two landscape history periods — the archive landscape history period and the people's landscape history period (Fig. 2). However, there is not and cannot be a strict border between them; in truth there is a transition period — from the abolition of serfdom in the 1817–1861 period (differently in various parts of Latvia) until the first decades of the 20th century, defined by the First World War and Latvia gaining its national independence. In essence, while the manor's feudal system continued to exist, after the abolition of serfdom peasants gained the right to buy land for their next generations. With this people's real inclusion in landscapes began, in the creation or maintenance of which they had already previously participated.

The archive landscape history period — this obviously is a somewhat pictorial label. Importantly, it is the existence or non-existence of specifically archival material which is the factor influencing or determining availability of facts, the method of interpretation or its breadth, the level of likelihood of any conclusions, or even the possibility of any research at all.

In Latvia's circumstances, the acceptable plausibility level of the pace of overall landscape development (based more

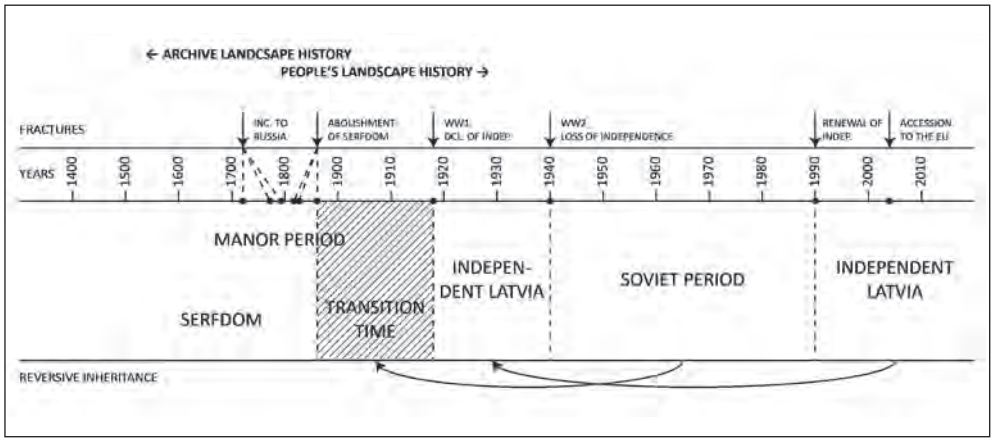


Fig. 2. The time scale of the landscape of Latvia

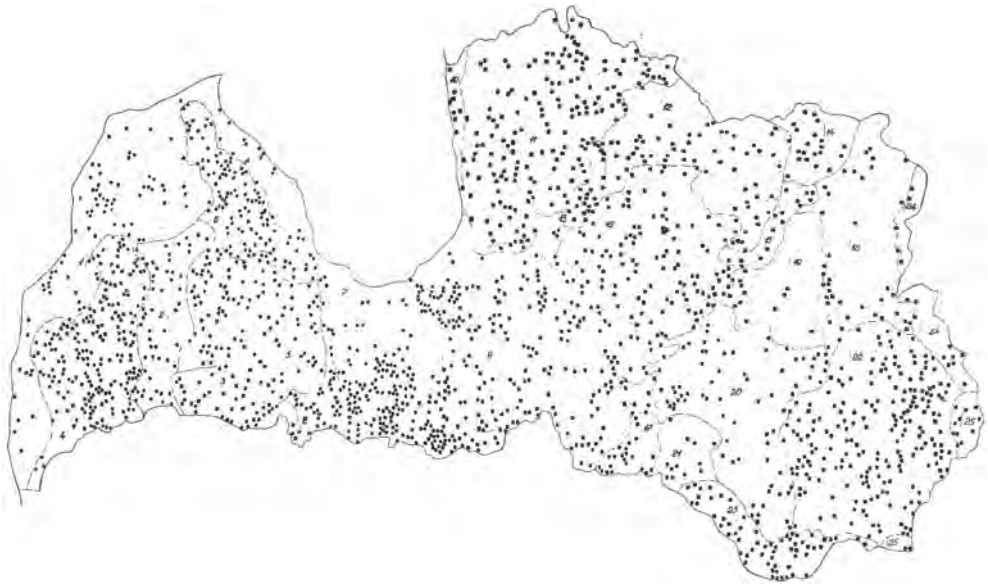


Fig. 3. Swedish cadastral map of Vidzeme, 1686. Fragment (LVVA, 6828. f.)

on today's experience and imagination, synthesizing information available from various sources) can only be described since the 15th–16th centuries, but more believably — since the turn of the 17th–18th centuries. The oldest, as yet unclear, notions about the possible pattern of landscapes (activity landscapes!) are provided by 18th and 19th century medium- or fine-scale general or topographical maps. However, from old maps one can find out about population distribution more specifically. As an example, the Vidzeme general map (Fig. 3) can be mentioned, which was made in 1686 — including manors, churches, taverns and the main roads of the time.

For that matter, specific site landscape development research possibilities, from the view of that time period, are directly connected with the existence of ancient maps. They are to be detailed to the degree that not only the site itself, but also the site conditions can be identified. Such maps have only been accessible to us since the 17th century and only the Vidzeme section. Later, since the 19th century, a variety of data was collected in manor maps, as well as in land purchase documents.

The essence of the people's landscape history period is that with the changing centuries and changes that have taken place in society and in the landscape (without calling them this way, but more so — the surroundings, the places) at least in the mid 20th century these were still in people's memories. This is also confirmed by oral history research. I can speak for myself as well — I recall the stories of my grandparents and parents, and myself in the real events of the 20th century.

Therefore, it is the presence of real people, recognizable generations and people, collected information and memories, which create a feeling of identity and presence as a whole. The presence of people in landscapes varies over time — they are not just doing field work, but also having recreation (planned summer house places since the

19th century), it is life in cities and indirect participation in their creation, and also the presence of researchers.

People would like to see one of the first or ancient landscapes, however, it is not possible, since these landscapes are illusory for us. In addition, one must take into account the fact, that later centuries changed the first landscapes, wiped out the information collected. Only certain types of anchorages have been preserved — hills which were once the site of forts, ancient settlement places and burial sites. They participate in today's landscape in the status of cultural monuments, often being quite attractive.

One can get a more realistic idea about the pace of Latvia's landscape history in later centuries, in what we call the manor period (Fig. 4). Without getting into detailed explanations, the period from the mid 15th century (according to historians, it was during this period that manors were set up and serfdom was established) until the beginning of the 1920s is described in the scheme, when land reform was implemented in independent Latvia.

There are cities, villages, farmsteads (each with its own homestead name), manor centres with parks and gardens in landscapes in the manor period. Many manor centres, especially these in the 18th and 19th century, were architectural models of their time, and this concerns also the parks. These were modern landscapes of their time, although quite localized.

During this period, farming land and large forest areas were territorially set apart. There is reason to believe that in the manor period spatial localization of landscapes already occurred. Historical sources provide evidence that manors as territories were comprised of two parts: the manor lands themselves,

Fig. 4. Manor centres at the beginning of the 20th century (from personal archive)

which were mainly concentrated around the manor centres, and peasant lands, with individual farmsteads (later these were called old farmsteads). Many manors had also a third part — huge forest tracts.

Later, in the 1920s and 1930s, in the manor lands the new farmsteads were developed but in the peasant lands area the old farmsteads were an evidence of old rural landscapes. In the second half of the 19th century the land in these areas was purchased, and one can find the purchased farming land's measurement plans in the archives, too.

A different example of spatial differentiation: villages in Latgale, which were local centres of settlement and also centres of a wider territory. Each village was provided with a certain amount of land (these could vary widely), but the centre was a compact group of homesteads. Often the homesteads were arranged in a linear fashion along a road/street. The rest of the areas outside the centres were divided up among the residents, each having a defined number of narrow fields (the number of these per owner could exceed a hundred), which were called *šņores* (strips). This is a feature of Latgale, which existed until land reform in the 1920s and 1930s.

Obviously, real life is more complex — over the centuries there were wars and periods of starvation, as well as other events which crucially affected people, their lives and work, and alongside this, also landscapes. One can assume that in the history renaturalization or anthropogenization processes frequently dominated in landscapes, furthermore — contrasting in their territorial manifestation. In other words, there was uninterrupted spatial differentiation creating new rural and forest landscapes, wiping out the previous ones.

Two significant fractures in Latvia's history and landscape history are connected with the 19th century. The first one is incorporation of Latvia's territories into Czarist Russia (Vidzeme in 1721, Kurzeme in 1795, Latgale in 1772) and the second — the abolition of serfdom (Kurzeme in 1817, Vidzeme in 1819, Latgale in 1861). After incorporation, Russia's legal system was introduced intensively, the regulatory acts or administrative instructions were manifold and often very detailed.

As already mentioned, after abolition of serfdom, purchase of land for the next generations began, and old farmsteads, which had in most cases already existed for a long time, became quite established in the country, but belonged to others. (Due to their visual shape and the information accumulated in them over the centuries, in 2009, country farmsteads were declared as part of Latvia's cultural heritage.)

During that time, a large class of landless peasants developed, especially in Kurzeme. To be without land meant the same as being homeless. Therefore, solutions were sought for — they stayed at various places on the lands owned by other people (farmers' landholdings, in forests, on the coast — even in sand dunes), but already at manors in the 18th century, especially at crown manors, where land was subdivided for building small households, where, over time, new settled centres developed. Obviously, that affected landscapes — both visually, as well as ecologically — creating new settled landscapes.

Events of the 20th century yet intensified this, and the consequences have remained until today. In accordance with this, the time scale in the scheme changes — decades instead of centuries. Furthermore, the discussion is not only about changes in the structure and pattern of the landscape, but also (or mainly) about people, who have lived through all of this, maintained their memories forming a collective memory. Thus, the people's landscape history period has begun.

The first fracture in the 20th century was

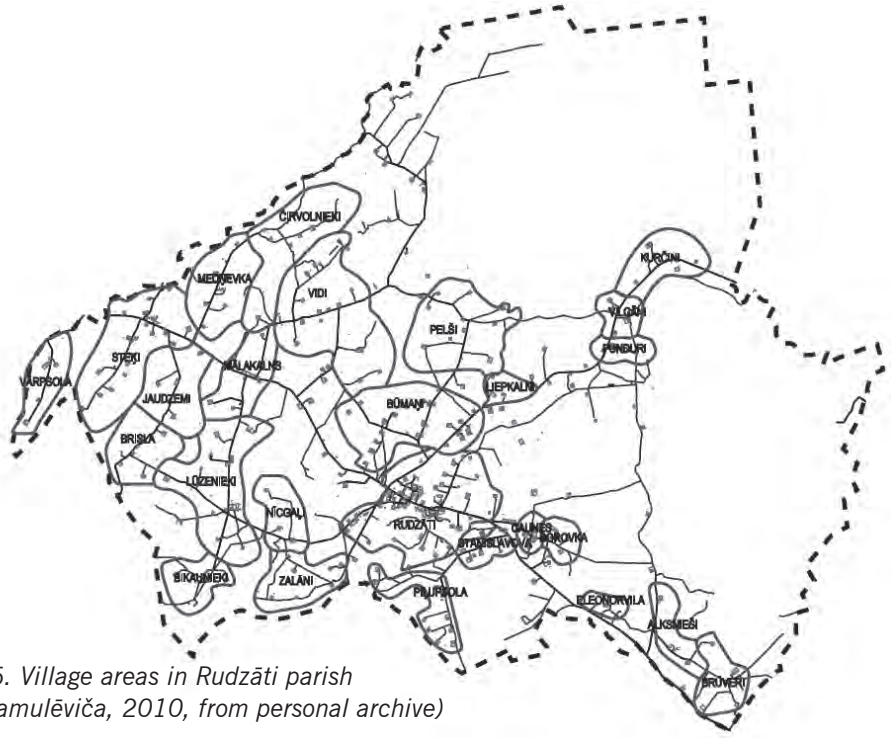


Fig. 5. Village areas in Rudzāti parish (A. Samulēviča, 2010, from personal archive)

the First World War, and immediately after this, in 1918, Latvia gained its national independence. War brought great destruction — in 1920, on average about 29% of arable land remained untilled in Latvia, but in several districts this figure was about 40% and more than 55%. Of the total number of rural buildings, about 25% were seriously damaged, including in that amount 10% which were completely (Skujenieks, 1927).

Founding of an independent nation provided hope and unleashed creative spirit. The most significant event was land reform, and with this the feudal period legally ceased to exist. Manor lands were included in the nation's land reserves, divided up and new farmsteads were established. During that time, land was also provided for the needs of towns and less inhabited centres (villages, hamlets) — their territories were broadened and land was subdivided into building blocks. Cities' spatial contours were developed and have largely remained the same until now. It is interesting that the first city construction projects were developed by rural surveyors.

In broad brush strokes, the overall spatial structure in the territory of Latvia changed as well during that period. Principally, this is influenced by legal drawing up of tracts of state forest, as well as a noticeable reduction in forest acreage for the broadening of agricultural land expanses. It turned out that the land to be subdivided in rural areas was smaller than the number of people requesting land, and that is why in many places new farmsteads received forest land (the 20th century land grab began!). Forests were allocated for obtaining wood materials, for construction needs, as well as for firewood.

It should be noted that in Latgale land reform proceeded differently, since there a

subdivision of village/hamlet land took place between the existing users, and homesteads/ buildings were transferred from the centre to the allocated farmsteads. The farms created were generally small, on average about 10 ha. The transfer of farms substantially altered the rural landscapes — dispersed settlements were created. However, memories of life in hamlets in some form have remained up until today. One can find evidence for this, for example, in the hamlet area map for Rudzāti rural municipality produced basing on people's memories (Fig. 5).

During this period, creation of new landscapes took place in all areas where subdivided new farmsteads were concentrated more intensely.

The overall situation in Latvia was affected by the fact that new farmsteads' territorial division was largely uneven. This was affected by various circumstances — both the variety of manors themselves, the land resources available for subdivision, the number of people requesting land etc. In addition, on average a little over 13% of the new farmsteads did not have any buildings. It has not currently been determined whether there were some regions with more new farmsteads lacking buildings than in other regions. But in places where new farmsteads were built they became a new element in the rural landscape structure, and are still recognizable by their visual pattern.

Broadly, the localization and spatial structure of the rural landscape from the manor period was retained. The old farmsteads and manor centres were maintained in the landscapes, preserving the significance of the visual accent and the road network. Manor centre ownership forms and the subsequent use were quite distinctively different. Some remained in the hands of their existing owners, but with land reduced to 50–100 ha, which was considered to be the average size of a farmer's landholding. Some went into state ownership for different purposes (rural model farms, schools, other cultural needs etc.).

The next 20th century *fracture* was the loss of the nation's independence in 1940 and Latvia's incorporation into the Soviet Union, which was linked to the Second World War. That was a tragic fracture as it is connected with the deportation of people — both before, and after the war. As it will be seen later, life in the Soviet system has affected people in many different ways.

Beginning with the end of the war until 1990, under the influence of the Soviet power, different economic and social policies, using a variety of instruments — fixing output, control, and centralized planning — were purposefully implemented. The main development being nationalization of land and property and creation of kolkhozes (collective farms) and sovhozes (state farms). During that time, Latvia's landscape grossly changed, and significant spatial differentiation took place as well. Generally, forest acreage was increased, the size of land devoted to agriculture was decreased, and individual farms in rural landscapes disappeared: in the period from 1950 to 1985, their number decreased twice, and if destruction from the Second World War is included — even more (Strods, 1992). In many regions the loss of individual farms was much greater than on the average, and this is evident visually.

The composition of residents in rural areas changed. This was affected both by immigrants from other USSR republics, as well as internal migration within Latvia's borders. In turn this was promoted by the existing centralized work appointment system, to which university graduates were subject. With this the local cultural background also changed — immigrants brought in with them experience gained elsewhere.

But the creation of a planned new landscape took place that was based on different political decisions. This is a significant difference compared with previous periods, and

it has left impact on people's consciousness. The new landscape developed in the broad drained land tracts. They were open, without farm homesteads (they were torn down, together with gardens and tree plantings), bunches of trees and the small landscape elements which form a landscape's spatial structure, the landscape's cultural robe disappeared. Reclaimed landscapes truly were already unified landscapes, which wiped out possible differences in the landscape structure and pattern in various Latvian regions. During this time, the issue of landscape's ecological optimization appeared in landscape research, that is, to use the wide drainage work as a tool in the creation of an ecologically favourable landscape, or even — to create techniques for rehabilitation or stabilization of destructive landscapes (Fig. 6).

A new idea was creation of villages and concentrating people within them, creation of newly settled landscapes. That was the beginning of the development of progressive rural urbanization.

When compared to previous periods, during this time, ruins as an element in landscapes became more and more frequently encountered — that is both in manor centres and abandoned individual farm sites. We came to watch how an abandoned farmstead turned into ruins within a year or two.

An unusual event was appearance of various military structures in strategically significant places, mostly along the sea coast, which was once the Soviet Union's western border. In total more than 100 000 ha of farmed land was taken over for military needs, farmsteads were destroyed and people were transferred to other places. Even now the contours of the former large firing ranges and their after effects are still there (Latvija — PSRS karabāze, 2006). During that time, a variety of military structures were concentrated in cities (Rīga, Ventspils, Liepāja and others), as well as in new closed military settlements of various sizes in different places — basically new cities, which are now not needed by anyone, but continue to exist as a legacy of the past.

In evaluating the situation, the conclusion

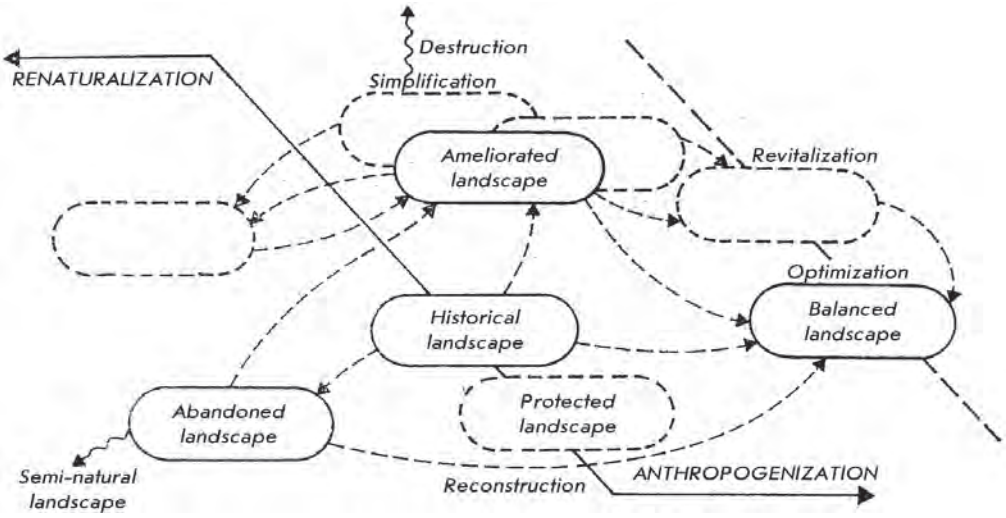


Fig. 6. Development courses of agricultural landscape (A. Melluma, 1992, from personal archive)

is to be made that towards the end of the 1990s the landscape structure had stabilized (this did not happen during the 20 years of the first independence period). Possible evidence of this fact could be that the large landscapes of drained tracts of land are currently emotionally being accepted as an asset, a beautiful one, even though during the period of the drainage work the community protested against them. These evaluations are made by different generations.

The next fracture was Latvia's regaining its national independence in 1990–1991. A new landscape development period followed this, the first condition of which was land reform again — restoration of previous land titles took place, and reorganization of land use on different legal and economic foundations. Initially, there was enthusiasm, for a return to the situation which was interrupted by the occupation and war. But everything had changed — and a return turned out to be only partly possible. To a large degree, this was connected with the implementation of land reform, which took place against the background of changes made during the Soviet years — large tracts of drained land, villages, with farmsteads bought in good faith etc. But the reality was that it had occurred on the land of previous owners. Furthermore, the relationship between rural and city residents had changed: during the first period of reform, about 70% lived in rural areas, but this proportion had reduced to 30%. An interesting fact is provided by the breakdown of requests for land holdings — as a fact the majority of requests came from people living in Rīga.

Even though 22 years have passed (which is longer than the first period of independence), landscapes continue to change, being in a transitional process. In some regions forests and scrubland visually dominate in abandoned agricultural fields, on abandoned farmsteads. These are places with few inhabitants where a renaturalization process is currently taking place. For that matter in other places land is being intensively utilized, especially large tracts of drained land and traditional agricultural areas. Intensive use has also affected forests, both state and private ones.

In some places one can observe the development of new landscapes which are associated with new development trends. For example, tourism and recreation sites in rural areas are being developed, the old manor buildings are being restored, the so-called aestheticized rural areas are being developed, and even wind generator parks appear in the new landscapes next to towns.

The joining of Latvia to the European Union in 2004 was a fracture in its own way, probably, not so radical as many previous ones. It could be said that it has its own role as a catalyst, but it is still prematurely to say in what way it is really being expressed and how this is reflected in landscapes. Still it is interesting to clarify the trends; how the direct effect of Europe's agricultural and environmental protection policies manifests itself, how it is reflected in landscapes, and what sort of after effects could be expected from this.

Such is an insight into landscape formation and development over the passage of the centuries.

In summary, attention should be focussed on the inheritance phenomenon. Formerly, we saw that not only landscape spaces are passed on from one landscape development period to the next one, but also various formations — artefacts, natural structures — which have developed during its existence. Therefore, it could be said that today's landscape is at the same time old and new — formations which have formed and functioned at different times have been accumulated in it, even though their meaning changes over time. For example, hill-forts and ancient settlements become archaeological monuments. Or even — buildings which are not

required or suited to the times become ruins. Generally, the landscape's repository function materializes in this way over the centuries and in the end is a necessary condition to be able to deliberate about landscapes, about the interaction of nature and people and the expression of the latter at various times and on various places, and finally, to be able to research landscape history.

However, reflexive or reversible inheritance features attract one's attention. For example, the land policy implemented during the years of Soviet power in a way returned us to the manor period, as the kolkhozes and sovhozes that were created were like the private and crown manors in terms of their acreage and work organization. People within this system were workers (carrying out their tasks), often alienated from those places and landscapes where they were living. In addition, class divisions were brought in: they were considered workers in sovhozes, not farmers, in other words they were compared to those working in factories. It should be noted that the Latvian historian Edgars Dunsdorfs (Dunsdorfs, 1983), who lived in the diaspora, spoke of red manors in this context.

Creation of planned rural villages in the 1970s and 1980s, concentration of people into villages is also a reversible inheritance. This could especially be said about Latgale, as people there only left their villages about 50 years ago (farmstead names did not even get a chance to be consolidated in many places during this time).

Other reversible inheritance took place through land reform after the renewal of nation's independence, when properties were returned against the background of the previous period's reorganization, and they were just as small, if not even smaller, than those gained during the land reform of the first independence period.

Currently, the reversible inheritance trends are expressed in relation to manors, but only to the preserved buildings in their former centres. A new attitude can be seen in contrast to the dominating negative attitudes (at least during the 20th century) of former times (as the manor personified negative aspects of the previous centuries) — manors are becoming places to relax, even homes. At the same time, the manor buildings where schools were established after the 1920s–1930s land reforms, are being abandoned and are beginning to deteriorate.

The pace of landscape development also provides evidence for the fact that new landscape development took place at the same time as inheritance, stimulated by the pace of overall social and economic development, new knowledge and possibilities and new forms of activity. In essence, the new landscapes developed on the background of the previous ones, bringing new objects into them, changing the previous spatial structure and visual pattern. This was already discussed previously.

" 'Change and recurrence' — in these words the history of the Universe as well as that of individual people and nations is stated" — this was written by German writer and publicist Garlībs Merķelis (Merķelis, 1969) at the end of the 18th century, a person who lived in Latvia, and whose work and conclusions influenced public opinion, not only during his lifetime but also afterwards.

Territorial/spatial view

Previously we looked at the pace of landscape development from the historical point of view. In this context, landscape as an object is associated more with a fluid process, with facts, and only through thoughts — could specific places be different for each of us. But landscapes are spatial formations, or in cartographic expression — territorial formations. They form an uninterrupted surface, the pattern of which depends both on environmental circumstances and on territorial features of people's activities.

Such a view is related to landscape as a space/territory, to its delimitation from other landscapes. That is how we encounter the main problem — various landscape scales and dimensions exist here. Such problems will be differently solved in academic research and planning tasks, for example, also in landscape protection projects.

Quite a while ago I could not keep away from thinking about what the transition could be like from the overall point of view — in landscape history's period of flux, without the attachments of a specific place — to a territorial/spatial view. In the 1970s and 1980s, landscape research saw promotion, both in relation to landscape ecology (mainly rural landscapes) and to landscape protection (nature and national parks were established as well as areas of landscape to be protected). The goal set for the research established that landscapes should be viewed as spaces/territories, that people/people's activity should not be excluded from them. It turned out that academic landscape research methods did not really support this goal, which was based more on descriptions of environmental conditions (this, in turn, was to a large degree determined by the dominating political doctrines). That is why various methods were tried out, however, in concordance with the practical direction of the research. Without delving deeply into specific aspects, I will focus on only two main conclusions.

First, landscapes are such obvious formations that the characteristic features and differences of their pattern are easily perceived by nearly every person, and that is why it is possible to use simple approaches, including typological ones.

Second, people are closely connected to places (notably, currently this connection has become weaker, but it still exists virtually, in one's thoughts), and that is why it is possible (and even necessary) to focus one's attention on the landscape of a specific place, its history, which in reality is a person's landscape.

In discussions with people I have come to learn that the feeling for landscapes is not the same for everyone — there are hills and plains people, valley and sea coast people. For example, in Kurzeme, those who live further from the coast are called *arāji* (ploughmen), but those who live by the sea *jūrmalnieki* (beach people) (in the Liv language, *rāndalist*). It is possible that the archetypal connection with the landscape in which many generations live and also take part in its creation, appears in this way.

Conclusion

In the previously demonstrated landscapes development scheme the time scale is open in both directions — both in the deepest past and into the distant future. What meaning does the present — or time, or place have? The present — these are also real landscapes, which exist now and in various ways interact with people, with society, create conceptions, attitudes. They imply simultaneously the landscape as a whole and each specific, separate landscape as a space, as a place. Landscapes are simultaneously old and new. In their own way they reflect generational relationships, and in this sense one can talk of landscapes as an inheritance. This means a certain responsibility, and how should this be understood in the context of landscape change?

Contemplation about real landscapes, their meaning for today's society, about the old and the new in them, was especially motivated by a specific example. The discussion was about the landscape space by Viešūra Lake in Vidzeme, which has attracted attention in recent years with provocative new development. I have known the mentioned landscape for almost 50 years. Its old visual structure and its changes have remained in my memory. This is all supplemented by archival history facts, plus — here they become real and present. I perceived changes

in the landscape as self-evident; they reflected events over time, and the landscape in truth became an evidence of these. Furthermore, the specific landscape space is located in a specially protected territory, the aim of which was direct protection of the landscape. This was through my initiative in the 1970s.

But all this changed at the moment when a real conflict developed between the interests of nature protection and new development. The crux of it — dissatisfaction arose in the community with the changes happening to the landscape and their scope. The existing laws on nature protection, which stated that substantially transforming the characteristic landscape is not permitted, were used as the motivator. Discussions about the meaning of the words "substantially transforming" and a "characteristic landscape" are still continuing.

A number of questions arose, which are not only of a practical, operational nature, but are much deeper. In reality the discussion is about landscape history research, about its interpretation and effect on today's practices, as well as about the responsibility of researchers. This particularly applies to concepts of landscape protection, which only seem simple on the surface. For example — to ban or allow some activities — moreover using only today's view in relation to the currently observable landscape without evaluating its historical and ecological context. Consequently — the discussion again is about activity, only this is not a real activity in the landscape, but in some way a normative, institutionalized activity (prescribed by legislation!).

Returning to the time scale of landscape development, I'd like to draw reader's attention to openness in the future direction, which means continuation, new approaches and research methods. Perhaps signs have already appeared in today's real landscapes which provide evidence of the fact that we can expect great changes in the future? Perhaps new generations of researchers will evaluate the past 20 years in Latvia — a dynamic, crucial, at times unpredictable time of change — as only a transition period towards some other more stable time? These are the questions.

Again — "change and recurrence".

References

Dunsdorfs, E. (1983). *Muižas. Simts divdesmit viens attēls*. Melburna: K. Zariņa fonds. 208 lpp.

Latvija — PSRS karabāze (2006). Rīga: Zelta grauds. 360 lpp.

Latvijas vēstures atlants (1. izdevums) (1998). Rīga: SIA „Apgāds Jāņa sēta" karšu izdevniecība. 20. lpp.

LVVA, 6828. f., 2. apr., 1686. lieta.

Merķelis, G. (1969). *Izlase*. Rīga: Liesma. 130. lpp.

Skujenieks, M. (1927). *Latvija: zeme un iedzīvotāji*. Rīga. 752 lpp.

Strods, H. (1992). *Latvijas lauksaimniecības vēsture*. Rīga: Zvaigzne. 245 lpp.

COASTAL LANDSCAPE DEVELOPMENT IN SOUTH AND CENTRAL DENMARK, C. 800–1600

Johnny Grandjean Gøgsig Jakobsen
Department of Scandinavian Research, University of Copenhagen
Njalsgade 136, DK-2300 Copenhagen S, Denmark
jggj@hum.ku.dk

Key words: *historical geography, coastal landscape, Middle Ages, Denmark, Wends*

A historical-geographical analysis shows that the most coast-near areas of the Danish isles went through a different landscape and settlement history than the rest of the islands during the period c. 800–1600. To judge from archaeology, place-names, administrative structures and church buildings, a belt of 1–3 km along the coasts were left almost uninhabited from the beginning of the Viking Age until around 1200. This residential and agricultural dislike of the coastland cannot be explained by physical geography, as most of the coastal areas on the islands are quite suitable for residence and arable agriculture all the way out to 50–100 metres from the beach. But then why did the Danes leave a coastal forest belt around the islands and on the east coast of Jutland? The reason can probably be read out of three chronicles from the period 1170–1210, describing how Wendic pirates from the Baltic shores of northern Germany ravaged the Danish coasts, causing the people there to move further inland. When the tide of military power turned around 1200, the Danes soon began to clear the coastal forests, settle there and cultivate the land for the rest of the Middle Ages.

In a country as small as Denmark, landscape history traditionally has found little need to distinguish between inland- and coastal regions. With a total area of c. 43 000 km^2 and a coastline of more than 7000 km, and no location in the whole country with more than 52 km to the nearest coast, you may indeed claim that all of Denmark is coastal! However, recent studies do actually point to a distinctive development of land use and settlement structure along the Danish coastline in the Middle Ages, especially in south and central Denmark.

Presentation of the study approach and the case study area

This paper is based on a study using an interdisciplinary set of sources and methods from the tool box of historical geography.[1] The sources used include physical geography, historical land-use mapping, place-names, administrative structures (village lands and parishes), and parish churches, combined with written records from the Middle Ages. With this combination of different source types and related methods to study them, the paper will try to identify any common trends in the analyses in regard of coastal landscape

Fig. 1. Map of medieval Denmark with the major landscape names, pointing out the case study-area in north-western Sjælland

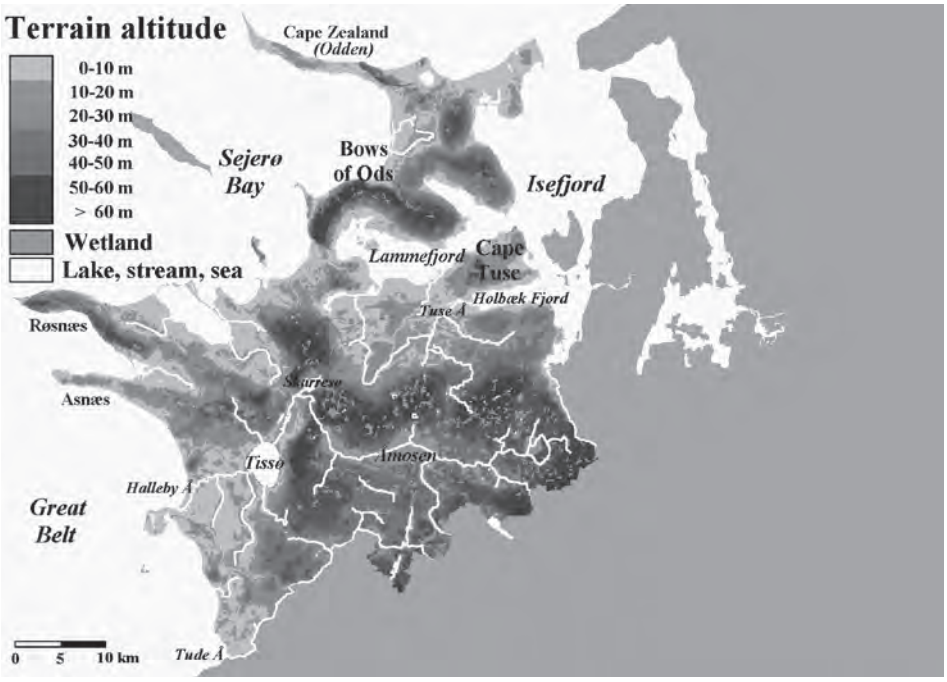


Fig. 2. Physical-geographical map of north-western Sjælland (before the nineteenth-century draining projects) with lakes, streams and wetland areas, as well as the most important landscape names

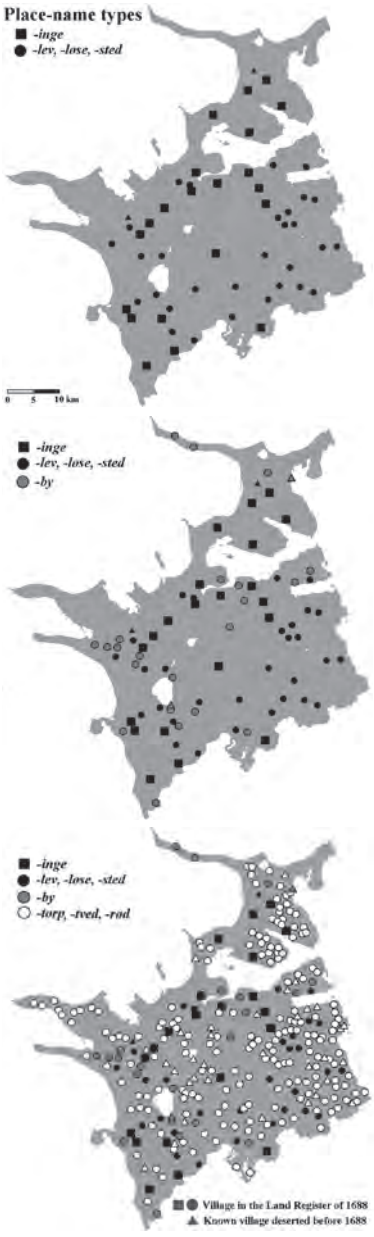


Fig. 3. Chronology of medieval settlement distribution in north-western Sjælland based on place-name types. Top: Settlements with names from before AD 800. Middle: Settlements with names from before AD 1000. Bottom: Settlements with names from before 1350

development during the period c. 800–1600, with special focus on the High Middle Ages (c. 1000–1300).

Medieval Denmark was a bit bigger than what it is today. Besides the present-day state, it included the archdiocese of Lund (Skåne, Halland and Blekinge, from 1658 part of Sweden) and the diocese of Slesvig (from 1864 part of Germany). In this concept, the Danish isles between Jylland and Skåne — of which Sjælland, Fyn, Lolland and Falster are the biggest — for long constituted the central part of the kingdom (Fig. 1).

As case study area I have chosen the north-western part of Sjælland, which is an area quite representative for central Denmark in terms of coastal landscape geography (Fig. 2). For the physical geography, three major types of coastal landscapes can be identified. 1. *Cliff coast* can be found on Cape Røsnæs and the narrow land belt between Sejerø Bay and Lammefjord. The cliffs are not made of rock, but of moraine soils in a hilly terrain with steep slopes towards a narrow beach zone. 2. *Meadow coast* is found in two districts of the Sejerø Bay, with a very broad beach zone of wet or dry meadows, almost like marshland. 3. *Plain coast* is here a term used on all the remaining coastline of the case study-area and far the most widespread type of coastal landscape in central Denmark. A hinterland of plain or slightly hilly terrain open for potential arable use stretches right out to a narrow beach zone of about 20–100 metres width.

Place-names

The study of place-names, especially on settlements, is quite an established school in Scandinavia. A large part of Scandinavian settlement names are constituted of two parts, a prefix and a suffix, each with different etymologies. A place-name like *Bregninge*, for instance, contains the prefix *Bregne-* (“fern”) and the suffix *-inge* (“place” or “people”), giving a combined meaning as “the place,

where there are ferns (or people known for living in the fern area)". In Denmark, the suffixes tend to group around a limited number of types, such as *-inge*, *-lev*, *-løse*, *-by*, *-torp*, *-tved* and *-rød*. From linguistic as well as settlement-historical considerations, many of these suffix types can be dated to different periods, where the settlement — or at least its name — seems to have come into existence. The suffix types *-inge*, *-lev* and *-løse* all appear to be from the period 0–800; *-by* is mainly from 800–1000; and *-torp*, *-tved* and *-rød* are primarily from 900 to 1350, although the extremely widespread suffix type *-torp* has been active from 800 to 1500 and beyond.[2] Based on these dating intervals, the majority of settlements known from medieval north-western Sjælland can be placed in the chronology series shown in Figure 3.

The top map in Figure 3 represents the situation at the beginning of the Viking Age, i.e. around AD 800. Iron Age-settlements, at least those that had survived into the Middle Ages, mainly seem to be an inland phenomenon, whereas settlements with names from this period generally appear but sparse in the coastal area; the ones that can be found are especially of the *inge*-type and usually situated about 3–4 km inland or on the south side of the fiord capes. This distribution corresponds well with archaeological observations from Fyn and Skåne, where the coasts of Fyn generally seem to have constituted an uninhabited wasteland and wilderness throughout most of the first millennium, whereas several Iron Age-settlements in Skåne out by the very coast appear to have been abandoned around 700–900 (Henriksen, 2009, 349 (Fyn); Anglert, 1995, 50 (Skåne). On the Danish isles and on the east coast of Jylland, a preceding retreat from the most coast-near zone may have set in as early as the fourth and fifth centuries (Crumlin-Pedersen *et al*., 1996, 156–158). During the Viking Age (c. 800–1000), represented on the middle map, a number of *by*-settlements were founded in north-western Sjælland along the west coast, the north coast and the fiords. These were anything but inferior fishing communities, as most of them soon grew to become large villages, often housing both a parish church and a magnate's farm in the High Middle Ages. By the middle of the fourteenth century, settlements were densely spread over almost all the region, in the coastal zone especially with *torp*-settlements. These were established adjacent to older settlements as well as in hitherto uninhabited areas, the latter not least in the hilly terrain and on the capes. This chronological place-name analysis would indicate that the coastal zone was left quite free of settlements during the Viking Age, no matter what kind of physical landscape, first to be inhabited and cultivated from a few *by*-settlements, especially in the more protected fiord areas, to be followed by a more intensive colonization by *torp*-settlers in the period c. 1000–1350. A spatial analysis of the internal distribution of place-name types on the Isefjord capes would furthermore suggest a "colonization movement" from the innermost part of the capes to the outermost.

Administrative units (village land and parish)

Spatial analyses of the settlement structure can also be performed in combination with the related administrative units. Until the turn of the nineteenth century, each Danish village had an area of adjacent land — arable, meadows, pasture and wood — held by the village peasants in some sort of collective administration; each "village land" bordered on the neighbouring village lands, leaving practically no land outside this land administrative structure.[3] The actual settlement was situated somewhere within its village land, sometimes in the centre of it and sometimes peripheral. But in the case of village lands bordering on the sea, there is a very systematic tendency that the settlement can be found as far inland in the village land as possible. In north-western Sjælland, this is

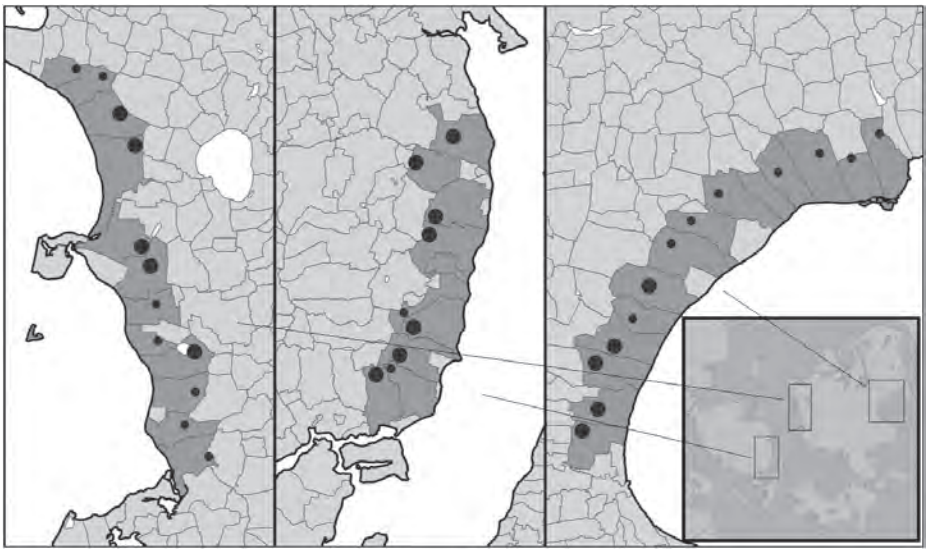


Fig. 4. Village land structure in three coastal areas of Fyn and Sjælland, the areas being pointed out on the small map. In the highlighted village lands, the inland orientation of the actual settlement is shown. Maps by Peder Dam in Jakobsen & Dam, 2010, 23

especially evident along the west coast, and similar evident observations can be made on other coastlines on the Danish isles (Fig. 4). There seems to be no physical-geographical explanation for this distinct tendency, since the historical coastline has not moved in the intervening period[4], and both the soil and terrain is quite suitable for arable; in today's landscape, the land is cultivated or inhabited all the way out to the beach zone.

A similar phenomenon is found when moving up one level in the medieval administrative structures, that is, from village lands to parishes. Once again there is a clear tendency that the "centre" of the parish, i.e. the parish church, was not situated very central at all when looking at the coastal parishes. In practically all the parishes of north-western Sjælland, the parish church was located in a settlement as far inland as possible within the parish borders. For those parishes, which due to the region's geography bordered on open sea as well as on fiords, a location was chosen on the fiord side (Fig. 5).[5]

Analyzing the spatial distribution of known medieval settlements within the parishes also shows that far the majority of all villages actually belonged to the parish in which the villagers had the shortest way to the church. Only in 12 per cent of the villages in north-western Sjælland, the inhabitants had a shorter distance to a neighbouring parish church than to their own, without the physical geography being an explaining factor (e.g. by intervening streams or bogs). For 10.5 per cent, the settlements with "unfair parish affiliation" had place-name types belonging to younger categories (such as *-torp*), indicating that the settlement may very well have come into existence *after* the parish structure was implemented and settled, which in Denmark seems to be the case by the end of the twelfth century. This could also suggest that perhaps the de-central, inland orientation of churches in coastal parishes was not as unfair or de-central to the parishioners at the time when the parishes were established, in the sense that the areas closest to the beach by that

time still were only very sparsely populated — if indeed inhabited at all.

Parish churches

A third source that I have included in my historical-geographical analysis of the coastal landscape development in medieval Denmark is the parish churches themselves. On the Danish isles, parish churches of stone were built in almost all rural parishes during the twelfth and the thirteenth centuries. For the period 1050–1350, construction of the buildings can be dated quite accurately into sub-periods (1050–1100, 1100–1200, 1200–1250, and 1250–1350) due to type of stone material and architectural style.[6] The main regional variation within this distribution is that whereas twelfth-century churches are dominating on Sjælland and Fyn, the southern-most islands of Lolland and Falster appear to have had most of their churches built in the thirteenth century. For our case-study region of north-western Sjælland, a geographical variation also seems to occur on this smaller regional scale: quite a lot of the parish churches along the coastline appear to be younger than their inland neighbours (Fig. 6). This is especially evident on the west coast (1200–1250) and on the most exposed open-sea capes (1250–1350). This does not necessarily mean that the coastal areas had no parish churches (or even parishes) until that time, as several of them may have been preceded by wooden churches, but it then at least does suggest an inferior economical situation along the coast, not making it possible to fund a stone-church construction until 50 or 100 years later than further inland.

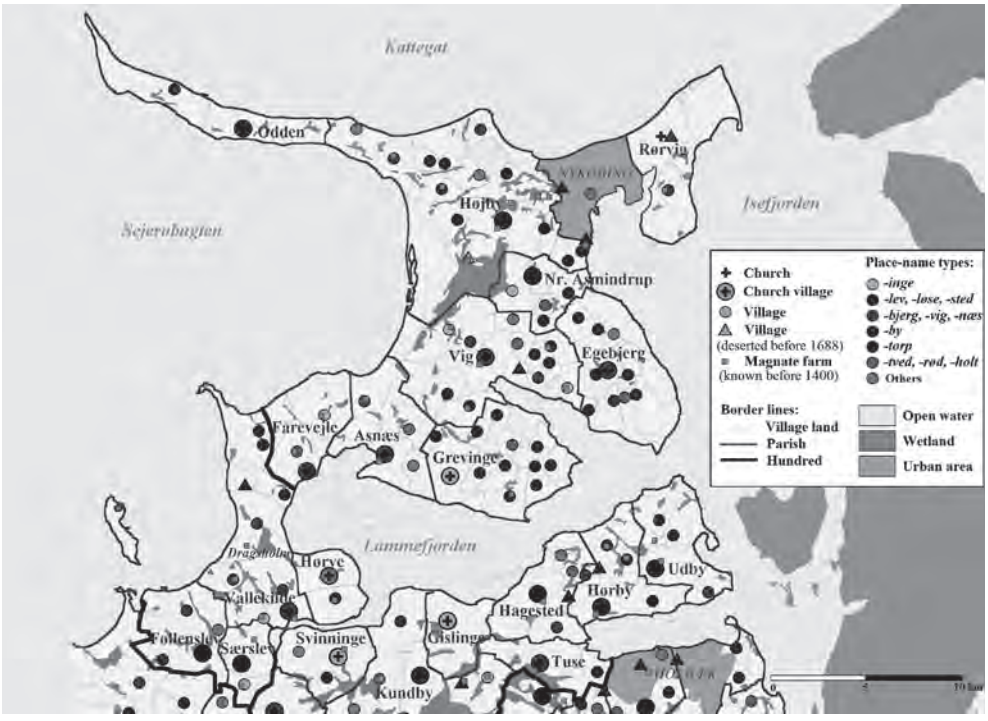


Fig. 5. Medieval parish and settlement structures in the northernmost part of north-western Sjælland, showing the location of church village and other settlements within the parish boundaries

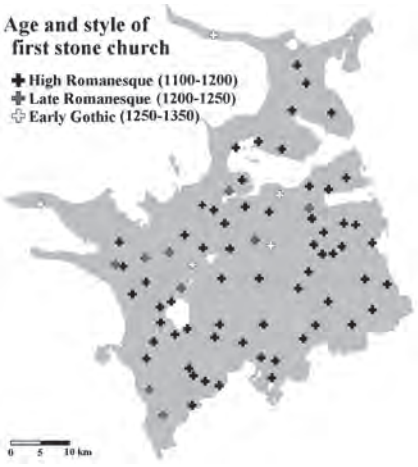


Fig. 6. Geographical distribution of rural parish churches in medieval NW-Zealand with indication of age and architectural style of oldest stone church

Once built, some stone churches stayed the same in matters of size and shape throughout the Middle Ages, but far the majority had an architectural change from Romanesque to Gothic style during the Late Middle Ages, usually including vaulting and the erection of a tower. Some of the churches also had an extension of the nave, which was the part of the church building especially meant for the parishioners. Some scholars have therefore suggested that such church-nave extensions may reflect a contemporary (or rather preceding) growth in the number of parishioners (Mackeprang, 1927; Nyborg, 1986; and Anglert, 1995). With this in mind it is interesting to note that church-nave extensions in north-western Sjælland is almost exclusively a phenomenon to be found in inland parts of the region known for late place-name types only and considerable deforestation, *and* in the coastal districts of the region. Since these extensions can be architecturally dated — although with more uncertainty than the primary buildings — to three high and late medieval sub-periods (1200–1350, 1350–1500 and 1500–1550), we are even given an indication of when the coastal parishes had their main demographical growth (Fig. 7). For the parishes along the west coast it seems to have been in the periods 1200–1350 and 1500–1550, and for the parishes on the fiord capes starting in 1200–1350 on the innermost cape, then in 1350–1500 on the two central capes, and finally in 1500–1550 on the most exposed cape.

When taking the observations and interpretations of all the combined analyses into consideration, a general picture emerge of only very limited settlement — if indeed any — along the coasts of north-western Sjælland during the Viking Age (c. 800–1000). About a dozen *inge*-settlements around the region represents the oldest surviving villages, but rarely to be found less than 3–4 km from the actual coastline. During the Viking Age, another dozen of *by*-settlements doubled the number of coastal settlements, especially along the fiords and the northern coast, several of these located quite close to the water (0–1 km). They usually became large villages with lots of farm, one of them often a high medieval magnate demesne, which may point to an origin as some sort of fortified colonization centre. By the time of the formation of the parish structure (i.e. 1100–1200), an extreme inland orientation of parish churches in the coastal parishes indicates that at this time a belt of 1–2 km along the coastline was still quite uninhabited. When this coast-near belt was finally settled, not least with *torp*-settlements, the village was still situated as far inland as the village-land structure allowed for. Since marshlands, meadows or dunes do not seem to offer an explanation for this sparsely populated or even uninhabited zone along the coast, we must expect a widespread belt of coastal forest in the region, generally stretching 2–3 km inland right into the thirteenth century. To judge from place-name types, parish formation and church-

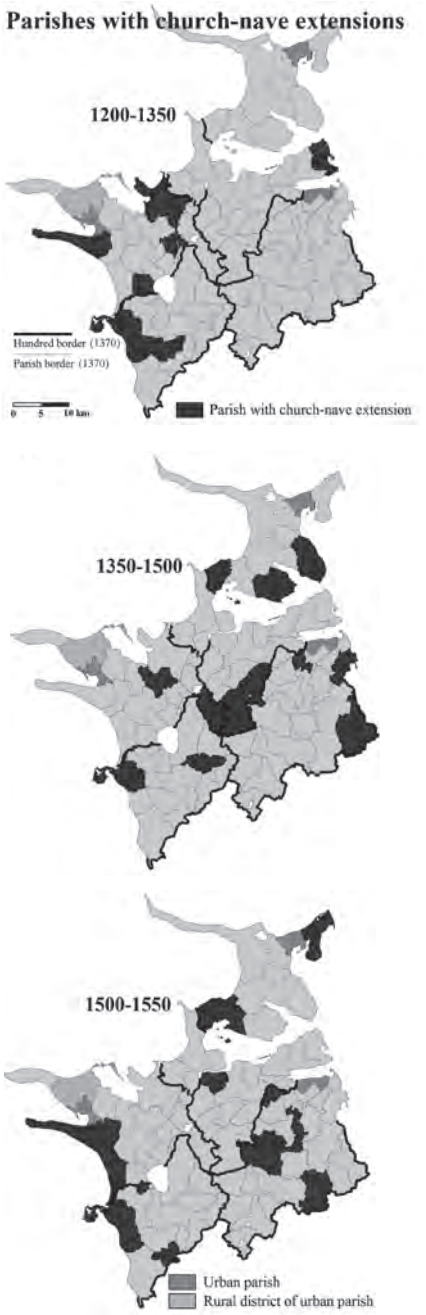


Fig. 7. Medieval parish map of north-western Sjælland showing parishes with church-nave extensions dated to three different periods

architectural considerations, a demographic growth began to occur in the coastal parishes from the beginning of the thirteenth century, with foundation of new *torp*-settlements both adjacent to existing villages (such as *-inge* and *-by*) and out in hitherto uninhabited areas; the most exposed capes appearing to be the scene for the last stage of the colonization. The period 1200–1350 seems to be a generally active period of coastal forest reclamation all around, on the west coast with a continuation in the sixteenth century, but even during the period 1350–1500, two of the fiord capes appear to have seen a significant demographic and economic growth.

Historical written sources and maps

But what could possibly be the reason to leave a belt of 2–3 km forest along the coast of north-western Sjælland and the Danish isles in general, in quite plain terrain with good soils suitable for arable, while the rest of the islands were intensively settled and cultivated during the period 900–1200? Neither sand- nor rain storms appear to be a reasonable explanation for such a coastal protection zone, as the period in question appears to have been one of a relatively mild and warm climate — at least for Danish conditions. A more plausible explanation seems to be that the coastal forest was left in order to provide a physical and visual protection for the inhabitants further inland — protection from unwanted visitors from the seaside.

Such uninvited visitors may have been the Wends. '*Wends*' is a term used by medieval Scandinavians and Germans for their Slavic neighbours, and thus not referring to just one people or tribe. For the Danes, the Wendic name was applied to Slavs living along the south coast of the Baltic Sea, such as Polabians, Obotrites, Rugians and Pomeranians. Since the Viking Age, there was frequent contact across the south-western Baltic Sea of both military and peaceful nature. As German

eastward pressure on the Slavs increased during the eleventh and twelfth centuries, some Wends took it out on their northern, overseas neighbours in southern Denmark. Wendic piracy especially seems to have increased during the second quarter of the twelfth century, when the Danish kingdom was cursed by a long-lasting war between a number of royal pretenders to the thrown for two generations. In this period, coastal defence against the Wends was completely left to local lords and the peasants themselves. When the civil war in Denmark finally ended, and King Valdemar the Great and Archbishop Absalon of Lund in 1168 defeated the Wends in Rügen and destroyed their pagan temple in Arkona, it marked the beginning of the end for the Baltic Wends, who subsequently were subdued by continuous German, Danish and Polish crusades, and eventually were being assimilated in the German '*Ostsiedlung*'.

A connection between Danish coastal forests and the Wends finds support in historical documentation from the period. According to the Danish historian Saxo Grammaticus, who wrote his *Gesta Danorum* around 1200, continuous plundering and killing caused by Wendic pirates had forced inhabitants of the southernmost coasts of the Danish isles to give up their farms and villages, and to move further inland. Something similar is indicated by a comment in a contemporary chronicle of Øm Abbey, *Exordium Carae Insulae*, telling that the Cistercian monks had been donated some land on Djursland, the big peninsula on the east coast of Jylland, but that this was worthless due to its closeness to the coast, which made it vulnerable to pagan (i.e. Wendic) searaids. That the Wends did indeed ravage the shores of Denmark far beyond the southern isles in the eleventh and especially the twelfth century is documented in numerous accounts.[7] This is also confirmed by the Wendic chronicler Helmold von Bosau, writing his *Slawenchronik* around 1170, where he explained the situation like this:

> Denmark mainly consists of scattered islands surrounded by sea. They are difficult to defend against pirates, because there are many tongues of land, which are excellently suited as hiding-places for the Slavs. Unnoticed, they sail out from there and attack the unsuspecting with plundering, and for such sudden raids are the Slavs exceptionally strong. In later years, this brigandage has been so frequent that they [i.e. the Wends] have given up their useful farming altogether and in stead put their confidence in armed navigation, pinning all their hope and wealth on their ships. (Helmold von Bosau, ch. 109 (Translated from Stoob, 2002, 378)

In additional support of this, marine archaeologists have found numerous coastal defence systems with various kinds of blockages along the central Danish coasts dating from the Viking Age and up until 1170, just as an earlier defence system has been detected from the centuries around 400 (Crumlin-Pedersen *et al.,* 1996, 19).

Fragments of a coastal forest belt were still extant on the first accurate mapping of Denmark from the late eighteenth century, especially on the coasts bordering on the open Baltic Sea; in several places, remnants of these old coastal forests are still present even today (Fig. 8).[8] Danish historians have, of course, been well aware of this reference by Saxo on how the southern coasts were abandoned due to Wendic terror, but like most other information delivered by Saxo it has been largely dismissed as pure propaganda. The present historical-geographical analysis does, however, show that several mutual independent sources actually support the claims by Saxo and the chronicler from Øm Abbey that land close to the coast was for long not considered suitable for settlement and arable farming due to seaborne piracy. But the analyses also suggest that the phenomenon existed at a much larger scale than

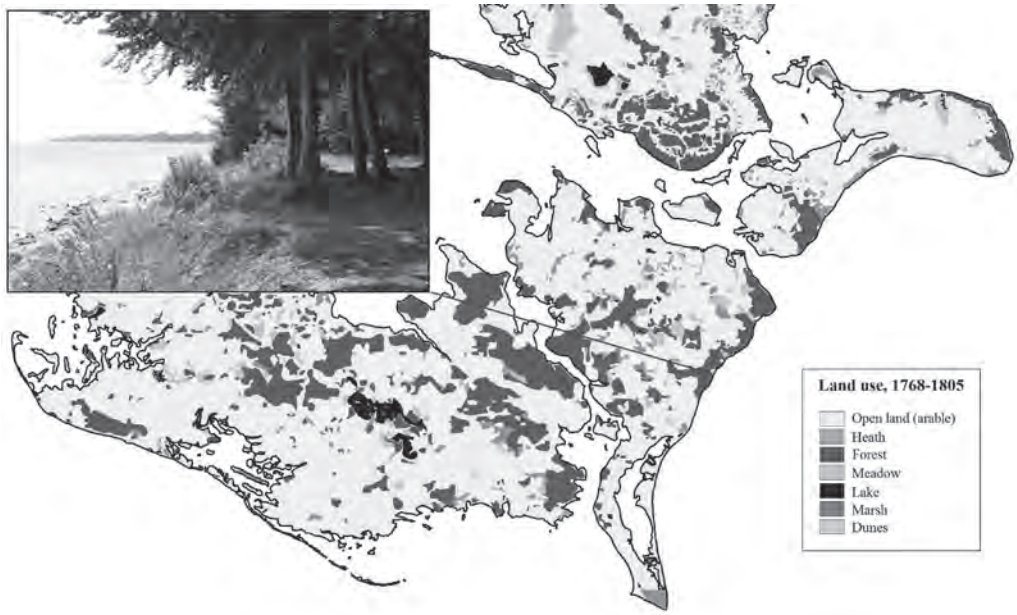


Fig. 8. Land use on Lolland, Falster, Møn and southern Sjælland around 1770 according to "Videnskabernes Selskabs Kort". The inserted photo shows the coastal forest of Korselitse on Falster as it looks today. Photo: Sascha Helsengren Hansen 2010

stated by Saxo, both in terms of geography and time. Even if the southern islands of Langeland, Lolland and Falster suffered more than their share of Wendic attacks, the coastal forest belt seems to have stretched all around Sjælland and Fyn as well, and probably even far up the eastern coast of Jylland.[9] Furthermore, historical-geographical attempts to date the phenomenon do not support Saxo in blaming it all on the Wends. Apparently, the Danish coasts were abandoned long before the Wends, probably being depopulated throughout most of the Viking Age, strongly indicating that Wendic sea-raiders were only continuing what their Viking predecessors had been doing for centuries before them.

Concluding epilogue

The Wendic terror on the Danish coasts ended in 1170–1185, when the tide of military power turned around, and now the Danes began to systematically ravage the Wendic coasts by bringing the crusade to the Baltic peoples. This historical fact correlates profoundly well with the picture given by the landscape analyses of a coastal colonization beginning around 1200. When the fear of Wends had ceased, landowners in the coastal regions of central Denmark gradually decided to expand the open arable landscape with new settlements into the old coastal forest belt preserved by their ancestors. Surely, new seaborne attacks of Norwegian, Swedish and German origin ravaged the Danish coasts every now and then throughout the rest of the Middle Ages, but never again on such a consistent, systematic and long-lasting scale as with the Vikings and the Wends. In the thirteenth century, it was rather the Wends and their neighbours along the south and east Baltic coast that were in need of a protecting forest shield against Danish seaborne crusaders, but that is a story for another historical-geographical analysis.

References

Anglert, M. (1995). *Kyrkor och herravälde — Från kristnande till sockenbildning i Skåne* [Churches and lordship — From Christianization to parish formation in Scania]. Lund Studies in Medieval Archaeology 16. Lund: Almqvist & Wiksell International.

Crumlin-Pedersen, O. *et al*. (Eds.) (1996). *Atlas over Fyns kyst i jernalder, vikingetid og middelalder* [Atlas of the coasts of Funen in Iron Age, Viking Age and Middle Age]. Odense: Odense Universitetsforlag.

Dam, P., Jakobsen, J.G.G. (2008). *Historisk-geografisk atlas* [Historical-geographical atlas]. Copenhagen: Det Kongelige Danske Geografiske Selskab & Geografforlaget.

Danmarks Kirker [Churches of Denmark]. Various editors. Copenhagen 1933- (still in progress): Nationalmuseet.

Danmarks Stednavne [Place-names of Denmark]. Various editors. Copenhagen 1922- (still in progress): C.A. Reitzels Forlag.

Exordium Carae Insulae [Chronicle of Øm Abbey]. Published by M.C. Gertz in *Scriptores minores historiæ Danicæ medii ævi* II (pp. 153–264). Copenhagen 1918–20: Selskabet for Udgivelse af Kilder til Dansk Historie.

Fellows-Jensen, G. (1987). To divide the Danes from the Norwegians: On Scandinavian settlement in the British Isles. *Nomina — A Journal of Name Studies Relating to Great Britain and Ireland* XI, 35–60.

Frandsen, K.-F. (1984). *Atlas over Danmarks administrative inddeling efter 1660* [Atlas of the administrative structure of Denmark since 1660]. Copenhagen: Dansk Historisk Fællesforening.

Hald, K. (1965). *Vore Stednavne* [Our place-names]. 2nd edn. Copenhagen: Gad. 1st edn.; Copenhagen 1950: Gad.

Helmold von Bosau: Slawenchronik. Published by H. Stoob, Darmstadt 1963: Wissenschaftliche Buchgesellschaft.

Henriksen, M.B. (2009). *Brudager Mark — en romertidsgravplads nær Gudme på Sydøstfyn* [Brudager Fields — a Roman burial site near Gudme on south-eastern Funen]. Fynske Studier 22. Odense: Odense Bys Museer.

Jakobsen, J.G.G., Dam, P. (2010). Nordvestsjællands kystbebyggelse fra vikingetid til ca. 1700 [Coastal settlement in north-western Sjælland from Viking Age to c. 1700]. *Kystkultur* ('Fra Nordvestsjælland' 2009), 11–45.

Jensen, C.S. *et al*. (eds.) (2000). *Venderne og Danmark — Et tværfagligt seminar* [The Wends and Denmark — An interdisciplinary seminar]. Odense: Center for Middelalderstudier, Syddansk Universitet.

Jørgensen, B. (2008). *Danske stednavne* [Danish place-names]. Copenhagen: Gyldendal.

Mackeprang, M. (1927). Middelalderlige Kirkeudvidelser [Medieval church extensions]. *Festskrift til Kristian Erslev*. Copenhagen: H. Hagerup. 187–210.

Nyborg, E. (1986). Kirke — sognedannelse — bebyggelse. Nogle overvejelser med udgangspunkt i et bebyggelsesprojekt for Ribeområdet [Church — parish formation — settlement. Some considerations based on a settlement project in the Ribe area]. *Hikuin*, 12, 17–44.

Porsmose, E. (1981). *Den regulerede landsby — Studier over bebyggelsesudviklingen på Fyn i tiden fra ca. 1700 til ca. 1000 e.Kr. fødsel* [The regulated village — Studies on settlement development on Funen in the period c. 1700 to c. 1000]. Odense: Odense Universitetsforlag.

Porsmose, E. (1987). *De fynske landsbyers historie — i dyrkningsfællesskabets tid* [History of the villages on Funen — in the time of the agricultural community]. Odense: Odense Universitetsforlag.

Ringtved, J. (1999). Settlement organisation in a time of war and conflict. In: Fabech, C., Ringtved, J. (eds.). *Settlement and Landscape — Proceedings of a conference*

in Århus, Denmark, May 4–7 1998 (pp. 361–381). Højbjerg: Århus University Press.

Saxo Grammaticus: Gesta Danorum. (1931). Numerous editions, e.g. *Saxonis Gesta Danorum*. Olrik, J., Ræder, H. (eds.). Copenhagen: Levin & Munksgaard.

Ulriksen, J. (1998). *Anløbspladser. Besejling og bebyggelse i Danmark mellem 200 og 1100 e.Kr. En studie af søfartens pladser på baggrund af undersøgelser i Roskilde Fjord* [Places of call. Navigation and settlement in Denmark between AD 200 and 1100. A study of maritime locations based on surveys from Roskilde Fjord]. Roskilde: Vikingeskibshallen i Roskilde.

Notes

[1] The initial part of the study was made together with Peder Dam, results from this are published in Jakobsen & Dam, 2010.

[2] The major text book on Danish place-names and dating of suffix types is Hald, 1965. A catalogue of Danish place-names is being published in the series *Danmarks Stednavne*, with an introduction of each region's place-name types and the most recent studies on them. A short and updated hand book-version of this catalogue is available in Jørgensen, 2008. The best general introduction to Danish place-name types written in English is Fellows-Jensen, 1987.

[3] This "village land" (Da.: *ejerlav*) is somewhat equivalent to the English *vill* and the Irish *townland*. Danish village lands and their boundaries are known from cadastral maps from the decades around 1800. A retrogressive attempt to reconstruct their structure back to the 1680s was made by Frandsen, 1984, later digitized by Peder Dam for use in G.I.S. To a large extent, these village lands are believed also to be valid for at least the Late Middle Ages (Porsmose, 1987, 45). Spatial studies of the village land structures, including the settlements' location within the village land, have in Denmark mainly been carried out by Porsmose, 1981.

[4] Combined geological and archaeological surveys have showed that sea level in Isefjord during the Viking Age was about 0.5–1.0 meter above today's level, and something similar must be expected for the northern and western coasts of the region (Ulriksen, 1998, 22–23).

[5] Historical Danish parish structures are known from the same post-medieval sources and reconstructions as for the village lands. Written sources of the Middle Ages do, however, offer a better basis for medieval retrospection of the parishes than in the case of the village lands. Spatial studies of parish structures, including the location of the parish settlements, have in Denmark mainly been carried out by Porsmose, 1981, 173–175.

[6] A catalogue of Danish church buildings is being published in the series *Danmarks Kirker*, with an introduction in each regional volume of the dating criteria (also in German or English).

[7] Wendic relations to high medieval Denmark, including the military campaigns, are most recently described in the proceedings of an interdisciplinary conference "Venderne og Danmark", eds. C.S. Jensen *et al.*, 2000.

[8] *Videnskabernes Selskabs Kort* was the first scientific mapping of the entire Danish kingdom, commenced in 1761 and finished in 1805. The initial mapping was made in 1:20 000, the final published maps in 1:200 000. The maps have later been digitized for use in G.I.S. by Peder Dam *et al*. An introduction to the maps is given by Peder Dam in Dam and Jakobsen, 2008, 76–83.

[9] Recent historical-geographical surveys have found similar signs of a Viking Age- and high medieval forest belt along the coasts of Jylland (Ringtved, 1999, 367), Fyn (Crumlin-Pedersen *et al*., 1996, 46–47 and 158) and Skåne (Anglert, 1995, 50).

VERSATILE LAND, HIGH VERSUS LOW. DIVERGING DEVELOPMENTS IN THE EASTERN NETHERLANDS[1]

Bert Groenewoudt
Cultural Heritage Agency
P.O. Box 1600, 3800 BP Amersfoort, the Netherlands
b.groenewoudt@cultureelerfgoed.nl

Key words: *landscape change, landscape biography, lowland reclamations, Middle Ages, Post-medieval Period, Eastern Netherlands*

Regional studies on landscape history are sometimes biased to some extent by a tendency to focus on the most intensively cultivated and investigated areas. Moreover, the concept of 'landscape' is at times applied uncritically, resulting in a homogenized and simplified reality, with interesting developments and contrasts being easily overlooked. It is the aim of this paper to show that fundamentally different historical developments may have occurred within one and the same "landscape". The focus will be on the Pleistocene covers and landscapes of the eastern Netherlands. Here, already during prehistory, higher, dry areas of land were being transformed into relatively open, intensively used, compartmentalized and — to some degree — spatially stable landscapes that were very much "cultural". The little-studied lower areas that surrounded these cultivated "islands", on the other hand, remained essentially natural in character: forested, unpartitioned, extensively used and probably spatially dynamic in terms of spatial structure until well into the Middle Ages, when reclamation began. Unlike the situation in the fossilized "old land", new and rapid physical geographical (and social) developments took place in these lowlands, especially from the medieval period onwards. This high-low dichotomy deserves more attention, also in other areas. Its social dimension will be discussed separately (Groenewoudt, in prep.)

Introduction

Whether or not they display characteristics of "landscape biographies",[2] some studies on the history of man and landscape (especially those that betray a leaning towards archaeological sources) are to some extent imbalanced in that they focus on the nuclei of human activity and settlement, i.e. on well-ordered, "domesticated" landscapes, or "the world of man". Less intensively used landscape zones, often covering the greater part of research areas, tend to play a subordinate role. Until quite recently, substantial parts of the human environment throughout Europe consisted of semi-natural and extensively used areas: outfields, "marginal land", "waste land" and "wilderness" (Svensson and Gardiner, 2009). This duality (a deliberate oversimplification) may have been a reality on more than one spatial level.

Fig. 1. Dutch sandy landscapes (light grey)

Perhaps the overlooking of specific areas and specific types of land use can be attributed to our perception of the past (and of landscape and land use), which is blurred by the fact that our modern lives are largely spent in fully domesticated, man-made landscapes (it is an undeniable fact that urban elites perceive far-away "marginal" areas very differently than its inhabitants do; e.g. Svensson, 2009). Geographically speaking, our location can literally determine — and limit — our field of vision, for following the basic definition by Dickinson, 'landscape' is simply "...the view within the range of an observer's vision" (Dickinson, 1939, 1–2). Also physically, what we see depends on where we are standing.

Another problem is that the terms 'landscape' and 'area' (or 'region') tend to be used interchangeably, as if they hold the same meaning. It is clear what an area or region is: a spatially delimited part of the earth's surface. The term 'landscape' can be defined and applied in a variety of ways (see e.g., Muir, 2000). When an explicit definition is lacking, it would appear that there is an implicit leaning towards a definition that emphasizes general and connecting properties, both physically and culturally. As a result, uncritical, or rather, ill-considered use of the concept of 'landscape' may have the unintended consequences of homogenizing and simplifying, potentially leaving fundamental aspects of landscape history overlooked as a result. Metaphorically speaking, we may be gazing at only one side of Janus's face. Whether or not this is really the case (or at least a real possibility) will be investigated on the basis of data from the eastern Netherlands, that are part of the somewhat higher Pleistocene sandy soils roughly encompassing the eastern half of the present-day country (Fig. 1). This short paper is obviously not an all-embracing landscape biography; its sole aim is to draw attention to the fact that it may be fruitful to purposively search for differences, for evidence of versatility, within the context of landscape historical research.

"Diversity rules"

In general this Pleistocene half of the Netherlands is far from uniform: there are marked regional differences with regard to the origins and overall structure of the physical landscape. These differences have influenced (not determined!) land use and settlement patterns since prehistoric times, which is why models that were developed in one region should not be applied to another without first critically analyzing their validity there (Van Beek, 2009). The southern sandy soils and soils in the northeast of the country are essentially plateaus, although their geology is fundamentally different; they are cut through by numerous streams and — in the past — bordered (in the south) or were completely surrounded (in the north) by extensive peat bogs. The backbone of the central Dutch sandy region consists of a number of large ice-pushed ridges. The eastern Netherlands are different yet again; this area is characterized by diversity. Relatively flat coversand areas (harbouring numerous sandy ridges

and hummocks) alternate with somewhat higher areas: ice-pushed ridges and plateaus. Here in the east, "diversity rules", on several spatial levels (Van Beek, in press). No fewer than nine different physical-geographical landscapes have been distinguished (Van Beek, 2009). Significantly, regional variation in geogenesis also brought about marked differences in landscape scale. The southern sandy soils as well as those in the north are relatively large-scale whereas those in the east are not only diverse but also small-scale.

The main focus will be on one of the nine physical geographical landscapes present in the Eastern Netherlands: the southern part of the slightly undulating coversand landscape that encompasses most of the western part of the area (Fig. 2). The coversand was deposited under periglacial conditions during the Weichselian Ice Age. The meta-morphology of the landscape is determined to some extent by buried glacial, glacio-fluvial and fluvial deposits. The alternation of coversand

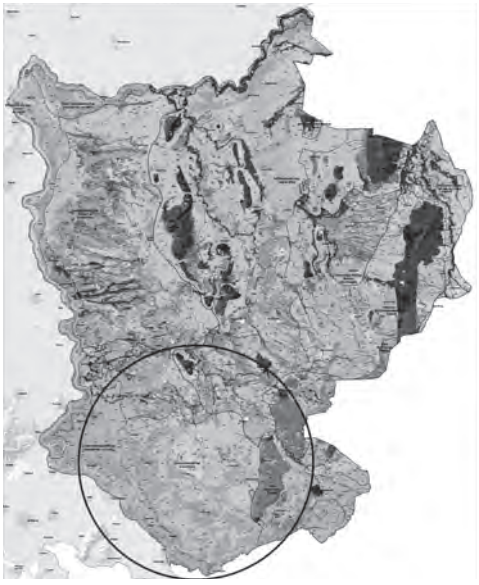


Fig. 2. Landscape diversity in the eastern Netherlands (after Van Beek, 2009). The research area is indicated

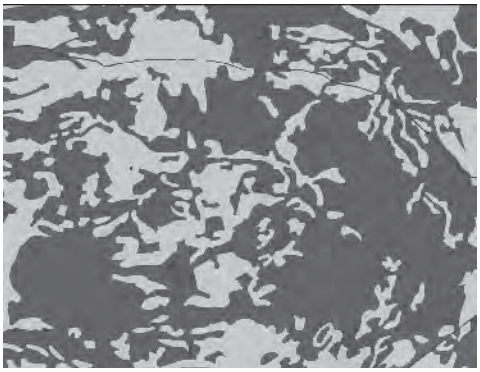


Fig. 3. A random section of the highly fragmented coversand landscape in the eastern Netherlands. Dark grey: low/wet; light grey: "high"/dry

hummocks and ridges of various sizes, and of depressions and low-lying plains gives the area a distinct "archipelagic" character (Fig. 3). The coversand landscape under discussion is the core area of a region called — the Achterhoek. It is situated in the east of the province of Gelderland (Guelders).

Landscape developments: high versus low

The landscape discussed here has been fairly densely settled for millennia, and probably seeing continuous occupation since the Late Palaeolithic/Late Weichselien (14 500–10 000 BP) (Stapert, 2005) Mesolithic hunter-gatherer settlement sites are more numerous however, and distributed over a much wider area (Musch, 1991; Scholte Lubberink, 1998). Although there are several indications of human activity dating to the start of the Neolithic, the first reliable (palynological) evidence of human modification of the landscape and agricultural activities dates to R. Bakker's Neolithic Occupation Phase 2 (3450–2600 BC). It is attributed to the middle Neolithic Funnel Beaker Culture (Bakker, 2005). Around 1500 BC, agriculture intensified and settlements concentrated

Fig. 4. Former maximum expansion of peat bogs: dark grey (after De Rooij, 2006; Van Beek, 2009)

on the larger and more fertile stretches of slightly elevated ground (Arnoldussen and Fontijn, 2006; Bourgeois and Fontijn, 2008; Van Beek, 2009; in press). These are almost without exception the same locations that were transformed into open fields, or "*essen*" after the tenth and eleventh centuries AD (Groenewoudt and Scholte Lubberink, 2007), when settlements moved from the highest parts of these sandy "islands" to the lower fringes. From late prehistory onwards, these same islands became the core elements of a settlement system that underwent phases of expansion as well as contraction (Ten Bosch *et al.*, 1997; Groenewoudt and Scholte Lubberink, 2007). Only periodically did this settlement system incorporate less favourable locations, such as smaller, lower or less fertile sandy ridges. As early as around 500 BC, deforestation had resulted in the emergence of semi-open, intensively used, compartmentalized and — to some degree — spatially stable landscapes that were very much "cultural" (Groenewoudt *et al.*, 2008). This situation remained essentially unchanged until well into the Middle Ages. The ninth century AD was a time of great transformations, during which spatial dynamics decreased even further. Many settlements were relocated to their present locations (Waterbolk, 1982, 1995; Van der Velde, 2004; Van Beek, 2009). The oldest contemporary isolated farms (*Einzelhöfe*) date to this period too. Apart from a short episode during the mid-late Roman period (second-fourth century AD) it was not until the fourteenth and fifteenth centuries that larger settlements and actual villages came into being (Van Beek, 2009; Keunen, in prep.). Gradually, a mixture of dispersed and nucleated settlement evolved.

On closer inspection, however, the aforementioned turns out to be valid only for the "upland" parts of the landscape (though differences in elevation rarely exceed ten metres). From times immemorial, these constituted the civilized world, and it was this face of the landscape — covering less than half of the total area — upon which research always concentrated, as indeed it still does. The rest of the landscape consists of lowlands, in part (former) wetlands. Recent research integrating pedological, historical and toponymic evidence has shown that a surprising percentage of almost 30% of the total area used to be covered by mostly small but numerous peat bogs (De Rooij, 2008; Van Beek, 2009, p. 472). Because the landscape

was so fragmented, marshy lowlands were hardly ever far away (Fig. 4). On average, lowlands cover 50% of the surface within a one kilometre radius from settlement sites (Groenewoudt *et al.*, 2008). Besides peat bogs ('veen') the lowlands harboured a broad spectrum of other landscape features, that can essentially be identified by the same terms as those in use for the province of Drenthe, northern Netherlands (Spek, 2004; Ter Laak, 2005). Commonly used lowland landscape features are *broek* (undivided flat and moist pastures, incidentally flooded by nearby streams), *flier* (similar areas with peaty topsoil), *goor* (bogland), *maat/maten* (parcelled out meadowland), *laar* (pasture within woodland or wood pasture) and *horst* (hillock surrounded by flat land). *Broeken* in particular could be very extensive. Contiguous *broeken* belonging to neighbouring local farmers' communities (*marken*) could together cover several thousand hectares.

Recent palaeobotanical studies have shown that deforestation and particularly cultivation in lowland areas proceeded at a much slower pace than was the case in the uplands (Fig. 5). For circa 2000 years, the lowlands were very much a reverse image

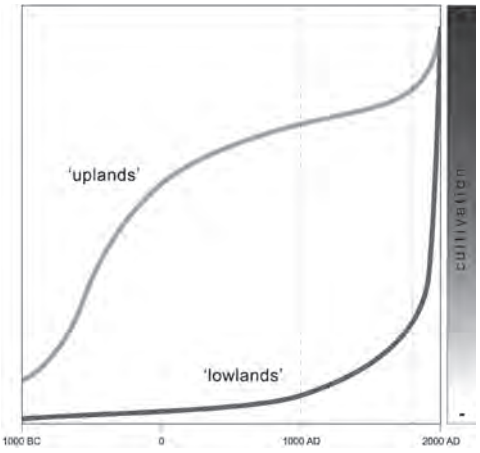


Fig. 5. Diverging developments: pace and extent of cultivation in "uplands" and "lowlands"

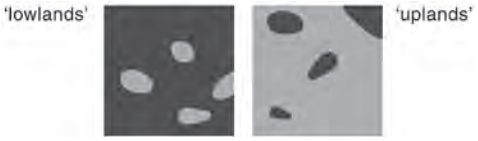


Fig. 6. In terms of vegetation structure and the ratio between uncultivated (dark grey) and cultivated land (light grey), for about 2000 years the lowlands were very much a reverse image of the uplands (after Van Beek, 2009)

of the uplands in terms of the ratio between uncultivated and cultivated land (much earlier, between circa 1500 and 500 BC the uplands had transformed in a similar way: Groenewoudt *et al.*, 2008; Van Beek, 2009) (Fig. 6). Although there is clear evidence for earlier human impact in the vicinity of settlements, the woodland cover in the lowlands only began to decline systematically during the late Middle Ages. Until then, the lowlands had been covered by a patchwork of dense woodland (predominantly alder carr), more open woodland, shrubs, raised bog, marshes, moorland and strips of semi-natural grassland. It was likely a spatially dynamic landscape with fuzzy borders, characterized by curves rather than straight lines. Remnants of primeval woodland ("wildwood" as Oliver Rackham (1976) prefers to call it) may have survived for a surprisingly long time, at least until the beginning of the Roman period (Scholte Lubberink and Willemse, 2009).

In contrast to the sandy uplands, where the soils were becoming ever more depleted as a result of intensive agrarian exploitation, the lowland landscape became increasingly wet over the course of time (Groenewoudt, in press). As a result, from the Atlantic period onwards bogs expanded right up to the beginning of large-scale drainage, commercial peat cutting and subsequent reclamation. Causes for rising water tables, paludification and the expansion of bogs included a surplus of

precipitation, poor drainage and — near the coast — rising sea levels. Initially the causes of the "drowning" process were natural, but from the Iron Age onwards human interference with the landscape had an increasing impact. Rapid deforestation during this period contributed to a rise in groundwater levels (Buishand and Velds, 1980; Dolman, 1988; Spek, 2004), a process that probably accelerated during the Middle Ages (For Germany, see Bork *et al.*, 1998; 2003) when much of the surviving lowland woodland disappeared (see below). Obviously, flat, low-lying areas were particularly affected by rising groundwater levels, since even a small rise there resulted in significantly wetter soil conditions, which in turn stimulated peat growth.

Persistent wilderness

Many place names and historical sources in the low-lying heartland of the *Achterhoek* region attest to the long survival of a well-forested, barely cultivated and sparsely populated landscape (Fig. 7). This was already observed in 1944 by Slicher van Bath (1949), one of the founding fathers of Dutch agrarian history. Departing from the already demonstrated relatively high degree of stability in land ownership in the Middle Ages (Noomen, 1991; 1993; Spek, 2004). Keunen (in press) recently inventoried old domanial properties (AD 800–1100). These are indeed absent in the lowlands of the Achterhoek, despite occurring frequently along the periphery. Furthermore, an eleventh century source defines a substantial part of the border of a county in the territory called "Hamaland" (Utrecht Charter book I, no. 202; Wartena, 1989) as running "*per silvam*", i.e. through woodland or uncultivated land. Other sources dating from the late tenth to the fourteenth centuries mention *Steenrewalt, Furwalde, Berlewalde, Holterwold, Synwede* and another nameless *"great woldt"* (Groenewoudt *et al.*, 2008; Keunen, in prep.), place names that in the Pleistocene parts of the Netherlands probably refer to areas of wooded lowland wilderness rather than to clearly defined forests (Ter Laak, 2005, pp. 136–138; Spek and Van Exter, 2007). Parts of such wildernesses were undoubtedly exploited by people, who are known to have lived along their edges,

Fig. 7. "Berlewalde". A reconstruction of the medieval landscape of the Achterhoek lowlands before reclamation (artist's impression by Mikko Kriek, BCL Archaeological Support)

on isolated patches of cultivated high ground (such as Zelhem, Vorden, Ruurlo), and along streams, particularly the river Berkel. Texts from the thirteenth and fourteenth centuries mention the herding of "forest horses" (e.g. Meihuizen, 1953). These may have been semi-feral horses like those still roaming the Westphalian nature preserve Merfelder Bruch today. Further historical research will no doubt produce evidence of grazed woodland (*Hudewald*) and coppices.

As far as we know there are no comtemporary sources that can inform us as to what an Achterhoek "wold" looked like. However, a number of nineteenth-century sources concerning the Beekbergerwoud in the Central Netherlands (destroyed in 1871) allow us to visualize what densely forested parts of "wolds" were like. The following description is by the famous Dutch botanist and conservationist Victor Westerhoff (1969):

> The heart of the forest consisted of extremely tall Black Alders, often covered in ivy, interspersed with Ash trees. Circling it was a zone of Alder coppice. Various shrubs grew amidst them such as Blackcurrant, Bird Cherry, Guelder Rose, Common Dogwood, Spindle tree, Buckthorn and Common Hazel, and at the transitions to higher parts also Dog Rose, Holly and Common Juniper. In wintertime, the forest and adjoining heath were entirely inundated and only accessible to lumberjacks when it froze. In the summertime it was nigh impassable, bar the higher-lying hillocks where Oak and Beech grew. … The wealth of extraordinary moisture- and shade-loving mosses and mushrooms was astounding, especially on stools and the many rotting tree trunks that lay scattered throughout the forest.

Charcoal burning

In the *Achterhoek* there is evidence for wide-spread charcoal burning, but only during certain periods. The charcoal served as fuel in the production of iron (Groenewoudt, 2007). The archaeological dates available thus far cluster around the ninth century. This early phase may be related to the exploitation of newly gained domains by the new Frankish or Frankish-friendly authorities (The part of the Netherlands we are dealing with was incorporated into the Frankish empire during the late eighth and beginning of the ninth century AD). The oldest known historical reference dates to the seventeenth century (see below). Toponymic evidence for charcoal burning is wide-spread (Smalbraak, 2009). Martinet (1790) recounts that charcoal production was a common occupation in the *Achterhoek* in his day. According to him, the village Zieuwent was renowned for its charcoal production throughout the wider surroundings. Charcoal burning last took place at the start of the twentieth century at Zieuwent and Lievelde, and in the vicinity of Winterswijk (Heuvel, 1914; Hulshof, 1947; Weenink, 1983).

Early medieval charcoal is nearly 100% oak, not only in the *Achterhoek* but also in other sandy regions in the Netherlands. A 1648 source from Neede (Archive Province of Gelderland: Archief Hof van Gelre en Zutphen, inventory number 5227) speaks of the coaling of oak and alder. In the same area in the post-Medieval period all kinds of wood were used, but predominantly alder (Martinet, 1790). This change from oak to alder likely reflects a more opportunistic use of wood necessitated by wood scarcity, and also a shift towards the exploitation of low-lying areas, such as the heart of the *Achterhoek* region. During its initial phase, charcoal production was an upland occupation. In historical times it was a lowland activity.

Depositions

Numerous depositions of objects indicate that some peat bogs and marshes in Drenthe (Northern Netherlands) were used for 'ritual' purposes from prehistoric times until as late

as the sixteenth century (e.g. Van Vilsteren, 1998; Van der Sanden, 2004). These chiefly natural and generally watery places are designated as sacrificial or ritual landscapes by Fontijn (2002). So far, evidence for ritual uses of *Achterhoek* bogs is scarce. Three whole millstones from Roman times have been found in the Haaksbergerveen (Van Es and Verlinde, 1977). Millstones are found in bogs in Drenthe, too (Van der Sanden, 1998). An old mention of a find in the neighbourhood of Gorssel (Epse-Klembergen) is intriguing. A concentration of cobble stones (a cobblestone floor?) was found in a depression at the centre of (or near?) a barrow complex, as were a fragment of an oak pole and a cow horn (Pleyte, 1889; Van der Kleij, 2003). The scanty details handed down call to mind the famous Bronze Age sanctuary of Bargeroosterveld (Drenthe) (Waterbolk and Van Zeist, 1961).

Lowland reclamations

The empty lowland at the centre of the *Achterhoek* was situated on the border between the bishoprics of Utrecht and Münster. That clearance and colonisation took place there from the thirteenth century onwards is apparent from a reference in a source from 1265 to an estate *Furwalde* (Ter Kuile, 1964). The valley of the river Berkel that crosscuts these lowlands from east to west seems to have been an important gateway into the area. In the mid-thirteenth century the Count of Guelders ordered the digging of a drainage channel, the so-called *Gravengracht* (Count's Canal), to facilitate reclamation and probably also the transportation of peat. As a result, the pace of deforestation, drainage, peat cutting and reclamation accelerated. Large-scale peat exploitation never occurred in the *Achterhoek* though. The local population generally cut peat for personal use only. This small-scale activity can probably be put down to the generally thin peat layer and the still limited means of transportation. Turf extraction on the communal grounds initially took place via individual turf pits. When that began to cause problems from a water management point of view, laws were issued from the seventeenth century onwards to ensure a more regulated exploitation. In some areas, local farmers' communities and the lords of local manors systematically drew up parcels of land to be sold for the purpose of freeing them of peat, after which the newly exposed subsurface returned to the hands of the original owner. Most peat bogs had already vanished by the eighteenth century (De Rooij, 2006; 2008).

Deforestation

The area must have been deforested soon after the thirteenth and fourteenth centuries. Historical sources inform us that by the end of the seventeenth century there was virtually no woodland left that could be used as wood-pasture or for any other purpose in large parts of the eastern Netherlands (Dirkx, 1998; Bakker and Van Tweel-Groot, 1998). By that time open, ultimately virtually treeless landscapes had become wide-spread. The situation in a stretch of common land called Balkenbroek is typical. In AD 1555, alder wood was cut here for road building (De Graaf, 1948), and the last actual record of the sale of woodland products dates to AD 1651. Hereafter, the sources mention only meadows (Keunen, in prep). Parts of the *Achterhoek* certainly remained somewhat forested for a longer period of time (Slicher van Bath, 1949; Buis, 1985). This much can be deduced from the fact that *pannage* was practised until at least the middle of the eighteenth century and, again, during the First World War, near Winterswijk that is (Smalbraak, 2009). In the southern *Achterhoek* lay (and to some extent still lie) the Bergher, Didammer en Silvolder forests, located in elevated parts of the landscape. The Berghse woods had almost completely disappeared by 1800 as a result of overcutting

and the impact of war (Bijlsma *et al.*, 2001). Lower lying forests were not in much better condition. It is apparent from the sale of trees that the mostly low-lying lands belonging to local farmers' communities in the former county of Zutphen had until the seventeenth century "partially been covered with trees" (Roessingh and Schaars, 1996, 301). During the course of the eighteenth century, almost all of the remaining forest disappeared, at least in the eastern Achterhoek. This was the case not only for common woodland (used as *Hudewald*), but also — though presumably at a slower pace — open or delimited *Bannwald*, that was the property of lords and subject to stricter rules of use (Smalbraak, 2009). Basically, only woodlands that were or became private property had any chance of survival. There are exceptions though. The remnants of the large Zwillbroekerbos, a stretch of common woodland in the very east of the Achterhoek only disappeared around the middle of the nineteenth century (Fig. 8). The forest features prominently on sixteenth- and seventeenth-century maps of the region. In 1784, use rights to the forest were handed out to 42 persons. By 1821, that tally had risen to at least 173. The forest was used intensively for pasture, also illegally. This is doubtless the reason for the forest's disappearance (Tenhagen, 1975; Smalbraak, 2009). Until the end of the nineteenth century, another exception was formed by the so-called "elsweiden" ("alder meadows") and "bosweiden" ("forest meadows") that had up until then been used for charcoal production. These were presumably plots of alder coppices, or strips of alder woodland enclosing meadows. In 1885, people in Winterswijk recommend their removal, because they cannot see a future for charcoal burning (Boxem, 1914). Some "horsten", small sandy hillocks, long remained covered in woods, too. The well-known local historian H.W. Heuvel from Oolde near Laren describes what these hillocks looked like at the end of the nineteenth century: "… they are vast pastures, across which these hillocks

Fig. 8. Marshy and partly wooded common land on a 1599 map (Oeding, along the border between the Achterhoek and the Münsterland (after Smalbraak, 2009, map 1)

are dotted like islands, elevations covered in a wild vegetation comprising oaks, holly the size of trees, bracken, etc. like some Germanic forest" (Heuvel, 1927, p. 392). Nearly all these hillocks fell victim to levelling practices during the twentieth century. At least one *Achterhoek* lowland forest, namely the Meene near Ruurlo, was saved from clearing, although by 1900 only shrubs remained (Vriezen, 2007). The local forest soil attests to the uninterrupted presence of forest here over several centuries (Honnay *et al.*, 1999).

Iron extraction

An important new activity in the deforested lowlands was the extraction of bog iron ore for the purpose of iron production. Bog iron ore occurs locally here in the form of compact layers in the ground (Kuiper, 2008). This ore was formed in depressions under the influence of seepage. From the end of the seventeenth century onwards and into the nineteenth century, ore deposits were systematically mined on an ever expanding scale. The ore was transported to iron melting works in the region (Deventer, Ulft, Laag-Keppel and Terborg) to be processed into cast iron. These iron works were able to develop thanks to a unique set of specific regional circumstances, namely the availability of ore, cheap labour and the necessary sources of energy (charcoal and hydropower) (Schreurs *et al.*, 2009). The removal of iron ore was useful from an agricultural perspective, too, for it raised the productivity and value of the land (Kuiper, 2008). From the close of the nineteenth century, a lot of ore was transported to the German Ruhr region. The period between the seventeenth and nineteenth centuries was not the first time that the *Achterhoek* lowlands had been exploited for the procurement of bog iron ore. There are several indications of earlier exploitation between the ninth and the eleventh or twelfth century (Van der Velde and Kenemans, 2002; Joosten, 2004; Groenewoudt and Groothedde, 2008; Fermin and Van Straten, 2010). Large-scale ore extraction and iron production had been taking place as early as the third and fourth centuries a little to the north near Heeten, in an area comparable to the *Achterhoek* (Groenewoudt and Van Nie, 1995).

Rapid changes

The open, virtually treeless lowland landscape described earlier is the one we know from the earliest detailed maps that depict the entire area (late eighteenth century). Stable field boundaries, infrastructure and habitation remained scarce in the lowlands. Here modern field systems and planned infrastructure generally go back no further than the mid-nineteenth century, when all commons were sold, divided, reclaimed and transformed into planned landscapes (Demoed, 1987; Van der Woud, 1987). At the same time, settlement began to expand, and hedgerows and coppices were planted. In a sense this was a revival of previous conditions, since the scale of the landscape was reduced and woodland returned. However, many of these nineteenth-century introductions were short-lived, as they were removed again in the course of various twentieth-century reallotment episodes. Nowadays even fences and barbed wire are disappearing rapidly, as "factory farmers" prefer to keep their cattle indoors. The modern lowland landscape (Fig. 9) is characterized by openness and large-scale, highly intensive forms of agriculture, which has become possible thanks to efficient drainage. In recent years, the lowlands have assumed centre stage in modern agriculture, and in this respect they have — as "new land" — overtaken the old land. In a striking example of "the dialectics of progress", centre and periphery have become reversed.

It can be surmised, however, that in terms of biodiversity and ecological value a contrary development has taken place. As far as bio-

diversity is concerned, wetlands inherently often rank very highly (Westhoff and Den Held 1969; Schaminée *et al.*, 1995; Notenboom *et al.*, 2006). The quotes cited above speak volumes on that score. But little of that remains. The flipside of the agricultural success story is that on average; low-lying areas have likely lost more of their ecological value than have the uplands. The majority of the present-day nature reserves in Pleistocene sandy areas are located in the uplands. This is principally barren land that has escaped cultivation, as in many cases it was deemed not worth the effort.

Expanding settlement

Initially, the new settlement in the former lowland commons took on a dispersed character. An interesting phenomenon is numerous new hamlets and villages coming into existence in the nineteenth and start of the twentieth century. The background to and materialisation of this new "time layer" in the settlement pattern of the *Achterhoek* have hardly been researched thus far, unlike in the southern sandy regions (Thissen, 1993; Van den Brand and Douma, 2002; Janssen, 2005). According to Keunen (in prep.), we are dealing chiefly with organic growth around nuclei such as new churches, stations and agricultural cooperatives, mostly in low-lying areas. Planned settlements, like "veenkoloniën" (lit. peat colonies) (skirting the sandy soils of both the north and south of the Netherlands) and villages set up for the purpose of heath land reclamation (especially in the south) seem to be rare.

The new hamlets and villages are an interesting phenomenon from a social geographic point of view as well (Groenewoudt, in prep.). Newly formed "veenkoloniën" in the northern Netherlands were often inhabited by religiously like-minded groups. One has the impression that the same was the case for the Achterhoekse *Neusiedlungen* and that this is partly attributable to the strong "pil-

Fig. 9. The modern lowland landscape is characterized by openness and large scale, as well as highly intensive forms of agriculture (photo by Paul Dijkgraaf)

larisation" that characterized the Dutch social geographic landscape between 1853 (restoration of the Roman Catholic Episcopal hierarchy) and circa 1930 as a result of the emancipation of the Catholic faith after centuries of oppression. The new villages in the Achterhoek appear to have taken on a predominantly Catholic identity (Demoed, 1996). The rise of Catholic villages such as Kranenburg, Keienborg, Mariënvelde, Baak and Vierakker was usually the outcome of the founding of a church by prominent Catholic families. A good example of ecclesiastical patronage in the best medieval tradition is the role played by the noble family of Dorth tot Medler in the development of the village Kranenburg in no man's land close to the old village of Vorden (Lindeijer, 2001; Hartelman and Niemeijer, 2007).

Conclusion

In the introduction I stated that an ill-considered use of the concept of 'landscape' may have the unintended consequences of homogenizing and simplifying, potentially leaving fundamental aspects of landscape history overlooked as a result. Different historical developments may have occurred within one and the same "landscape", some of which may have escaped attention. As it turned out this was clearly the case in our study area: the Pleistocene sandy landscapes of the Netherlands. What the foregoing suggests is that while studying historical landscapes it may be worthwhile to look beyond nuclei of human settlement and activity (including research activity). In our study area from late prehistory onwards, and especially since the late medieval period, low lying areas developed in a fundamentally different way than the "upland" zones did, temporally and physically, and also socially (Groenewoudt, prep.). Things seem to have happened differently here, and — once things got moving — more rapidly. Over time, the contrasts resulting from the "diverging developments" mentioned in the subtitle of this paper have faded, but until quite recently the high-low dichotomy had lost little of its fundamental influence. This reality deserves more attention, not only in research but also when it comes to utilizing the resulting information to initiate and shape future developments, both here and in other areas. After all, contrasts make many things more exciting, including landscape.

References

Aa, A. J. van der. (1840). *Aardrijkskundig woordenboek der Nederlanden*. Tweede deel B, Gorinchem.

Arnoldussen, S., Fontijn, D. (2006). Towards familiar landscapes? On the nature and origin of Middle Bronze Age landscapes in the Netherlands. *Proceedings of the Prehistoric Society*, 72, 289–317.

Bakker, R. (2003). *The emergence of agriculture on the Drenthe Plateau — A palaeobotanical study supported by high-resolution 14C dating*. Bonn (Archäologische Berichte 13).

Bakker, M., Tweel-Groot, L. van. (1998). Historische referentiebeelden voor de bossen van Twente. Historische ligging, beheer en samenstelling *van bossen als referentie voor het huidige bosbeheer*. Wageningen (DLO-Staringcentrum Rapport 521).

Beek, R., van (2009). Reliëf in Tijd en Ruimte. Interdisciplinair onderzoek naar bewoning en landschap van Oost-Nederland tussen vroege prehistorie en middeleeuwen. PhD-thesis. Wageningen University, Wageningen.

Beek, R. van. (in press). Diversity rules. On late prehistoric settlement of the eastern Netherlands and the need of regionally specific models. *Proceedings of the Prehistoric Society*.

Bijlsma, R.J., Blitterswijk, H. Van, Clerkx, A.P.P.M., Jong, J.J. de, Os, L.J. van. (2001). *Bospaden voor bosplanten. Bospaden en — wegen als transportroute, vestigingsmilieu,*

refugium en uitvalsbasis voor bosplanten. Wageningen (Alterra rapport 193).

Bork, H.R., Bork, H., Dalgow, C., Faust, B., Piorr, H-P., Schatz, T. (1998). *Landschaftsentwicklung in Mitteleuropa. Wirkungen des Menschen auf Landschaften*. Gotha/Stuttgart.

Bork, H.R., Schmiedtchen, G., M. Dotterweich (Hrsg.) (2003). *Bodenbildung, Bodenerosion unu Reliefentwicklung in Mittel- und Jungholozän Deutschlands*. Deutsche Akademie für Landeskunde, Flensburg.

Bosch, F. ten, Groothedde, M., Groenewoudt, B. (1997). De archeologie van 'het Swormink'. Over bewoningsexpansie en — continuïteit in Colmschate (gem. Deventer). *Westerheem*, 46, 23–40.

Bourgeois, Q., Fontijn, D. (2008). Houses and barrows in the Low Countries. In: Arnoldussen, S., H. Fokkens (eds.). *Bronze Age Settlements in the Low* Countries (pp. 41–57). Oxford.

Boxem, W. (1914). *Iets uit de geschiedenis der Afdeeling 'Winterswijk' G.O.M. van Landbouw*. Geldersch-Overijsselsche Maatschappij van Landbouw afd. Winterswijk.

Buis, J. (1985). *Historia Forestis. Nederlandse bosgeschiedenis*. Wageningen (A.A.G. bijdragen 26).

Brand, R. van de, Douma, H. (2002). *Land van Cuijk. 33 dorpen en één stad*. Boxmeer.

Buishand, T.A., Velds, C.A. (1980). *Neerslag en verdamping*. Klimaat in Nederland 1. Uitgave KNMI, De Bildt.

Demoed, H.B. (1987). *Mandegoed schandegoed. De markeverdelingen in Oost-Nederland in de 19de eeuw*. Zutphen.

Demoed, E.J. (1996). *Kerkgeschiedenis van de Graafschap*. Kampen.

Dickinson, R.E. (1939). Landscape and society. *The Scottish Geographical Magazine* 55, 1–15.

Dirkx, G.H.P. (1998). Wood-pasture in Dutch Common Woodlands and the Deforestation of the Dutch Landscape. In: Kirby, K.J., Ch. Watkins (eds.). *The Ecological History of European Forests* (pp. 53–62). Walingford.

Dolman, A.J. (1988). Evaporation from an oak forest. PhD Thesis. Groningen University, Groningen.

Eliëns, F.M., Harenberg, J. (1984). *Middeleeuwse kastelen van Gelderland*, Rijswijk.

Es, W.A. van, Verlinde, A.D. (1977). Overijssel in Roman and Early Medieval times. *Berchten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek*, 27, 7–89.

Fermin, B., Straten, K. van. (2010). *De Agrarii Milites van Beinum. Archeologisch onderzoek onder erve Tricht in Beinum (gem. Doesburg)*. Doesburgse (Archeologische Publicaties 6).

Fontijn, D.R. (2002). Sacrificial landscapes. Cultural biographies of persons, objects and 'natural' places in the Bronze Age of the southern Netherlands, c. 2300–600 BC. Analecta Praehistorica Leidensia, 33–34, PhD thesis. Leiden University.

Graaf, J. de (1948). *Markeregt van Gooi. Overijsselsche stad-, dijk- en markeregten*. Derde deel, twintigste stuk. Vereeniging tot Beoefening van Overijsselsch Regt en Geschiedenis. Zwolle.

Groenewoudt, B.J. (2007). Charcoal Burning and Landscape Dynamics in the Early Medieval Netherlands, in Klapste, J., Sommer, P. (eds.). *Arts and Crafts in Medieval Rural Environment* (pp. 327–337). Proceedings Ruralia VI 22–29 September 2005, Szentendre, Hungary.

Groenewoudt, B.J. (in press). History Continuous: drowning and desertification. *Quarternary International.*

Groenewoudt, B.J. (in prep.). The social dimension of landscape versatility.

Groenewoudt, B.J., Groothedde, M. (2008). Houtskoolproductie op de Looërenk. In: Bouwmeester, H.M.P., H.A.C. Fermin, M. Groothedde. (Eds.). *Geschapen landschap. Tienduizend jaar bewoning en ontwikkeling van het cultuurlandschap op de Looërenk in*

Zutphen (pp. 276–283). 's-Hertogenbosch/ Deventer (BAAC-rapport 00.0068).

Groenewoudt, B.J., Haaster, H. Van, Beek, R. Van, Brinkkemper, O. (2008). Towards a reverse image. Botanical research into the landscape history of the eastern Netherlands (BC 1100 — AD 1500). *Landscape History*, 29, 17–33.

Groenewoudt, B.J., Nie, M. Van. (1995). Assessing the scale and organisation of Germanic iron production in Heeten, the Netherlands. *Journal of European Archaeology*, 3, 187–215.

Groenewoudt, B.J., Scholte Lubberink, H. (2007). Essen en plaggendekken in Oost-Nederland vanuit een archeologisch perspectief. In: Doesburg, J. van, M. de Boer, J. Deeben, B.J. Groenewoudt, T. de Groot (eds.). *Essen in zicht. Essen en plaggendekken in Nederland: onderzoek en beleid* (pp. 53–77). Amersfoort.

Hartelman, B., Niemeijer, F. (2007). *Cuypers op de Kranenburg. De basis voor een kerkdorp*. Vorden.

Heuvel, H.W. (1914). Over Pinus sylvestris. In: Heuvel, H.W. *Uit den Achterhoek*. Schetsen van land en volk (1928). Deventer.

Heuvel, H.W. (1927). *Oud Achterhoeksch boerenleven*. Deventer.

Hidding, M., Kolen, J., Spek, T. (2001). De biografie van het landschap. Ontwerp voor een inter- en multidisciplinaire benadering van de landschapsgeschiedenis en het cultuurhistorisch erfgoed. In: Bloemers, J.H.F. *et al.* (eds.). *Bodemarchief in Behoud en Ontwikkeling. De conceptuele grondslagen*. NWO, Van Gorcum Assen, 7–110.

Honnay, O., Hermy, M., Coppin, P. (1999). Effects of area, age and diversity of forest patches in Belgium on plant species richness, and implications for conservation and reforestation. *Biological conservation*, 87, 73–84.

Janssen, J. (2005). Vooruit denken en verwijlen. De (re)constructie van het plattelandschap in Zuidoost-Brabant (1920–2000). PhD thesis. Tilburg University, Tilburg.

Joosten, I. (2004). *Technology of early historical iron production in the Netherlands*. Amsterdam (proefschrift Vrije Universiteit / Geoarchaeological and Bioarchaeological Studies 2).

Keunen, L.J. (in prep.). *Eeuwig grensland. Een historisch-geografische studie van Salland en de Achterhoek*. PhD. Wageningen: Wageningen University and Research Centre.

Kleij, Gerre van der (2003). *Prehistorische grafvelden en tumuli rond Zutphen*. Zutphen (Zutphense Archeologische Publicaties 3).

Kolen, J. (1993). *The cultural biography of the landscape. A re-appraisal of history*, Leiden (paper presented to TAG, Durham 1993).

Kuile, G.J. ter (1964). *Oorkondenboek van Overijssel, regesten 797–1350, Volume II, 1250–1300*. Zwolle.

Kuiper, P.P. (2008). IJzeroer in de Oost-Nederlandse bodem. Bijdragen en Mededelingen. *Historisch Jaarboek voor Gelderland*, part XCIX (pp. 183–197). Arnhem.

Laak, J.C. ter (2005). *De taal van het landschap. Pilot toponiemen in de Berkelstreek*. Amersfoort (Rapporten Archeologische Monumentenzorg 123).

Lindeijer, M.J.F. (2001). Heersen of Weldoen? *De kerkelijke patronage van de familie van Dorth tot Medler, 1830–1890* (Virtus 2001).

Martinet, J.F.M. (1790). *Beschrijving van het houtskoolen branden.* In: *Volledige beschrijving van alle konsten, (...), 6e deel (De Houtskoolenbrander)*. Dordrecht.

Meihuizen, L.S. (1953). *De rekening betreffende het graafschap Gelre 1294–1295*. Werken uitgegeven door Gelre, no. 26. Arnhem.

Musch, J. (1991). Het Laat Paleolithicum en Mesolithicum van Centraal Overijssel (Een inventarisatie naar materiële cultuur en sitelokaties, met enkele opmerkingen over

de plaats van deze regio in de toenmalige bewoning van Noordwest-Europa). Master thesis Amsterdam University. Amsterdam.

Noomen, P.N. (1991). Koningsgoed in Groningen. Het domaniale verleden van de stad. In: Boersma, J.W. *et al.* (eds.). *Groningen 1040. Archeologie en oudste geschiedenis van de stad Groningen* (pp. 97–144 and 279–288). Bedum/Groningen.

Noomen, P.N. (1993). Middeleeuwse ontwikkelingen in Rolder dingspel. In: Borgesius, J.G., P. Brood, M.A.W. Gerding *et al.* (eds.). *Geschiedenis van Rolde* (pp. 83–111). Meppel.

Notenboom, J., Veen, M. Van, Wesselink, L.G. (2006). *Halting the loss of biodiversity in the Netherlands*. Bilthoven: Netherlands Environmental Assessment Agency.

Pleyte, W. (1889). *Nederlandsche Oudheden van de vroegste tijden tot op Karel den Groote*, *parts I en II: Gelderland*. Leiden.

Rackham, O. (1976). *Trees and woodland in the British landscape. The complete history of Britain's trees, woods and hedgerows*. London.

Roesingh, H.K., Schaars, A.H.G. (1996). *De Gelderse landbouw beschreven omstreeks 1825. Een heruitgave van het landbouwkundige deel van de Statistische beschrijving van Gelderland (1826*). Wageningen (Agronomisch-Historische Bijdragen, 15).

Rooi, C.-J. de (2008). Waar de venen groeiden: de Achterhoek. *Historisch-Geografisch Tijdschrift,* 26(3), 117–129.

Sanden, W.A.B. van der. (1998). Zware gaven. Maalstenen uit natte context in Drenthe, *Nieuwe Drentse Volksalmanak*, 115, 107–130.

Sanden, W.A.B. van der. (2004). Een 16de-eeuwse tinnen papkom uit Orvelterveen — naar een archeologie van de toverij, *Nieuwe Drentse Volksalmanak*, 119, 184–203.

Schaminée J.H.J, E.J. Weeda E.J., V. Westhoff. (1995). *De vegetatie van Nederland. Plantengemeenschappen van wateren, moerassen en natte heiden*. Uppsala.

Scholte Lubberink, H.B.G. (1998). De landschappelijke ligging van archeologische sites uit de steentijd en de vroege bronstijd in Noordoost-Twente, Provincie Overijssel. In: Deeben, J., E. Drenth (eds.). *Bijdragen aan het onderzoek naar de Steentijd in Nederland verslagen van de 'Steentijddag' 1* (pp. 111–122). Amersfoort (Rapportage Archeologische Monumentenzorg, 68).

Scholte Lubberink, H.B.G., Willemse, N.W. (2009). *Bornsche Maten-Grutterskamp, gemeente Borne. Een nederzetting uit de ijzertijd en vroegromeinse tijd*. Weesp (RAAP-rapport 1937).

Schreurs, J., J.W. de Kort (2009). *De oertijd van de DRU. Archeologisch onderzoek naar de resten van een ijzerhut en de bijbehorende watermolen op het voormalige DRU-fabrieksterrein te Ulft* (gemeente Oude IJsselstreek, prov. Gelderland). Amersfoort (Rapportage Archeologische Monumentenzorg 177).

Slicher van Bath, B.H. (1944/1949). Geschiedenis van de nederzettingen in de graafschap Zutphen (tot 1500). In: Slichter van Bath, B.H. (Ed.). Herschreven historie. *Schetsen en Studiën op het gebied der middeleeuwse geschiedenis* (pp. 119–171). Leiden.

Smalbraak, Joanneke. (2009). *Mooi (in 't) holt. Vijf eeuwen bomen, bos en hout in Nationaal Landschap Winterswijk*. Bachelor thesis Van Hall-Larenstein. Velp.

Spek, Th. (2004). *Het Drentse esdorpenlandschap. Een historisch-geografische studie*, PhD Thesis. Wageningen University, Utrecht.

Spek Th., L. van Exter. (2007). Een paleogeografische kaart voor het kerspel Raalte en Heeten. In: Velde, H. van der. *Germanen, Franken en Saksen in Salland. Archeologische en landschappelijk onderzoek naar de geschiedenis van het landschap en nederzettingsresten uit de Romeinse tijd en Vroege Middeleeuwen in centraal* Salland

(pp. 391–397). Amersfoort (ADC Monografie 1).

Stapert, D. (2005). Het Laat-Paleolithicum in Noord-Nederland. In: Deeben, J.J., E. Drenth, M. van Oorsouw, L. Verhart (eds.). De Steentijd van Nederland. *Archeologie*, 11/12, 143–170.

Svensson, E.. (2009). Consuming nature-producing heritage: aspects on conservation, economical growth and community participation in a forested, sparsely populated area in Sweden. *International Journal of Heritage Studies*, 15, 540–559.

Svensson, E., Gardiner, M. (2009). Introduction: Marginality in the preindustrial European countryside. In: Klapste, J., P. Sommer (eds.). *Medieval Rural Settlement in Marginal Landscapes.* Proceedings Ruralia VII 8–14 September 2007, Cardiff, Wales, UK (pp. 21–25). Turnhout.

Tenhagen, F. (1975). *Desammelte Abhandlungen Vredener Geschichte*, Vreden.

Thissen, P.H.M. (1993). *Heideontginning en modernisering, in het bijzonder in drie Brabantse Peelgemeenten* … 1850–1940, Proefschrift Nijmegen, Utrecht.

Velde, H.M. van der. (2004). Landschapsordening in de Vroege Middeleeuwen. Het ontstaan van het middeleeuwse cultuurlandschap in Oost-Nederland. In: Heeringen, R.M. van, E.H.P. Cordfunke, M. Ilsink, H. Sarfatij (eds.). *Geordend landschap. 3000 jaar ruimtelijke ordening in Nederland* (pp. 43–59). Hilversum.

Velde, H.M. van der, Kenemans, M.C. (2002). *Archeologisch onderzoek Zelhem, Provinciale rondweg N315*. Bunschoten (ADC-Rapport 120).

Vilsteren, V.T. van. (1998). Voor hutspot en de duivel; over de betekenis der 'zoogenaamde Spaansche legerpotten'. *Nieuwe Drentse Volksalmanak*, 115, 142–170.

Vriezen, E. (2007). *Een veranderend landschap. Verkennende studie naar de aanwezigheid van oud bos in Oost-Nederland*. Stageverslag Rijksdienst voor Archeologie, Cultuurlandschap en Monumenten, Amersfoort.

Waterbolk, H.T. (1982). Mobilität von Dorf, Ackerflur und Gräberfeld in Drenthe seit der Latènezeit. *Offa*, 39, 97–137.

Waterbolk, H.T. (1995). Patterns of a peasant landscape. *Proceedings of the Prehistoric Society*, 61, 1–36.

Wartena, R. (1989). 'Het graafschap in Hamaland en de hof Eschede in Terwolde'. In: *Bijdragen en mededelingen Gelre*, 80, 7–8.

Waterbolk, H.T., Zeist, W. van (1961). A Bronze Age sanctuary in the raised bog at Bargeroosterveld (Dr.). *Helinium*, 1, 5–19.

Weenink, B. (1983). *Herinneringen van een oude Achterhoekse boer*. Doesburg.

Werner, H.M. (1906). *Geldersche kasteelen. Historische, oudheidkundige en genealogische studiën*. Zutphen.

Westhoff, V., Held, A.J. den. (1969). *Plantengemeenschappen in Nederland*. Zutphen.

Woud, A. van der. (1987). Het lege land. De ruimtelijke orde van Nederland 1798–1848. PhD thesis. Groningen University, Amsterdam.

Notes

[1] This short article is an adapted version of a paper presented to PECSRL 24, Riga & Liepāja, 23–27 August 2010. I would like to thank Theo Spek (Groningen University) for stimulating comments on a draft version of this article, Michel Groothedde (archaeologist for the municipality of Zutphen) for fruitful discussions, Luuk Keunen (RAAP Archeologisch Adviesbureau) for allowing me to use unpublished data and Gerre van der Kleij (Grondtaal Translation Bureau) and Alistair Bright for improving the English.

[2] Such as a multidisciplinary approach, a long-term perspective, and a combination of physical and mental approaches, public participation and policy orientation (e.g. Kolen, 1993; Hidding *et al.*, 2001).

CLIMATE CHANGE AND THE CULTURAL HERITAGE OF DIKES

Michel A. Lascaris
Cultural Heritage Agency; Ministry of Education, Culture and Science
Smallepad 5, 3800 BP Amersfoort, the Netherlands
m.lascaris@cultureelerfgoed.nl

Key words: *dikes, cultural heritage, climate change and heritage protection*

The Netherlands have more than 17 500 kilometres of dikes and a significant amount of them is several hundreds of years old. An accelerated sea level rise, increased high-water discharge of Rhine and Meuse and more frequent torrential rainfall urges the need for large-scale maintenance. Driven by a promptness coming from a long tradition of coastal engineering, old dikes are subject of raising, profile changing or even dike-cutting. The magnitude of these measures and the machinery used suggests that this can have consequences for the heritage value of dikes. Conserving the existing situation is not an option for most of the dikes because of the threat of flooding. The heritage value of a dike which is still in use must therefore primarily be found in the recognizability of the history and not in its originality. In the Netherlands already much is done to protect dikes and to keep them recognizable but there are still questions to ask. In this paper I will give a short overview on this subject.

Introduction

Situated in the largest delta of Western Europe, one quarter of the Netherlands is below sea level (Fig. 1). The Dutch have had to learn to live with the water. Without the protection of our levees and dunes, more than half of the country would be flooded. Due to the climate change large-scale dike maintenance is necessary which can have consequences for the cultural heritage value of the dikes which are still in use. A significant amount of these dikes is several hundreds of years old and valuable from a heritage view of point. However, dikes are functional elements and the fact that they are reinforced and therefore change is nothing new. Through the centuries, dikes are strengthened regularly to keep them safe.

There are numerous different subtypes, but three main types of dikes can be distinguished. Protection against direct flooding from the rivers and the sea is provided by a system of 3200 km of primary dikes. The area that is protected by a linked system of primary flood protection structures is called a dike-ring area. Within a dike-ring, a large network of smaller secondary dikes exists, which protect the land against flooding from the canals, lakes and rivers within the dike-rings. A third group of levees can also be found within the dike-rings but has lost its function as an embankment. These dike relicts can be very valuable from a heritage point of view. The group of dike relicts is not directly affected by the climate change and they are, therefore, beyond the scope of this paper. Further we will describe how the cultural heritage value of the still functioning dikes in the Netherlands is protected. After an historical outline in which account is given of changes in flood risk management and the consequences of the actual climate change, we will focus on

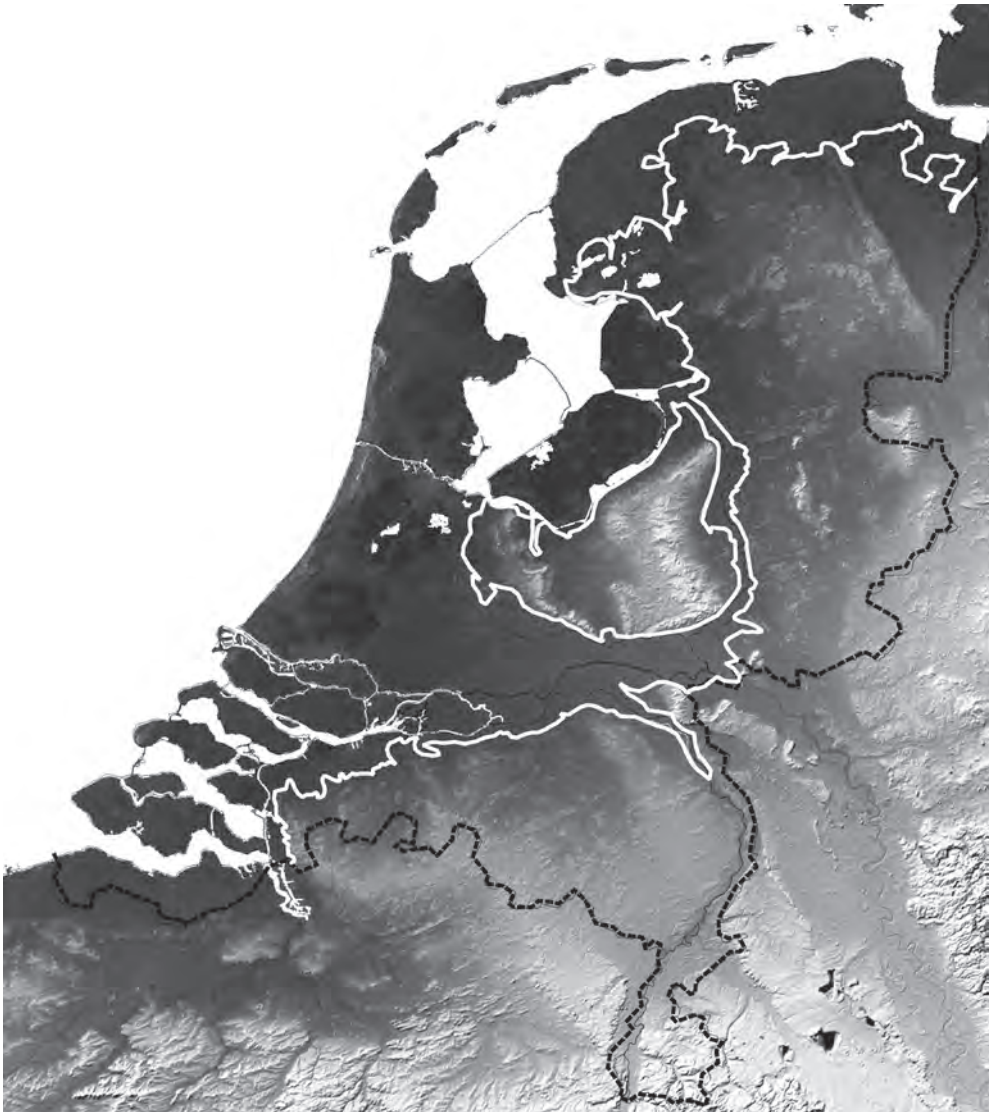


Fig 1. A quarter of the Netherlands is situated below mean sea level (white line). Without flood protection structures, about half the country would be flooded during storm surges at sea or high discharges in the rivers

the cultural heritage value of dikes and the way these values are protected.

Historical outline

The threat of flooding is not a new phenomenon. Already during the Middle Ages, subsidence of the land caused (relative) sea level rise. Since the reclamation and exploitation of the fenlands in the 10th to 12th century, the groundwater level dropped, starting a process of continuous land subsidence in the coastal zone (Van Asselen, 2010). The

Fig. 2. Along the dike deep pools have been scoured out by water swirling through breaches which still can be seen in the landscape. Zomerdijk. Photo: Henk Bol. Province Utrecht

rise of the relative sea level did gradually reduce the capacity of the rivers to discharge their water. At the same time, an increased peak discharge of the Rhine and Meuse rivers took place, connected to large scale upstream deforestation (Ward *et al*., 2008). The inundations and floods that followed had serious consequences. Therefore, huge efforts were undertaken to create defenses against the water. In many parts of the country dikes were build (Van der Ven, 2004). The threat of flooding decreased and man started to settle on previously uninhabitable places. With the continuing land subsidence and increasing river high waters, dikes needed to be maintained at higher levels, requiring growing efforts in construction and maintenance.

Forced by the recurring threat of flood devastation, the Dutch were continuously improving their dike building techniques and, recognizing the profit of good organized flood risk management, regional water authorities, the so-called waterschappen (water boards) were established. Yet the danger of inundation was not over. Despite the progress made in flood risk management, the Netherlands have a long history of dike breaches and flood catastrophes (Fig. 2). Thousands of acres of fertile land have been inundated for shorter or longer periods, and many people died. In the present landscape numerous pools along the dikes and arc-like sections recall the many dike bursts.

In the 19th and especially in the 20th century, several ambitious large scale projects were realized, such as the reclamation of the

Fig. 3. Deep-sea inlets and large inland saltwater lakes such as the Zuider Zee have been cut off from the sea, reducing the country's coastline by hundreds of kilometres

Haarlemmermeer (170 km^2), the reclamation of the IJsselmeerpolders (1417 km^2), the building of the Afsluitdijk (Enclosure dike) and the Delta works. The Afsluitdijk is an enclosure dam, shortening the coastline with over 600 kilometres. The Delta works are a project with several dams and barriers to protect the South western province of Zeeland with another 640 km (Fig. 3).

The realization of these projects increased confidence and the feeling of safety, resulting in the building of infrastructure, houses and other constructions in low laying places. Therefore, both the population and economic value behind the dikes have substantially increased. Consequently, the potential impact of dike breaches is becoming progressively more severe, which changed the attitude towards flooding radically. Less than two hundred years ago, people where convinced that human influence on nature was limited and flood catastrophes were to some extent an act of God. Nowadays even the smallest dike breach is unacceptable.

The 2007 Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) indicates that during the 21st century the global surface temperature is likely to rise. An increase in global temperature will cause sea levels to rise and will change the amount and pattern of precipitation. Other likely effects of the warming include more frequent occurrence of extreme weather events. These effects will increase the probability of flooding and hence dike reinforcements are needed to maintain the

safety standards as required by the Dutch Delta Act on water safety. For over 650 km of the larger dikes was in 2007 concluded that the threat of floods was acute. Reinforcement of these dikes started soon after that and a significant part of those 650 km is already realized. The fact that dikes change is nothing new. Through the centuries, dikes are reinforced regularly, but the scale and velocity of the current dike projects are without precedence. With modern equipment even robust structures like dikes can change rapidly. It is obvious that this can have consequences for the heritage aspects of dikes.

However, the present maintenance of the weak (parts of the) dikes is only the beginning. Many dike building projects will follow in the years to come: recent resampling of meteorological data of the Rhine used in a new hydrological model to simulate long discharge series makes clear that the currently implemented and proposed dike building measures, seem inadequate to cope with the increased flooding probabilities (Te Linde *et al*., 2010).

Which aspects of old dikes are valuable?

Throughout the history, dikes have changed due to reinforcements that were made regularly. The actual dike projects will change the dikes as well. For the protection of the heritage value of old dikes it is necessary to define which aspects of these dikes are valuable. Is it solely the location, is it the archaeological information hidden within and under the dikes, is it the scarcity or the authenticity?

Dikes have an important information value. Especially for the older dikes almost no information can be retrieved from written sources. Through coring or trenching, archaeologists can collect data concerning age and construction of the current dike and its predecessors. In addition unique archaeobotanic remains can be found beneath the dike, which give information about the landscape and land use before dike building took place (Van Geel *et al*., 1983).

Scarcity is another heritage aspect of dikes. Scarcity has a relation with the Informational Value and typological aspects of dikes. In the Netherlands there are several thousand kilometres of dikes, yet a national overview is still lacking in order to classify dikes as elements of cultural heritage. The criterion of scarcity can therefore only be used on a local scale or for obvious cases such as a dike along the southern Oosterschelde which has a characteristic and unique saw tooth shape (Baas *et al*., 2001).

From a heritage point of view, authenticity can be of importance. One of the meanings of authenticity is originality, but after centuries of dike maintenance hardly any dike has its original form. Theoretically dikes which lost their dam-function long ago can be in an original condition but in practice it is almost always unclear how much of a dike disappeared over the centuries. After losing their primary function, many dikes were levelled (Nijhof, 1996; Mijnssen-Dutilh, 2011). The authenticity of a dike must therefore be found in the recognizability of the history and not in originality. Arc-like sections and numerous pools along the dike and characteristic elements like an historical cladding, old sluices and pump houses are reminders of the fact that every dike has its unique history.

Protecting dikes

In the Dutch policy on dikes there is consensus that the safety demand is the primary function but also that this always should be considered in relation with other aspects like cultural heritage and nature. Until the Nineteen Eighties, dike building in the Netherlands was dominated by civil engineers used to build dikes without taking into account cultural heritage values. Nowadays, things have changed and there are several instruments to ensure that the

heritage aspect of the dikes is correctly handled. A limited number of dikes are listed monuments. The status of a listed monument does not freeze the situation but gives extra protection for information and authenticity values of a dike. In the Netherlands there are three administrative levels involved in listing monuments: state, province and municipality. Only one dike — the Leppedijk in the province of Friesland — is listed as a national monument. Several elements on, or in, dikes such as the Steenendijk — a 800 m long stone brick wall — at the outside of a dike between Zwartsluis and Wijhe and historical sluices like the Stevin- and Lorenzsluizen in the already mentioned Afsluitdijk are listed as national monuments, but not the dikes themselves. On the provincial level two out of the twelve Dutch provinces have listed their own monuments but only Noord Holland used the opportunity to protect dikes. The best known protected dike is the West Frisian Ring Dike. This 126 km long encircling dike is an important structuring element in the landscape. According to the monuments act of the province damaging the dike without permission is an offence. Furthermore the Province has developed a Beeldkwaliteitsplan (Visual Quality Plan) for the ring dike as an instrument to protect the dike in the spatial planning system and to preserve the openness of the landscape (Olthof *et al*., 2009). However, no clear definitions are given for what could be considered as damage to the dike and also openness can interpreted in a flexible way for in 2009 several wind turbines were build in the vicinity of the dike (Johnson, 2011).

In addition to a monument status protection the cultural heritage aspects of dikes can be guaranteed by defining requirements for design and execution of dike reinforcement projects. This can partly be done by an Environmental Impact Assessment (EIA), often combined with a benefit-cost analysis. In an EIA, strict regulations for noise, air quality and nature protection are leading but heritage aspects can also be included in the assessment. Usually a dike reinforcement project is initiated by a water board or by Rijkswaterstaat (Directorate-General for Public Works and Water Management). The appropriate authority is the Province. The Netherlands commission on EIA's inventories the available information. When there is not enough information available an assignment can be given for additional study and reporting. Until April 2011, an EIA in the Netherlands was only obliged for the larger dike projects, exceeding five kilometres. Smaller projects needed no EIA, which was not in accordance with EU Treaty principles. Therefore, the Dutch rules were changed. Now for every dike project the appropriate authority can decide if an EIA is mandatory or not.

Although the EIA was already practiced in the 1990s, almost no publications are available on the effectiveness of the assessments (Van Dijk, 2008). This effectiveness from a heritage point of view seems to vary greatly. Sometimes funds are lacking to bring back even the old cladding on a reinforced dike. In other cases it turns out to be possible to limit reinforcement measures to the waterside of the dike, resulting in the preservation of the original dike contours at the landside.

Some instruments can give protection to the heritage aspect of dikes indirectly (Van Veldhoven, 2009). Examples are dikes which are property of natural heritage organizations, National Landscapes or belong to listed town characters. The effectiveness of these instruments in the protection is not yet analyzed, although there are surely conflicting interests: for instance between the recognizability of historical dikes and the targeted biodiversity.

The first steps in the direction of preservation of historical dikes are to asses, identify, compile and map them. On a national level a limited set of historical dikes of supra-regional importance are defined and mapped

out (Baas *et al*., 2001). A much larger set of dikes can be found on provincial heritage maps. Almost all the provinces have such a map. Combining these maps give a more detailed and complete overview of historical dikes. The problem is that comparison of the provincial maps and their impact is rather complicated, since there are significant differences in the used selection criteria, rating, accessibility, cartographic representation and use by the provincial policymakers.

Publicity and support

In recent years, several actions were taken to increase public support for the heritage aspect of the dikes. Dikes usually have a prominent position in regional and national canons. In the province of Noord-Holland, for example, lectures and excursions were organized on this topic. The results of archaeological fieldwork on dikes are regularly presented to the public on open days. These excursions, lectures and open days are usually well visited and widely reported in the media. Also the Internet is intensively used to inform the public about dikes and dike projects.

Another way to inform the general public of the cultural value of dikes is presenting reconstructions of long gone dike building techniques. Up to the 18th century, many dikes had a construction of wood and sea grass on the seaside for protecting the dike against the direct force of the waves. Because of a plague of the shipworm — a wood coring bivalved shellfish (*Teredo navalis*) — hundreds of kilometres of poles, wooden cladding and sea grass had to be replaced by a much more expensive cladding of stone which has changed the appearance of these dikes notably. To demonstrate to the public how the old dikes looked like, part of a sea grass dike along the former coast of Wieringen island was reconstructed in 2001. Another example is the reconstruction of part of the wooden pole clad-

Fig. 4. The Palendijk (pole dike) of Bunschoten, June 2011. Photo by the author

ding at the dike of Bunschoten in 2007 (Fig. 4). The reconstructions are explained with texts and illustrations on billboards.

Tasks for the future

In summary, we can conclude that dike building measures initiated by climate change can have a negative effect on the heritage aspects. Simultaneously the conclusion is that already much is done to improve the safety of dikes while conserving these aspects. A weak point remains: still not much is known of the effectiveness of the instruments used for protecting historic dikes. Another point is that a national overview is still lacking in order to classify the dikes as elements of cultural heritage. The Cultural Heritage Agency is currently working on this subject.

References

Baas, H.G., Burm, P.P.D., Ligtendag, W.A., Vreugdenhil, V. (2001). *Ontgonnen Verleden*. Hoorn.

Commissie voor de milieueffectrapportage (2008–2010): Jaarverslagen. Commission EIA, Annual Reports. http://www.commissiemer.nl/zoeken?q=jaarverslagen+uitgever%3A%22commissie+voor+de+milieueffectrapportage%22

Johnson, L. (2011). The west Frisian dyke: from monument to living landscape. Unpublished report.

Lintsen, H. (2002). Two Centuries of Central Water Management in the Netherlands. *Technology and culture*, 43, 549–568.

Mijnssen Dutilh, M. (2011). *Een vallei vol water: waterschapskroniek Vallei & Eem 1616–2011.* Amersfoort.

Nijhof, P., Prins, L., Van Rijn, D. (1996). *Dijken in Nederland.* Rotterdam.

Olthof, B., Van Boheemen, Y., Danner, H., Hooiveld, M., de Vries, D. (2009). *BeeldkwaliteitsplanWestfriese Omringdijk.* Haarlem.

Projectbureau Belvedere (Ed.) (2010). *Peilwaarden. Omgaan met erfgoed in actuele wateropgaven.* Utrecht.

Te Linde, A.H., Aerts, J.C.J.H., Kwadijk, J.C.J. (2010). Efectiveness floodmanagementmeasures on peakdischarges in the Rhine basin under climate change. *Journal of Flood Risc Management*, 3, 248–269.

Van Asselen, S. (2010). *Peat compaction in deltas. Implications for Holocene delta evolution.* Netherlands Geographical Studies, 395. Utrecht.

Van Dijk, J.M. (2008). *Water and Environment in Decision-making. Water Assessment, Environmental Impact Assessment, and Strategic Environmental Assessment in Dutch Planning. A Comparison.* Wageningen.

Van Geel, B., D.P. Hallewas, J.-P. Pals (1983). A Late Holocene deposit under the Westfriese Zeedijk near Enkhuizen (Prov. of Noord-Holland, The Netherlands): Palaeoecological and Archaeological Aspects. *Review of Palaeobotany and Palynology*, 38, 269–335.

Van der Ven, G.P. (1993). *Man-made lowlands. History of water management and land reclamation in the Netherlands.* 4th ed. Utrecht: Matrijs.

Vink, A., Steffen, H., Reinhardt, L., Kaufmann, G. (2007). Holocene relative sea-level change, isostatic subsidence and the radial viscosity structure of the mantel of northwest Europe (Belgium, the Netherlands, Germany, southern North Sea). *Quaternary Science Reviews*, 26, 3249–3275.

Ward, P.J., Renssen, H., Aerts, J. C. J. H., Van Balen, R. T., Vandenberghe, J. 2008: Strong increases in flood frequency and discharge of the River Meuse over the late Holocene: impacts of long-term anthropogenic land use change and climate variability. *Hydrology. Earth System Science*s, 12, 159–175.

COMPARISON OF THE DEVELOPMENT OF AGRARIAN LANDSCAPES BASED ON REGIONAL INVENTORIES OF THE SOUTHERN BALTIC REGION AND NORTH FRISIA

Dirk Schleinert*, Ludwig Fischer, and Haik Thomas Porada*****
* Landeshauptarchiv Sachsen-Anhalt, Hegelstraße 25, 39104 Magdeburg, Germany
schleinert@lha.mi.sachsen-anhalt.de
** Benkel 15, 28870 Ottersberg, Germany
fischu.benkel@t-online.de
*** Leibniz-Institut für Länderkunde e.V., Schongauerstraße 9, 04329 Leipzig, Germany
H_Porada@ifl-leipzig.de

Key words: *reviews and presentations of regional geography in Germany, landscape analysis, reader-orientated knowledge transfer*

The following article aims to give insights into the possibilities of reviewing and presenting regional geography according to the Leipzig Model, using two regional case studies. These regions are in the southern Baltic region and the (German) south-eastern coast of the North Sea. What is the Leipzig model? Reviews and presentations of regional geography, the results of which have been published since 1957 in the series of volumes entitled "Werte der deutschen Heimat" (Values of the German homeland), can look back on a history of more than 100 years. Originally, this was a project of geography teachers in the state of Saxony, which was also aimed at readers outside the school system after the Second World War. This new direction in terms of readership and the fact that the series occupied a niche market in East Germany for more than three decades has resulted in the "Werte der deutschen Heimat" series being among the best selling regional study publications in German-speaking countries up to the present day. Well in excess of a million copies have been printed of the 71 volumes published to date. Since 2000, the series has been published by the Leibniz Institute for Regional Geography (Leibniz-Institut für Länderkunde, IfL) and the Saxony Academy of Sciences in Leipzig under the new name "Landschaften in Deutschland" (Landscapes in Germany). At the IfL the series is seen as an important element in reader-orientated knowledge transfer.
The aim of the editors and authors of this series is to make available to a wider public knowledge about the origin and the present-day development of selected landscapes in Germany. The project is accompanied by an advisory scientific committee. Results of the surveys of the respective landscapes are published in volumes furnished with abundant high-value map and pictorial material, which are addressed equally at experts and a lay public and can also be used for more intensive reading on journeys and excursions.

Introduction

Well-founded study of regions is based on an interdisciplinary analysis of cultural landscapes, in which the spatial natural, economic and cultural characteristics of a region are portrayed in their origin and in their present-day existence. In this way not only aspects of research but also of knowledge transfer are considered. Selected objects of the landscape within a broad spectrum between natural elements and settlements are described using actual results of research and are recorded according to the relative position of their value for the cultural landscape. Finally on a regional level general statements can be made on natural endowment and the development of the landscape as well as on economic and social structures and their correlation. As a result of the variety of methods of the expert fields of research involved, an intensive exchange takes place between the disciplines, whereby in particular geography as a cross-section phenomena in them which are recorded are orientated to actual spatial developments. The particular concern of the project is to investigate such landscapes, which in the perception of the population are clearly defined historically or by nature. In this way the regional study survey makes an important contribution to the discussion on the value of cultural landscapes and their respective social importance, for example for formation of a regional identity (Brogiato and Porada, 2008).

Although the previous projects focused on Central Germany, i.e., the states of Saxony, Saxony-Anhalt and Thuringia, the series has been an all-German project since German reunification (Fig. 1). This also explains why two projects could be carried out in North Germany during the last few years. Volume 71, *Die Halbinsel Fischland-Darß-Zingst und das Barther Land* (The Fischland-Darß-Zingst Peninsula and the Barth Region) was published in December 2009 (Billwitz and Porada, 2009). Volume 72, *Die Halbinsel Eiderstedt* (The Eiderstedt Peninsula) will be published in a few months' time (Steensen, Panten and Porada, 2012). In this way it has been possible to subject small landscapes in the states of Mecklenburg-Western Pomerania and Schleswig-Holstein to an interdisciplinary cultural landscape analysis parallel to another and it is worth comparing them for several reasons. In the following we will concentrate on the evidence for the development of the agrarian cultural landscape in the Middle Ages and in early modern times. With this study we have albeit chosen only a small section out of the great spectrum of themes which are dealt with in these volumes. However, this appears particularly interesting to us, as in this way a comparison of two very different agrarian landscapes is made possible. The natural preconditions for the development of the cultural landscape as well as the social processes, which took place since the Middle Ages on the (German) south-east coast of the North Sea and the south coast of the Baltic Sea differ from another in very marked form. Even today, the settled landscape, as well as the agrarian structure, shows these differing developments. In a first step we will establish the basic agrarian historical processes on the south Baltic coast over the past 800 years. In a second step the village and field forms of this region will be portrayed in an exemplary way as evidence of these processes, which made out of this region of peasant colonization the central area par excellence of large estates east of the river Elbe. In a third step using the example of the Eiderstedt peninsula (in western Schleswig-Holstein) a completely different development in a coastal region, permanently threatened by the storm floods of the North Sea, will be described. The special house and farmstead forms there up to the present day are testimony to the particular form of agricultural organization which arose, protected by extensive dyke works. For the first two steps approaches from research methods will be used which go back to the

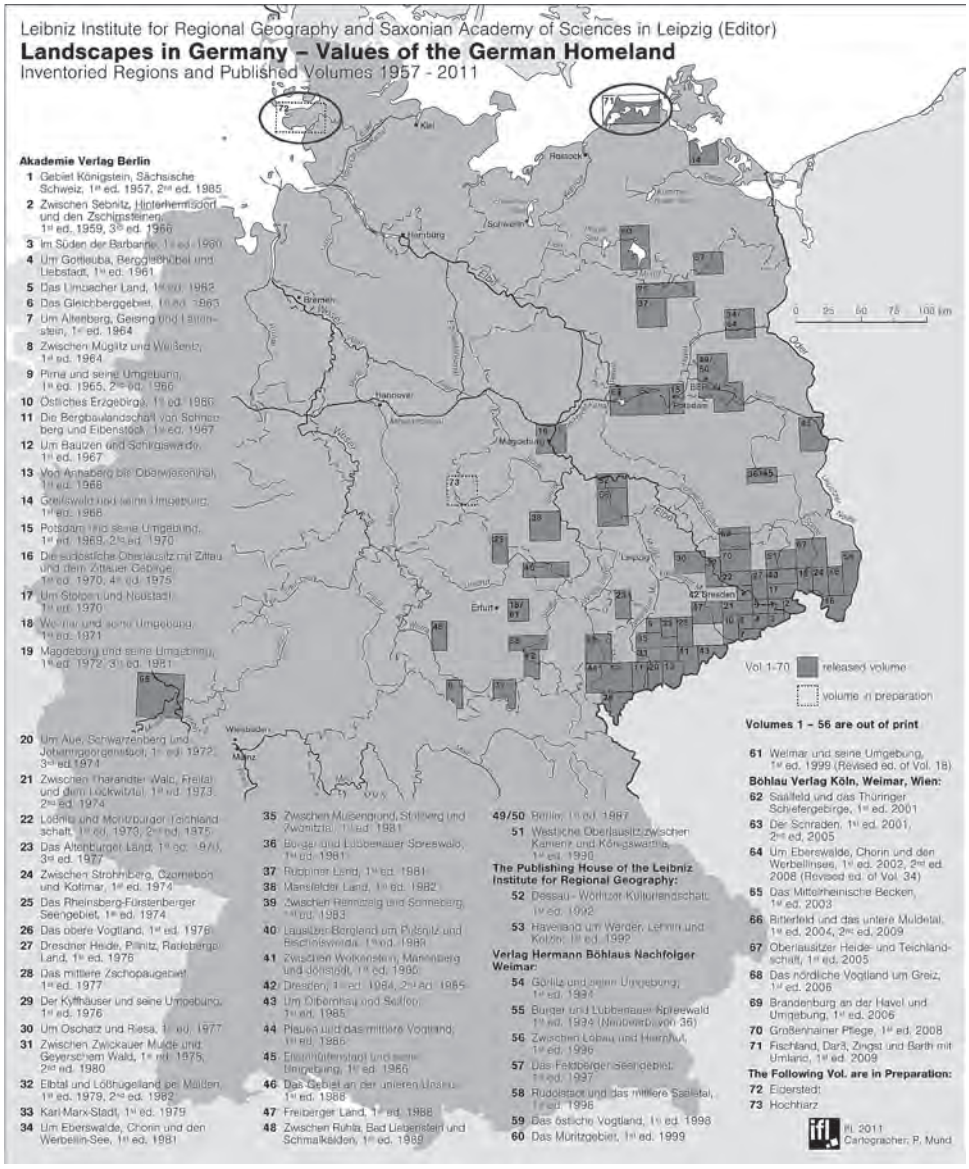


Fig. 1. Overview of the volumes in the series of books "Landschaften in Deutschland — Werte der deutschen Heimat" (Landscapes in Germany — Values of the German homeland) published between 1957 and 2011. Draft: Patricia Mund/Leibniz-Institute for Regional Geography Leipzig

Greifswald school of Historical Geography. There in the first half of the 20th century Fritz Curschmann developed an extensive reconstruction of the cultural landscape and agrarian historical conditions for earlier periods on the basis of the Swedish Territorial Survey of Pomerania carried out from 1692 to 1709 and also by intensive study of high

and late medieval charters. For the third step the over 40 years' old tradition of research on farm houses in North Frisia and Dithmarschen can be relied upon. In particular attempts to preserve the buildings by a grassroots' movement aimed to set intensive research and its effective presentation in public against the accelerated loss of these witnesses of a cultural landscape.

Development of agriculture in the southern Baltic region since the High Middle Ages

From the beginning of the 13th century, the German occupation, settlement of land and colonisation triggered a fundamental change in economic and social conditions. The introduction of the Hide Constitution ('Hufenverfassung') based on the Western European pattern went hand in hand with the change in agriculture towards what became almost entirely a grain monoculture, which dominated the southern Baltic region until the start of the 19th century. Mainly rye, barley and oats were cultivated. Based on the state of the art at that time, farming was really quite intensive. More extensive methods of utilisation dominated only in the coastal regions and on the Fischland-Darß-Zingst peninsula where natural conditions were not as favourable. In most cases the fields were not divided into hides because they were not located in large interconnecting areas and, especially on the peninsula, the extensive grassland areas were used as pastures and meadows. Apart from this, as in all coastal regions, fishing played a significant role well into the 20th century. This means that these villages are better described as fishing rather than farming villages or as combined fishing and farming villages (Bütow, 1998, passim; Benl, 1999, 48 f.). Along with the Hide Constitution came the manorial system or lordship as it is also known, which was to define rural society as a second basic element until the early 19th century. During settlement and

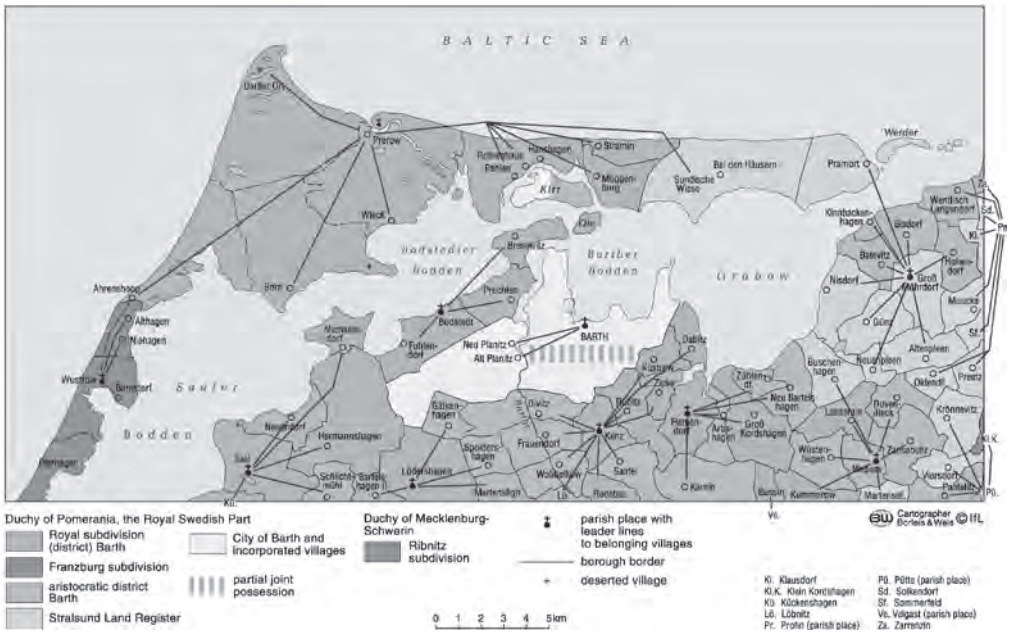


Fig. 2. Administrative (vested rights) and church structure around 1780. Draft: Dirk Schleinert/Borleis & Weis

occupation the land was distributed among the lords, who then acted as locators to promote further colonization and the settlement of farmers. The settlers paid various forms of rent to use the land granted to them by the lords. This could be natural and cash payments as well as work, generally described as socage (Fig. 2). The estate owners were the territorial lords, especially the resident Slav nobility as well as the German nobility who came to the region, but they also included religious institutions and the newly formed municipalities, their institutions and citizens (Benl, 1999, 60 ff., 65 ff.; Schleinert, 2005, 23 f.). A new element in the socio-economic structure evolved with the foundation of towns based on German law. In the area under investigation and the surrounding area this was exclusively based on Lübeck law. The towns took over the function of regional craft and trade centres, although some of them, such as Stralsund, very quickly achieved supra-regional importance. Colonization of the flat land and the foundation of towns and cities are very closely connected in terms of the economy. Apart from intermediary trade with many other goods, the rise of the Hanseatic cities from the late 13th century was especially due to the trade in grain from the newly formed grain-growing regions in their hinterland (Fritze, 1976, 29 ff.). From the 16th century, the manorial system developed in several phases into a form of estate ownership in which the manorial self-sufficient economies (manors, outlying estates) became the decisive economic element that everything else was subordinate to. Favourable factors for this development included the wars in the 17th century with their side effects, decline in population and the destruction of material values (buildings, equipment, cattle). In the18th century, traditional estate ownership, i.e., managing the estates, was completely shaped by labour services from the dependent population. However, in the second half of the 18th century, especially on the properties of private land owners there began a phase where farming was discontinued. This almost led to the complete disappearance of peasantry (Schleinert, 2000, 214 f.). In the 19th century, farming villages and domain farms existed only on properties of the sovereign rulers (Grand Dukes of Mecklenburg and Kings of Prussia). In the 19th century, the grain monoculture was supplemented by root crops; initially potatoes, followed by sugar beet, which grow especially well on the heavy soil. When the manorial-peasant conditions ceased and after enclosure, farming was dominated by estates increasingly operating according to capitalist production methods (Schleinert, 2005, 33).

Types of fields and villages on the Fischland-Darß-Zingst peninsula and the neighbouring mainland

From the names of towns and villages it can be seen that the region is made up of former Slav and German settlements from the time of colonization. It can be assumed that the Slav settlements also experienced far-reaching changes during the expansion in the 13th and early 14th centuries. In particular, they were adapted to suit the new types of management (polyculture) and the corresponding cadastral constitution (hide constitution). Without doubt it can be assumed that all places with the German name-roots “dorp/dorf” and “hagen” belong to the newly founded villages that were made arable by clearance or formed by merging small Slav settlements. They are especially found on a broad strip two to almost ten kilometres long south of the Bodden coast (shallow bay coast) on the mainland part of the area under investigation. There one can especially find the loamy soil of the moraine land. It was first possible to farm this heavy but fertile soil with the superior ploughs brought by the German colonists. Agriculture was the main source of revenue in this region. But there were also a number of places without hides.

These were primarily located along the Bodden coast, both on the mainland and on the Fischland-Darß-Zingst peninsula. These were probably areas to which the Slav population, who had preserved their conventional form of economy, retreated. Indeed in fact Slav place names dominate and it can be assumed that there was quite intensive Slav settlement in this area. On the other hand, one also finds place names with "dorp/dorf" and "hagen' that suggest new settlements. This can indicate that farming was carried out without units being divided into hides. But the reason for this would probably have been the poor quality and less fertile soil — generally sand and sandy marsh. Apart from this, in these coastal settlements farming was probably just a secondary source of income in addition to the more widespread fishing (Fig. 3). Some difficulties arise when it comes to determining the specific types of villages and open field systems. While the Swedish land records from 1695/96 give us an early and, at the same time, extensive range of maps, these maps have only limited value as descriptions of the types of open-field systems. Generally, they show only the different agricultural areas as such but do not describe the internal subdivision. In one farming village of the Barth Subdivision the fields, meadows, pastures and other areas are entered, but the fields belonging to the individual farms cannot be determined. However, there is a more accurate description of what the fields were used for and of the crop rotation. In many cases, the relatively fertile soil of the hinterland allowed a modification of the three-field crop rotation to a form of five-field rotation. These differ from the coastal regions with the poorer sandy soil with no distinct land-use planning. Another reason for the unregulated field systems could be the extensive abandonment of villages in the 17th century and the fact that farming was recommenced only after a long period of abandonment (Curschmann, 1948, passim; Wegner, 1968,

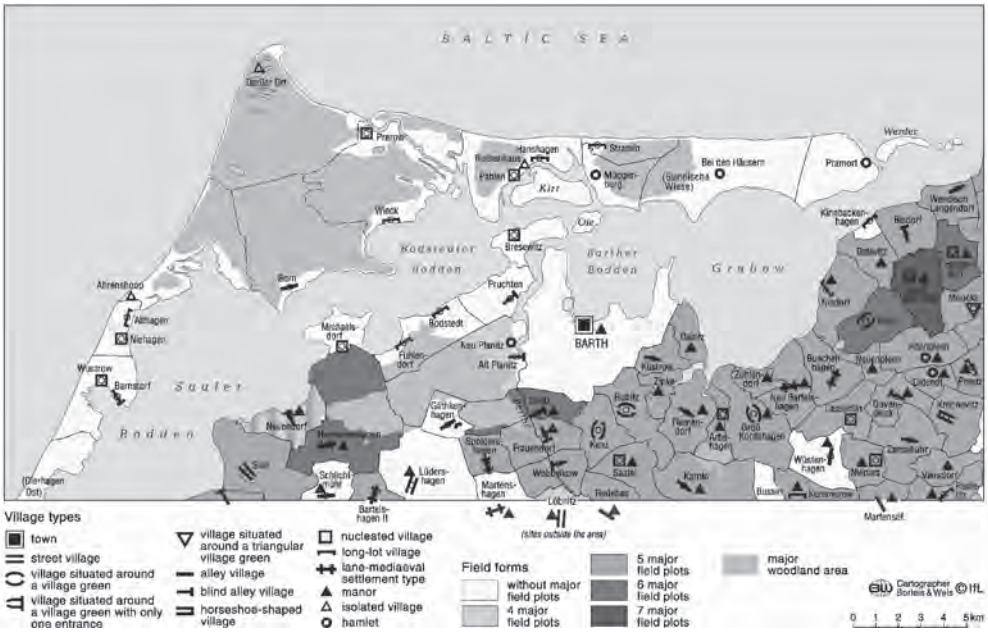


Fig. 3. Forms of village and field distribution around 1700. Draft: Dirk Schleinert/Borleis & Weis

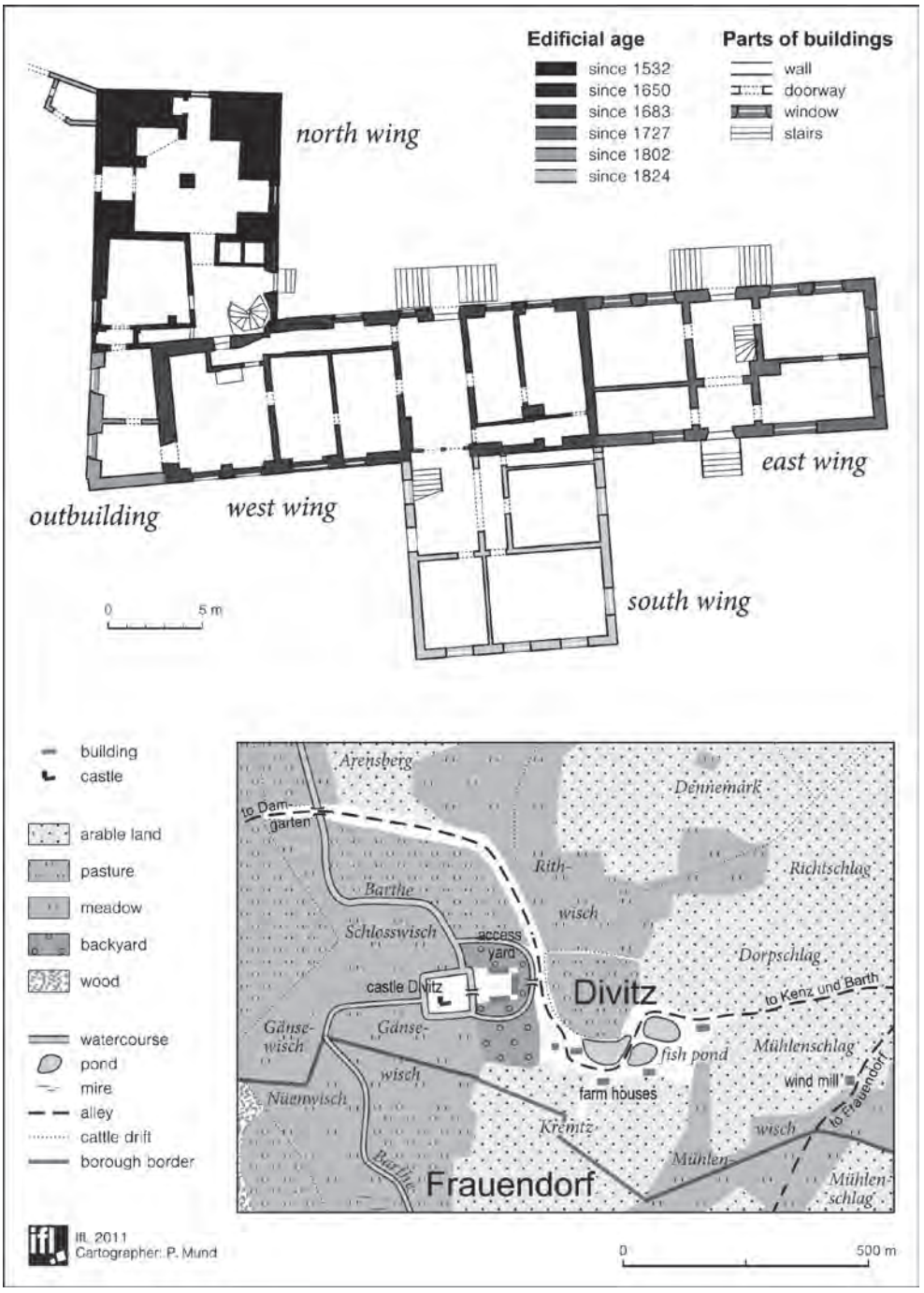


Fig. 4. Building phases of the Divitz manor since the Late Middle Ages and the location of the "Festes Haus" (manorhouse) in the Barth lowland 1696. Draft: Jana Olschewski and Haik Thomas Porada/Leibniz-Institute for Regional Geography Leipzig

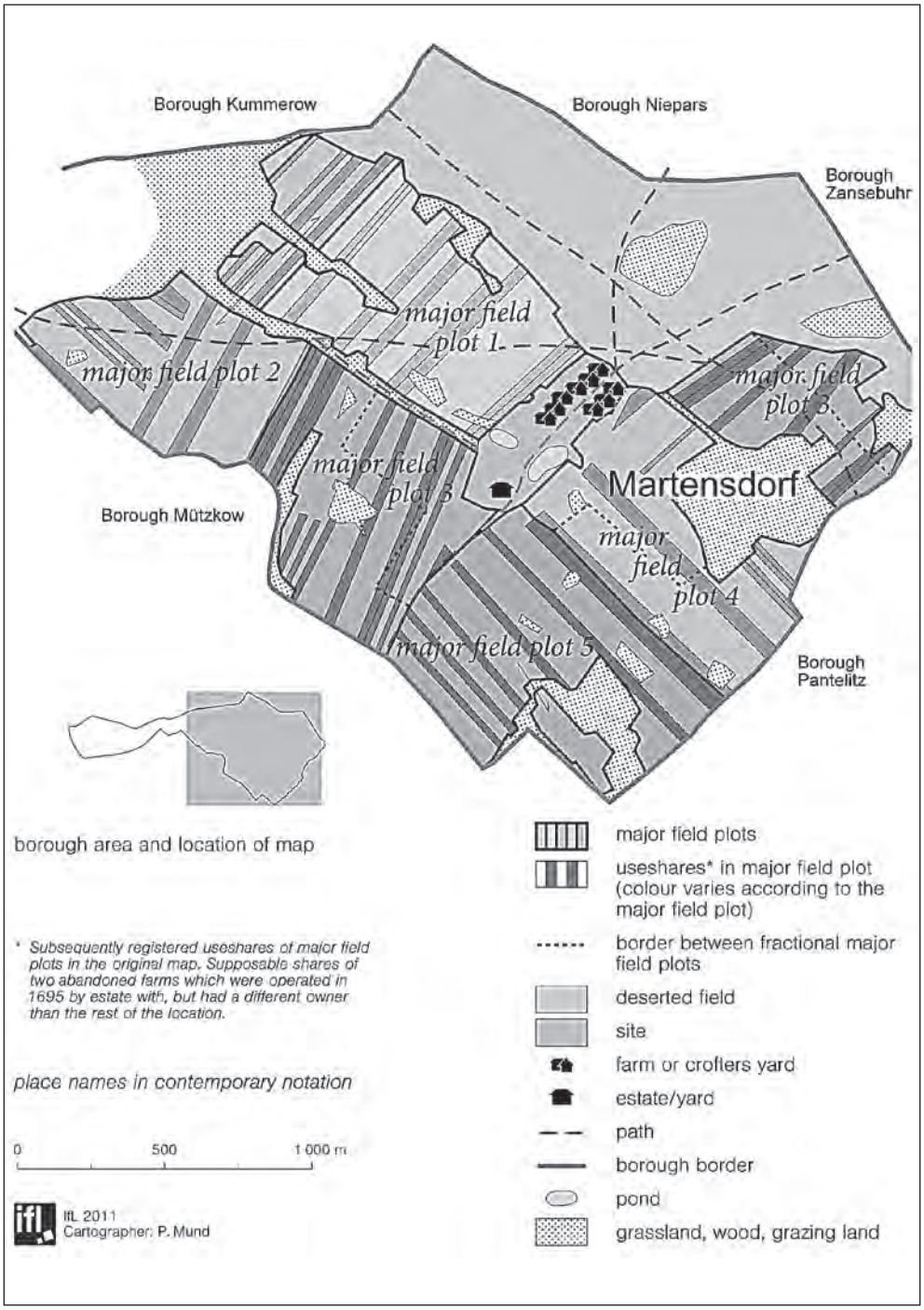


Fig. 5. Field usage system of Martensdorf 1695. Draft: Dirk Schleinert/Leibniz-Institute for Regional Geography Leipzig

map in appendix). The types of villages are much more obvious on the maps of the land inventory. But there is also often a lack of obvious features, which does make precise determination difficult (Fig. 4). At that time, medieval settlements were already shaped by two processes. The first is the development of large estates that increased from the middle of the 16th century and the second is the extensive abandonment of villages in the 17th century, some of which can still be seen directly and some of which was also catalysed by the development of the estates. There are few villages without deserted farmsteads or without unused fields, which are either identified directly as deserted fields or which have been used more extensively as pastures or forest. The changes resulting from these two processes have a more serious effect in that here, like everywhere in the northern part of West Pomerania, relatively small village districts with correspondingly small settlements dominate. Most village districts have an area of between 500 and 750 ha. Districts of more than 1000 ha are very rare and are usually in combination with large forests. More common, in fact, are small village districts of less than 500 or even less than 300 ha. The effect of abandonment and the development of large estates on the small settlements with relatively few farmsteads (seldom more than ten), resulting from districts of this size is much more serious for the overall appearance of the village or townscape than it is for larger settlements (Känel, 1971, 69; Bütow, 1998, 120 f.). Because of the special features of the Swedish land inventory that have been described and the general lack of enclosure maps as an additional source of information, it is only possible to describe the types of village and field usage systems here. The body of source material seemed too unfavourable for a more reliable determination. At the end of the 17th century, the fields in the farming villages and townships with several agricultural enterprises had mainly a long narrow format ('Gewann') (Fig. 5). In a few cases, such as in Martensdorf, there is also evidence of how the shares of the users (peasants and others) were distributed in the fields. The long narrow fields were used in lengthwise and crosswise strips. The sources also mention the term "Ruthen", which was also used as a measure of area. On the other hand, block-type fields dominate in the pure estate villages where the only industry was farming. In most places with farmers and estates, the fields were still in mixed use; in some, however, estate and farm fields were already separated and enclosed (Curschmann, 1948, passim; and 1952, map 3 and 4). One particular feature is found in the "hagen" villages, which are often regarded as exemplary German colonisation villages. While at the end of the 17th century most villages were still recognisable as "Hagen", only very few still have long lots ('Hagenhufen') or evidence that areas were divided up according to the long-lot principle ('Hagenhufenprinzip'), in other words, separate areas for each type of farming (Fig. 6). Much more common are long narrow fields ('Gewann'), as seen in the example of Spoldershagen (Curschmann, 1948, 40 f.; and 1952, Bl. 3; Baumgarten and Bentzien, 1963, 191 ff.). The types of villages and fields changed further through the continued development of estates in the 18th and 19th centuries and the separations/enclosures in the remaining farming villages in the19th century. The estate villages mostly developed towards the typical format with cottages for the estate workers and the manor house with residential and farm buildings. New settlements evolved in the 19th century as a result of the separations/enclosures and more intensive use of the fields. But as a rule, this was not associated with subdividing the districts; rather the new settlements were regarded as part of the old districts and were often given supplementary names such as 'Ausbau' (extension), 'Heide' (heath) or simply 'Neu' (new). In spite of this, at the end of

the 19th century the settlements in the hinterland of the area under investigation were dominated by the estates (Känel, 1971, 69 f.; Bütow, 1998, 121).

Types of settlement and rural building on the Eiderstedt peninsula

The fact that the types of settlement and buildings shaping the landscape do not go back very far in history compared to other regions has a lot to do with the development of Eiderstedt itself, as it only became a landfast peninsula about 450 years ago. The particular conditions needed to settle the marshland that had been open to the sea for centuries evolved only gradually through the building of dykes and dams. Therefore, the most important phases of the geomorphological changes and human actions to secure land are also mapped in the forms of settlement and in the types of buildings over a long period (Fig. 7).

Although this is a slight simplification, one can distinguish between five types of settlement that shaped the landscape and that are still recognisable: raised embankments/dwelling mounds made by humans ('Warften', terps) of various ages, sizes and types; clustered villages ('Haufendörfer') with

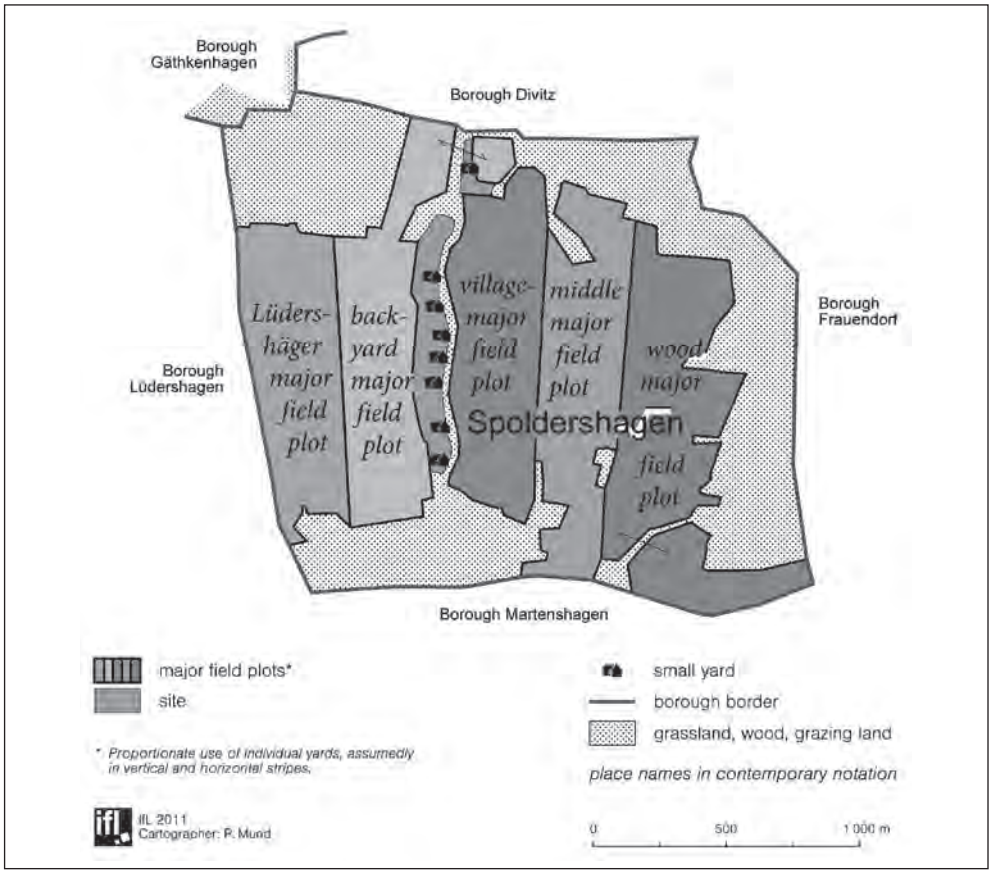


Fig. 6. Field distribution of Spoldershagen 1695. Draft: Dirk Schleinert/Leibniz-Institute for Regional Geography Leipzig

buildings close together on high geest ridges; rows of dwellings on spits, old dikes and along surfaced traffic routes; older and newer single buildings in the landscape on more or less flat ground from land reclamation ('oktroyierte Köge') initiated by the sovereign rulers since the 17th century (Jessen, 1933) to the systematic land development of the Nazi era and the resettlement programmes after 1960; finally, the new housing estates of the last decades that no longer have any connection with farming.

The older settlements up until the 18th century are most significant for characterizing the Eiderstedt landscape. But the individual villages and polders show some very significant differences, which are mainly due to the condition of the soil, the location and also the age of the settlement. But one thing in particular characterizes the picture of the entire landscape: the prominent role of the 18 churches — even very small and remote settlements had their own churches in the 12th century. Even after the start of the dyke building (11th or early 12th century) many villages and polders were still separated by tideways and tidal flows. The island-like structure of Eiderstedt made it necessary to have churches within a reasonable distance.

Until the early 20th century, Eiderstedt was one of the wealthiest regions of north western Germany, even though it always suffered from strong economic fluctuations. Since at least the 13th century export of agricultural products, such as livestock, grain, cheese and wool, played a decisive role in founding the at times legendary wealth of big farmers (Tödt, 1965, 67).

The western spit barriers at today's St. Peter-Ording with their relatively high sand ridges and the spit from there towards east and Katharinenheerd offered early settlers adequate protection against the storm floods (Bantelmann, 1970, passim). This

Fig. 7. Loss of Haubargs in Eiderstedt since 1989 and current number. Draft: Johannes Matthießen/Borleis & Weis

is why 'freely' structured clustered villages were built on these ridges, from about 1100 grouped around the church which stood at the highest point.

Through finds from excavations archaeologists have been able to show that from the 2nd century AD onwards raised embankments ('Warften') were built on unsheltered grass lands for a settlement protected largely against storm floods. These oldest raised embankments were successively heightened to take account of the slowly rising sea level. In most cases these are very large raised embankments that generally grew from several individual raised embankments. The allocation of these holm raised embankments in the flat marshlands, open towards the sea, with their very narrow and small-sized lots and buildings and a fresh water reservoir in the centre, was frequently decisive for their early embankment. Existing raised embankments often served as base for the dykes which in many cases enclosed an island-like territory in a ringlike manner (Meier, 1991, 14 ff.). Within these very old dykes, a division of allotments has been conserved until today which can be traced back to the tidal creek patterns in the salt meadows of pre-embankment times. The overall settlement structure is characterized by scattered raised embankments of varying sizes, while the eastern part of Eiderstedt features mainly very regular allotment structures and drainage systems as well as settlements mostly in form of rows of dwellings. These can be considered evidence of a systematic development of marshland.

Therefore, a third relatively old form of settlement in Eiderstedt is rows of dwellings. Buildings with more or less even rows of houses evolved where over time many individual raised embankments had been built on a favourable settlement line or where a slight ground elevation offered better protection against flooding (Meier, 1991, 14 f.). A second type of terraced housing evolved due to the increased building of dykes in Eiderstedt over centuries. When a new sea dyke was built, the dyke body that had acted as the dyke up until that time became the middle dyke. Some of these middle dykes or abandoned dykes in the third row were released after some time for cottages to be built on them, which resulted in long rows of small houses being built on these old dykes for farm workers, fishermen and craftsmen.

The principle of the long houses from the Roman Empire and the centuries following survived in the Frisian long house in terms of construction and distribution: a long narrow house, roughly half of which was used as a stable and the other half as living quarters. The many small houses ('Katen') basically followed the same patterns of construction and division.

But then building took a strange turn in Eiderstedt: At the end of the 16th century Dutch immigrants from West Frisia and North Holland introduced the building principle of the Gulf house. It quickly evolved into the style of a large farmhouse that is typical for the peninsula, the Haubarg. This shape regarded as "traditional" especially in the 18th century has an almost square floor plan covering an area of 600 m^2 and more. The Haubarg was the dwelling house/stable of relatively wealthy farmers. In many cases these houses were furnished opulently (Meiborg, 1977, 45 ff.). Gardens almost as big as parks surrounded the building, the terp was often enclosed by a wide moat. Many farms were surrounded by trees offering protection against the wind. Authors in the 19th century were reminded of English parks (Fischer, 1984).

By the middle of the 19th century, the Haubargs became impractical because of the increasingly intensive pastoral economy (Fig. 8). Many farms were deserted, became dilapidated and were knocked down. More modern buildings, usually with rooms each side of a hallway replaced the typical large Eiderstedt farmhouse. At the start of the

First World War, only about two thirds of the roughly 400 Haubargs still remained, and by 1930 the number had fallen to about 180 (Saeftel, 1965, 63). Today only about 30 are still well maintained, while only very few museums or well renovated Haubargs show what they used to look like inside.

Summary

Settlement on the Eiderstedt peninsula and on the southern Baltic coast between Stralsund and Rostock was very much influenced by colonization processes in the High Middle Ages. While Frisian occupation and settlement of land on the west coast of Schleswig-Holstein left sustainable traces in the settlement pattern, on the southern Baltic coast it was Low German settlers who, together with the existing Slav population, developed the land. The cultural landscape of both regions still shows the long-term changes that farming has experienced since the 12th/13th centuries. In Eiderstedt it was mainly dyke building and the resulting polders that shaped the pattern of the fields and meadows to be reclaimed from the sea, while the southern Baltic coast was shaped by extensive deforestation in the Mid-

Fig. 8. The Haubarg Blumenhof in the western part of the Eiderstedt peninsula was built in 1790. The supporting construction of the "gulfhouse" consists of six wooden pillars (pinewood). The photograph shows the integrated part of living space, which is oriented to the south. The domestic part with the storeroom for the crop in the centre of the house, in the so called Vierkant between the wooden pillars, the threshing floor and the cowbarn points to the north. Photo: Gerd Kühnast, Interessengemeinschaft Baupflege Nordfriesland & Dithmarschen

dle Ages and the many new long-lot villages ('Hagenhufendörfer'). In the Middle Ages, both regions were characterized by farming settlements but during early modern times the entire East Elbian region changed to become the core region of estate farming, which was accompanied by the spread of serfdom in both Mecklenburg and Pomerania. Similar processes cannot be observed in North Frisia. This is due to different agricultural production conditions and especially the closer vicinity to customers of the agricultural products in Western Europe. From the 16th century, the increasing prosperity in Eiderstedt was evident in the so-called Haubargs, which were a sign of large farming wealth. On the other hand, since the Late Middle Ages, several waves of abandonment can be recognised on the southern Baltic coast. After the Thirty Years' War, the lack of workers increased the trend towards serfdom and led to an extensive change in the settlement pattern. Most farming villages around Barth were turned into estate villages by the 17th century at the latest. Behind these marked agrarian historical differences can also be discerned socially differing processes: Whereas on the one hand in Eiderstedt the nobility and the towns played practically no role and the free peasants were all the more able to administer themselves despite the lordship of the Dukes of Schleswig at the highest level, on the other hand in Mecklenburg and Pomerania the estates (nobles and towns) were able to increase their power extensively. As the power of the territorial ruler became weaker not least as a result of the Peace of Westphalia, the nobility and the towns were able to preserve and indeed even extend their privileges for almost another 200 years. These privileges were at the cost of the peasants who in contrast to Scandinavia and also North Frisia possessed no participation whatsoever in the political power. Despite short phases of settlement in the 20th century, the East Elbian region is characterized by large operating units from more than 400 years of farming tradition, especially as a result of the collectivization during the Communist period. On the other hand, in Eiderstedt the peasant and large-scale peasant farms have remained almost without interruption since the Middle Ages. This is evident in the settlement pattern to the present day.

Determining such differences in agrarian culture landscapes with the help of text, maps, aerial and satellite images as well as pen and ink drawings and photographs is one of the main tasks of presenting regional geography according to the Leipzig Model. The aim of the editors and authors is not only to reconstruct earlier conditions or to describe settlement-genetic processes, but also to connect these with findings from all fields interested in interdisciplinary regional and cultural studies so that readers may understand complex structures and are thus able to interpret the current appearance of a cultural landscape. In this way geographers along with representatives of other natural and humane sciences have the opportunity to help modern-day people find their identity.

References

Bantelmann, A. (1970). Spuren vor- und frühgeschichtlicher Besiedlung auf einem Strandwall bei Tating, Eiderstedt. *Probleme der Küstenforschung*, 9, 49–57.

Baumgarten, K., Bentzien, U. (1963). *Hof und Wirtschaft der Ribnitzer Bauern. Edition und Kommentar des Kloster-Inventariums von 1620* (= Veröffentlichungen des Instituts für Deutsche Volkskunde 31). Berlin.

Benl, R. (1999). Pommern bis zur Teilung von 1368/72. In: Buchholz, W. (Ed.). *Pommern. Deutsche Geschichte im Osten Europas* (pp. 21–126). Berlin.

Billwitz, K., Porada, H.T. (eds.) (2009). *Fischland, Darß, Zingst und Barth mit Umland — Eine landeskundliche Bestandsaufnahme im Raum Wustrow, Prerow, Zingst und Barth*. (= Landschaften in Deutschland

— Werte der deutschen Heimat, Bd. 71). Köln, Weimar, Wien.

Brogiato, H.P., Porada, H.T. (2008). Das Leibniz-Institut für Länderkunde in Leipzig — Ein geographisches Forschungsinstitut mit Tradition. *Jahrbuch für Geschichte Mittel- und Ostdeutschlands — Zeitschrift für vergleichende und preußische Landesgeschichte*, 53, 243–292.

Bütow, M. (1998). Von Bauerndörfern, Schiffahrtshäfen und Badeorten — Siedlungsentwicklung auf Darß und Zingst in den letzten 350 Jahren. In: Asmus, I., Porada, H.T., Schleinert, D. (eds.). *Geographische und historische Beiträge zur Landeskunde Pommerns. Eginhard Wegner zum 80. Geburtstag* (pp. 120–124). Schwerin.

Curschmann, F. (Bearb., 1948–1952). *Matrikelkarten von Vorpommern 1692–1698. Karten und Texte*. Part I: Dorfbeschreibungen zu Blatt 3, 4, 7 und 8, Amt Barth, Barther und Stralsunder Distrikt, Amt Franzburg. Umzeichnung im Maßstab 1:50 000 (= Historischer Atlas der Provinz Pommern 3/1). Rostock.

Fischer, L. (1984). *Haubarge. Eine Bauernhausform hat abgewirtschaftet?* Bredstedt (4th edition 1991).

Fritze, K. (1976). *Bürger und Bauern zur Hansezeit. Studien zu den Stadt-Land-Beziehungen an der südlichen Ostseeküste vom 13. bis zum 16. Jahrhundert* (= Abhandlungen zur Handels- und Sozialgeschichte 16). Weimar.

Jessen, H.J. (1933). *Auszug aus der Geschichte der okroyierten Köge neben Erwähnungen des Deichwesens und der Verwaltung in der Landschaft Eiderstedt*. Garding (Reprint Westerhever 1993).

Känel, A. von (1971). Das nordmecklenburgische Boddengebiet. Eine siedlungsgeographische Charakteristik. *Wissenschaftliche Zeitschrift der Universität Greifswald*, math.-nat. 1/2, 69–77.

Meiborg, R. (1896). *Das Bauernhaus im Herzogtum Schleswig und das Leben des schleswigischen Bauernstandes im 16., 17. und 18. Jahrhundert*. Kiel (reprint 1977).

Meier, D. (1991). Archäologische Untersuchungen zur Besiedlung und Bedeichtung Eiderstedts. In: Eiderstedter Heimatbund (Ed.). *Blick über Eiderstedt*. Vol. 3. Husum, pp. 9–25.

Saeftel, F. (1930). *Haubarg und Barghus, die friesischen Großhäuser an der Schleswig-holsteinischen Westküste*. Heide.

Schleinert, D. (2000). Der ländliche Raum in Pommern in der Frühen Neuzeit. Ein agrargeschichtlicher Abriß. *Blätter für deutsche Landesgeschichte*, 136, 199–226.

Schleinert, D. (2005). Die Entwicklung der Gutswirtschaft in Vorpommern vom Mittelalter bis zur Bodenreform von 1945. *Stier und Greif: Blätter zur Kultur- und Landesgeschichte in Mecklenburg-Vorpommern*, 15, 23–35.

Steensen, T., Panten, A., Porada, H.T. (2012). *Eiderstedt — Eine landeskundliche Bestandsaufnahme im Raum St. Peter-Ording, Garding, Tönning und Friedrichstadt*. (= Landschaften in Deutschland — Werte der deutschen Heimat, Band 72). Köln, Weimar, Wien (in preparation).

Tödt, A. (1965). Über Eiderstedts Kirchen bis zur Einführung der Reformation. In: Eiderstedter Heimatbund (Ed.). *Blick über Eiderstedt. Beiträge zur Geschichte, Kultur und Natur einer Landschaft*. Husum, pp. 66–70.

Wegner, E. (1968). Die Feldsysteme um 1700 im Gebiet des ehemaligen Vorpommern. *Mitteilungen für Agrargeographie, landwirtschaftliche Regionalplanung und ausländische Landwirtschaft*, 27, 275–285.

A MULTISTEP METHOD FOR HISTORICAL CHARACTERISATION OF RURAL SETTLEMENTS IN BELGIUM, RESULTS FOR THE PROVINCE OF ANTWERP

Lisa Van De Velde*, Veerle Van Eetvelde and **Marc Antrop**
Department of Geography, Ghent University
Krijgslaan 281 S8, B-9000 Ghent, Belgium
Lisa.Vandevelde@ugent.be

Key words: *settlement geography, typology, historical landscape characterisation, GIS-database*

Rural settlements and their territories are the building blocks of the rural landscape. In Belgium, many different settlement types can be recognised (green villages, street villages, nucleated villages, planned villages, dispersed settlements), each referring to different environmental conditions and periods of foundation. Most of the landscape typologies and regional classifications of Belgium do not include a systematic settlement classification. For example, the landscape characterisation of Belgium is based on the urbanised settlement patterns and does not include historical features of the rural settlements. The presented research aims to complete the landscape typology with a historic characterisation of rural settlements. It includes the analysis of the site and the morphology of the initial settlement in relation to its territory, using a multi-step method at two scales. First, at the local scale, a sample area is defined by a settlement and its territory in relation to the adjacent ones. For each site, the morphology of the places is analyzed as well as their territories. Second, settlement types and characteristics are mapped at a regional scale. The method uses a holistic interpretation of historical and topographical maps and of aerial photographs, covering a period from the 18th to the 20th century. The results are discussed for one sample area in the Kempenland and the synthesis for the province of Antwerp.

Introduction

Rural settlements are considered as the centres of the organisation of their surrounding territory, and can be seen as the building blocks of the landscape. The term 'settlement' is defined as a permanent human habitation with at least one or more houses (Uhlig and Lienau, 1972; Egli, 1991; 1992), and refers both to the morphology and the function of the settlement, without considering its size and hierarchy (hamlet, (urbanised) village, town or city) (Van Eetvelde and Antrop, 2005). The individual settlements are differentiated by the distance between the settlements,

which varies in the rural areas from 100 m to a maximum of 150 m (Lienau, 1986). The initial settlement patterns are an important factor in the explanation of the actual landscape patterns and the characterisation of geographical regions (Antrop, 2000). However, most of the landscape typologies and regional classifications of Belgium did not use nor include any systematic settlement classification. The first comprehensive study of the rural settlements in Belgium was made by Dussart (1957), combining village forms and their spatial distribution. Based on the previous work by Dussart, Lefèvre published in the first National Atlas of Belgium of 1964 a map at scale 1 : 500 000, indicating the village morphology as represented on the topographical map at scale 1 : 100 000 (Lefèvre, 1964). Both the typologies of Dussart and Lefèvre have a rather poor quality and detail, use only morphological and structural properties, and no historical characteristics are included. These classifications are solely based on (population) size and the position in a hierarchical structure of urban places (Van der Haegen *et al*., 1982; Van der Haegen, 1992).

Although most rural settlements in Belgium, more in particular in Flanders, have been completely transformed by urbanisation, their historical centres reflect the initial site characteristics and structure and they often have a particular significance as heritage. There is a strong link between the site of the initial settlement and the land and its surrounding territory. In the past, people were bound to the soil and the terrain (Roberts, 1977), and this relation between people and their physical environment causes different settlement types such as green villages, street villages, nucleated villages, and dispersed settlements. These settlement types refer to different environmental conditions (for example, soil, topography, availability of water) but also to different periods of land reclamation. They are often characteristic for a geographical region and contribute to the landscape character. Fundamental work on typology and terminology of settlement geography in Europe was done by the "Internationale Arbeitsgruppe für die geographische Terminologie in der Agrarlandschaft" (Uhlig and Lienau, 1972) and most of the definitions of settlement types used in the current paper are based on this previous work, as well as on the work of Renes (1981), which is more focussed on the Low Countries. Settlement types and patterns for Europe are also described, but not systematically mapped by Lebeau (1979), Jordan (Jordan-Bychkov and Bychkova Jordan, 2002). *The atlas of rural settlement in England* by Roberts and Wrathmell (2000) is another example.

Uhlig and Lienau (1972) defined three important methodological aspects in the study of settlements: (1) the physiognomic-topographic aspects, dealing with the topographic position (site) of a settlement, its size and shape as represented by the groundplan, and the outline of the settlement, (2) the functional aspects, referring to factors such as the geographical position, the socio-economic situation, the functions offered and related structures, and the continuity of the settlement, and (3) the genetic aspect, the historical development of the place, characterised by the change of its form, morphology, and functionality. Uhlig and Lienau (1972) see the change of form as a consequence of a functional change. Many settlement typologies are based on physiognomic-topographic properties, which can be inferred directly from (historical) maps (Renes, 1981). Central in these morphological typologies are the size and form or shape of the settlement (Roberts, 1987; 2002).

An updated typology of settlements in Belgium is still lacking and the small scale maps of Dussart and Lefèvre are still used, for example in the most recent version of the National Atlas (Van Hecke *et al*., 2010), despite its too general scale and

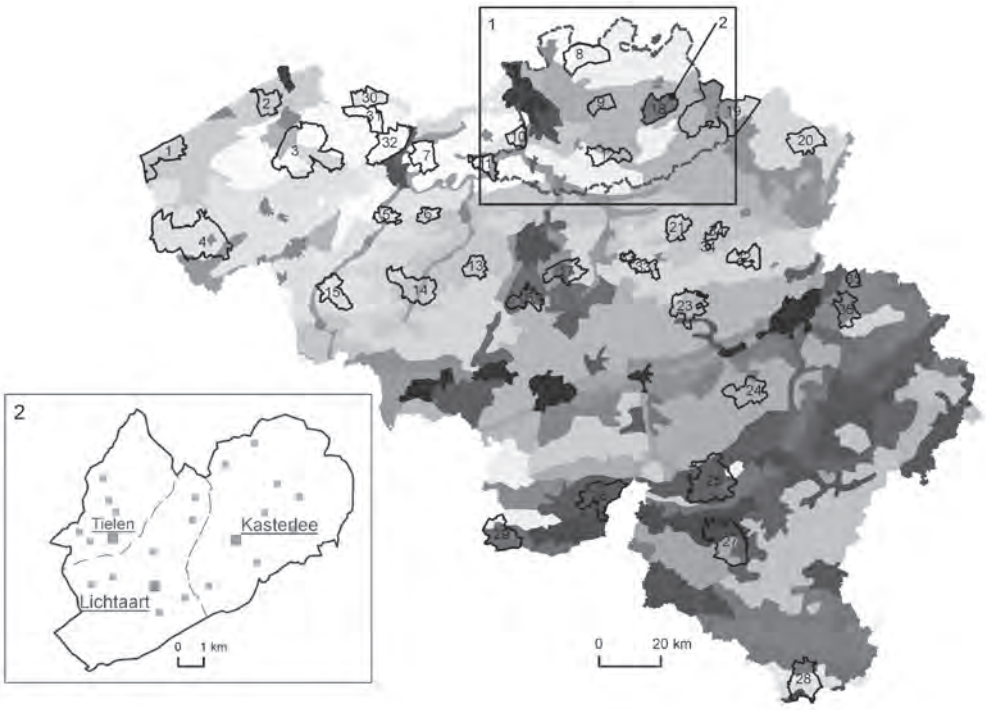


Fig. 1. Location of the 36 case study areas in Belgium belonging to different landscape typologies in different Landscape Character Types (Van Eetvelde and Antrop, 2009). Location of the Province of Antwerp (1) and the case study area "the Central Kempen" (2)

that the classification does not reflect recent research on settlement geography and historical landscape characterisation. Also, the characterisation of the contemporary landscapes of Belgium is based on the current built-up patterns and does not include the genetic and historical features of the settlements (Van Eetvelde and Antrop, 2009). Our aim is to update and complete this landscape typology of Belgium with an improved characterisation of the settlements, using site properties, morphological types, the relationship with the surrounding territory, and the trajectory into the actual urbanised landscape. This paper presents a multistep method for this historical characterisation of the traditional rural settlements of Belgium. First, the detailed analysis of the settlement and its territory and the place morphology is presented, and secondly, the synthesis of the results for the province of Antwerp is discussed.

Study area

The province of Antwerp (Fig. 1) covers the western part of the geographical region known as the Kempenland (Monkhouse, 1949). Today, this region belongs to the highly urbanised part of Flanders region, the northern part of Belgium. It contains a wide variety of settlement types and urban gradients and was therefore chosen to set up and test the methodology. The case study areas for the analysis at the detailed scale are indicated

as well. The one discussed in this paper covers the municipalities of Kasterlee, Tielen and Lichtaart, situated in the traditional landscape region named the "Centrale Kempen" or Central Kempen (Fig. 1). The area is structured by the parallel alluvial valleys of the Aa and the two Nete rivers, separated by elongated interfluvia covered by land dunes (ridges and parabolic blowout dunes) and heath land. The ridge of Lichtaart-Kasterlee (average elevation 40 m) is the most prominent one. Most of the heath land was planted with conifers during the 19th century. Today, it is a highly urbanised landscape, extending from the historical settlements into the woodland on the dunes areas. Only the wet alluvial valleys are free of buildings and carry cropland and meadows.

Method and materials

In general, the method consists of three steps and has a bottom-up structure. The first step consists in a detailed analysis at the local scale of the territories of a sample of adjacent municipalities, which are representative for a specific type of landscape area as defined in the Belgium landscape characterisation. All settlements in these sample areas are described and their layout is studied. In the second step, the settlement morphology (size, shape, structure) of each place is analysed in detail. In this paper, the results are discussed for the places Kasterlee en Lichtaart, situated in the geographical region of Central Kempen. The third step consists of a cartographic synthesis of the settlement types and their characteristics at a regional scale. Some results are presented for the province of Antwerp to illustrate the method.

In this section, the data sources and their use will briefly be discussed first, followed by the description of steps of the bottom-up method.

The data sources

Table 1 shows the different types of data sources which were used for the analysis at both scale levels. The historical maps were used to analyze the landscape and the settlement patterns of the 18th century. They proved to be a very useful data source to define landscape types as they provide, in various ways depending on the quality and properties, information on the landscape character of the different time periods, representing topography, land use, field patterns, settlement patterns, and infrastructure (Vuorela *et al*., 2002). The oldest map we used is the very detailed historic map of Count de Ferraris at a scale of 1 : 11 200 of 1775, representing the landscape characteristics at the end of the 18th century. A high quality scanned version is available online http://www.kbr.be/collections/cart_plan/ferraris/ferraris_nl.html. The map is of exceptional quality and detail (Fig. 2) and is very significant as it represents the situation just before the beginning of the fast-reaching changes of the 19th century. This map was used — despite some geometrical distortions — as a base to define the initial settlement types. To analyze the transformation of the settlements, two topographical maps of the 20th century were also used. The first one is made by the Military Geographical Institute at a scale 1 : 20 000 and represents the situation before the First World War (1860 — 1881, with revisions until 1948). The second one, at a scale 1 : 10 000, gives the situation from the 1960s onwards, right after the processes of suburbanization had started. A digital and georeferenced version of this topographical map was used in ArcMap 9.3 as a base map for the digitising of the characteristics and join with the geo-database. Finally, cadastral maps of the 19th century made by P.C. Popp at a scale 1 : 5 000 were available and used to verify the morphological details of the places and field patterns. Table 1 shows also several used thematic maps with their properties.

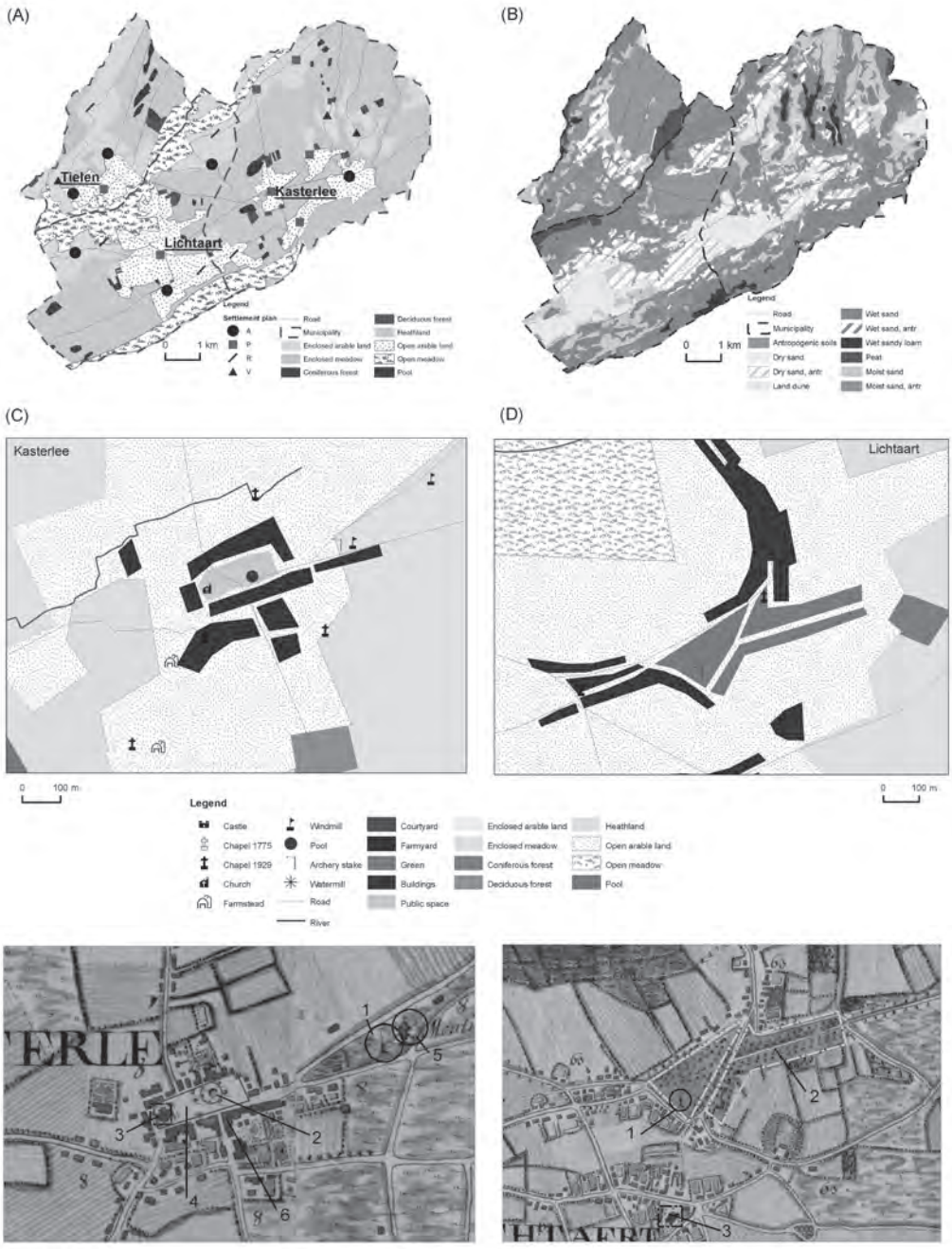


Fig. 2. Top: Analysis of the territory of Central Kempen at the end of the 18th century (A) and the main soil characteristics (B). Centre: Site characteristics of Kasterlee (C) and Lichtaart (D). Bottom: Map of de Ferraris with following settlement components: pillory (1), green (2), common place (3), church (4), pool (5) and windmill (6)

Table 1. **Datasets used to define and set up the historical settlement typology of the province of Antwerp**

Datasets	Date	Original scale/ Resolution
Historical and topographical maps		
Historical maps by de Ferraris	1770–1778	1 : 11 200
Topographical map (Military Geographic Institute)	1860–1881 (1949)	1 : 20 000
Topographical map (National Geographic Institute)	1970–1990	1 : 10 000
Topographical map (National Geographic Institute)	2002–2008	1 : 50 000
Thematic maps		
Cadastral map (P.C. Popp)	1842–1879	1 : 5 000
Settlement typology (Lefèvre, 1964)	1964	1 : 500 000
Soil map	1970	1 : 20 000
Landscape Characterisation of Belgium (Van Eetvelde and Antrop, 2009)	2009	1 km
Digital elevation model (AGIV)	2006	10 m
Aerial photographs		
Google Earth	2007	Variable

Step 1: Detailed territorial analysis of sample areas

Selecting the sample areas for local analysis

In the first step, different sample places were selected for a detailed territorial analysis. A first selection of "initial" rural settlements was based on the hierarchical list of places defined by Van Hecke (1998), which is also commonly used in the context of spatial and urban planning (Taverne and Visser, 2004). Cities and towns of different hierarchical scales are not taken into account in this research, as for example the city of Antwerp.

Secondly, overall 36 different case study areas in Belgium were selected (Fig. 1) to test the methodology and the classification criteria and to build the typology. Their sampling was based on the landscape characterisation of Belgium based on the classification of Van Eetvelde and Antrop (2009) and on the old administrative division of the independent municipalities (situation before 1961), as these fit better the traditional territories than the redesigned actual municipalities (Van Eetvelde and Antrop, 2005). Each of the 36 case studies areas consists of several adjacent municipalities, which have one main centre and several dependent smaller settlements. Using adjacent municipalities

allowed a better understanding of the relationship between place and territory, in particular the evolution of the common land.

For this paper, the local case study number 18 "the Central Kempen", consisting of two neighbouring municipalities, was chosen to test the methodology.

Map and photo-interpretation and building of the geo-database

The characteristics of the settlement and their territory as represented on the historical and topographical maps and on aerial photographs were visually interpreted, starting with the historical map of de Ferraris (end of the 18th century) and moving to the contemporary situation. The method of holistic interpretation of the patterns on maps and photographs, was adapted from the one used by Antrop and Van Eetvelde (2000). First, the results of the interpretation were generalised on a topographical base map of 1 : 50 000 and described in a notebook. Second, this compiled version was digitized in ArcGIS 9.3 and the descriptions were coded in a linked database (Microsoft Access 2007).

Step 2: Detailed analysis of the morphology and defining the settlement type

First the settlement characteristics were described of the "initial" settlement at the end of the 18th century, based on the historical map of de Ferraris. This is mainly based on its morphological structure as represented on the map, and on the occurrence of specific elements which are known to be associated with different settlement types. For each settlement, the following characteristics were included: the morphological properties (the extent and shape of the central square

Table 2. **Settlement characteristics**

	Variables/ attributes	Scale type	Source
Morphological properties	The extent and shape of the central square if any, the layout of different elements	Qualitative (nominal)	Map by de Ferraris, cadastral map
Site properties	Number of churches, chapels, water pool, water pump, wind- or watermill, castle...	Quantitative	Map by de Ferraris, cadastral map, Military topographical map
Functional properties	Agrarian, social and economic	Qualitative (nominal)	Map by de Ferraris, Military topographical map
Historic properties	Age, continuity of habitation, land use change	Qualitative (nominal)	Map by de Ferraris, Military topographical map and Google Earth

Table 3. **Overview of morphological settlement types for the province of Antwerp**

Code	Name	Description
Settlement plan (main type)		
A	Agglomeration	Cluster of buildings without a distinct common place or a green.
P	Settlement with a distinct common place	Settlements with a distinct common place in the centre of the settlement, functioning as an agrarian green or market place.
R	Row settlement	Settlements with a linear arrangement of buildings along a road.
V	Dispersion, isolated settlement	Large isolated farmsteads and buildings. The minimum distance between two buildings is more than 150 m.
Building layout		
c	Continuous	Buildings form a closed street front.
o	Discontinuous	All buildings stand on a separate lot
x	Not applicable	
Common place (in combination with main type A, R, V)		
p	Common place	Settlement associated with a common space or green outside the built-up part.
z	Without common place	Settlements without any common place.
x	Not applicable	
Complexity (in combination with common place P or p)		
e	Simple	Settlements with one common place; the function is not defined.
m	Multiple	Settlements with more than one common place, which can have different functions
x	Not applicable	

if any, the pattern of different elements), the site properties (topography, slope exposition), functional properties (agrarian, social and economic), and historic properties (age, continuity of habitation, land use change) (Table 2). Furthermore, an analysis of geographical characteristics (hydrology, soil properties, and geomorphologic properties) was added, as well as an analysis of place names as given on the maps and described in literature. All information is integrated in a GIS database using ArcGIS 9.3 and Microsoft Access 2007.

A four letter code was used to identify the characteristics for each settlement and linked to a specific settlement type. This code refers to four main variables describing the main characteristics of the place (Table 3). Also, four main morphological groups of the settlement types were recognised with the first letter: row or linear settlements (R), settlements with common spaces (P), agglomerated or nucleated settlements (A), and dispersed isolated settlements (V). Settlements with commonly used spaces (P) are very common and varied in Belgium and they locally referred to different names such as *bist*, *dries* or *plaats*. These are indicative for the evolution of the place (Knaepen and Antrop, 2000). Therefore, this group is further subdivided according to the number of spaces and their functions (letter 4). The other two variables contain information about the degree of continuity of the buildings (letter 2) and the occurrence of common spaces (letter 3).

Step 3: Analysis of the spatial distribution of the settlement properties at a regional scale

As all descriptive attributes are coded as separate entries in the database they can, besides defining settlement types, also be used to analyse relations and the spatial distribution of features in thematic maps, both at the local as well as regional scale.

Results and discussion

Detailed analysis of the settlement morphology of the case study

Initially, the settlements of Kasterlee and Lichtaart are “islets” of agricultural land surrounded by heath lands on dry sandy soils with dunes and wet alluvial valleys. Figure 2 (A) shows their appearance at the end of the 18th century and Figure 2 (B) gives the soil conditions. The settlements are surrounded by a fringe of arable land and, further away, common grazing land (heath land and meadows). Intensive agriculture and fertilizing during late medieval times transformed the original podzolic soils on the dry sandy land into antropogenic soils (antrosols), locally known as “plaggen” soils.

The historical map of 1775 allows a detailed analysis of the settlement plan and structures for Lichtaart and Kasterlee, as illustrated in Figure 2 (C and D), showing the interpretation map and the historical map. Kasterlee (Fig. 2 C) has a large rectangular square (4) with the church and graveyard (3) located at the west end of the square and partially bordered by buildings forming a street (6). Small elements are represented as well, such as the water pump on the square (2), a windmill at the extension of the common space to the east (5), and an archery stake for training the local militia (1) located on the highest part of the dune. Most probably, the square of Kasterlee once was an agrarian green, but as in other cases, the place was “promoted” to a centre of commerce (Knaepen and Antrop, 2000). Today, it is a market place.

Lichtaart (Fig. 2 D) is characterized by multiple centres. The one in the south is situated on the top of a land dune ridge and has the church and graveyard (3). The other one is situated along the northern edge of the dune ridge and two large common spaces planted with trees stretch out to the eastern side (2). These are probably greens but only

partially surrounded by houses. An archery stake for training the militia is shown on the green.

Consequently, both places are assigned to different settlement type categories (Fig. 2). Kasterlee is described by the code Pcxe and Lichtaart Poxm (Fig. 3 and Table 3). Kasterlee is a compact, geometrical and closed (c) settlement with a common area (P) with a juridical and/or market function at the end of the 18th century. The 'e' in the letter code refers to one single common area in the centre of Kasterlee.

Lichtaart is more complicated. It has two centres, one around the church and one situated around multiple village greens area. The first centre around the church has a compact and closed (c) structure. The second has two spaces (m) forming a common area (P) surrounded by discontinuous buildings (o). Both spaces still have the function of an agrarian green.

Results for the province of Antwerp: the spatial distribution of settlement properties

Figure 3 illustrates some of the results of the spatial analysis and thematic synthesis for the province of Antwerp. In total, 186 settlements were analyzed and classified according to the four main groups as defined previously. The distribution is as follows: nucleated settlements (57), settlements dominated by one or several common spaces (46), linear settlements (75) and irregularly scattered settlements (8). Clearly, a wide diversity of settlement forms occur and no specific settlement type dominates in the province of Antwerp. As a comparison: the classifications of Dussart (1957) and Lefèvre (1964) give only one type and distribution pattern for the whole of the Kempenland: i.e. "Villages and hamlets with extensions along the road". The thematic mapping of key properties also shows that their spatial patterns are rather equally distributed throughout the province. For example within the municipality of the main village, a hierarchy of smaller settlements can be noticed. The main settlement contains the church and multiple village greens and is surrounded by smaller hamlets of various types as linear settlements, clusters or small green villages.

Conclusion

The stepwise method allows making a multi-scale typology of the settlements at the end of the 18th century, based on their morphology and spatial structure. The detailed analysis of the settlements in sample areas made it possible to gradually build a typology in an open geo-database. All descriptive attributes characterising the settlement types can be mapped thematically in order to analyse their spatial patterns at a regional scale. The next phase of this research will apply the synthetic typology based on all sample areas to assign a typological category to all villages of Belgium.

References

Antrop, M. (2000). Changing patterns in the urbanized countryside of Western Europe. *Landscape Ecology*, 15(3), 257–270.

Antrop, M., Van Eetvelde, V. (2000). Holistic aspects of suburban landscapes: visual image interpretation and landscape metrics. *Landscape and Urban Planning*, 50(1–3), 43–58.

Dussart, F. (1957). Geographie der ländlichen Siedlungsformen in Belgien und Luxemburg. *Geographische Rundschau*, IX, 12–18.

Egli, H.R. (1991). Die Untersuchung der Besiedlungs- und Entsiedlungsvorgänge im Hochgebirge als Prozessforschung: Fragestellingen und Methoden. In: *Siedlungenforschung. Archäologie — Geschichte — Geographie*. Bd. 8/1990. Bonn.

Egli, H.R. (1992). The development of settlement structures in the rural area of Switzerland since 1850, as example the

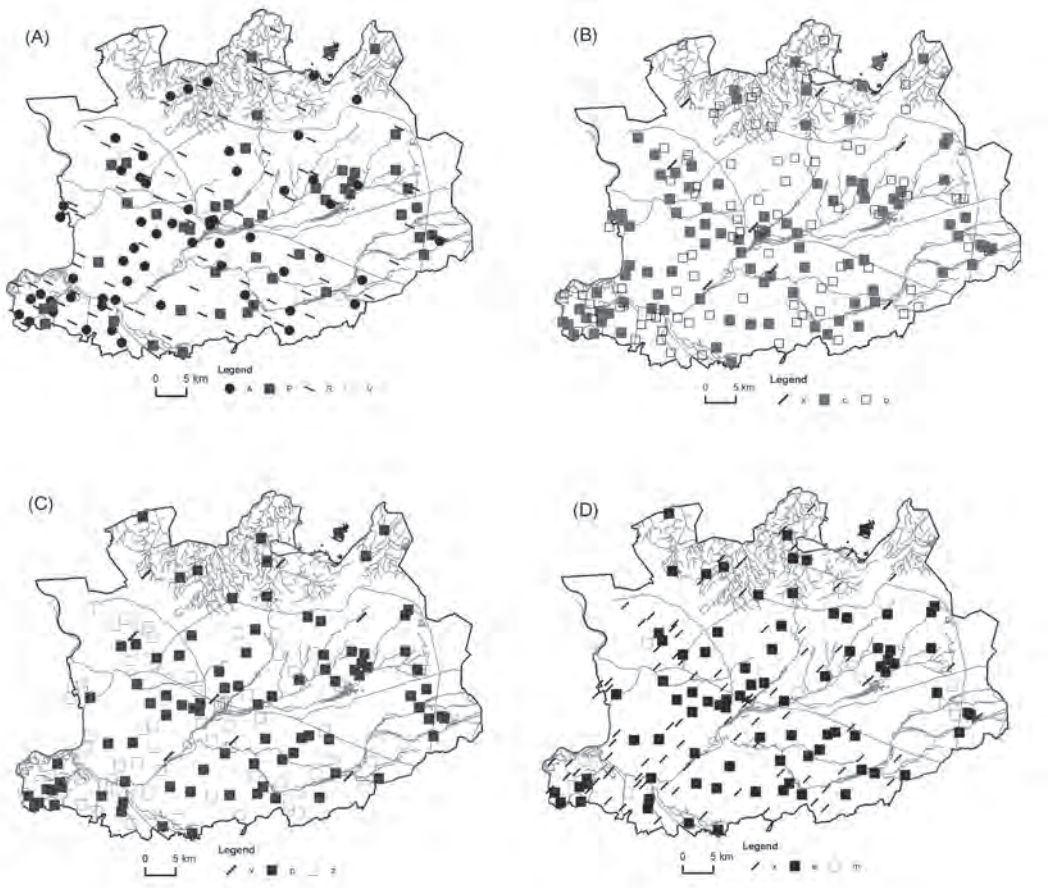


Fig. 3. Overview of the settlement types for the province of Antwerp. The main settlement plan (A), the continuity of buildings (B), the existence of a common space (C) and the degree of complexity of the common spaces (D)

North-Alpine dispersed settlement zone. In: Verhoeve, A., Vervloet, A.J. (eds.). *The Transformation of the European Rural Landscape: Methodological issues and agrarian change 1770–1914* (pp. 23–32). Brussels: NFWO.

Jordan-Bychkov, T.G., Bychkova Jordan, B. (2002). *The European Culture Area. A systematic Geography*. New York: Rowman & Littlefield Publishers. 437 pp.

Knaepen, R., Antrop, M. (2000). The Functional Evolution of Common Place-settlements in the Rural Kempenland of Belgium and the Netherlands. In: Unwin, T., Spek, T. (eds.). *European landscapes: from mountain to sea. Proceedings of the 19th Session of the Permanent European Conference for the Study of the Rural Landscape (PECSRL) at London and Aberystwyth 10–17th September 2000* (pp. 54–62). Tallinn: Huma Publishers.

Lebeau, R. (1979). *Les grands types de structures agraires dans le monde*. Paris: Masson, troisième édition. 162 pp.

Lefèvre, M.A. (1964). *De landelijke*

bewoningsvormen [the rural settlement patterns]. Plaat 27, Atlas van België, Brussel, Nationaal Comité voor Geografie. 17 pp.

Lienau, C. (1986). *Ländliche Siedlungen*. (Das Geographische Seminar). Braunschweig: Westermann. 192 pp.

Monkhouse, F.J. (1949). *The Belgian Kempenland*. Liverpool: University Press. 252 pp.

Renes, J. (1981). *Typologieën — van bewonings en perceelsvormen: een overzicht van bestaand werk in Nederland en buurlanden [Typologies of settlement and parcel patterns: an overview of the existing work in The Netherlands and neighboring countries].* Wageningen: Centrum voor landbouwpublikaties en landbouwdocumentatie. 78 pp.

Roberts, B.K. (1977). *Rural settlement in Britain*. London: Hutchinson. 221 pp.

Roberts, B.K. (1987). *The making of the English village*. London: Longman. 237 pp.

Roberts, B.K., Wrathmell, S. (2000). *An Atlas of the Rural Settlement in England*. London: English Heritage. 77 pp.

Roberts, B.K., Wrathmell, S. (2002). *Region and Place. A study of English rural settlement.* London: English Heritage. 203 pp.

Taverne, E., Visser, I. (eds.) (2004). *Stedenbouw. De geschiedenis van de stad in de Nederlanden van 1500 tot heden [Urban development. The history of the city in The Netherlands from 1500 until now].* Amsterdam: Uitgeverij SUN. 394 pp.

Uhlig, H., Lienau, C. (1972). *Die Siedlungen des ländlichen Raumes (Materialen zur Terminoligie der Agrarlandschaft)*. Internationale Arbeitsgruppe für die geographische Terminologie in der Agrarlandschaft. Giessen: Lenz. 277 pp.

Van der Haegen, H., Pattyn, M., Cardyn, C. (1982). The Belgian settlement systems. In: *West-European Settlement Systems* (pp. 251–263). Leuven: Acta Geographica Lovaniensia, 22.

Van der Haegen, H. (1992). De Steden. In: Denis, J. (Ed.). *Geografie van België [Geography of Belgium]* (pp. 428–482). Brussel: Gemeentekrediet.

Van Eetvelde, V., Antrop, M. (2005). The significance of landscape relic zones in relation to soil conditions, settlement patterns and territories in Flanders. *Landscape and Urban Planning*, 70(1–2), 127–141.

Van Eetvelde, V., Antrop, M. (2009). A stepwise multi-scaled landscape typology and characterisation for trans-regional integration, applied on the federal state of Belgium. *Landscape and Urban Planning*, 91(3), 160–170.

Van Hecke, E. (1998). Actualisering van de stedelijke hiërarchie in België [Actualisation of the urban hierarchy of Belgium]. Brussel: *Het tijdschrift van het Gemeentekrediet*, 52(205), 45–75.

Van Hecke, E., Antrop, M., Schmitz, S., Sevenant, M., Van Eetvelde, V. (2010). *Atlas van België. Landschappen, platteland en landbouw [Atlas of Belgium. Landscape, countryside and agriculture].* Gent: Academia Press. 74 pp.

Vuorela, N., Alho, P., Kalliola, R. (2002). Systematic assessment of maps as source information in landscape-change research. *Landscape Research*, 27(2), 141–166.

UDAL LAW AND CONTESTED HISTORIES OF LAND TENURE AND LANDSCAPE IN ORKNEY AND SHETLAND

Michael Jones
Department of Geography, Norwegian University of Science and Technology
NO-7491 Trondheim, Norway
michael.jones@svt.ntnu.no

Key words: *contested histories, landscape and law, land tenure, Orkney and Shetland, udal law*

After settlement by Vikings c. 800 AD, Orkney and Shetland were for nearly 700 years under Norse rule, followed after transfer of sovereignty in 1468–1469 by 540 years of rule by Scotland and then Britain. Vestiges of Norse law — known as udal law — have nonetheless survived to the present. The paper illustrates manifestations of law in the landscape of Orkney and Shetland. It examines how ideas of udal law have been maintained in modern legal texts and public perceptions. Udal law has continued to be invoked in public debates about a variety of issues up until the 21st century. A tentative exploration is made of how conceptions of udal law have been socially constructed. This is related to two contested strands in the historiography of Orkney and Shetland, one emphasizing Norse influence and the other Scots influence. Based on an analysis of legal, historical and topographical literature concerning Orkney and Shetland, this paper illustrates how different interpretations of the history of land-tenure and landscape change reflect domination, resistance and contestation between different classes and ethnicities in the construction of histories of the islands.

Introduction

I revisit here my paper presented in 1996 at the Dublin meeting of the Permanent Conference for the Study of the Rural Landscape (PECSRL) on the topic "Scots and Norse in the landscape of Orkney and Shetland — visible landscape and mental landscape" (Jones, 1996b). Orkney and Shetland are the Northern Isles of Scotland (Fig. 1). They were colonised by Norse Vikings AD c. 800. They were transferred to the Scottish Crown in 1468 (Orkney) and 1469 (Shetland). Along with Scotland they have been under the British Crown since 1603. The isles became subject to the British Parliament after the union of the Scottish and English Parliaments in 1707. Since devolution in 1999 they are also subject to the re-established Scottish Parliament. Despite 540 years of Scottish and British rule, Norse cultural influences are still found in the isles. I have a long-standing interest in traces of Norse law in Orkney and Shetland, and how they relate to landscape. Here, I summarise my previous work on this

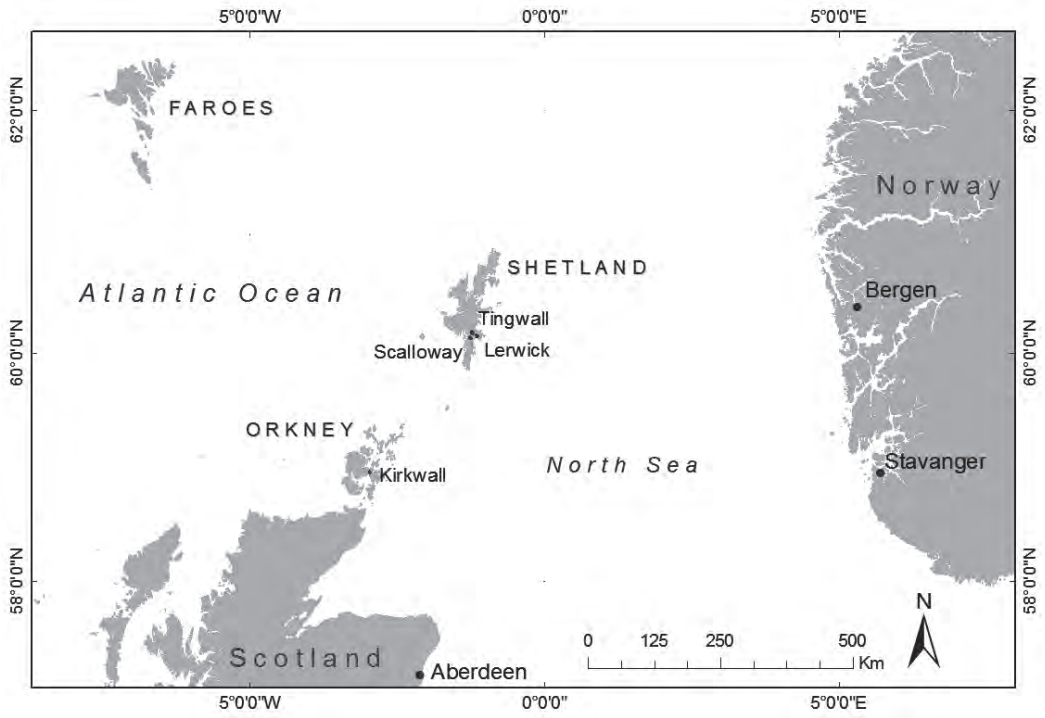


Fig. 1. The location of Orkney and Shetland between mainland Scotland and western Norway

topic and provide a view of the way forward. I am particularly interested in differing interpretations of history, and associated popular conceptions that underlie understandings of the role of law in the landscape of the isles.

The first section of the paper recapitulates in part my previous studies illustrating manifestations of law in the landscape of Orkney and Shetland, and showing the extent to which ideas of survivals of Norse law — known in the Northern Isles as "udal law" — have been maintained in modern legal texts and popular perceptions. The second section provides a tentative exploration of how conceptions of udal law have been socially constructed, and how this is related to the contested Norse and Scots roles in the historiography of Orkney and Shetland.

Landscape, law and popular perceptions

Landscape and law

Legal geography can provide a theoretical framework for studies of the significance of law — both formal law and customary law, as well as popular perceptions of law — for the ways in which people make use of their geographical environment. My own work falls within a North European tradition of research on the relationship of landscape to law, land regulation and local customary institutions, undertaken by geographers, ethnologists, historians, and legal historians (Jones, 2005). Olwig (1996; 2002) has demonstrated the close relationship between law and the medieval notion of landscape in Scandinavia and northern Germany. Landscape referred here

to the conditions and character of a land, including its traditions and customs. The landscape referred also to the organisation of things in a land through "things" — legal assemblies and courts called *ting* in Scandinavian. The activities of these landscape polities shaped the material forms of the landscape. As a region, a landscape was a district in which the land was shaped by the regional customs and laws.

Law may be directly manifested in the physical landscape through buildings such as parliaments and law courts, through signs and decorations alluding to law, through boundary markers, and through field systems and land-tenure patterns. Manifestations of law and legal power in the landscape of Orkney and Shetland can be related to both a Norse landscape narrative and a Scots landscape narrative.

The Norse narrative includes excavated foundations of Viking longhouses, Norse fortresses and palaces, and the 12th-century St Magnus Cathedral in Kirkwall. At Tingwall, in Shetland, is an islet named the Law Ting Holm, reputed to be the open-air meeting-place of the medieval Shetland law court. This is an example of the manifestation of the law in the landscape both materially and immaterially through the surviving place-name. Landholdings showing continuity from Norse times are still thought of as "udal" holdings (Fig. 2). Jetties with houses built on the foreshore, although dating from the 18th century, are known as *lodberries* in Lerwick, from Old Norse *hlaðberg*, meaning loading rocks

Fig. 2. Udal and crofting tenant holdings at Coppister, Yell, Shetland. The middle house, called the Auld Haa, belongs to a small udal holding that has never been part of a large estate. To the left is Lowerhouses and to the right Da Kitchen, former udal holdings that became tenanted crofts in 1882 when the land was bought by a Lerwick merchant. The holdings consist of intermixed parcels of land separated by stone walls and fences. Photo: Michael Jones, 28.05.1986

(Wonders, 1995), facilitated by the Norse concept that a landholding extends to the ebb, or low-tide mark. A Norse literary revival starting in the 19th century led to the use of Norse symbolism in decorative elements of buildings, coat-of-arms and flags. Lerwick Town Hall, from 1883, has external decorations representing the Norse past and a spectacular series of stained-glass windows with motifs of Norwegian rulers. The Shetland coat of arms incorporates the motto "Med lögum skal landet byggja", meaning "By law the land shall be built", taken from *Njål's Saga* and found in medieval Scandinavian law codes (Jones, 1996b) (Fig. 3).

Fig. 3. Shetland's coat of arms on a welcoming sign at Lerwick Harbour. The arms use Norse imagery, including a legal motto found in several medieval Scandinavian landscape laws. Translated this means "By law the land shall be built". Photo: Michael Jones 04.08.1972

The Scots narrative includes the ruins of Renaissance palaces and castles. The ruins of Scalloway Castle in Shetland and the Earl's Place in Kirkwall, built at the turn of the 16th and 17th centuries, remain as monuments to the rule and misrule of Patrick, Earl of Orkney and Lord of Shetland, accused of manipulating Norse and Scots law for his own ends. The ruined Muness Castle on Unst in Shetland similarly provides a reminder of Earl Patrick's erstwhile ally Lawrence Bruce of Cultmalindie, also accused of misdeeds. Lairds' and merchants' houses built from the 17th century onwards, and the pattern of enclosures that transformed the landscape of Orkney in the 19th century, are memorials to the power of the incoming Scots who acquired estates in the islands. The "squared" fields that characterise parts of the Orkney landscape reflect the history of land reorganisation and agricultural improvement, involving enclosure and division of the commons, and replacing fragmented smallholdings (Fig. 4).

The medieval Norse law in Orkney and Shetland is thought to derive from Gulating Law, i.e the law of the Gulating legal assembly. This was the regional "landscape law" for West Norway. Similar "landscape laws" were found in several regions of medieval Norway, Denmark and Sweden. This was a notion of landscape as a territorial unit together with its legal institutions and people. The laws included rules and rights concerning use of land and other resources and the inheritance of land and goods. They were written down in the 12th and 13th centuries, and are thought to have been based on oral customary law with added elements of canon law introduced with the establishment of Christianity. The main provisions of the Gulating Law were codified by the Norwegian king Magnus Lawmender (*lagabøte*) in 1274 (Helle,

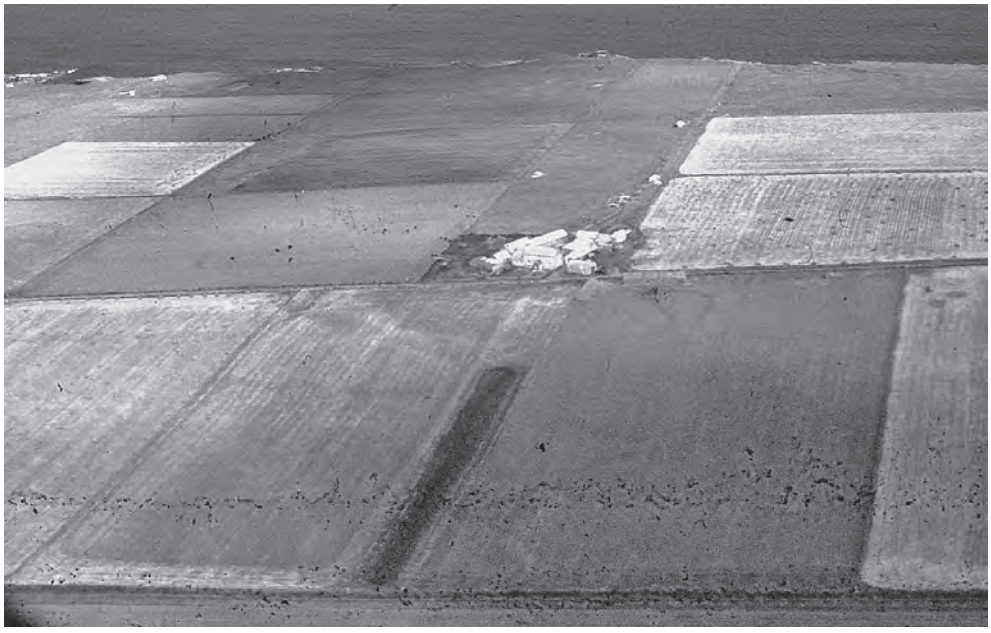


Fig. 4. The squared landscape of Shapinsay, Orkney. The grid-iron pattern of fields was laid out in the mid-19th century by estate owner David Balfour, descended from Scots incomer landowners. Balfour instituted agricultural improvement that involved enclosure and reclamation of land, which became farmed by tenants. Photo: Venke Åsheim Olsen 07.08.1972

2001). Magnus ruled the Norwegian realm at the time of its greatest extent, after Iceland and Greenland had submitted to the authority of the Norwegian king in the early 1260s, and before the loss of the Hebrides and Isle of Man to the Scottish king in 1266 (Helle, 1995). Orkney and Shetland remained part of the Norwegian realm until the mid-15th century; from the 1230s the Earls of Orkney were Scottish, recognising Norwegian suzerainty (Thomson, 2001).

Scandinavian rule ended when the king of Denmark and Norway, Christian I, pawned the islands to the Scottish king James III in lieu of a dowry for Christian's daughter Margrethe (Margaret). The treaties of 1468 and 1469 provided implicitly for the continuation in Orkney and Shetland of existing laws, and the Scottish Parliament in 1567 specifically recognized that the islands were subject to their own laws. Nonetheless the gradual imposition of Scots law and legal practice occurred. The notorious Earls Robert and Patrick Stewart, who ruled the islands as a fief from 1565 to 1609, exploited the confusion between Norse and Scots law to suit their own ends. In 1611, an Act of the Scottish Privy Council proscribed "foreign laws" in Orkney and Shetland. Such aspects of the old laws that survived came to be regarded as customs within a corpus of Scots law (Donaldson, 1978).

Udal law

The primary meaning of "udal" (also written "odal") is inherited land held by a form of freehold tenure involving absolute ownership, not subject to a superior. It derives from Old Norse *oðal*, meaning ownership of inherited family property in which certain rights belong

to the kin. Spelt *odel* in modern Norwegian, this form of landholding still exists in Norway, securing the kin in a fixed order of succession prior rights to take over a farm holding above a certain size once it has been held in the family for a specified length of time. Similar rights in other Scandinavian and Germanic countries disappeared between the 16th and 20th centuries (Jones, in press).

The term "udal law" is used in two principal ways. In the narrow sense, it refers to certain survivals of the Norse land tenure system, sometimes referred to as udal tenure. In the broad sense, it is used to refer to the whole system of Norse law that regulated Orkney and Shetland when they were transferred to the Scottish Crown in 1468–1469. The Norwegian legal historian Knut Robberstad (1983) showed that udal law in Orkney and Shetland can be traced to the Magnus Code of 1274 and the earlier provincial laws this codified. Norwegian laws were not superseded in Orkney and Shetland by Scots law until the early seventeenth century. Nevertheless, certain aspects of the Norse laws survived in the Northern Isles until the twentieth century. Although some claim that udal law can still be regarded as a separate system of law, the prevailing opinion among Scottish lawyers is that it represents survivals of customary land tenure within the prevailing body of Scots law (Robberstad, 1983; Sellar, 1987; Ryder, 1989; Smith, T., 1989; Jones, 1996b).

Udal law merited separate chapters in 20th-century encyclopaedias of Scots law. Orkney solicitor W.P. Drever wrote a chapter on udal law for *Green's Ecyclopædia of Scots Law* in 1900. Noting its Norse origins, he stated that udal law was "foreign" in relation to Scotland and coexisted with Scots feudal law as survivals of what he termed "native law". Udal landowners, or 'udallers', held hereditary estates derived from "primitive occupation", and owed no vassalage, homage or service to a superior, but had "a right of absolute property". Drever listed a number of features of udal law, some superseded and others surviving:

(1) The things — the "Udallers' Law Court and Parliament" — with their lawbooks had been gradually superseded until the last vestiges were abolished in 1748.

(2) Succession to property, both land and moveables, was by partition among all the children, with a brother's part being worth two sisters' parts, but this had been gradually superseded by the feudal practice of primogeniture. Drever erroneously stated that the youngest son received the father's dwelling-house.

(3) The period of prescription whereby lands became udal was, according to Drever, 30 years, but this had been superseded by the Scots law of prescription.

(4) Udal tenure was allodial, i.e. title did not emanate from the Crown and there was no feudal superior. A written title was not deemed necessary, although convenient. However, title had to derive from a lawful right; possession alone was not sufficient. Even where udal land had been granted by a feudal charter, as frequently happened in the 17th century, this was not sufficient to transform udal land into feudal land. Drever also referred to claims that the foreshore adjoining udal land belonged to the udaller rather than to the Crown.

(5) Udal landowners paid an annual tax of Norse origin, known as "scat" (Old Norse *skattr* = "tax"), which in origin was not a feudal duty, although over time tended to be conflated with feu-duties.

(6) In Shetland the commonly grazed pastures are called "scattalds", which Drever thought was the unit on which "scat" was payable.

(7) Regarding the Norse weights and measures peculiar to Orkney and Shetland, Drever found the land measures, based on value rather than area, to be "vague" and "confusing", although perpetuated in descriptions of land titles. "Native" standards and in-

struments, such as weighing-beams or steelyards of Norse origin known as "bismars" and "pundlars", were replaced by imperial avoirdupois weights in 1826.

In the 1914 and 1933 editions of Green's encyclopaedia, Drever added a paragraph on the right of riparian owners to salmon-fishings, which Scotland's supreme court, the Court of Session, had found in 1907 did not belong to the Crown but to the adjacent landowner on the basis of udal law.

In 1936, Edinburgh solicitor Wm. Jardin Dobie wrote a chapter on udal law in the Stair Society's *Survey of the Sources and Literature of Scots Law*. Like Drever, he noted that a udal holding was allodial, and the "udaller held of no man and owed no service to any superior". He paid "skat", which in origin was "a tribute to the state or Crown, rather than a feu-duty". The udal system involved "an entail on the family", and a udaller who wished to sell his land had to offer it first to his kinsmen. The kin had the right to redeem land sold to a stranger without their consent. Dobie also referred to the practice of "uppgestry", whereby an owner could make over his land to another in return for upkeep for the remainder of his life. Again, it was noted that writing was not essential to transfer the title of udal holdings. Udal inheritance was divided among the children, with daughters' shares being one-half those of sons, and the latter being entitled to acquire their sisters' portions by purchase if they wished. The eldest son (not the youngest, as stated by Drever) was entitled to the mansion or manor-house and had first choice of lots available. Dobie referred to the chief court, or law-thing, presided over by the lawman, until replaced by Scottish sheriffs. He referred also to local weights and measures. While udal law had largely disappeared from the islands, udal tenure had survived in the form of foreshore and fishing-rights.

Udal law was discussed in the Stair Memorial Encyclopaedia on *The Laws of Scotland* by Edinburgh solicitor Jane Ryder in 1989. Udal landownership involved a system of inheritance and kinship rights in which land was allodial rather than feudal, not emanating from the Crown as feudal superior. Title to udal property could be transferred without writ or conveyance if the legal right could be proven by witnesses. A written deed or charter was not sufficient in itself to convert a udal to a feudal holding if the Crown had never been feudal superior. Ryder described succession through partible inheritance as well as the rights of kin, the land being held "in trust for the family". Partible inheritance on intestacy was upheld in the Shetland sheriff court as late as 1893. She further described scat as an incident of udal landownership. Scattalds were in origin the unit for which scat was paid and included not only common grazings but also arable land and foreshore rights. Udal landowners owned the adjoining foreshore between high and low spring tides. Udal holdings were frequently described as extending from the highest stone of the hill to the lowest of the ebb. Ryder also described the historical weights and measures, including land measures.

Between 1890 and 1990, the Court of Session judged five cases involving udal law. In 1890, the case concerned a landowner's claim under udal law to one-third share of pilot whales driven on to his shore, which was contested by the captors. Although such claims had been recognised in earlier court decisions, it was rejected in 1890 on the grounds that it was an unreasonable custom. In 1903, a merchant's claim to foreshore adjoining his udal land in Lerwick was upheld, allowing him build out on to the foreshore. In 1907, a landowner's claim to salmon-fishing rights on the basis of udal law was upheld. In 1963, a claim was rejected that treasure trove found on udal land should be divided according the Magnus Code: one-third to the finders, one-third to the landowner, and one-third to the Crown. Finally, in 1990,

the Shetland Salmon Farmers' Association contested Crown ownership of the seabed under udal law but lost the case. Thus udal tenure was upheld in two of these cases, but rejected in three cases, once on the grounds that it was an unreasonable custom and twice (in the treasure and seabed cases) that they concerned the Crown's sovereign rights (Ryder, 1989; Smith, T., 1989; Jones, 1996a; 1996b).

Udal law differed from Scots law in several ways. Allodial tenure contrasted with feudal tenure, which prevailed legally in Scotland until it was formally abolished in 2000, with effect from 2004. Partible inheritance and rights of kin differed from Scots law, where primogeniture prevailed for intestate succession until 1964. Norse weights and measures were effectively done away with in 1826. Scat payments in Orkney and Shetland were finally extinguished in 2004. The foreshore and salmon-fishings in mainland Scotland belong to the Crown estate except where alienated. Especially after the reform of Scottish land tenure since devolution in 1999, little remains legally to distinguish udal law from Scots law. Foreshore and salmon-fishing rights remain, but their practice is subject to other legislation such as planning laws and fishing regulations (Jones, 1996a; in press).

Popular perceptions of udal law

On the basis of some 70 qualitative interviews, undertaken mostly in 1986, I investigated modern perceptions of udal law. I found that the meanings and functions attributed to udal law varied among different social groups. Townspeople in Orkney and Shetland generally had anecdotal knowledge of udal law. Some mentioned disputes over building on the foreshore. Some saw it in a somewhat romantic light as part of local history or contributing to their identity — sometimes as part of the Viking heritage used to promote tourism — but for most it had little practical significance. The legal profession, represented by local solicitors, mostly regarded udal law as having eroded over time and existing as a few survivals within the framework of Scots law, principally private ownership of the foreshore and salmon-fishing rights. Their training was in Scots law, but some were willing to defend udal law if they thought it could be legally upheld (as in the unsuccessful seabed case). Estate owners and crofters mentioned especially economic aspects connected to foreshore and salmon-fishing rights. Finally, I found a few small landowners — the "last udallers" — who told of the practice of partible inheritance and rights of kin in living memory. This is the essence of udal law, although the poorest documented in modern times. This might be regarded as vestiges of family customary land rights, or it might be interpreted as revealing ethnic memories (Jones, 1996a).

In another study, I showed how udal law became a focus of attention in the 19th and early 20th centuries as part of a Norse cultural renaissance. Local historians emphasised and often romanticised the Norse period in their works, frequently contrasting it with the perceived oppressions of Scottish rule. The Udal League, founded in 1886, campaigned for home rule, land-tenure reform and the conversion of farm tenants to owner-occupiers. Udal law was an early topic of interest for the Viking Club, founded in London in 1892, becoming in 1912 the Viking Society for Northern Research. Similarly, udal law was a theme taken up by the First Viking Congress held in Lerwick in 1950. During the second half of the 20th century, udal law was invoked in public debates on matters of concern for Orcadians and Shetlanders. In the 1960s, the concern was local government reform. In the 1970s, when constitutional reform for Scotland was debated, the Shetland and Orkney Movements were established to agitate for local autonomy and referred to udal law as part of the islands' distinctiveness. In the 1980s, udal law was

invoked by opponents to such diverse issues as uranium mining, Sites of Special Scientific Interest, and Crown estate seabed rentals for salmon-farming (Jones, 1996b).

More recently, I have examined demands that arose during the Scottish Parliamentary elections in 2003 for local control of the sea and seabed, important for fishing and offshore oil, and for local autonomy and the recognition of udal law as Shetland's "native Norse law". The Shetland and Orkney Udal Law group (SOUL) set up a website with links to legal decisions in favour of aboriginal land titles in Australia and Canada, and claimed that udal law was an "indigenous legal system". I concluded that it was doubtful whether indigenous status for Orcadians and Shetlanders could be sustained (Jones, 2010). In a further study, I have discussed in relation to the idea of the "right to landscape" the territorial dimension of human rights as a basis for analysing claims made for udal law. I argued that contested rights to land and sea resources are frequently bound up with contested interpretations of history. My conclusion was that, although land ownership and rights shape landscape to a significant degree, the right to landscape as a shared resource extends beyond legal questions of property ownership and legal rights of resource use (Jones, 2011) .

Social construction of the past and contested interpretations of history

The social construction of udal law

Extensive evidence of the practice of udal law during the Norse and early Scottish periods to 1611 is found in collections of historical documents from Orkney and Shetland, mostly not published until the 20th century (Clouston, 1914; Donaldson, 1954; Ballantyne and Smith, 1994; 1999). However, ideas of the significance of udal law as part of Orkney and Shetland identity are strongly influenced by legal, topographical and historical literature as well as fiction. This literature can be said to have contributed to the "social construction" of udal law through the meanings and values conferred on it in descriptions. Ideas about udal law have been part of the social construction of the Viking past in the Victorian era (Wawn, 2000) and the related social construction of the Norse past in Shetland (Renwanz, 1980; Cohen, 1983) and Orkney (Seibert, 2008).

The earliest literature on Orkney and Shetland is in the Icelandic sagas from the early 13th century. *The Orkneyinga Saga* tells the history of the Norse earls of Orkney from the islands' capture by the Norwegian king Harald Fairhair in the 9th century to the forfeiture of Shetland with its "scats and dues" to the Norwegian king Sverre at the end of the 12th century. It mentions the calling of the things, but otherwise law is little discussed. At one meeting of the thing, Earl Rognvald allowed landowners to repurchase their previously confiscated "odal possessions", which enabled him to finance the building of St Magnus Cathedral. The saga is as much fiction as historical documentation. First published in Copenhagen in Latin translation in 1780, it did not appear in English until 1873 (Anderson, 1981). Like the English translations of the other sagas, it strongly influenced the Victorian imagination of the Viking period.

Not counting references in court records and Acts of Parliament, one of the earliest legal texts to mention Norse law in the Northern Isles was Thomas Craig's *De Unione Regnorum Britanniæ Tractatus*, written in 1605 although not published before 1909. Craig, one of the most influential legal writers of his time, was one of the Scottish commissioners who drafted Articles for the proposed political union of Scotland and England. His tract provided the only detailed argument for union from the Scottish side. He gave the example of Norwegian law in Orkney as an argument

that a union was possible even if the laws differed.

The earliest topographical description of Orkney and Shetland to refer to Norwegian law was by Robert Monteith in 1633, published by the Geographer Royal of Scotland, Robert Sibbald, in 1711. Monteith was responsible for the misapprehension that the youngest was to have the dwelling-house on the division of inheritance, repeated by later writers. An Orkney money-lender and landowner, he had come into conflict with Earl Patrick, who plundered his estates. He may have described the udallers' "immemorial possession" of their lands in justification of the restoration of his rights.

In 1681, James Dalrymple (later Viscount of Stair) published his *Institutions of the Law of Scotland*. Two short paragraphs described "udal rights" as "peculiar customs of the isles of Orkney and Zetland" (Stair, 1826–1827, II, 222, IV, 683). Statements by Monteith and Dalrymple that written titles were not necessary were repeated in other early topographical accounts (Wallace, 1693; Martin, 1703; Brand, 1883).

A much fuller account of udal law is found in Thomas Gifford's *Historical Description of the Shetland Islands in 1733*, published in 1786. He was a landowner and the Earl's chamberlain, responsible for collecting dues and rents as well as scat, and hence had an interest in making a thorough historical reconstruction of these as well as ways of transmitting property. He claimed that the udallers had been oppressed by the Fowd, the Norwegian governor who had collected the scat historically. He also criticised the oppressions of the Stewart earls. Nonetheless, he regretted the replacement of the simple Norse system of transmitting land by Scots conveyancing as it impoverished the udallers while making money for lawyers.

In 1750, James Mackenzie, a Kirkwall lawyer, published anonymously *The General Grievances and Oppressions of the Isles of Orkney and Shetland*. He was a legal agent for one of the Orkney lairds involved in a 26-year long legal dispute known as the Pundlar Process, in which the Earl was accused of manipulating the old weights and measures to increase the dues payable to the Earldom. Mackenzie produced a historical account supporting the claims of the lairds. He argued that the weights and measures should revert to their original values under Norwegian rule, and that scat should be abolished since the landowners also paid Scottish land tax. In 1759, however, the Court of Session found in favour of the Earl.

Among those arguing against Mackenzie was Andrew McDouall (later Lord Bankton) in his *Institute of the Laws of Scotland*. On udal law he argued that the lack of written titles was antiquated, that udal rights were an ancient feudal form of possession, and that scat was not a land tax but a feudal due. He claimed that the rights of kin and partible inheritance were in disuse, or if still practised were so inconvenient that udal rights should be discontinued (McDouall, 1751, 542–545).

These examples from the 17th and 18th centuries show that interpretations of udal law varied according to personal circumstances, political views, and position in the landowning hierarchy. Despite differences, a picture was built up of the Norse heritage of the isles in which udal law became an established part. Interpretations as well as misinterpretations of history were passed down from one writer to another and became widely accepted as "historical facts". The number of accounts referring to udal law multiplied in the 19th and 20th centuries. A detailed analysis of these is a task for later (although I have provided a brief account (Jones, in press b)). They have helped sustain up until the 21st century debates over the relevance of the Norse historical past for the present despite 540 years of Scottish dominating influence.

Contested historiography

In 2004, the relevance of udal law was the subject of a public debate in Kirkwall on whether udal law was living history or modern fantasy. The first view contended that udal law was part of Orkney and Shetland identity and hence a continuing part of modern life. The opponents argued that it was a remnant of a system of private law concerning land inheritance, and not relevant for ordinary people in the street. The jury (including a solicitor, local historian, librarian and ex-councillor) voted seven to five against the motion that udal law was still relevant, whereas the audience voted by 43 votes to 11 that it continued to be relevant (Jones, 2011; in press). The status of udal rights is linked to differing interpretations of the islands' history. In detail this requires further research, but a tentative sketch can be given (Jones, 2011).

Øien (2005) identifies two main strands in the historiography of Orkney and Shetland, one emphasizing Norse influence and the other Scots influence. One debate has been between the 'war school', who maintain that Viking settlement was accompanied by genocide of the pre-existing population, and 'the peace school', who emphasize continuity with assimilation of the former Pictish inhabitants (Bäcklund, 2001; Smith, B., 2001; 2003b; Fellows-Jensen, 2005). Another debate has concerned whether the medieval system of administration and taxation was solely of Norse origin or showed Celtic-Pictish influences (Øien, 2005). On the transfer of sovereignty to Scotland, some maintain that there still exists a residual Norwegian or Danish right of redemption of the mortgage by which sovereignty was transferred in 1468–1469, while others argue that sovereignty has been permanently transferred to Scotland by acquiescence (Donaldson, 1984). The Stewart earls' administration of 1565–1609 has been regarded in some quarters as the worst example of Scottish misrule and in others as a treacherous exploitation in their own interest of Scots feudal or Norse udal laws according to expediency (Smith, B., 1999). "Udallers" have been variously described as Norse smallholders struggling against the power of expanding Scottish estate-owners or as large medieval landowners with tenants whose estates were eventually acquired through marriage or purchase by incoming Scots. Fragmentation of udal (allodial) estates has been explained by the introduction of feudal conveyancing without recognizing the rights of kin or as the result of partible inheritance under Norse udal law (Shaw, 1980). The claim to a share of pilot whales driven onshore has been presented as an ancient udal right of landowners or as an unjust custom introduced by Scottish estate-owners in the eighteenth century (Smith, B., 2003a). Udal law has been presented as a separate system of law eroded by the political ascendancy of Scotland and the "legal imperialism" of encroaching Scots law or as accepted local customary rights within the prevailing system of Scots law (Sellar, 1987; Jones, 1996b). In the most recent debates, it has been evoked as a basis for claims to local control over maritime and seabed resources or dismissed as vestigial land rights unrelated to the regional and offshore economy.

Conclusion

Landscape and law are intimately bound up with one another in multiple ways. The example of udal law in Orkney and Shetland shows that ideas of landscape are not only based on the landscape's physical appearance but are supported by stories and histories told about it. When one system of law replaces another, vestiges of the old system may endure over many centuries and contribute to feelings of cultural identity. Interpretations of the history of land tenure and landscape change reflect domination, resistance and contestation between different classes and ethnicities in the construction of histories

of the islands. This is seen in a continuing tension between academic histories and popular histories.

References

Anderson, J. (Ed.) (1981 [1873]). *The Orkneyinga Saga*. Edinburgh: James Thin, Mercat Press. civ+227 pp.

Bâcklund, J. (2001). War or peace? The relations between the Picts and the Norse in Orkney. *Northern Studies*, 36, 33–47.

Ballantyne, J., Smith, B. (eds.) (1994). *Shetland Documents 1580–1611*. Lerwick: Shetland Islands Council & The Shetland Times Ltd. xxii+329 pp.

Ballantyne, J., Smith, B. (eds.) (1999). *Shetland Documents 1195–1579*. Lerwick: Shetland Islands Council & The Shetland Times Ltd. xxii+359 pp.

Brand, J. (1883 [1701]). *A Brief Description of Orkney, Zetland, Pightland-Firth & Caithness*. Edinburgh: William Brown. 247 pp.

Clouston, J.S. (Ed.) (1914). *Records of the Earldom of Orkney 1299–1614* (Publications of the Scottish History Society, Second Series, vol. VII). Edinburgh: Scottish History Society & University Press. xcix+515+8 pp.

Cohen, B.J. (1983). Norse imagery in Shetland: An historical study of intellectuals and their use of the past in the construction of Shetland's identity, with particular reference to the period 1800–1914. PhD thesis, University of Manchester. 535 pp.

Craig, T. (1909 [1605]). *De Unione Regnorum Britanniæ Tractatus*. Ed. and transl. by Terry, C.S. Edinburgh: Scottish History Society & University Press. 497 pp.

Dobie, W.J. (1936). Udal law. In: *The Stair Society: An Introductory Survey of the Sources and Literature of Scots Law*, Vol. 1 (pp. 445–460). Edinburgh: Stair Society.

Donaldson, G. (Ed.) (1954). *The Court Book of Shetland 1602–1604*. Edinburgh: Scottish Record Society. xii+176 pp.

Donaldson, G. (1978). Norse and Scottish law in Shetland: The background. In: *The Shetland Report: A Constitutional Study Prepared for the Shetland Islands Council by the Nevis Institute under the Chairmanship of Lord Kilbrandon* (pp. 179–195). Edinburgh: Nevis Institute.

Donaldsen, G. (1984). Problems of sovereignty and law in Orkney and Shetland. In: Sellar, D. (Ed.). *The Stair Society: Miscellany Two* (Publications of the Stair Society, vol. 35) (pp. 13–40). Edinburgh: The Stair Society.

Drever, W.P. (1900). Udal law. In: Chisholm, J. (Ed.). *Green's Encyclopædia of the Law of Scotland*, vol. XIII (pp. 28–38). Edinburgh: William Green & Sons.

Drever, W.P. (1933 [1914]). Udal law. In: Dunedin, Viscount, Wark, J.L., Black, A.C. (eds.). *Encyclopædia of the Laws of Scotland*, vol. XV (pp. 321–336). Edinburgh: W. Green & Son.

Fellows-Jensen, G. (2005). Extermination or economic exploitation? In: Gammeltoft, P., Hough, C., Waugh, D. (eds.). *Cultural Contacts in the North Atlantic Region: The Evidence of Names* (pp. 100–118). Lerwick: NORNA, Scottish Place-Name Society and Society for Name Studies in Britain and Ireland.

Gifford, T. (1976 [1786]). *An Historical Description of the Zetland Islands in the Year 1733*. Sandwick, Shetland: Thuleprint Ltd. xviii+104 pp.

Helle, K. (1995). *Aschehougs Norgeshistorie*, vol. 3: *Under kirke og kongemakt 1130–1350* [Aschehoug's History of Norway, vol. 3: Under the Power of Church and King]. Oslo: Aschehoug. 239 pp.

Helle, K. (2001). *Gulatinget og Gulatingslova* [The Gula Assembly and the Gulating Law]. Leikanger: Skald. 240 pp.

Jones, M. (1996a). Perceptions of udal law in Orkney and Shetland. In: Waugh, D. (Ed.). *Shetland's Northern Links: Language and History* (pp. 186–204). Edinburgh: Scottish Society for Northern Studies.

Jones, M. (1996b [2001]). Scots and Norse in the landscape of Orkney and Shetland: Visible landscape and mental landscape. In: Aalen, F.H.A., Hennessy, M. (eds.). *Proceedings of the Permanent European Conference for the Study of the Rural Landscape: Papers from the 17th Session, Trinity College Dublin, 1996* (pp. 4–10). Dublin: Department of Geography, Trinity College, University of Dublin.

Jones, M. (2005). Law and landscape — some historical-geographical studies from northern Europe. In: Peil, T., Jones, M. (eds.). *Landscape, Law and Justice: Proceedings of a Conference Organised by the Centre for Advanced Study at the Norwegian Academy of Science and Letters, Oslo 15–19 June 2003* (Instituttet for sammenlignende kulturforskning, Serie B: Skrifter, vol CXVIII) (pp. 95–109). Oslo: Novus forlag.

Jones, M. (2010). Playing the indigenous card? The Shetland and Orkney Udal Law group and indigenous rights. *GeoJournal*, 11 pp. DOI 10.1007/s10708-010-9380-8.

Jones, M. (2011). Contested rights, contested histories: Landscape and legal rights in Orkney and Shetland. In: Egoz, S, Makhzouni, J, Pungetti, G. (eds.). *The Right to Landscape: Contesting Landscape and Human Rights* (pp. 71−83). Aldershot: Ashgate.

Jones, M. (in press). Udal law. In: Mulhern, M. (Ed.). *Scottish Life and Society: A Compendium of Scottish Ethnology*, vol. 13: *Institutions of Scotland — The Law* (pp. 389−417). Edinburgh: European Ethnological Research Centre & Birlinn.

McDouall, A. (1751). *An Institute of the Laws of Scotland in Civil Rights: With Observations on the Agreement or Diversity Between Them and the Laws of England. In Four Books: After the General Method of the Viscount of Stair's Institutions*, vol. I. Edinburgh: A. Kincaid & A. Donaldson. 708 pp.

Mackenzie, J. (1836 [1750]). *The General Grievances and Oppression of the Isles of Orkney and Shetland*. Edinburgh: Laing and Forbes. xxxix+111+vi pp.

Martin, M. (1999 [1703]). *A Description of the Western Isles of Scotland*. Edinburgh: Andrew Bell. 392 pp.

Monteith, R. (1711). *The Description of the Islands of Orkney and Zetland*. Edinburgh: S.R.S. & Andrew Sympson. 4+42 pp.

Øien, T. (2005) The Northern Isles — between two nations. *Northern Studies*, 39, 80–104.

Olwig, K.R. (1996). Recovering the substantive nature of landscape. *Annals of the Association of American Geographers*, 86, 630–653.

Olwig, K.R. (2002). *Landscape, Nature and the Body Politic — From Britain's Renaissance to America's New World*. Madison, Wisconsin: University of Wisconsin Press. 299 pp.

Renwanz, M.E. (1980). From crofters to Shetlanders: The social history of a Shetland island community's self image, 1872–1978. PhD thesis, Stanford University. 349 pp.

Robberstad, K. (1983). Udal law. In: Withrington, D.J. (Ed.). *Shetland and the Outside World 1469–1969* (Aberdeen University Studies Series, no. 157) (pp. 49–68). Oxford: Oxford University Press.

Ryder, J. (1989). Udal law (Ed. Sellar, W.D.H). In: Smith, T., Black, R., Thomson, J.M. (eds.). *The Laws of Scotland: Stair Memorial Encyclopaedia*, vol. 24 (pp. 193–219). Edinburgh: Law Society of Scotland & Butterworths.

Sellar, W.D.H. (1987). Custom as a source of law. In: Smith, T., Black, R., Thomson, J.M. (eds.), *The Laws of Scotland: Stair Memorial Encyclopaedia*, vol. 22 (pp. 176–198). Edinburgh: Law Society of Scotland & Butterworths.

Siebert, S. (2008). *Reception and Construction of the Norse Past in Orkney* (Imaginatio Borealis, Bilder des Norden, vol 16). Frankfurt am Main: Peter Lang. 341 pp.

Shaw, F.J. (1980). *The Northern and*

Western Islands of Scotland: Their Economy and Society in the Seventeenth Century. Edinburgh: John Donald.

Smith, B. (1999). Earl Robert and Earl Patrick in Shetland: Good, bad or indifferent? *New Orkney Antiquarian Journal*, 1, 6–16.

Smith, B. (2001). The Picts and the martyrs or did Vikings kill the native population of Orkney and Shetland? *Northern Studies*, 36, 7–32.

Smith, B. (2003a). Pilot whales, udal law and custom in Shetland: Legal red herrings, *Northern Scotland*, 23, 85–97.

Smith, B. (2003b). Not welcome at all: Vikings and the native population in Orkney and Shetland. In: Downes, J., Ritchie, A. (eds.). *Sea Change: Orkney and Northern Europe in the Later Iron Age AD 300–800* (pp. 145–150). Balgavies: Pinkfoot Press.

Smith, T. (1989). Udal law: Editorial excursus by the late Sir Thomas Smith (Ed. Sellar, W.D. H.). In: Smith, T., Black, R., Thomson, J.M. (eds.). *The Laws of Scotland: Stair Memorial Encyclopaedia*, vol. 24 (pp. 219–230). Edinburgh: Law Society of Scotland & Butterworths.

Stair, J, Viscount of. (1826–1827 [1681]). *The Institutions of the Law of Scotland Deduced from its Originals, and Collated with the Civil and Feudal Laws and with the Customs of Neighbouring Nations in Four Books*, 4th edn. by Brodie, G., vols. I–IV. Edinburgh: Thomas Clark. 1101 pp.

Thomson, W. L. (2001). *The New History of Orkney*. Edinburgh: Mercat Press. 529 pp.

Wallace, J. (1693). *A Description of the Isles of Orkney*. Edinburgh: John Reid. 94 pp.

Wawn, A. (2000). *The Vikings and the Victorians: Inventing the Old North in Nineteenth-century Britain*. Cambridge: D.S. Brewer. 434 pp.

Wonders, W. C. (1995) The lodberries of Lerwick. *Scottish Geographcial Magazine*, 111, 88–97.

ON THE INTEGRATION OF OUTDOOR RECREATION IN NATURE CONSERVATION POLICIES

Marie Stenseke
Department of Human and Economic Geography, University of Gothenburg,
P.O. Box 630, SE-405 3, Göteborg, Sweden
Marie.Stenseke@geography.gu.se

Key words: *outdoor recreation, nature conservation, policy analysis, Sweden*

Nature conservation and recreation are factors affecting land use in many rural areas in contemporary Europe. This implies new perspectives on "landscape" and reveals a need to broaden the horizon when it comes to understanding and analyzing rural land. During the last decades, biodiversity has become a central objective in landscape management and planning. Meanwhile, the possibilities for outdoor recreation have become increasingly important, due to urbanization, coupled with greater leisure time and escalating economic welfare. This article discusses the interface nature conservation — outdoor recreation and explores how outdoor recreation is considered and contextualized in contemporary nature conservation policies and strategies in Sweden. An examination of statutory documents has been conducted, and complemented with a case study of a developing nature conservation project. The result shows that outdoor recreation is acknowledged in the documents as an important factor, but this is not followed up rigorously. The focus is on the impact of recreation on nature while conflicts between various recreational interests as well as other societal aspects tend to remain unnoticed. The reasons behind are discussed in terms of (i) attitudes among officials; (ii) the institutional structure; (iii) the dominant paradigm in nature conservation.

Introduction

Nature conservation and recreation are factors affecting land use in many rural areas in contemporary Europe. This implies new perspectives on "landscape" and reveals a need to broaden the horizons when it comes to understanding problem complexes and seeking managerial solutions. Outdoor recreation and nature preservation have been intertwined since the birth of nature conservation during the 19th century. Though some conflicting interests can be identified, these two aspects of land (and water) use have a lot in common in the fields of the history of ideas, spatial areas of interest, shared policy agendas and landscape quality demands (Jongman, 1995; Mels, 1999). Over the past three decades, biodiversity has become a central objective within nature conservation. The Convention on Biological Diversity (CBD), established in 1992, has been a powerful force and Natura 2000, the network of conservation areas in Europe, is the major contribution by the European Union towards the fulfilment of the CBD programme (European Union, 2008). What implications do

these strong commitments to enhancing biodiversity have for the contemporary relation between nature protection and outdoor recreation, and what challenges do they present for the development of recreational features within landscape management and planning?

Sweden stands out as a country very active in the biodiversity preservation discourse, both in the international arena and with respect to national policy making (Sandström, 2008). Meanwhile, the issue of outdoor recreation has been much less in focus. Since the beginning of the 21st century, however, renewed ambitions in this regard are seen in the national policy strategies and outdoor recreation is once again explicitly considered to be an integral part of nature conservation (Swedish Government, 2002). Furthermore, since 2002, the national responsibility for outdoor recreation has come under the Swedish Environmental Protection Agency (SEPA), which has been responsible for nature preservation since 1967. In the context of the emphasis on biodiversity, the ambitions as regards the interface between nature conservation and outdoor recreation in contemporary policy strategies imply challenges regarding how to preserve "nature" while encouraging the recreational use of land and water resources. This article discusses the interface nature conservation — outdoor recreation and explores how outdoor recreation is considered and contextualized in contemporary nature conservation policies and strategies in Sweden. The scientific approach is deconstructive, with the primary aim to expose preconceived perceptions and reveal underlying premises that need to be reflected.

Outdoor recreation and nature conservation

One fundamental issue, with implications for how outdoor recreation is considered and contextualised, is the way that relations between human beings and nature are conceived. From a nature protection point of view, a common preconception is that recreational activities are harmful for the environment. Much natural science research on the interaction between outdoor recreation and nature conservation has primarily focused upon the negative consequences of recreation for biodiversity (Arnberger and Mann, 2008). Recreation and hunting have been identified among the factors most responsible for the conflicts between human activity and biodiversity conservation in Europe (Young *et al*., 2005). Issues such as waste, pollution, and loss of vegetation cover exemplify this discourse of "disturbance". Different recreational activities have, however, different environmental impact. The impact is not homogeneous or strictly dependent upon the number of visitors, but varies depending on activity patterns and general behaviour. Furthermore, the consequences for biodiversity can be positive or negative, direct or indirect, temporary or lasting and can vary in scale from global to local (Pröbstl, 2003; Pickering, 2010). Besides the very concrete physical impacts of recreation on "nature", there are also implicit aspects to the relation between nature protection and outdoor recreation. Tourism and outdoor recreation have been highlighted as means for enhancing local development based on nature protection, thereby providing a win-win situation for the nature conservation authorities and the local community (Burger, 2000).

In the wake of ambitious conservation objectives and the expansion of protected areas, there is, however, a growing body of research showing that 'nature' is inescapably social as it is defined, delineated and often even physically reconstructed by humans (Macnaghten and Urry, 1998; Castree and Braun, 2001; Hajer and Versteeg, 2005). This approach challenges the modern ontological division between nature and culture, by revealing the cultural construction of central concepts such as wilderness and biodiversity, and reinforc-

ing the need to identify and analyse implicit perspectives in nature conservation. Having their departure in a critical perspective, a number of scholars have revealed biases and preconceived notions in nature conservation and landscape management that shape ways of perceiving outdoor recreation and its integration. In his research on national park planning in Sweden in the 1990s, Mels showed that nature was essentially defined as beyond society, though the very existence of national parks could be understood as a confirmation of the fact that nature and humanity are one (Mels, 1999). In his critique Mels stressed the need for a more reflexive understanding of nature conservation and launched *reinvention* as a key concept in understanding contemporary nature conservation.

Following Mels, assessments of "authenticity", and the common ambition in nature preservation to restore habitats to a "non-human biophysical authenticity" (Campbell, 2005) can be questioned, as indeed can the notion of historical landscapes being more "authentic" than present ones (Deremitt, 2001). In the numerous social science studies on nature conservation, conflicting interests are often essentialised as discrepancies between purist (ecocentric) and use-oriented (anthropocentric) attitudes to nature (Gobster, 2001). The dominant preservation versus utilitarian dichotomy, developed in a historic era when extractive use was perceived as the greatest threat to nature qualities, is, however, losing its validity (Wilson, 2008). As the relationship between humans and the physical landscape is changing, there is a need to direct more attention to changing societal expectations, including the growing demand for recreational use (Daugstad *et al.*, 2006).

The request for a more sophisticated conception of nature conservation, can be related to the widely acknowledged need to integrate social and natural science if sustainable usages of land and natural resources are to be developed (cf. O'Riordan and Stoll-Kleeman, 2002; MA, 2005). The most prominent approach towards this integration is the ecosystem approach, originating in the CBD and promoted by the IUCN (International Union for Conservation of Nature) (IUCN, 2009). Simply put, in this approach, human society and all human activities are considered as parts of ecosystems (CBD, 2009). One of the primary goals in this approach is to maintain ecosystem services V the benefits people obtain from ecosystems (Shepherd, 2004). As ecosystem services have become prominent in environmental rhetoric, outdoor recreation has been categorised as a cultural ecosystem service (MA, 2005). The attempt to absorb human society analytically into ecosystems has, however, attracted criticism, as has the ambitions to create naturalistic models of human behaviour (Macnaghten and Urry, 1998; Head, 2007).

From a recreation management point of view, it is of fundamental importance to recognise what motivates people to be outdoors, what they want to do, and what kind of expectations they have, in order to meet the demands for nature experience and recreational qualities (Manning, 2010). Several studies show that biodiversity preservation qualities are not essential to experiences of "nature" (Emmelin *et al*., 2010). Animals and plants do not have to be rare to be fascinating (Henningsson, 2008), and pristine areas are not always of recreational interest (Gundersen and Frivold, 2007). All this, of course, in the context of considerable divergence in recreational interests of different individuals and groups (Stankey *et al.*, 1999; Emmelin and Fredman, 2001). In North America, a number of concepts for managing recreation and nature protection in the same areas have developed (Pirgram and Jenkins, 1999). The most well known of them is Recreation Opportunity Spectrum (ROS) (Manning, 2010), which also has been occasionally used in national park planning in Sweden (Fulufjället, see Wallsten, 2003).

Outdoor recreation in Swedish nature conservation policies and strategies

In order to examine how recreation aspects are integrated in central policies in nature conservation in Sweden, a quantitative content analysis and a context examination (Krippendorff, 2004) of written policy documents in Swedish nature conservation 2002–2006 were performed, and complemented by results from a case study of the policy in practice. The documents were selected as being the most important strategic texts for nature conservation during that period, and the ambition has been to reveal overarching perspectives and approaches of importance for resource allocation and the perceived need for knowledge and competence, rather than applied guidelines: The government bill on nature conservation (Swedish Government, 2002), and the National Code for Environmental Quality Objectives, which form the basis of the national environmental policy (Swedish Government, 2005a) (the examination in this study is limited to the text describing the environmental objectives), together with its three complementary national strategies for wetlands, forest conservation and marine environments (SEPA, 2005a; Swedish Government, 2005b; SEPA, 2006). In the content analysis, the frequencies of code words related to outdoor recreation and the understandings of outdoor recreation, explicitly expressed or implicitly indicated by textual devices and analogy, were investigated.

The results show a great variation between the documents in the use of the term "outdoor recreation" and related terms (Table 1).

Table 1. **Frequency of outdoor recreation terms in mandatory documents in Swedish nature conservation**

	Frilufts + rekrea (outdoor recrea + recrea)	Fritid (leisure)	Upplevelse (Experience)	Turis (Touris)
Government bill on Environmental Quality Objectives (214p)	22 (+ 4 rekrea)	7	11	17
National Strategy for Wetlands (32p)	2	0	0	0
National Strategy for Forest Conservation (127p)	18 (+ 14 rekrea)	0	6	0
National Strategy for Marine Environments (91p)	8	19	0	14
Government bill on Nature Conservation (135p)	277 (+ 10 rekrea)	18	57	190

The nature conservation bill (Swedish Government 2002), states that outdoor recreation is a cornerstone in nature conservation and deals significantly with recreational aspects, as indicated by the quantitative content analysis (Fig. 1). Outdoor recreation is partly embraced as an integrated part of nature conservation, implying outdoor recreation as a land use interest. Outdoor recreation is furthermore conceptualised as having intrinsic values, giving people positive life quality values.

"Outdoor recreation implies experiences and enjoyment and is a kind of 'consumption' that increases the welfare and wellbeing of the population." (Swedish Government 2002, p. 9, author's translation).

One of the explicit aims in the Nature Conservation Bill is to create opportunities for nature experiences and development of outdoor recreation options rather than restrictions. The possibilities for outdoor recreation are briefly related to issues such as accessibility, areas without noise, air pollution, discussions about how many visitors an area can accommodate, and synergies with local development and physical planning. Conflicts between various kinds of recreation activities are to some extent discussed and zoning is brought up in passages concerning how to satisfy people with various interests when designating protected areas.

In the environmental quality code with the 16 national objectives, phrased as catchy slogans, e.g. Sustainable Forests, Thriving Wetlands, A Varied Agricultural Landscape, and the related strategies, which explicitly departs from the ecosystem approach, outdoor recreation is much less of an issue. Recreational issues are, mainly apparent in the rhetorical parts of the bill, as in the chapter on Flourishing Lakes and Streams;

"The importance of lakes, shores and streams for experiences of nature and culture and for swimming and recreation are taken into account and considerately and sustainably developed." (Swedish Government 2005a, p. 104, author's translation).

Outdoor recreation is often contextualised as a means for enhancing nature protection, as education and business opportunities for local communities adjacent to protected areas, while it is generally absent in those sections dealing with implementation and management. In the forest strategy, for example, the explicit objective stated in the introduction, is to create a green infrastructure for animals, plants and people, yet the following chapters relate to biological qualities and measures for protection. When recreational aspects are considered, the focus is generally on the impact upon biological qualities, and outdoor recreation and related terms are regularly found in contexts of disturbance.

"In bird-rich areas, visitors should be channelled towards certain zones in order to reduce the risk for disturbance." (SEPA 2006, p. 15, author's translation).

The examination of the texts reveals inconsistencies in the use of the terms under investigation that complicate the interpretation of how outdoor recreation is related to nature conservation. Even if the bill on nature conservation states that outdoor recreation is a cornerstone, the 18 passages where the expression "outdoor recreation and nature conservation" can be found, indicate that this idea of outdoor recreation being integrated has not taken hold. Moreover, the consideration of outdoor recreation as a use interest or a preservation interest varies; in the target of the bill, it is stated that hunting and fishing are not considered as outdoor recreation, but as utility interests. This could be understood to mean that only recreational interests that are related to landscape quality preservation are included in the bill; however, this logic is not consistently applied.

As for outdoor recreation in the environmental quality objectives documents, there are notable variations in the frequency and the vocabulary when it comes to different

landscape types, indicating various sectorial habits and a lack of coherence in contextualising the phenomena. Terms related to outdoor recreation are to a large extent found in the chapters dealing with the sea, forests, the alpine areas, urban areas and biodiversity, while just occasionally in others. The terms "social values" and "experience" are used more frequently in the forest context than in others, and it is only in relation to forests that the use of urban-proximate nature for recreational reasons, nature experiences, children's activities and nature education is discussed. Equally, in the strategy for wetlands, hunting and off-road vehicle driving are mentioned as outdoor recreation activities, while neither of these is discussed in the forest strategy.

The establishment of Kosterhavet national park

The findings from the strategic documents are related to the outcome in practice through a study of how recreational aspects were considered in the establishment of Kosterhavet National Park, which coincides in time with the documents examined (Stenseke, 2010). In the process of establishing the Kosterhavet National Park, an explicit aim was to promote nature experiences. Kosterhavet is likely to be the most species rich area in Sweden. At the same time the archipelago is a popular spot for recreation and tourism. When the park opened, a number of facilities for visitors had been constructed in various places (signs, waste collection, toilets etc), a visitors' center was planned and restrictions for use had been erected. The analysis of the process revealed, however, that these measures were mainly taken ad hoc, as no clear strategy or structure for how recreation aspects were to be integrated were at hand. While there was a significant base of scientific knowledge regarding the biological aspects, and scientific expertise was mobilized for the inventories, the knowledge base for outdoor recreation consisted of the experience of the executives (biologists), supplemented by consultations with local residents. Except for the planning of the visitor centre, no one with professional competence in outdoor recreation, tourism, or human behaviour, participated in the process. Furthermore, the plans for future monitoring of recreational aspects remain unclear, again in contrast with the specific monitoring plans for biological aspects. Although a visitor survey revealed some data of interest for recreational aspects, the results are not referred in the management plan. Thus, a number of vital concerns were not elaborated, e.g. How many visitors are there in the area, and where are they? What different recreational demands are at hand? Do the various demands interfere with each other and/or with nature preservation?

Discussion

Outdoor recreation is stated to be a cornerstone in nature conservation in Sweden, however, the results of this study indicate that it has not been established as a fully developed and integrated element of nature conservation policies. The phenomenon is vague and not adequately contextualised in policy documents. The case of Kosterhavet shows that scientific knowledge of human dimensions, such as activity patterns and preferences, is not necessarily utilised in major nature conservation projects in Sweden. While recreation is generally referred to as a central aspect of nature conservation policies and management in the nature conservation bill, it mainly exists in the rhetoric ambitions in the environmental quality documents, but is not considered in detail nor elaborated in strategies and managerial discussions. The text analysis reveals inconsistencies, signalling that the understanding of outdoor recreation varies between sectors as well as between the people formulating the texts. Furthermore, it is to a large degree described as a problem. When outdoor recreation is

mentioned in a more favourable light it is generally activities that adapt to the physical conditions in the landscape and make minor impacts upon the terrain. A similar pattern is recognisable in the Kosterhavet national park process: though notwithstanding the intention to enhance nature experiences, outdoor recreation is discussed more in terms of restrictions than possibilities, and there is an evident lack of knowledge and competence as for outdoor recreation. The results presented show parallels to the implementation of Natura 2000 in many European countries (Rekola *et al*., 2000; Alphandéry and Fortier, 2001).

The past two decades may justifiably be characterised as an era of biodiversity in Swedish nature conservation. The results of this study indicate that awareness and knowledge about recreational aspects have not progressed to the same degree, which suggests that the development of a more informed understanding of outdoor recreation is necessary if appropriate strategies for meeting contemporary challenges of integrating recreation and nature protection are to be developed. Nature conservation policies and strategies might not necessarily present extensive ontological considerations as regards outdoor recreation, but a common and consistent reading of the phenomenon would support a competent, transparent and integrated management of land and water. This implies, though, not just a reflective understanding of outdoor recreation, but of the entire concept "nature conservation", acknowledging the act of reinvention as Mels suggested (1999). A consideration of nature conservation as something that is about performing, rather than about preserving, will stimulate discussions on *what* should be performed, *why* and *for whom*?

The vague conceptualisation and inconsistent contextualising of outdoor recreation is a problem, restricting as it does the possibilities of enhancing recreational use of land and water resources. In order to remedy these deficiencies, the reasons behind them have to be understood. Based on the results of this study, one can speculate on individual as well as administrative and paradigmatic explanations. First, it seems still to be a well-established understanding among people working in the nature conservation sector, that nature conservation is about "nature", thus keeping an ontological division between nature and culture. Nature's intrinsic qualities and ecosystem functions serve as the point of departure in nature conservation management, and are keys in defining what is important knowledge, and what competence is needed. Consequently, outdoor recreation is not recognised as an interest in itself with its own logic, but as an aspect of nature preservation. Questions related to recreation are generally handled through making use of ones own previous experiences and through trial and error. For a professional management of outdoor recreation aspects should be founded on scientific knowledge, similar to the demands posed for biodiversity management, why the qualifications and the knowledge base need to be beyond personal interest. The perceived dichotomy between preservation and use in nature conservation, as discussed by Daugstad *et al.* (2006) and Wilson (2008), serves to confuse the integration of outdoor recreation into nature conservation as recreational aspects can be categorised as both. It could be suggested that the complication arises from contrasting landscape perspectives. In nature protection, landscape is commonly considered as a stage, where something is to be performed; preservation, ecological functions, biodiversity etc., while the recreation approach embraces landscape both as stage and as practice; not only consisting of the physical environment, but also of the activities carried out there — walking, picnicking, biking, socializing etc.

Secondly, the preconditions given in the administrative structure in nature conservation

do not sufficiently support the integration of outdoor recreation. The integration of outdoor recreation in nature conservation must not be dependent on individual officials and managers, but rather enforced by formal and institutional settings. The various styles of writing and the incoherent understandings of outdoor recreation in the investigated documents signal that a thoroughgoing reconsideration of concepts, measures, guidelines and competence is requested. The need for a formal structure that promotes a qualified integration of recreational aspects can be illustrated by the Kosterhavet case, where not even relevant reports on outdoor recreation supported by SEPA were not used (cf. SEPA, 2005b; Kajala *et al*., 2007). In the recent government bill on outdoor recreation (Swedish government, 2010), one aim is to increase knowledge on outdoor recreation. This study indicates that increased knowledge is not enough. For knowledge to be utilised there is a need for an institutional structure that guarantees that the insights are recognised and might be influential. One option is to change the institutional structures for outdoor recreation, making it less aligned to nature conservation.

Thirdly, the results from this study promote a challenge to the present ecosystem approach. When introduced in nature conservation management, where there is an influential preconceived notion of nature as something beyond society, the ecosystem approach can be interpreted as postulating business as usual, just demanding a slight change in the sort of objectives that are formulated. Defining outdoor recreation as an ecosystem service, might help us to consider the (economic) values of nature (Shepherd, 2004), but it is of little use for recognising the variety of recreational demands, conflicts between various forms of outdoor recreation and between recreation and other societal interests. Furthermore, when integrating the human sphere in ecosystems, it may be tempting to overestimate the similarities between the human society and the non-human world. The consequence of this is often an (over)emphasis on local societies. Humans situated in an area have, however, complex connections to other places and to regional, national and global processes. The term "local" is therefore intricate, and the question of who belongs to the local community is certainly delicate: a societal interest such as recreation cannot be understood just from a place based point of view. This calls for the development of new perspectives, in which nature and the human sphere, though integrated, need not be under the hegemony of either one or the other.

Acknowledgements

This study forms a part of the research programme Outdoor Recreation in Change, funded by SEPA.

References

Alphandéry, P., Fortier, A. (2001). Can a Territorial Policy be Based on Science Alone? The System for Creating the Natura 2000 Network in France. *Sociologia Ruralis*, 41(3), 311–328.

Arnberger, A., Mann, C. (2008). Crowding in European forests: a review of recent research and implications for forest management and policy. *Forestry*, 81(4), 559–571.

Burger, J. (2000). Landscapes, tourism, and conservation. *The Science of the Total Environment*, 249(1–3), 39–49.

Campbell, B. (2005). Changing protection policies and ethnographies of environmental engagement. *Conservation and Society,* 3(2), 280–322.

Castree, N., Braun, B. (eds.) (2001). *Social nature. Theory, practice and politics*. Oxford: Blackwell Publishers.

CBD (2009). *Ecosystem approach.* Secretariat of the Convention on biological diversity. http://www.cbd.int/ecosystem/, last accessed 31 May 2011.

Daugstad, K., Svarstad, H., Vistad, O.I. (2006). A case of conflicts in conservation: Two trenches or a three-dimensional complexity? *Landscape Research*, 31(1), 1–19.

Deremitt, D. (2001). Being constructive about nature. In: Castree & Brown (eds.). *Social Nature. Theory, Practice and Politics* (pp. 41–63). Oxford: Blackwell Publishers.

Emmelin, L., Fredman, P. (2001). Wilderness purism, willingness to pay and management preferences: a study of Swedish mountain tourists. *Tourism Economics*, 7(1), 5–20.

Emmelin, L., Fredman, P. Lisberg Jensen, E., Sandell, K. (2005). *Planera för friluftsliv* [Outdoor recreation planning]. *Natur, samhälle, upplevelser.* Stockholm: Carlssons.

European Union, (2008). *Environment — Nature and biodiversity.* http://ec.europa.eu/environment/nature/natura2000/index_en.htm, last accessed 30 July 2009.

Gobster, P.H. (2001). Visions of nature: conflict and compatibility in urban park restoration. *Landscape and Urban Planning*, 56(1–2), 35–51.

Gundersen, L.H., Frivold, V.R. (2008). Public preferences for forest structures: A review of quantitative surveys from Finland, Norway and Sweden. *Urban Forestry & Urban Greening*, 7(4), 241–258.

Hajer, M., Versteeg, W. (2005). A decade of discourse analysis of environmental politics: achievements, challenges, perspectives. *Journal of Environmental Policy & Planning*, 7(3), 175–184.

Head, L. (2007). Cultural Ecology: the problematic human and the terms of engagement. *Progress in Human Geography*, 31(6), 837–846.

Henningsson, S. (2008). Hagen i staden [The pasture in the city]. Betydelsen av den ”vilda” naturen runt knuten. *Occasional Papers* 2008: 2. Department of Human and Economic Geography, University of Gothenburg.

IUCN (2009). *The Ecosystem approach.* IUCN. http://www.iucn.org/about/union/commissions/cem/cem_work/cem_ea/index.cfm, last accessed 4 November 2009.

Jongman, R.H.G. (1995). Nature conservation planning in Europe: developing ecological networks. *Landscape and urban planning*, 32(3) 169–183.

Kajala, L., Almik, A., Dahl, R., Diksaite, L., Erkkonen, J., *et al.* (2007). *Visitor monitoring in nature areas — a manual based on experiences from the Nordic and Baltic countries.* Copenhagen: Nordic Council of Ministers.

Krippendorff, K. (2004). *Content analysis: an introduction to its methodology.* 2nd ed. Thousand Oaks, California: Sage.

Macnaghten, P., Urry, J. (1998). *Contested natures.* London: Sage Publications.

Manning, R.E. (2010). *Studies in outdoor recreation: search and research for satisfaction.* 3rd ed. Corvallis: Oregon State University Press.

Mels, T. (1999). *Wild landscapes. The cultural nature of Swedish national parks.* Meddelanden från Lunds universitets Geografiska institutioner, Avhandlingar, 137. Lund: Lund University Press.

MA (2005). *Millennium Ecosystem Assessment, Ecosystems and human wellbeing. General synthesis.* Washington: Island Press.

O'Riordan, T., Stoll-Kleemann, S. (eds.) (2002). *Biodiversity, Sustainability and Human Communities.* Cambridge: Cambridge University Press.

Pickering, C.M. (2010). Ten Factors that Affect the Severity of Environmental Impacts of Visitors in Protected Areas. *Ambio,* 39(1), 70–77.

Pigram, J.J., Jenkins, J.M. (1999). *Outdoor recreation management*. New York: Routledge.

Pröbstl, U. (2003). NATURA 2000 — The influence of the European directives on the development of nature-based sport

and outdoor recreation in mountain areas. *Journal of Nature Conservation,* 11(4), 340–345.

Rekola, M., Pouta, E., Kuuluvainen, J., Tahvonen, O., Li, C-Z (2000). Incommensurable Preferences in Contingent Valuation: The Case of Natura 2000 Network in Finland, *Environmental Conservation*, 27(3), 260–268.

Sandström, E. (2008). *Reinventing the commons.* Uppsala: Acta Universitatis agriculturae Sueciae, 2008, 42.

SEPA (2005a). *Nationell strategi för formellt skydd av skog* [National strategy for forest conservation].

SEPA (2005b). *Skyddad natur — en motor för regional och lokal utveckling* [Protected nature — an engine for regional and local development] Rapport 5504.

SEPA (2006). *Nationell strategi för myllrande våtmarker* [National strategy for wetlands].

Shepherd, G. (2004). *The ecosystem approach. Five steps to implementation*. Ecosystem management series No. 3, IUCN, Cambridge.

Stankey, G.H., McCool, S.F., Clark, R.N., Brown, P.J. (1999). Institutional and Organisational Challenges to Managing Natural Resources for Recreation: A Social Learning Model. In: Jackson & Burton (eds.). *Leisure Studies. Prospects for the Twenty-First Century* (pp. 435–449). Pennsylvania: Venture Publishing, Inc.

Stenseke, M. (2010). *Hur beaktades friluftslivet vid bildandet av Kosterhavets nationalpark?* [How was outdoor recreation considered in the establishment of Kosterhavet national park?] *En fallstudie av svensk praktik i att integrera friluftsliv och naturbevarande.* Report no. 13, Outdoor recreation in change, Östersund: Etour/Mid Sweden University.

Swedish Government (2002). *En samlad naturvårdspolitik* [A cohesive nature conservation policy]. Government bill 2001/02:173.

Swedish Government (2005a). *Svenska miljömål — ett gemensamt uppdrag* [Environmental quality objectives — a shared responsibility]. Government bill 2004/05, 150.

Swedish Government (2005b). *En nationell strategi för havsmiljön* [National strategy for marine environments]. Government bill, 2004/05, 173.

Swedish Government (2010). *Framtidens friluftsliv* [Future outdoor recreation]. Government bill, 2009/10, 238.

Wallsten, P. (2003). The "Inside-out" process. A key approach for establishing Fulufjället National Park in Sweden. *Journal of Mountain Research and Development*. 23(3), 227–229.

Wilson, P.I. (2008). Preservation versus motorized recreation: Institutions, history and public lands management. *The Social Science Journal,* 45(1), 194–202.

Young, J., A. Watt, A., Nowicki, P., Alard, D., Clitherow, J., *et al.* (2005). Towards sustainable land use: identifying and managing the conflicts between human activities and biodiversity conservation in Europe. *Biodiversity and Conservation*, 14(7), 1641–1661.

VISUAL LANDSCAPE ASSESSMENT FOR LARGE AREAS — USING GIS, INTERNET SURVEYS AND STATISTICAL METHODOLOGIES

IN PARTICIPATORY LANDSCAPE PLANNING FOR THE FEDERAL STATE OFMECKLENBURG-WESTERN POMERANIA, GERMANY

Michael Roth and Dietwald Gruehn
Dortmund University of Technology, School of Spatial Planning,
Chair of Landscape Ecology and Landscape Planning
August-Schmidt-Straße 10, 44227 Dortmund, Germany
michael.roth@udo.edu http://www.llp.tu-dortmund.de

Key words: *web survey, landscape aesthetics, landscape modelling, European Landscape Convention, public participation*

The European Landscape Convention (CoE, 2000) defines landscape as "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". Thus, both empirical data on landscape perception and GIS-available data on physical landscape structures were incorporated in GIS-based models to generate an area-wide assessment of scenic quality for the federal state landscape programme of Mecklenburg-Western Pomerania.

A broadly based photographic documentation (> 2000 photographs) was created as basis for over 24 000 assessments by more than 3000 participants using advanced and validated Internet survey methodologies (cf. Roth, 2006). By using a 3D-GIS system and large datasets of area-wide accessible data, the photographs' sites/views (located by GPS) were simulated in a virtual environment. Taking the participants landscape assessment and the visible landscape elements within the GIS representation, statistical models for visual preference and its components beauty, visual diversity, uniqueness and perceived naturalness were developed. These models were then applied area-wide within the GIS.

The approach developed is innovative in several ways: First, the area of investigation (> 23 000 km^2) is much larger than in comparable projects. Second, the empirical basis is unique in size and composition. Whereas conventional studies tend to use dozens to few hundreds of landscape architecture or psychology students, the subject sample of this study is varied in geographic origin, age, education and profession due to the immense outreach of the online survey. Third, the statistical methodology of ordered logistic regression allows overcoming restrictions that traditional approaches (using linear regressions) faced. Fourth, the method allows the judgement of its validity, which is a huge advantage compared to traditional expert methods in landscape planning.

It is shown how the research methodology was developed starting from a theoretical analysis of the research problem, and a critical judgement of the role of GIS in visual quality assessment/modelling and participatory landscape planning is given.

Introduction

Landscape Planning in Germany uses a four level hierarchical planning system (cf. Riedel and Lange, 2009; von Haaren, 2004; Auhagen *et al*., 2002; Gruehn, 2006). The top level is located at the federal state (landscape programme), followed by the planning region (regional landscape plan or landscape framework plan), the municipality ([local] landscape plan) and parts of the municipality (green structures plan). One of the overall aims of nature protection and landscape management is to protect, maintain, further develop and — if necessary — restore the visual diversity, uniqueness/distinctiveness and beauty of landscapes (German Federal Nature Conservation Act § 1 Section 1). One task of landscape planning — on all four levels described — is to assess the present and anticipated state of nature and landscapes according to the overall goals and their spatially downscaled refinements, an area-wide visual landscape assessment is a core part of all landscape plans. Since landscape planning in Germany is subjected to participation procedures according to SEA Directive (European Parliament and the Council of the European Union, 2001) internet surveys as basis for visual landscape assessments could be regularly implemented in planning processes to foster participation processes at an early stage.

In the case described in this paper, the Ministry of Agriculture, Environment and Consumer Protection of Mecklenburg-Western Pomerania (Ministerium für Landwirtschaft, Umwelt und Verbraucherschutz, MLUV) as environmental planning authority on the federal state level, is responsible for providing the landscape programme, the plan setting out the "supra-local requirements and measures of nature conservation and landscape management" (German Federal Nature Conservation Act § 10 Section 1). Part of this programme is an area wide evaluation of scenic quality. In 2008, the chair of landscape ecology and landscape planning at Dortmund University of Technology was commissioned to develop a scenic quality evaluation method and to perform the scenic quality assessment mentioned above. This paper presents some of the results of the research conducted in that project.

Different requirements had to be fulfilled when developing the new scenic quality evaluation method:

- The method had to be developed on an empirical basis, making public participation in landscape planning and research (cf. Lange and Hehl-Lange, 2011; Höchtl *et al*., 2007; Höppner *et al*., 2007; Lange and Hehl-Lange 2005; Sheppard, 2005; Buchecker *et al*., 2003; Dearden, 1981), as for example requested in the Aarhus Convention (UNECE 1998), European Landscape Convention (CoE 2000) and SEA Directive (European Parliament and the Council of the European Union, 2001), both an integral part of the research progress and the foundation for the actual evaluation results.
- Scientific quality criteria had to be taken into account. The reliability (cf. Hull and Buhyoff, 1984) and validity (cf. Hull and Steward, 1992; Palmer & Hoffmann, 2001; Roth, 2006; Gruehn, 2010) of the method and its results had to be investigated and communicated.
- The scenic quality components of visual diversity, uniqueness/distinctiveness and beauty used in the Federal Nature Conservation Act had to be assessed as well as perceived naturalness (cf. Purcell and Lamb, 1998; Ode *et al.* 2009) and overall scenic quality/overall preference.
- The whole method had to be compatible with GIS (in this case ESRI's ArcGIS used at the MLUV). State-wide accessible geodata had to be used for the assessment and there was no possibility of mapping new data due to financial and time constraints, apart from the photographic documentation described below.

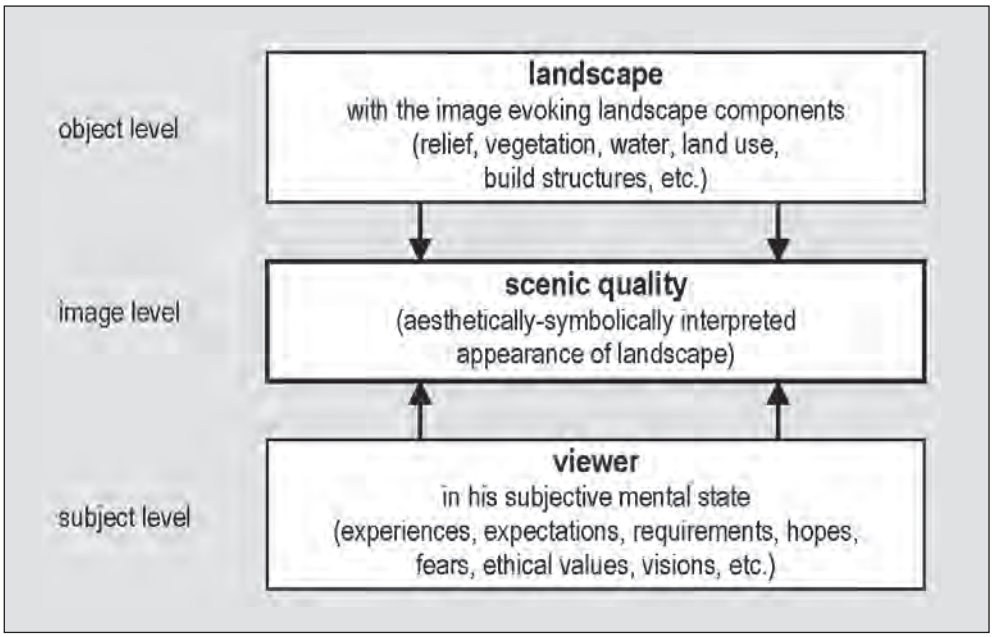


Fig. 1. Interdependence of landscape, viewer and scenic quality. Source: Nohl, 2001, p. 44, modified

When developing the theoretical concept for the research design, the definition of scenic landcape quality set in the psychological-phenomenological approach (Nohl, 2001, 43 et seq.) was followed (see Fig. 1). This allows the inclusion of both physical landscape elements and subjective human landscape preferences.

Material and methods

Within the research design employed in this study (see Fig. 2), following the psychological-phenomenological approach described above, it was assumed that landscapes (real landscapes or their photographic representation) evoke perceived scenic quality "in the eye of the beholder". These reactions can be captured by means of surveys and analysed in terms of their interrelation to physical landscape components, which has been done in landscape preference research for several decades (cf. e.g. Shafer *et al*., 1969; Daniel and Boster, 1976; Carlson, 1977; Shafer and Brush, 1977; Brush, 1981; Daniel and Vining, 1983; Lothian, 1999; Daniel, 2001; Roth and Gruehn, 2005; 2010).

The image evoking landscape components are represented in the digital landscape data set and can be measured objectively within a GIS by using 3D viewshed analysis, putting the virtual observer at the same spot where the photograph was taken. If statistic analysis reveals a significant and validated interrelationship between GIS-based landscape components and the participants' scenic quality ratings, this result can then be used for the area-wide modelling of visual quality within the GIS.

After the theoretical preparatory work was finished, a photographic documentation of landscapes in Mecklenburg-Western Pomerania was conducted during 18 days of fieldwork distributed over 18 months. 2014 photographs were taken at 381 sites,

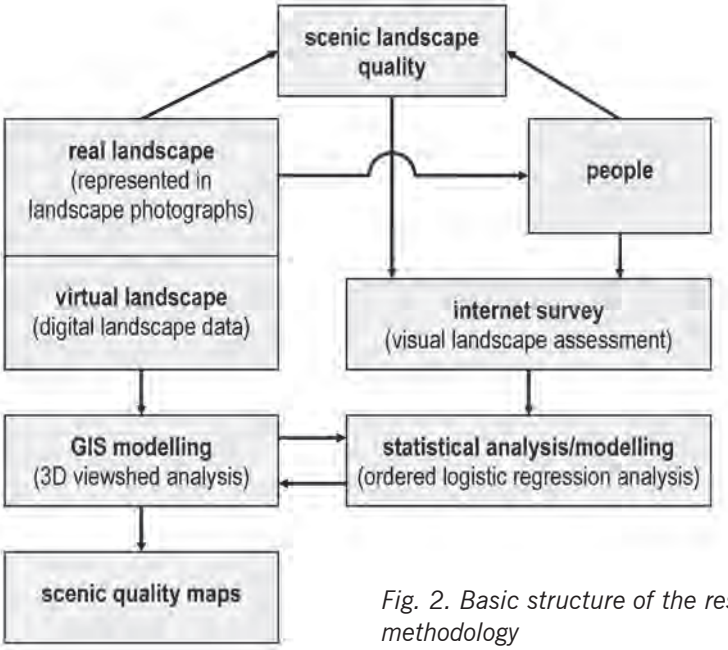


Fig. 2. Basic structure of the research methodology

distributed over all natural regions (as classified by Meynen and Schmithüsen, 1953–1962). A fully digital workflow was used: to exactly locate the viewpoints, GPS recordings were taken. Additionally, the view directions and the site descriptions were recorded in a database linked to a GIS and all metadata were as well stored in the image files' EXIF data to be permanently linked to the photograph. Up to 30 pictures were taken at each site, covering both different view directions and different seasons (up to three site visits).

To record the participants landscape ratings and landscape preferences, an online questionnaire was developed, using the method described by Roth (2006), which was empirically validated using on-site surveys as external correlation criteria. Apart from the participants' landscape assessment, socio-empirical data (age, sex etc.) and technical metadata (reaction times, technical setup etc.) were recorded. During the nine months the survey was online, more than 3300 participants took part and more than 24 000 complete photo assessments (according to the five criteria presented) were carried out.

To link the participants' photograph-based ratings (based on a perspective view of three dimensional landscape) and the 2D and 3D digital geodata (for the content of the dataset used, see Table 1) in order to establish algorithmic relations between landscape components and landscape preference, a GIS-based, 3D viewshed analysis was used, putting a virtual viewer at exactly the same position where the landscape photographs were taken. Figure 3 shows an example of this analysis. By overlaying the viewshed with the landscape elements geodata, both absolute amounts and relative shares of certain landscape components visible in the respective scene/image could be measured.

Based on the results of the survey, the interrelation between the participants' photograph-based ratings in the main survey (over 24 000 photograph ratings for more than 500 different views) and the landscape

Table 1. **The dataset used for viewshed analysis/visual quality modelling**

Dataset	Content
ATKIS DLM 25 (official topographic cartographic information system)	digital, vector based topographic land use data, original scale 1 : 25 000
ATKIS DGM (digital terrain model)	digital elevation model, grid, horizontal resolution 20 m, vertical resolution 0.1 m
CIR-based habitat mapping	digital, vector based habitat data, point, line and polygon layer, recording scale 1 : 10 000
additional thematic data layers	wind turbines, power plants, overhead lines, dumpsites etc.
nature protection areas	different types of nature reserves according to nature conservation law

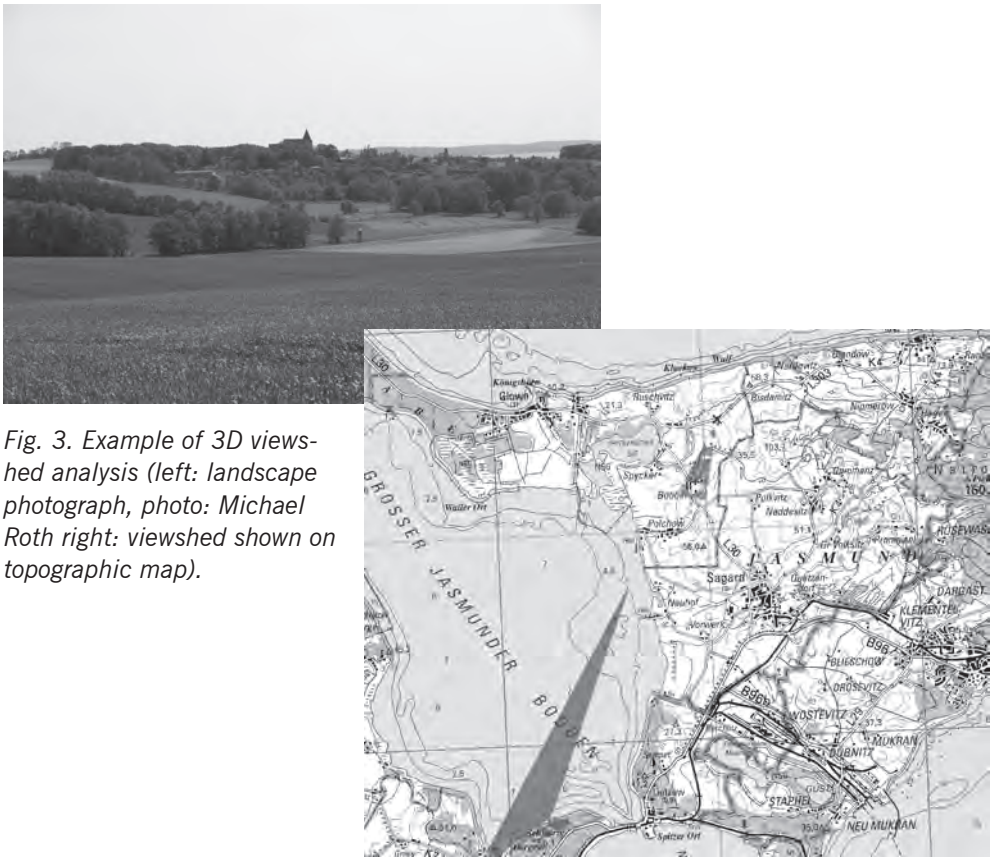


Fig. 3. Example of 3D viewshed analysis (left: landscape photograph, photo: Michael Roth right: viewshed shown on topographic map).

components in the digital dataset (as seen by the virtual viewer) was computed. To perform the statistical analyses, the GIS dataset/geodatabase and the MySQL database containing the empirical ratings of landscape quality and landscape preference from the Internet survey were both linked with the statistical software package SPSS (IBM 2011). Using methods of ordered logistic regression analysis, it was possible to develop a statistical model for different scenic qualities (visual diversity, uniqueness/distinctiveness, landscape beauty, perceived naturalness as well as overall scenic quality). This model then was applied to the whole area of the federal state of Mecklenburg-Western Pomerania, using a grid of 2500 m resolution as spatial basis.

Results

The questionnaires used, including all the socio-empirical variables, allow the testing of hypotheses and the analyses of correlations of wider relevance than just for the area wide assessment of visual quality of landscapes in Mecklenburg-Western Pomerania. Due to the limited space in this paper, only the most important results of these pretests are described in the following paragraphs:

- Previous research (e.g. Hershberger and Cass, 1973; Nohl, 1974; Daniel and Boster, 1976; Hull and Stewart, 1992; Scott and Canter, 1997) has empirically proven that colour photographs can be taken as surrogates for the real landscape experience visual landscape quality studies. For the method applied (questionnaires with the respective criteria investigated) an on-site comparative study has been conducted (cf. Roth and Gruehn, 2005; 2010) to validate this approach in the very specific context. The specific tool (online questionnaire), has also been validated using an on-site comparative study (Roth, 2006).
- The reliability of the methodological approach and specific tool has also been tested and verified in previous studies (Roth and Gruehn, 2005; 2010; Roth 2006).
- In practical settings in landscape management, it is a relevant question whether landscape assessments conducted by experts are different from those of lay people, especially local inhabitants. Out of the 23 761 landscape quality assessments in the study presented, 6392 (i.e. 27%) have been conducted by people with an expert background on scenic quality assessment. This allows analysing the influence of the expert status on the assessment. For four of the five criteria investigated (visual diversity, uniqueness/distinctiveness, scenic beauty, overall preference), the average differences were less than 0.15 out of ±10 units possible deviation. When judging the perceived naturalness, the average difference (on a 10 step scale) was 0.73. This illustrates, that there might be different mental constructs of naturalness influencing experts' and lay persons' assessments. The analysis of variance indicates that overall, the influence of the expert status on the variance of landscape assessment is no more than 1.2% (i.e. eta-squared maximum for all five criteria investigated is 0.012). Thus, unlike with single expert or lay person judgements, if taking large numbers of experts' and/or lay persons' assessments, the expert status has no considerable effect.
- Some authors, for example Winkelbrandt and Peper (1989) developed scenic quality models, which require landscape analysis through the entire course of one year. As this means a huge burden for any researcher or practitioner, it was tested whether there are significant and relevant differences between scenic qualities (as perceived by people) in different seasons, respectively, different vegetation foliage

states. 35 sites were photographed at multiple times, producing landscape scenes from identical viewpoints with identical ranges of vision. 676 persons evaluated this season subsample and produced 3511 landscape assessments according to set of five criteria. This dataset was analysed on three levels: individual person, data aggregated for each site, whole dataset. Generally speaking, high correlations and only small average differences could be observed between the respective seasons or foliage states (with/without leaves). For further details and statistical data cf. Roth and Gruehn (2011). Overall, the maximum influence of the season on the landscape quality assessment was 2.6 % (scenic beauty). With eta-squared values between 0.004 and 0.026 for all criteria investigated, the practical influence of seasonal aspects when performing a visual quality analysis (aiming at relative values on an ordinal scale) can thus be neglected. Nevertheless, it is interesting that all criteria had their maximum values in autumn, but perceived naturalness had its maximum in summer, when the green colour prevails.

- All the socio-empirical factors (sex, age, school and professional qualification, importance of nature and environment, frequency of outdoor trips) determined the variance of scenic quality ratings to a degree of less than 1% (eta-squared $<$ 0.01). Therefore, there was no necessity to draw stratified random sub-samples as there was no bias introduced by those factors.

Whereas the selected photographs represent a three dimensional view of the landscape, for the virtual viewer, the amount of landscape components in the two dimensional projection of the viewshed, not the three dimensional virtual image was analysed. This was necessary for different reasons:

1. When the statistical model for visual quality mapping was developed, it was essential to assess the scenic quality of a certain surface area according to its impact on a potential viewer, which might not be identical with the scenic quality the viewer perceives when standing on this area. Therefore, the content of the viewshed area, not the content of the view itself were considered as relevant parameters for the scenic quality models.
2. From a technical point of view, it was quite a huge effort to calculate the statistical model for scenic quality based on a grid with more than 4000 raster cells (with a size of 2500 m $\times$ 2500 m). It would have been impractical to calculate viewshed analyses for thousands of viewpoints. Also in terms of the theoretical concept, the 2500 m $\times$ 2500 m raster cell represents an average viewshed size (as demonstrated by Roth and Gruehn, 2005; 2010). Whereas the scenic quality model based on specific viewpoints might change drastically when moving the viewpoint only a few meters, moving the raster grid a few meters produces relatively stable models.
3. It was one goal of the project described to deduce planning objectives and measures. As the scenic quality of a particular area (represented by a grid cell) was assessed according to the method described above, it was easy to identify whether a certain region should be conserved, maintained, or (re-)developed according to the land uses and landscape elements in their specific composition in a certain area.

Finally, visual quality models were developed for visual diversity, uniqueness/distinctiveness, scenic beauty, perceived naturalness and an overall landscape preference. Figure 4 shows the map of scenic beauty as one example of these models. This model incorporates land use variety and small scale segmentation, relief, the area of agricultural

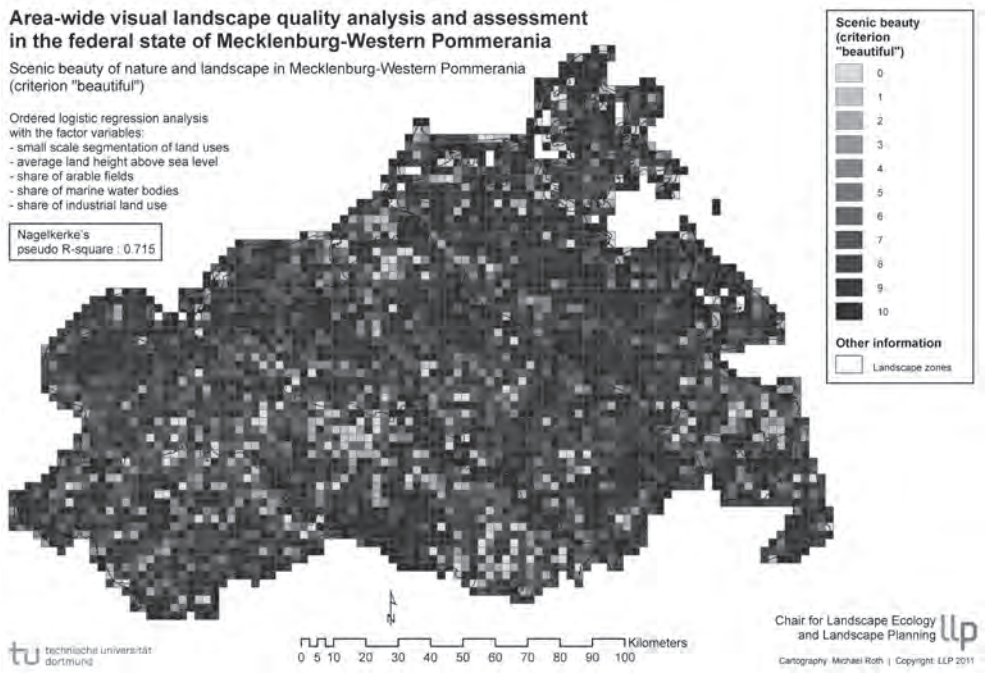


Fig. 4. Area-wide map of scenic beauty as an example of the ordinal regression analysis models developed. Darker grid cells represent higher scenic beauty.

fields, the area of marine water bodies and the area of industrial land use. The statistical quality of this model is measured using Nagelkerke's pseudo R-square which corresponds to R-square in linear regression analysis. For scenic beauty a pseudo R-square of 0.715 was achieved, this means that 71.5 % of the variance of scenic beauty can be explained by the factors mentioned. For visual diversity pseudo R-square reached 0.624, for uniqueness pseudo R-square reached 0.547, and for perceived naturalness 0.782.

Discussion

The statistical methodology of ordered logistic regression allows overcoming restrictions that traditional approaches (using linear regressions) faced. It has thus various advantages compared to the linear regression analysis that has been used in similar studies (e.g. Shafer *et al.*, 1969; Shafer and Brush, 1977; Patsfall *et al*., 1984; Kaplan *et al*., 1989; Gobster and Chenoweth, 1989; Steinitz, 1990; Bishop and Hulse, 1994; Bishop *et al*., 2000; Arriaza *et al*., 2004) during the last decades:

- The ordinal regression analysis, which does not rely on the interval scale or normal distribution requirement, is a more appropriate and efficient tool from a mathematical point of view.
- Linear regression analysis implies that there is a linear, monotonous relationship between in our case — landscape components and visual quality. This is obviously doubtful, as Bishop (1996) criticises. Ordinal regression analysis also allows including non-linear relationships in the model. One example of such non-

linear relationship is the influence of the percentage of forested area on scenic variety: Variety rises with an increasing portion of forests, but at a certain stage, a further increment of forested area leads to decreasing visual variety. Due to the better representation of these interrelationships, ordinal regression analysis delivered statistically more valid models than linear regression analysis. Cohen and Cohen (1975, p. 243, as referenced in Buhyoff and Wellmann, 1980, 261) state: "... it is a fundamental law of psychophysics that constant increases in the size of a physical stimulus are not associated with constant increases in subjective sensation." Buhyoff and Wellmann (1980) declare the logistic relation as generally suitable for modelling landscape qualities and refer to the Weber–Fechner law, which attempts to describe the relationship between the physical magnitudes of stimuli and the perceived intensity of the stimuli in a quantitative, logarithmic fashion.

The central point in visual quality modelling, as with all other models, is validity (Palmer and Hoffmann, 2000; Palmer, 2003). The scenic quality models developed in the study described can be judged concerning their validity by using the measure illustrated above (Nagelkerke's pseudo R-square). The models explain between 54.7% and 78.2% of the scenic quality components that were acquired in the broadly empirically based online visual quality survey. Looking at the explained variance of other scenic quality models found in literature (36% with Hunziker and Kienast (1999) based on image diversity/contrast; 54% with Palmer and Lankhorst (1998) calculating spaciousness based on landscape objects; 57% with Bishop *et al.* (2000) based on land-cover; 80% with Bishop and Hulse (1994) based on land-use and relief/slope), the results of the study presented confirm the amount of explained variance by using models based on area-wide accessible digital geodata. One aspect that distinguishes the study described in this paper from nearly all other models listed above is the size of the study area: The federal state of Mecklenburg-Western Pomerania has an area of more than 23 000 km^2 whereas Bishop and Hulse (1994) mapped scenic beauty within an area of about 10 km^2. Considering this huge scale difference, the large dataset and the fact that all calculations could be performed on a standard PC, the explained variance of the model developed seems quite satisfying.

As no polygon boundaries suitable for visual quality modelling were available, the scenic quality map(s) had to use a grid as spatial basis. Regarding the grid cell size, there are two opposed demands: To derive specific planning measures, a small cell size seems desirable whereas a larger cell size seems to better represent the average viewshed area in Mecklenburg-Western Pomerania. Different authors recommend to limit the "middleground" (where landscape components still can be clearly distinguished) at up to 5 km distance from the viewer (cf. e.g. Nohl, 2001, p. 81). To balance those two requirements, a correlation analysis between different cell sizes' (5000 m, 2500 m, 1250 m) amounts of landscape components was carried out in a previous study (Roth and Gruehn, 2005). An average correlation of about 0.75 could be observed between the 5 km grid and the 2.5 km grid, whereas the correlation between the 5 km grid and the 1.25 km grid were considerably lower. For these reasons, the 2500 m grid was used for all the analyses described. At first sight, one might think that this is a relatively coarse resolution for scenic landscape quality analyses. Compared to other approaches that were used in the past on the planning level of the landscape programme for a whole federal state, this resolution with more than 4000 grid cells is actually very fine opposed to the

few dozens of scenic units that are used in traditional expert assessments.

Different scenic quality estimation methods used in German planning practice sum up different components of visual quality in an overall aesthetic value (e.g. Adam *et al*., 1986; Wöbse, 2002; Hoisl *et al*., 1989). A different way of generating such overall values was used in this approach: A simple allocation of the maximum value of variety, uniqueness/distinctiveness and beauty into the overall aesthetic value was performed. This fulfilled the requirements of the precautionary principle in the Federal Nature Conservation Act to conserve the diversity, characteristic features and beauty of nature and landscapes, as a high value for one component cannot be averaged to a lower overall value by the other components.

By using relatively simple landscape metrics (areas, relative shares, numbers, line lengths etc.), the transparency and comprehensibility of the assessment and modelling is guaranteed even for lay people. The latter is the target group of visual landscape assessment (CoE, 2000). Thus, a method for analysis and assessment of visual landscape qualities, that is based on empirically validated preferences among the general public, reflects the "open-minded average landscape viewer" that is used as a benchmark in German jurisprudence (Augenstein, 2002, 55; cf. also Gruehn, 2001).

Conclusions and outlook

Online surveys, combined with GIS tools and statistical software allow including objectively measurable landscape elements and landscape preferences in scenic quality assessment and participatory landscape planning, even when dealing with large areas, as the study presented has demonstrated. Thus, modern technology can help to base planning measures on the strategically very important federal state planning level on a valid empirical basis. The depth of participation and width of outreach of such participatory planning procedure with up-to-date data on internet accessibility and usage (Eurostat, 2011), can be judged far higher than traditional ways of laying completed plans open to public inspection, restricted to opening hours of administrative buildings and physical presence of participating people. Thus, from a practical perspective, information and communication technologies (ICT, in this case GIS, the Internet, statistical software etc.) can facilitate public participation and therefore can help to implement SEA-directive requirements in the landscape planning process.

The degree of explained variance in scenic landscape qualities (roughly speaking 50 to 75% in the respective models) is absolutely satisfying, bearing in mind, that there are several layers influencing landscape preferences (cf. Hunziker, 2000), including a subjective individual layer. Thus, reaching a model that explains 100% of the variance in preference is even theoretically impossible. Nevertheless, the authors of this study have thought of various ways to further improve the method presented:

- If the catalogue of landscape metrics incorporated in future studies will be enlarged, further metrics with low complexity and theoretical validation should be used instead of more complex landscape metrics which are often less comprehensible to the stakeholders involved in landscape planning processes (cf. Scherner, 1995). Based on an investigation of theoretical and empirical literature (cf. Kiemstedt, 1967; Ruddell and Hammitt, 1987; Kaplan and Kaplan, 1989; Appleton, 1996), the authors of this paper suggest investigating border and fringe effects such as forest fringes, water shore lines, and land use changes first.
- The ordered logistic regression analysis allowed incorporating relationships that reflect the way humans perceive landscapes, instead of performing pure math-

ematical data fitting. Neural networks could provide similar qualities to visual landscape quality modelling, as has been shown in initial studies (Bishop, 1996).

Software packages such as FRAGSTATS (McGarigal *et al*., 2002) or SPAN (Turner, 1990) might tempt less experienced users to tick all boxes of available metrics to be calculated and then see which indicator complies with their personal landscape preferences. Instead of this, it should be emphasized again, that especially in times when the availability of hardware, software, digital geodata and processing power are no longer main restrictions to even very complex modelling studies, "the point has been reached where theoretically based model development should become a primary goal" (Buhyoff and Wellmann, 1980). According to the point of view of the authors of this paper, ICT can facilitate this process in many ways, from empirical ground research to participatory approaches in practical landscape planning scenarios.

References

Adam, K., Nohl, W., Valentin, W. (1986). *Bewertungsgrundlagen für Kompensationsmaßnahmen bei Eingriffen in die Landschaft.* Düsseldorf: Ministerium für Umwelt, Raumordnung und Landwirtschaft des Landes Nordrhein-Westfalen. 399 pp.

Appleton, J. (1996). *The Experience of Landscape*. 2nd edition. Chichester: Wiley. 282 pp.

Arriaza, M., Cañas-Ortega, J.F., Cañas-Madueño, J.A., Ruiz-Aviles, P. (2004). Assessing the visual quality of rural landscapes. *Landscape and Urban Planning,* 69(1), 115–125.

Auhagen, A., Ermer, K., Mohrmann, R. (2002). *Landschaftsplanung in der Praxis*. Stuttgart: Ulmer Verlag. 416 pp.

Augenstein, I. (2002). *Ästhetik der Landschaft. Ein Bewertungsverfahren für die planerische Umweltvorsorge*. Berliner Beiträge zur Ökologie, Bd. 3. Berlin: Weißensee Verlag. 170 pp.

Bishop, I.D., Hulse, D.W. (1994). Prediction of scenic beauty using mapped data and geographic information systems. *Landscape and Urban Planning*, 30(1–2), 59–70.

Bishop, I.D. (1996). Comparing regression and neural net based approaches to modelling of scenic beauty. *Landscape and Urban Planning,* 34(2), pp. 125–134.

Bishop, I.D., Wherrett, J.R. & Miller, D.R. (2000). Using image depth variables as predictors of visual quality. *Environment & Planning B: Planning & Design*, 27(6), 865–875.

Brush, R.O. (1981). Landform and scenic preference: A research note. *Landscape Planning*, 8(3), 301–306.

Buchecker, M., Hunziker, M., Kienast, F. (2003). Participatory landscape development: Overcoming social barriers to public involvement. *Landscape and Urban Planning*, 64(1–2), 29–46.

Buhyoff, G.J., Wellmann, J.D. (1980). The Specification of a Non-Linear Psychophysical Function for Visual Landscape Dimensions. *Journal of Leisure Research,* 12(3), 257–272.

Carlson, A.A. (1977). On the possibility of Quantifying Scenic Beauty. *Landscape Planning*, 4(1), 131–172.

CoE — Council of Europe (2000). *European Landscape Convention* (Florence Convention). See http://conventions.coe.int/Treaty/en/Treaties/Html/176.htm, last accessed 30 June 2011.

Cohen, J., Cohen, P. (1975). *Applied multiple regression/correlation analysis for the behavioral sciences*. Hillsdale, N. J.: Lawrence Erlbaum Associates. 490 pp.

Daniel, T.C., Boster, R.S. (1976). *Measuring landscape aesthetics: The scenic beauty estimation method*. Forest Service Research Paper RM-167. Fort Collins, Colorado: USDA Forest Service, Rocky Mt. Forest and Range Experiment Station. 66 pp.

Daniel, T.C., Vining, J. (1983). Methodological Issues in the Assessment of Landscape Quality. In: Altman, I. &Wohlwill, J.F. (eds.). *Behavior and the Natural Environment* (pp. 39–84.). New York: Plenum Press.

Daniel, T.C. (2001). Whither scenic beauty? Visual landscape quality assessment in the 21st century. *Landscape and Urban Planning*, 54(1–4), 267–281.

Dearden, P. (1981). Public participation and scenic quality analysis. *Landscape Planning*, 8(1), pp. 3–19.

Eurostat (2011). Usage of Information and Communications Technologies (ICT). See http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/introduction, last accessed 30 June 2011.

German Federal Nature Conservation Act (as of 29 July 2009). Gesetz über Naturschutz und Landschaftspflege — Bundesnaturschutzgesetz (BNatSchG). *Bundesgesetzblatt I*, pp. 2542–2579.

Gobster, P.H., Chenoweth, R.E. (1989). The Dimensions of Aesthetic Preference: a Quantitative Analysis. *Journal of Environmental Management*, 29(1), 47–72.

Gruehn, D. (2001). Einschätzung der Bedeutung von Landschaftselementen für das Landschaftserleben. In: Paar, P. & Stachow, U. (eds.). *Visuelle Ressourcen — übersehene ästhetische Komponenten in der Landschaftsforschung und -entwicklung* (pp. 49–59). Müncheberg: ZALF.

Gruehn, D. (2006). Landscape Planning as a Tool for Sustainable Development of the Territory — German Methodology and Experience. In: Vogtmann, H. & Dobretsov, N. (eds.). *Environmental Security and Sustainable Land Use — with special reference to Central Asia* (pp. 297–307). Dordrecht: Springer Netherlands.

Gruehn, D. (2010). Validity of landscape function assessment methods — a scientific basis for landscape and environmental planning in Germany. *The Problems of Landscape Ecology*, 28, 191–200.

Haaren, C. von (2004). *Landschaftsplanung*. Stuttgart: UTB. 528 pp.

Hershberger, R.G., Cass, R.C. (1973). The Adequacy of various Media as Representations of the designed Environment. *Man-Environment Systems*, 3(5), 371–372.

Höchtl, F., Ruşdea, E., Schaich, H., Wattendorf, P., Bieling, C., Reeg, T. & Konold, W. (2007). Building bridges and crossing borders: Integrative approaches to rural landscape management in Europe. *Norsk Geografisk Tidsskrift*, 61(4), 157–169.

Hoisl, R., Nohl, W., Zekorn, S., Zöllner, G. (1989). *Verfahren zur landschaftsästhetischen Vorbilanz. Abschlußbericht eines Forschungsvorhabens*. Materialien zur Flurbereinigung 17. München: Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten. 265 pp.

Höppner, C., Frick, J., Buchecker, M. (2007). Assessing psycho-social effects of participatory landscape planning. *Landscape and Urban Planning*, 83(2–3), 196–207.

Hull, R.B., Stewart, W.P. (1992). Validity of photo-based scenic beauty judgments. *Journal of Environmental Psychology*, 12(2), 101–114.

Hull, R.B., Buhyoff, G.J. (1984). Individual and group reliability of landscape assessments. *Landscape Planning*, 11(1), 67–71.

Hunziker, M., Kienast, F. (1999). Potential impacts of changing agricultural activities on scenic beauty — a prototypical technique for automated rapid assessment. *Landscape Ecology,* 14(2), 161–176.

Hunziker, M. (2000). *Einstellungen der Bevölkerung zu möglichen Landschaftsentwicklungen in den Alpen*. Birmensdorf: Eidgenössische Forschungsanstalt WSL. 157 pp.

IBM (2011). IBM SPSS Statistics. See http://www.ibm.com/software/uk/analytics/spss/products/statistics/, last accessed 30 June 2011.

Kaplan, R., Kaplan, S., Brown, T. (1989): Environmental Preference: A Comparison of

Four Domains of Predictors. *Environment and Behavior,* 21(5), 509–530.

Kaplan, R., Kaplan S. (1989). *The Experience of Nature: A Psychological Perspective*. New York: Cambridge University Press. 360 pp.

Kiemstedt, H. (1967). Zur Bewertung von Erholungsgebieten nach ihrer Ausstattung mit natürlichen Landschaftselementen. *Das Gartenamt*, 16(5), 213–217.

Lange, E., Hehl-Lange, S. (2005). Combining a participatory planning approach with a virtual landscape model for the siting of wind turbines. *Journal of Environmental Planning and Management*, 48(6), 833–852.

Lange, E., Hehl-Lange, S. (2011). Citizen participation in the conservation and use of rural landscapes in Britain: the Alport Valley case study. *Landscape and Ecological Engineering*, 7(2), 223–230.

Lothian, A. (1999). Landscape and the philosophy of aesthetics: Is landscape quality inherent in the landscape or in the eye of the beholder? *Landscape and Urban Planning*, 44(4), 177–198.

McGarigal, K., Cushman, S.A., Neel, M.C. & Ene, E. (2002). *FRAGSTATS: Spatial Pattern Analysis Program for Categorical Maps.* Computer software program produced by the authors at the University of Massachusetts, Amherst. See http://www.umass.edu/landeco/research/fragstats/fragstats.html, last accessed 30 June 2011

Meynen, E., Schmithüsen, J. (eds.). (1953–1962). *Handbuch der naturräumlichen Gliederung Deutschlands*. 9 volumes. Remagen: Selbstverlag der Bundesanstalt für Landeskunde. 1340 pp.

Nohl, W. (2001). *Landschaftsplanung. Ästhetische und rekreative Aspekte*. Konzepte, Begründungen und Verfahrensweisen auf der Ebene des Landschaftsplans. Berlin: Patzer-Verlag. 248 pp.

Nohl, W. (1974). Eindrucksqualitäten in realen und simulierten Grünanlagen. *Landschaft + Stadt*, 6(4), 171–187.

Ode, A., Fry, G., Tveit, M.S., Messager, P., Miller, D. (2009). Indicators of perceived naturalness as drivers of landscape preference. *Journal of Environmental Management*, 90(1), 375–383.

Palmer, J.F., Lankhorst, J.R-K. (1998). Evaluating visible spatial diversity in the landscape. *Landscape and Urban Planning*, 43(1), 65–78.

Palmer, J.F. (2003). Research Agenda for Landscape Perception. In: Buhmann, E., Ervin, S. (eds.). *Trends in Landscape Modeling* (pp. 163–172). Heidelberg: Wichmann Verlag.

Palmer, J.F., Hoffman, R.E. (2001). Rating reliability and representation validity in scenic landscape assessments. *Landscape and Urban Planning*, 54(1–4), 149–161.

Patsfall, M.R., Feimer, N.R., Buhyoff, G.J., Wellman, J.D. (1984). The prediction of scenic beauty from landscape content and composition. *Journal of Environmental Psychology,* 4(1), 7–26.

Purcell, A.T., Lamb, R.J (1998). Preference and naturalness: An ecological approach. *Landscape and Urban Planning*, 42(1), 57–66.

Riedel, W., Lange, H. (2009). *Landschaftsplanung*. Reprint of the 2nd edition. Heidelberg: Spektrum Verlag. 396 pp.

Roth, M., Gruehn, D. (2011). *Flächendeckende Landschaftsbildanalyse und -bewertung in Mecklenburg-Vorpommern als Beitrag zum Gutachtlichen Landschaftsprogramm sowie zur Fortschreibung des Moorschutzkonzeptes (Hauptstudie)*. LLP-report 024. Dortmund: TU Dortmund, Fakultät Raumplanung, Lehrstuhl LLP. 110 pp.

Roth, M., Gruehn, D. (2005). Scenic Quality Modelling in Real and Virtual Environments. In: Buhmann, E., Paar, P., Bishop, I.D. & Lange, E. (eds.). *Trends in Real-time Visualization and Participation* (pp. 291–302). Heidelberg: Wichmann Verlag.

Roth, M., Gruehn, D. (2010). Modellierung von Vielfalt, Eigenart und Schönheit von

Natur und Landschaft — Kriterien zur Bestimmung von Landschaftsbildqualitäten für große Räume. *Naturschutz und Landschaftsplanung*, 42(4), 115–120.

Roth, M. (2006). Validating the use of Internet survey techniques in visual landscape assessment — An empirical study from Germany. *Landscape and Urban Planning*, 78(3), 179–192.

Ruddell, E.J., Hammitt, W.E. (1987). Prospect Refuge Theory: A Psychological Orientation for Edge Effect in Recreation Environments. *Journal of Leisure Research*, 19(4), 249–260.

Scherner, E.R. (1995). Realität oder Realsatire der „Bewertung" von Organismen und Flächen. In: Riecken, U. & Schröder, E. (eds.). *Biologische Daten für die Planung. Auswertung, Aufbereitung und Flächenbewertung* (pp. 377–410). Schriftenreihe für Landschaftspflege und Naturschutz 43. Münster-Hiltrup: Landwirtschaftsverlag.

Scott, M.J., Canter, D.V. (1997). Picture or Place? A multiple sorting Study of Landscape. *Journal of Environmental Psychology*, 17(4), 263–281.

European Parliament and the Council of the European Union (2001). Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment. See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32001L0042:EN:HTML, last accessed 30 June 2011.

Shafer, E.L., Brush, R.O. (1977). How to measure preferences for photo-graphs of natural landscapes. *Landscape Planning*, 4(1), 237–256.

Shafer, E.L., Hamilton, J.E., Schmidt, E.A. (1969). Natural landscape preferences: A predictive model. *Journal of Leisure Research*, 1(1), pp. 1–19.

Sheppard, S.R.J. (2005). Participatory decision support for sustainable forest management: A framework for planning with local communities at the landscape level in Canada. *Canadian Journal of Forest Research*, 35(7), 1515–1526.

Steinitz, C. (1990). Toward a Sustainable Landscape Where Visual Preference and Ecological Integrity are Congruent: The Loop Road in Acadia National Park. *Landscape Planning*, 19(1), 213–250.

Turner, M.G. (1990). Spatial and temporal analysis of landscape patterns. *Landscape Ecology,* 4(1), 21–30.

UNECE — United Nations Economic Commission for Europe (1998). *Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters*. See http://www.unece.org/env/pp/documents/cep43e.pdf, last accessed 30 June 2011.

Winkelbrandt, A., Peper, H. (1989). Zur Methodik der Landschaftsbilderfassung und –bewertung für Umweltverträglichkeitsprüfungen am Beispiel von Retentionsmaßnahmen im Raum Breisach. *Natur und Landschaft*, 64(7/8), 303–309.

Wöbse, H.H. (2002): *Landschaftsästhetik*. Stuttgart: Ulmer Verlag. 304 pp.

TOWARDS A SHARED IDEA OF LANDSCAPE CAPABLE OF MANY MINDS, MANY DIRECTIONS, MULTI-LAYERED TRANSFORMATION

THREE CASE STUDIES AS THREE DIFFERENT INFLECTIONS OF THE EUROPEAN LANDSCAPE CONVENTION

Nausica Pezzoni
Polytechnic of Milan, Via Bornardi, 3–20133 Milano;
e-mail nausica.pezzoni@gmail.com

Key words: *human landscape, citizens participation, artistic installation, self-renewing*

The paper presents three case studies where the landscape design is the upshot of a collective process of recognition and of construction of meanings and signifiers which reply and give voice to the complexities of the contemporary society. They show a landscape that, for different reasons, can be considered as "deprived" for its inhabitants, and that is re-conquered through different processes able to FORM and IN-FORM the landscape with new elements and new meanings.

The first one is the project of a medieval village regeneration in Tuscan countryside, sold to an international tourism company, where a law on inhabitants participation has allowed citizens to take part in decision making processes which concerned the future of their territory.

The second one refers to a totally automated tiles factory that was transformed through an artistic installation improving the quality of the working environment. Here the artistic expression of a particular form of "site specific art" combines an anonymous industrial plant with an artistic installation which contributes in giving a new meaning to this environment.

The third one is the project of a self-renewed building for homeless Roma families. They were directly involved in the project by working on the restoration: realization of a shared image of landscape is expressed through the process of self-renewing to create a sense of living which more corresponds to their culture and needs.

These case studies support the research of a shared image of landscape, which is open to different visions of the territory's future, raising the question of inclusion within decision making processes and, in general, the question of asserting the rights of citizenship.

Statement of objectives

The present paper aims to analyze how the concept of landscape introduced by the European Landscape Convention can be developed in contexts where the inhabitants lack a perception of belonging to their territory.

Through the description of some processes

of re-possession of an "alienating" landscape, the paper demonstrates that landscape does not exist of its own as an already existing entity to which inhabitants have to conform themselves, but it takes shape and becomes significant through cultural processes involving inhabitants themselves in the construction of a renewed landscape perception.

The paper confronts three different contexts of the Italian landscape characterized by different problems of disaffection by the inhabitants and transformed through three different processes of "landscape re-pos session": regeneration of an expropriated landscape through citizen participation; transformation of an alienated landscape through an artistic installation; renewal of an "excluded" landscape through a process of self-restoration.

Each transformation project is introduced through five main points: 1. The territorial context; 2. The problem; 3. The proposal of landscape re-possession; 4. The project results; 5. Conclusions.

Introduction

The European Landscape Convention states that landscape is an expression and, at the same time, a foundation of social identity. Given this assumption, we can say that landscape does not exist as such, but takes shape only if there is someone to observe it, live in it or construct and deconstruct it in a continuous process. Landscape exists if we actually give it a sense, a cultural significance to its components and transform them into signals through which we can communicate with other people: a landscape cannot but be generated in and through a process of exploration and ongoing creative re-design, implemented in the process of the changing relations established by the citizens with the different surrounding terrains (Pezzoni, 2010 a).

The paper presents three case studies where the landscape design is the upshot of a collective process of recognition and construction of meanings and signifiers which respond to and give voice to the complexity of the contemporary society.

The three case studies show a landscape that, for different reasons, can be considered as alienating for its inhabitants, and that was re-conquered through different processes able to FORM and IN-FORM the landscape with new elements and new meanings.

The first case study describes the project of the regeneration of a medieval village in one of the most interesting European landscapes that was sold to an international tourist company. Here the introduction of a law (Regional Law n. 69/2007) on inhabitant participation in projects implying significant territorial transformations has allowed citizens to take part in decisional processes concerning the future of their territory.

The second case study refers to a tiles plant, totally automated, that was transformed through an artistic installation and thereby improving the quality of the working environment. The artistic intervention changed the industrial building transforming the work environment by inclusion of aesthetical elements.

The third case study is a project of a self-renewed building for homeless Roma families. The building was in a state of decay and the families were directly involved in the project by working on the actual restoration. At the same time an artistic installation placed in front of the building, renewed the visual impact of the new building towards the wider community.

Theoretical background

The paper contents, as far as the general assumptions, the objectives and the discussion, refer to the concept of landscape introduced by the European Landscape Convention: "landscape means an area, perceived by people, whose character is the result of the action and interaction of

natural and/or human factors" (The European Landscape Convention, 2000, Art. 1). A concept that emphasizes the importance of people in the recognition of landscape and that embodies the part played by human actions in the construction of the landscape itself. The words used by the European Landscape Convention to define landscape "also underline the dominance of the interaction of nature and culture in making landscape, thereby encouraging integration and cooperation between separate disciplines. The Convention also recognizes that ordinary, typical, 'everyday' landscapes, often characterized as much by human impact as by 'natural beauty', have their own special value, contributing to the rich variety of the European landscape." (Fairclough, 2002)

The theoretical background of the paper refers to the studies which, interpreting the innovative contents introduced by the European Landscape Convention, highlighted three main aspects: the cultural significance of landscape (Salerno and Casonato, 2008; Palmentieri *et al*., 2006), people's perception of landscape as a fundamental factor of the existence of landscape itself (Fairclough, 2002; Déjeant-Pons, 2002) and the interaction between natural and human factors as a structural element in the construction of landscape (Drury, 2002; Festas, 2002).

The three case studies of the present paper fit the general framework of the above mentioned literature. Each study represents a particular example of how the concept of landscape introduced by the European Landscape Convention can be developed into actual fact.

In the case of Castelfalfi Village, the theoretical background refers to the literature concerning the methods of participation about landscape transformation projects causing conflicts among the parties involved. The requalification process in Castelfalfi Village, has been a forerunner of the participating actions that are now becoming integral part of the decisional processes in the government of landscape, thanks to a recent cultural change towards the involvement of local actors (Pacchi, 2008).

The Tile Factory in Valenza falls into the framework of international site specific art literature (Kaye, 2000). In particular, in 2010, the Valenza Factory case study appeared on the Italian journal *Territorio* (Inguaggiato, 2010) together with other artistic interventions concerning processes of urban transformation. The Installation-Doubling in Valenza Factory and the role played by inhabitants (the workers, the chief executive of the plant, the town Major of Valenza, the artist) is documented by the publication on the Installation (Ferrari, 1998) that collects the contributions of art historians and art critics, in addition to the chief executive, to the Major and to the author of the Installation itself. On the occasion of the opening of the Installation, many articles appeared on the national press.

The case of Dado in Settimo Torinese falls into the framework of the research of a new welfare for transitory populations (Karrer and Ricci, 2003; Pomilio, 2009), among them immigrants and Roma (Vitale, 2009). Being a pilot project of new ways of cohabitation, it is mainly documented on the web, where on occasion of the opening news about a series of events in town were published, and successively some considerations about the project where written one and two years later concerning the results of the experiment still open today.

Data and methods: the projects

1. Castelfalfi Village

The territorial context

The first case study deals with a considerable investment project undertaken by a German tourist multinational company, on

Fig. 1. Castelfalfi Village follows and enhances the landscape design (source: Morisi, 2007)

the medieval village and estate of Castelfalfi, in Valdelsa (Tuscany Region, Italy).

The village was built around the walls of a castle, with buildings and houses built to support farmers. Around the Village area, 30 rural buildings are spread, which were vacant from the 1960s and are now in a state of ruin. The estate around the village (almost 1100 hectares) has represented a wide and unitary property, with traditional rural cultivation, managed by tenant farmers until the second post-war period.

From the middle of the last century, this area has suffered a high depopulation; since that time, the village and the estate have been in progressive decay. In the 19th century, the estate had almost 600 inhabitants; today there are only 15 residents. Though the place seems to be abandoned by the locals, there are some tourist infrastructures such as a restaurant in the medieval castle, a hotel in an old tobacco mill, a golf course and some swimming-pools.

The problem: an expropriated landscape

In March 2007, the estate and the village were bought by TUI (Touristik Union International), one of the largest tour operators in the world, who bought the whole area of Castelfalfi. Then they presented to the local council a project that foresaw, besides the restoration of the existing buildings, the construction of new tourist infrastructures and, in particular, a holiday village and a new hotel with 430 and 240 rooms respectively, four "villages" around some of the abandoned farmhouses, and the modernization of the old golf facilities.

The project raises some relevant questions, such as the new volume of construction introduced and the broad landscape transformation caused by the new tourist facilities (Fig. 1) (Morisi, 2007).

The proposal of landscape re-possessing

The project was consistent with targets and volumes foreseen in the Structural Plan, but the Mayor considered that an intervention of that importance required a more complex approval process and decided to conduct a wide consultation to allow all citizens to express their opinion about the

transformation project (Floridia, 2008).

On the basis of the Regional Law on inhabitants participation (that had just been approved in 2007), the administration opened a public debate, promoting and stimulating the locals turnout. The goals of this proposal were: to inform the inhabitants about the future of their territory; to let the locals express their opinion about the transformation project; to prepare a report for the tourist company with possible suggested changes.

The project results

Between 2007 and 2008, the process was begun and the public debate included: five public meetings, publication of 2500 copies of a "synthetic guide to the project", individual meetings with experts (real estate dealers, tour operators, farmers and so on), national and international press, a web site with the project's documents, a web forum with the citizens' contribution, guided tours to the estate and many other tools to promote the participation of the local population. A final report summarized the highlights and the new proposals that emerged from the debate.

Under law n. 69/2007, the tour operator had to accept the changes proposed by the only citizens and to modify the project.

The participation of the citizens involved some essential points, which modified the transformation project as follows:

- The dimensioning: the volume of buildings could not be increased by more than 10% of the existing volume;
- The design of the landscape: it was recommended to create a system of terraces for wine-grape and olive cultivation;
- All the rural buildings were to maintain their already existing volumes;
- In proximity of the historical buildings two new villages (instead of four) were accepted and they were to comply with the typical structure of farmhouses in Tuscany;

As far as the golf facilities, the inhabitants chose a type of grass which does not require much water.

Finally, the name of the new village had to be changed: instead of "Robinson Club" (proposed by the tour operator) the new village was named "Art and Culture Hotel", which better identifies the particularity of the place.

Conclusions

The case study of Castelfalfi represents an applicative model of the Tuscan Regional Law on citizens' participation, which was the first law on inhabitants' participation introduced in Italy. A public debate is one of the procedures introduced by this law and adopted in Castelfalfi: it allowed people some control of the elements of their own territory.

The process introduced by the Regional Law n. 69/2007 deals not only with a project of consensus building, but first of all of the empowerment of inhabitants: the local population, in order to decide about the future of their own dwelling place, had to develop a deeper know-how to be able to confront the experts (geologists, landscape architects, natural scientists, architects), learning how to observe the landscape, considering different points of view and being open to different visions of the future of the territory.

2. Tile factory in Valenza

The territorial context

The second case study involved a tile factory in Valenza (Piemonte Region, Italy), where in 1997 a new plant was built to replace the old furnace of the international company Terreal Italia. This new factory was the first example of a totally automated furnace with continuous 24 hour processing.

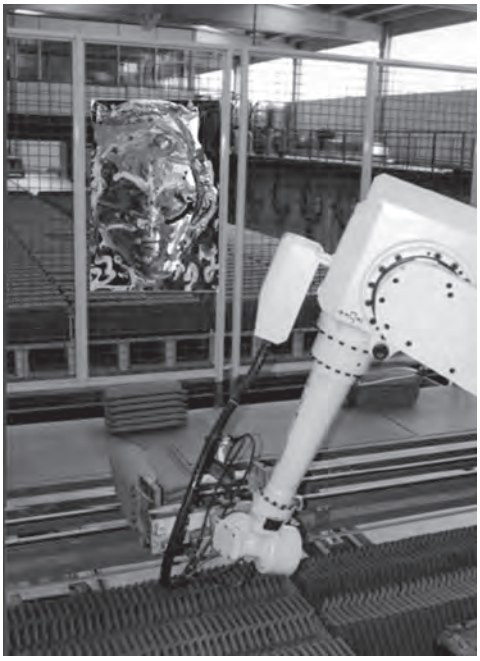


Fig. 2. Plotter-painting hanging in the robot area (source: Ferrari, 1998)

Fig. 3. Plotter-painting in the course of installation (source: Ferrari, 1998

The problem: an alienating landscape

The new plant, of 45 000 square meters, has very large and non-defined industrial spaces where the plant operators work close to the part of the plant which they have to oversee, but set apart and distant from each other.

According to the managing director, "The empty space between the machines and the workers can create a distance and a progressive loss of that proactive participation which is the most important factor, not so much for 'good production' as for 'a good experience of the work space'" (Stangalini, 1998).

Another issue is that decreased workers attention, due to the automated furnace conditions, could compromise the safety of the working environment.

The proposal of landscape re-possession

A new proposal was taken into account to address these issues: it consisted of the use of artistic elements within the industrial environment, providing "care" within the space and creating a less alienating place.

This proposal was in accordance with a particular form of "Site specific art" introduced in Italy by the artist-scientist Paolo Ferrari-Polfer, where the landscape is informed by artistic-cultural objects that modify the inhabitants' perception of the place.

This project has been developed in two stages and it is a work in progress. The first stage, called "The (Dematerializing) Installation-Doubling in-Absence", is a project composed of 30 plotter paintings. The second stage, called "Terre splendenti", (Resplendent earth) includes ten plotter paintings that were added when the plant was extended with a new 6000 square meter sector (Figs. 2, 3).

The artistic installation consists of a method and of an aesthetical-compositive technique which is capable of assuming the undifferentiated space of the plant, which is excessively empty and poor, and transforming it into a different kind of space, capable of much more articulated and complex relational activities (Ferrari, 1998).

The artistic installation, by introducing works of art in a factory, intends to "take care" of the working space and thereby

Fig. 4. Plotter-painting sliding across a track (photo by the author; Paolo Ferrari, 2008)

Fig. 5. Swinging plotter-painting hanging from the ceiling (photo by the author; Paolo Ferrari, 2008)

create a less alienating place in which a more complex and abstract relational level can emerge and so improve workers' living/working conditions.

The project results

The works of art were created expressly for and placed within the plant according to a project idea which is capable of integrating within their actual design the way of work life within the factory and the processes dictated by production exigencies. In this way realizing a complex operation in which the communicative strength and the intrinsic particularity of every art-work lies as much in the artistic quality of each, as in the relationship it realizes with the environment in which it is inserted, and also with the overall installation design (Pezzoni, 2010 b).

Through this process a strong relationship between the artistic installation and the working environment is achieved, whereby the particularity of each work of art emerges not only in its visual impact but also in the relationship between the paintings, the working environment, and the installation as a whole.

Positioning of various art works which compose the unity of installation was decided together with the workers, seeking each time the convergence points between the artistic work and the daily human work life, which is constricted to a repetitive interaction with the machines and robots.

The supporting metal frames structures for the paintings were designed and built by the artist's staff and the plant operators.

Following the project idea and its construction, the art works become one with the plant environment. They are not lost within the large plant space but "redouble" it through the artistic gestures, and through their specific placement within the environment they are made visually accessible from each work place (Figs. 4, 5).

Conclusions

The plant was not exploited as an exhibition space but rather the works were installed within it to be an integral part of it. This produced a humanizing and radical change of the relationships between workers and the work place, making it no longer as alienating as before (Verri, 2010).

Re-defying space, time and movement of an environment taken from its alienating potential, the works of art *inhabit* the factory and in this way make possible a dialogue with the workers.

For the visitor who comes into the boundless work space, along the production lines, within the enormous clay furnaces, the multilayered paintings appear like luminous presences within the atmosphere saturated with brick dust, the breaking brilliant colours and signs of the panels emerge little by little capturing the one's eye and freeing the mind from the hypnotic monotony of the space and the uninterrupted noise of the machines.

Fig. 6. The old press elaborated by the artist (photo by the author; Paolo Ferrari, 2010)

The old press placed in the garden at the front entrance to the plant becomes a sculpture which can be seen from the surrounding hills. An object of the work environment becomes an artistic item and the symbol of the whole process of aiming at improving working conditions (Fig. 6).

This intervention brought about a real reduction of work accidents. The chief executive of Terreal Italia, in 2008 maintained: "Data demonstrate that the frequency index of industrial accidents (the number of accidents in work hours) has decreased since 1999, the year of the Installation's opening: in 1998, the frequency index of accidents was 51 (18 accidents), the annual average from 1999 to 2007 is 10. Examining the last few years, the frequency index is 5.4 in 2005 (1 accident), 5.4 in 2006 (2 accidents), 5.2 in 2007

(1 accident)." For this reason the project was selected for inclusion in the Guggenheim Award, which promotes contemporary art.

The project highlighted and enhanced the relationship between art and the work environment as well as improving the workers quality of life.

3.'Dado' in Settimo Torinese

The territorial context

The last case study involved a building located in a suburban landscape close to the town of Torino.

This building is called "Dado" (dice), due to its cubic shape, and it is a two-storey state-owned building, covering an area of 900 square meters. Built in the 1970s as a municipal sport-centre, in 2003 it was converted into "social housing" due to a shortage of flats.

The problem: an excluded landscape

Since 2003, single people and families in different levels of poverty lived in the building. As a result, it became an exclusion

and alienating area for the townspeople, and an example of urban degradation.

The proposal of landscape's re-possession

In 2008, the Local Council decided to renovate the building and gave the mandate to the social cooperative "Architettura delle Convivenze", in collaboration with the artist-scientist Paolo Ferrari, and the association "Terre del fuoco". Together they planned a project of auto-reconstruction which would be able to directly involve the future tenants. At the same time they proposed a transformation of the site that would be a sign of regeneration even in the visual impact of the project in relation to the city (Fig. 7).

The co-operation between technicians and tenants created an environment based not only on welfare purposes. The families were actively involved in the project by working on the construction of their own flats and common areas. By joining the project they could improve their own professional skills (De Salvatore, Riboni, 2009).

As a result of the regeneration of the building, it became a place of culture for the city, with an aesthetic message, as well as of cultural renovation. In this way a new and positive relationship between the building and its surroundings was created.

The project was realized with the contribution of the following associations and institutions: associations "Architettura delle Convivenze" and "Terra del Fuoco", Provincial Office of the Red Cross, Gruppo Abele, the Pastoral Office for Migrants, the Province of Torino, the Region of Piemonte. The San Paolo Bank gave financial support, the Settimo Torinese Municipality offered the building to be renewed and the Province gave scholarships to the Roma families employed in the renovation works.

Fig. 7. Dado front (source: Myartspace.com)

The project results

While the internal spaces were renovated with a residential function in mind foreseeing the cohabitation of diverse types of inhabitants — not only Roma people, to avoid a "ghetto" place — the externals of the building facing the city was completely renovated with an artistic gesture which opens it to contemporaneity. The movements of forms, colours, masses, shadows and lights produce an oscillation of eyes and feelings, loss of the sense of reference and awkwardness which gives rise to a whole new understanding (Fig. 8)

Eight Roma, two Italian and one Romanian families are now living in the building, together with students and workers involved in the project Flare (Freedom Legality Rights in Europe) against organized crime. The families can live there for a maximum of three years; within this period they have the chance to find their own way in the integration process into the wider city.

Due to this project, the Roma were able to find jobs in the companies involved in the renovation, gaining a professional skill that could be utilized somewhere else.

The building has a common terrace, a meeting point for both tenants and visitors, to be used for public and cultural events.

With the inclusion of the artistic installation of Paolo Ferrari on the front of the building, the project was articulated on many different levels oriented to enable the construction of a new and positive relationship between the structure and its surrounding area.

Conclusions

What was previously a place of alienation and degradation has now been developed into a significant meeting point for the city and its inhabitants. The artistic installation on front of the building contributes in creating a new image, and changes the meaning of the place itself.

The co-presence of different levels — such as social mediation, the architectural

Fig. 8. The sculpture in front of Dado projects into the city (source: Myartspace.com)

project and the artistic installation — and the specificity of each of these come together to define an innovative character of the intervention which from a functional, aesthetic and construction point of view realizes a strategy which is able to facilitate the social and working inclusion of the Roma families and provides a meeting point between these and the wider citizens.

The artistic installation, seen from the road as part of the building's façade, gives rise to a process of transformation which involves many levels of reality and diverse readings: for example, aesthetic, social-political, urbanistic and architectural.

It provides a cultural and aesthetic basis for the habitable place: according to this project, staying in a place is not only a need to find a flat and a place to be, but it develops a symbolic and cultural meaning which the living experience is based on.

The inhabitants of Dado were interviewed by the Cooperative "Architettura delle Convivenze" one year and two years after the start of the project. They highlighted that the cultural aspects of the project — the artistic installation as a symbol of the renewed building, programmes for inclusion of inhabitant work, opening of the common terrace for cultural events to all citizens — helped them integrate in the society.

Discussion

These three case studies show three different processes where the contemporary world is trying to consider and recognize the landscape as an essential component of people's surroundings and — as the European Convention states — a foundation of their identity.

In the first case study this assumption is based on a special regional law which allows the local people to recover a territory designated as a holiday resort. According to this law it is possible for the local people to put forward alternative proposals to realize a transformation project which aims to express their own ideas of their own space.

In the second case study, the artistic expression of a particular form of "site specific art", combines an anonymous, insignificant industrial plant with an artistic installation which contributes in giving to this environment a new meaning. The industrial landscape is transformed and informed by artistic objects which modify the workers' perception of the place and improve their quality of life in this work place.

In the third case study, the consideration and description of landscape as an essential component of people's surroundings and a foundation of their identity, is expressed through a project of self-renewing to create a sense of living more correspondent to individuals culture and needs.

Therefore, by creating an artistic installation, the living standard improves and is transformed through a cultural element. The suburban landscape, which at the beginning was in a state of decay and degraded, was transformed through an artistic and cultural factor which gave a new identity to the place.

These three case studies support the research of a shared idea of landscape, which opens to different visions of the territory's future, raising the question of inclusion within decision making processes and, in general, the question of asserting citizenship rights. Once a project opens to creative participation of various entities involved, it has to deal with an open transformative process, in which an idea of the common good takes shape; an idea which cannot be pre-set or predetermined.

References

Bobbio, L. (a cura di) (2004). *A più voci. Amministrazioni pubbliche, imprese, associazioni e cittadini nei processi decisionali inclusivi* [Many voices. Public Administrations, Businesses, Associations and Citizens into inclusive decision-making processes]. Roma: Edizioni scientifiche Italiane.

Clementi, A. (a cura di) (2002). *Interpretazioni di paesaggio* [Interpretations of landscape]. Roma: Meltemi.

Il Dado. Un bilancio positivo di esperienze di accoglienza [The Dado. Positive accounts of welcome experiences] (2011). See http://www.cri.piemonte.it/comitato/, last accessed 1 October 2011.

Il Dado, progetto di auto-recupero e inserimento sociale [The Dado, Project of self-renewing and social inclusion]. (2009). See http://www.piemonteimmigrazione.it, last accessed 10 November 2011.

DadoScuola [DadoSchool]. Trailer (2011). See www.Youtube.com, last accessed 10 November 2011.

Déjeant-Pons, M. (2002). Content and scope of the convention. In: Ballester, J.M (Ed.). *Naturopa n. 98. European Landscape Convention* (pp. 8–9). Council of Europe.

De Salvatore, A., Riboni, S. (2009). *Il processo di auto-costruzione e auto-recupero come strumento di inclusione sociale. Il modello di Architettura delle Convivenze* [The process of self-building and self-renewing as a tool for the social inclusion. The Architettura delle Convivenze's model]. In: Vitale, T. *Politiche possibili. Abitare la città con i rom e con i sinti* (pp. 244–248). Carocci, Roma.

Drury, P. (2002). The historic and cultural dimensions of landscape. In: Ballester, J.M (Ed.) *Naturopa n. 98. European Landscape Convention* (pp. 12–13). Council of Europe.

The European Landscape Convention (2000). Florence: Council of Europe.

Fairclough, G. (2002). A forward-looking convention: European landscapes for the 21st century. In: Ballester, J.M (Ed.) *Naturopa n. 98. European Landscape Convention* (pp. 5–6). Council of Europe.

Ferrari, P. (1998). *I Raddoppi in-Assenza di Paolo Ferrari* [The Doubling in-Absence by Paolo Ferrari]. Milano: Skira.

Festas, M.G. (2002). Landscape and spatial planning synergy. In: Ballester, J.M (Ed.). *Naturopa n. 98. European Landscape Convention* (p. 14). Council of Europe.

Floridia, A. (2008). *Democrazia deliberativa, strategie negoziali, strategie argomentative: un'analisi del Dibattito Pubblico sul "caso Castelfalfi"* [Deliberative democracy, business strategies, strategic discussions: an analysis of public debate on the Castelfalfi case]. XXII Convegno Società Italiana di Scienza Politica, 4–6 settembre 2008, Pavia. See http://www.consiglio.regione.toscana.it/partecipazione/documenti/FloridiaSISP08.pdf, last accessed 10 November 2011.

Un futuro per otto famiglie rom: da un'emergenza a un'esperienza pilota [A future for eight Roma Families: from an emergency to a pilot experience]. (2009). See from http://www.libera.it, last accessed 10 November 2011.

Inguaggiato, V. (ed.) (2010). Urban and Social Space in Art. *Journal of Architecture and Planning Department, Polytechnic of Milan Territorio*, n. 53, 19–21.

Karrer, F., Ricci, M. (a cura di) (2003). *Città e nuovo welfare. L'apporto dell'urbanistica nella costruzione di un nuovo stato sociale* [City and New Welfare. The Contribution of Urban Planning in the Construction of a New Social Status]. Roma: Officina Edizioni.

Kaye, N. (2000). *Site Specific Art: Performance, Place and Documentation*. London: Routledge.

Legge Regionale Toscana 27 dicembre 2007, n. 69 *Norme sulla promozione della partecipazione alla elaborazione delle politiche regionali e locali* (Regional Law n. 69/2007). Rules on the promotion of participation in the elaboration of regional and local politics] (Regional Law n. 69/2007)

Marsicano, S. (a cura di) (2010). *Psiche, arte, territori di cura* [Psyche, Art, Territories of Care]. Milano: Franco Angeli.

Morisi, M. (a cura di) (2007). *Guida al Progetto Toscana Resort Castelfalfi. Sintesi*

del Piano di Fattibilità presentato da TUI" [Guide to the Castelfalfi Tuscan Resort Project. Synthesis of the Realization Plan presented by TUI]. Comune di Montaione.

Osborne, P. (2001). Installation, Performance or What? *Oxford Art Journal,* 24(2), 147–154.

Pacchi, C. (2008). La voce dei territori. Istanze emergenti, forme di organizzazione e modalità di confronto [Community voices. Emerging phenomena, forms of organization and methods of debate]. *Journal of Architecture and Planning Department, Polytechnic of Milan Territorio,* n. 46, 49–52

Palmentieri, S. (2006). The Landscape: a Good of Culture, Identification and Richness. *Proceedings of the Conference 'The Cultural Turn in Geography'*, 18–20th of September 2003, Gorizia. See http://www.openstarts.units.it/dspace/bitstream/10077/828/2/indice.pdf, last accessed 10 November 2011.

Pezzoni, N. (2010 a). Il paesaggio come narrazione del presente [The Landscape as a narration of the present]. *Journal of Architecture and Planning Department, Polytechnic of Milan Territorio,* n. 52, 117–121.

Pezzoni, N. (2010 b). 'Luoghi in-Raddoppio': una forma d'arte trasformativa di spazi per il vivere, il pensare, il lavorare ['Places in-Doubling': an art form which transforms spaces for living, thinking, and working]. *Journal of Architecture and Planning Department, Polytechnic of Milan Territorio,* n. 53, 57–64.

Pomilio, F. (a cura di) (2009). *Welfare e territorio. Esplorare il legame tra politiche dei servizi e dimensione urbana* [Welfare and territory. Exploring the relation between welfare policies and urban dimension]. Firenze: Alinea.

Rom, sgomberiamo il campo dai pregiudizi [Roma, let's clear the field of prejudices]. 2011. See from http://www.gruppoabele.org, last accessed 01.10.2011.

Salerno, R., Casonato, C. (a cura di) (2008). *Paesaggi culturali* [Cultural Landscapes]. Roma: Gangemi.

A Settimo Torinese nasce il "Dado" [In Settimo Torinese the "Dado" borns]. (2009). See from http://www.migrantitorino.it/, last accessed 10 November 2011.

Stangalini, F. (1998). Man and manufacturing space. In: Ferrari, P. (Ed.). *The Doubling in-Absence*. Milano: Skira, p. 8

Suderburg, E. (Ed.) (2000). *Space, Site, Intervention: Situating Installation Art.* Minneapolis: University of Minnesota Press.

Verri, S. (2010). Arte, assenza e qualità della vita [Art, absence and quality of life]. In: Marsicano, S. (Ed.). *Psiche, arte, territori di cura*. Milano: Franco Angeli, pp. 33–55.

Vitale, T. (a cura di) (2009). *Politiche possibili. Abitare la città con i rom e con i sinti* [Political possibilities. Living in a city with Roma and Sinti]. Roma: Carocci.

AMATCIEMS: EXAMPLE OF THE CREATION OF A NEW KIND OF RURAL LANDSCAPE AND SETTLEMENT PATTERN IN LATVIA

Ineta Grīne and Ivars Strautnieks
Faculty of Geography and Earth Sciences, University of Latvia
19 Rainis Blvd., Riga, LV-1586, Latvia
Ineta.Grine@lu.lv, Ivars.Strautnieks@lu.lv

Key words: *village, landscape changes, relief transformation, Latvia*

The development of new villages is bringing about changes in the appearance of the rural landscape across the world, and Latvia is no exception. These changes are connected with urbanisation and suburbanisation processes, and thus with changes in rural settlement structure. The present changes in the rural landscape are very rapid and dynamic, especially in the environs of cities and attractive natural sites.
Amatciems is one such newly-established village in Latvia. The study shows how, in creating a new rural settlement — Amatciems — an attempt has been made to give the impression of a seemingly natural, little-altered landscape, and in this regard it is unique in Latvia.
The main sources of information for the study are historical maps and plans, orthophotos and digital maps, as well as records of field studies and interviews with the creators of Amatciems. The possibilities offered by geographic information systems (GIS) have been utilised in spatial analysis, revealing more clearly the changes that have taken place in what was originally an undisturbed forest landscape.
Amatciems has developed completely anew next to historic settlements in the Vidzeme Highland, a development involving major relief transformation and creating a mosaic landscape with lakes, ponds and forested hills. Also forming part of the mosaic are hills with planted young trees and grassy areas, houses and yards, and a road network. The changes made by people to the relief, geological structure, distribution of soil parent material and vegetation cover are only the present results. The activation of slope processes observable in the area already points to changes in the natural balance. In the future development of the Amatciems landscape, it is necessary to take into account not only geological processes, but also local changes in soil cover and vegetation.

Introduction

The end of the 20th and the beginning of the 21st century in Europe, including Latvia, has brought changes in the national policy, economic conditions and social space, which have also significantly altered rural areas. These changes are associated with major urbanisation and suburbanisation processes, also altering rural settlement structure. In particular, it is the proximity and accessibility of

an area that lends it significance and attractiveness, because the criteria in the choice of a new place of residence include easy and fast access to the home, as well as attractiveness of the landscape. In the process of suburbanisation the urban fringe and countryside have merged, and the urban population has grown. In many country areas of Europe, as a result of the urbanisation process, new compact villages can be seen, which have developed during a short period. Starting from the second half of the 20th century, the wealthiest section of society in Europe has been seeking a home outside the city centre, in suburbs and rural areas close to the city. The decision to live in the country is determined by several considerations: both social (the countryside as a place to live and work, or the countryside as a place to live; also, the countryside as a source of traditional, ethnic values) and environmental (biological diversity, a natural setting, and wholesome, natural food) (Eetvelde *et al.*, 2009; Verburg *et al.*, 2006; Reger *et al.*, 2007; Krūzmētra, 2011; Ceccato *et al.*, 2002; Antrop, 2004; Paquette *et al.*, 2003; Banski *et al.*, 2010).

As in other countries, in Latvia, too, proximity to cities, major highways and public transport plays a major role in the development of settlement structure. The locational and landscape factor also has a growing role in the development of settlement: proximity to lakes and rivers, and the attractiveness of a mosaic landscape (Zariņa, 2010; Grīne, 2009; Grīne *et al.*, 2007). Individual new country homes and villages and compact villages of detached houses are appearing in the rural landscape.[1] Many of these villages have been created completely anew in the vicinity of forests, in meadows or near rivers and lakes, or else districts of detached houses have been created by extending pre-existing villages. In rural areas the new villages and compact villages have developed mainly in the vicinity of highways and economic centres, generally within a 30-km radius around Riga. Rapid development of such villages took place in the late 1990s and early 2000s, but in recent years, because of the downturn in the national economy, the development of new villages has come to a halt (Jauno ciematu pētījums, 2007; Koroļova, 2007; Vecgrāve, 2007; Bērziņš, 2011). On the one hand, building of such villages around the cities marks an extension of the urban area, but not all of these newly-developed villages reflect urbanisation processes in the classic sense, and Amatciems is one such example. This is because in the case of Amatciems, we see people moving close to nature, rather than to the urban environment.

Along with the development of the new villages, a new social stratum is entering the Latvian countryside: affluent residents with an income, values and lifestyle that differ from the way of life of the native residents (the rural population). For these residents, the residential setting differs from the work setting: they work or study in towns and cities, while the country home is their residence or a holiday location for weekends or summers. City-dwellers seek in the countryside the possibility to hide away in scenic locations from the bustle, noise, stress, pollution and neighbours in the city, i.e. away from the urbanised environment (Grīne, 2009; Liepiņa, 2001; Krūzmētra, 2011).

The most important factors in the development and structure of the landscape are: land use, geological structure and relief, soils and vegetation, and the hydrographic network. All of these factors affect the diversity and character of the landscape. Accordingly, in characterising landscape changes, studies focus on these components (Gaujas Nacionālā parka ainavu estētiskais vērtējums, 2005; Wascher, 2004; Eetvelde *et al*., 2009).

The urbanisation process, along with changes in settlement pattern and land use, transforms the traditional, natural rural landscape (Eetvelde *et al.*, 2009; Verburg *et al.*, 2006; Reger *et al.*, 2007; Krūzmētra, 2011;

Ceccato *et al.*, 2002). Landscape changes differ in intensity. Sometimes these changes can be destructive, and many landscapes may be irreversibly destroyed (Zariņa, 2010; Eetvelde *et al.*, 2009; Antrop, 2004).

From the above it is clear that both aspects — humans and nature — are closely connected, interact and are equally important in landscape studies (Paquette *et al*., 2003; Hunziker *et al.*, 2007; Ruiz *et al.*, 2004). It must also be borne in mind that a landscape is in itself dynamic and changing, i.e. it changes not only under the impact of human activities.

The aim of the study is to show how, as a result of major relief transformation in the course of the development of Amatciems as a new rural settlement in Latvia, an effort has been made to create the impression of a seemingly natural, little-altered landscape.

Materials and methods

Nowadays, across the world, and in Latvia as well, cartographic material — in the form of old, historic maps, orthophotos and digital maps — is being widely utilised in studies on changes in settlement pattern and landscape. The historical maps and plans provide a broad picture of the study area in various periods, showing the location of settlements, land use, topography and infrastructure. This is seen, for example, in studies on changes in the cultural landscape in Flanders (Belgium), Sweden and Norway, changes in vegetation cover in Europe, as well as landscape changes in Latvia, where certain case study areas have been analysed comprehensively (Eetvelde *et al.*, 2009; Reger *et al.*, 2007; Swensen *et al.*, 2008; Bell *et al.*, 2009).

In analysis of cartographic material and spatial analysis in the frame of studies on landscape and settlement patterns the possibilities of geographic information systems (GIS) are widely used, also in studies in Latvia. GIS is used not only to store data, but also for spatial analysis and data visualisation, in addition to which data analysis can be undertaken at various scales and in various temporal dimensions (examining temporal and spatial changes) (Eetvelde *et al.*, 2009; Ceccato *et al.*, 2003; Sevenant *et al.*, 2007; Aunap, 2007; Rogge *et al.*, 2008).

Analysis of the cartographic material, using the method of map overlay, is an aid in assessing, comparing and analysing changes over time, although it is necessary to take into account that these sources may differ in terms of the quality and volume of data, and in terms of scale and precision (Swensen *et al.*, 2008). Accordingly, other empirical data are used in addition to cartographic material: mainly statistical data, census data and published works.

In order to identify the changes to the rural landscape and settlement pattern in the case study area of Amatciems, several kinds of information sources have been used. One of the main sources is cartographic material (map servers of the Faculty of Geography and Earth Sciences of the University of Latvia and the Latvian Geospatial Information Agency). This includes topographic maps at scales 1 : 10 000 and 1 : 25 000, showing the situation in the mid-20th century, orthophotos showing the situation in 1998, 2005 and 2008, as well as a plan of the present situation in Amatciems (digital data from the Latvian Geospatial Information Agency) (Fig. 1). Geological mapping material at scales 1 : 200 000 and 1 : 500 000 has also been applied, including a geological map, a map of Quaternary deposits and a map of the thickness of Quaternary deposits and the pre-Quaternary surface.

Data from field research has also been applied in the study (July and August 2006; April–August 2010; April 2011). The fieldwork involved observations on the stratigraphy of the deposits forming the relief, and identification of genetic types of deposits and their lithological properties. Visual observation of the morphology of relief forms was

also carried out, along with measurement of slope angles. In addition, interviews with the managers of Amatciems (April 2009, August 2010) were used, also internet resources, including publications on Amatciems (Amatciems; Blūms, 2008; Benfelde, 2008; Dūmiņa *et al.*, 2010; Grīne *et al.*, 2010; Majore-Līne, 2007, 2009; etc.).

Analysis of spatial changes within the territory of Amatciems was undertaken using the *ArcView 10* GIS software with extensions *Spatial Analyst* and *3D Analyst*. In order to analyse the relief transformation that has taken place and more clearly visualise the existing situation: 1) using a topographic map at scale 1 : 10 000, the contour lines, spot heights, forest and wetland areas, waterbodies and road network were digitised, and a TIN model was created for characterising the situation in the mid-20th

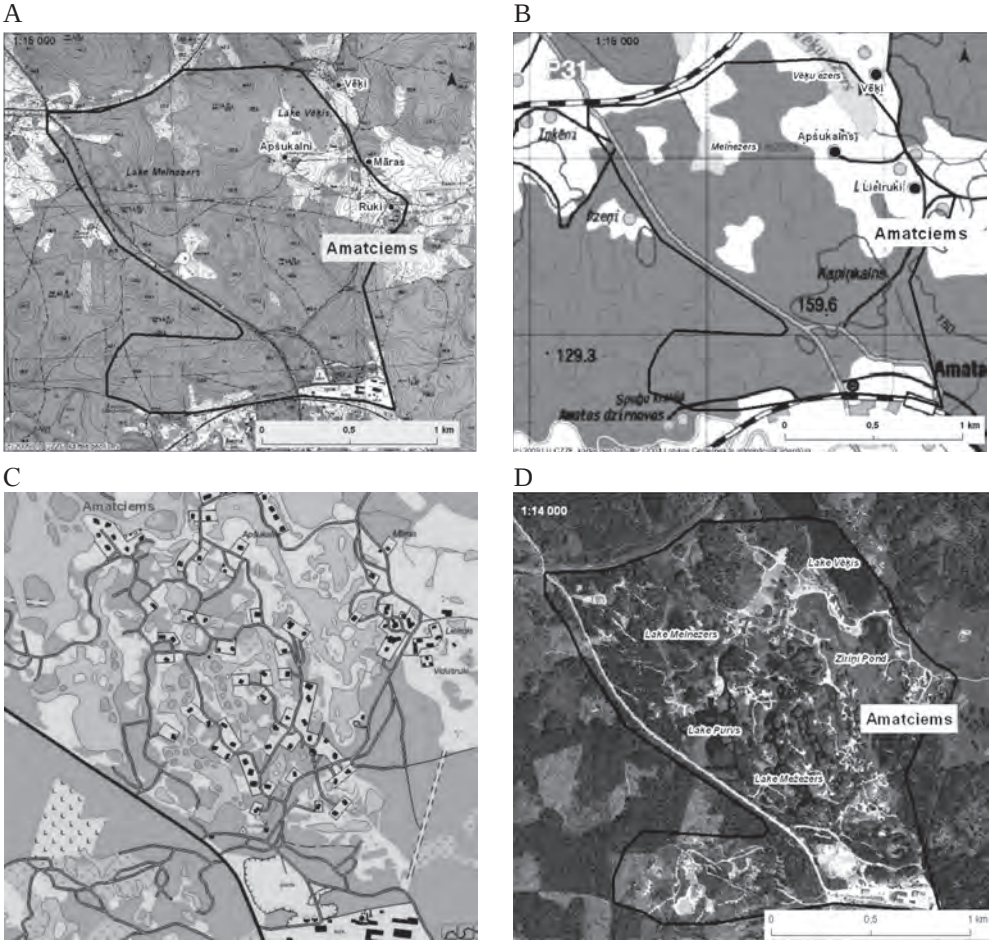


Fig. 1. The territory of Amatciems in maps: A — the area in the 1970s (1 : 10 000 scale topographic map); B — the area at the end of the 20th century (map of Cēsis District, scale 1 : 100 000); C — Amatciems, situation in 2008 (map server of the Latvian Geospatial Information Agency); D — the situation in 2008 (after orthophoto material from 2008; map server of the Faculty of Geography and Earth Sciences, University of Latvia)

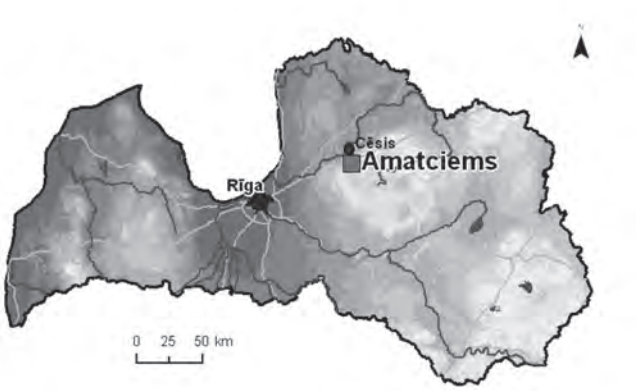


Fig. 2. Location of the case study area.

century; 2) using data from the Latvian Geospatial Information Agency (contours, spot heights, the hydrographic and road network), a TIN model was created characterising the present situation; 3) in order to characterise the extant buildings, they were digitised from the plan of Amatciems.

Main results

Characterisation of the location of Amatciems

Amatciems is located in a hilly area in the north-western part of the Vidzeme Highland. As regards the choice of location, the above-mentioned requirements regarding the proximity of cities, major thoroughfares and landscape attractiveness have been observed. Amatciems is located about 80 km from Riga about 12 km from Cēsis close to the Vidzeme Highway (2.5–3 km to the highway) and close to two railway lines: Riga–Lugaži and Ieriķi–Gulbene (the latter of which was closed in 1999). Passing next to Amatciems is the local-level road (P31), connecting Cēsis and Ērgļi.

Amatciems began to develop as a village in 2004, although the concept itself came earlier. It is the brainchild of one individual: A. Zvirbulis (Majore-Līne, 2007).

The total planned building area of Amatciems is 130–150 ha (Valdmane, 2008; Liepa, 2011). The development of Amatciems (Phases 1 and 2) commenced on the left-hand side of the Cēsis–Ērgļi road (P31). Major relief transformation and building work has taken place here, and is still underway, and during the past three to four years relief transformation and tree-felling has also begun on the right-hand side of the Cēsis–Ērgļi road along the railway line and the River Amata (Phase 3). However, during the last one to two years, development of the village has only been taking place in the built-up area, discontinuing the transformation work on the right-hand side of the Cēsis–Ērgļi road (Fig. 1: C, D).

It should be added that Amatciems has developed next to the village of Amata. However, in accordance with the planning documents, new development in Amata County is to be concentrated in the larger villages, including Amata itself. In 2009, the limits of the village of Amata were established, and in this scheme Amatciems is included as part of Amata village (i.e. the present Amata village consists of Amatciems and the historic Amata village), even though they differ radically in many respects (visually, functionally, philosophically etc.), and it is thought that these differences will persist (Majore-Līne, 2009; Amatas novada teritorijas plānojums…, 2006).

Description of the area before the development of Amatciems

The village has been developed in a new location next to historic settlements: *Vēķi,*

Ruki, Māras and *Apšukalns.* Not far from Amatciems is the historic population centre of Amata (with a population of 160 in 2001) (Latvijas ciemi, 2007) (Fig. 1: A, B).

Before relief transformation the area included two natural waterbodies: Lake Melnezers (Lake Asarājs) (~3.2 ha) and Lake Vēķis (~12 ha) (Ezeri.lv; Tidriķis, 1998). Lake Melnezers was surrounded by a boggy area (Fig. 1: A, B).

Before development of the village, most of the hilly area near Lake Melnezers and Lake Vēķis, as well as along the right-hand side of the Cēsis–Ērgļi road, along the bank of the River Amata, was covered in forest, with bogs in the smaller hollows between hills. There was agricultural land only around Lake Vēķis and around the historic farmsteads of *Ruki, Apšukalns* and *Māras.*

Description of the area after the development of Amatciems

In contrast to the development of other new villages in Latvia, in the case of Amatciems, the creation of building plots and landscaping has involved large-scale

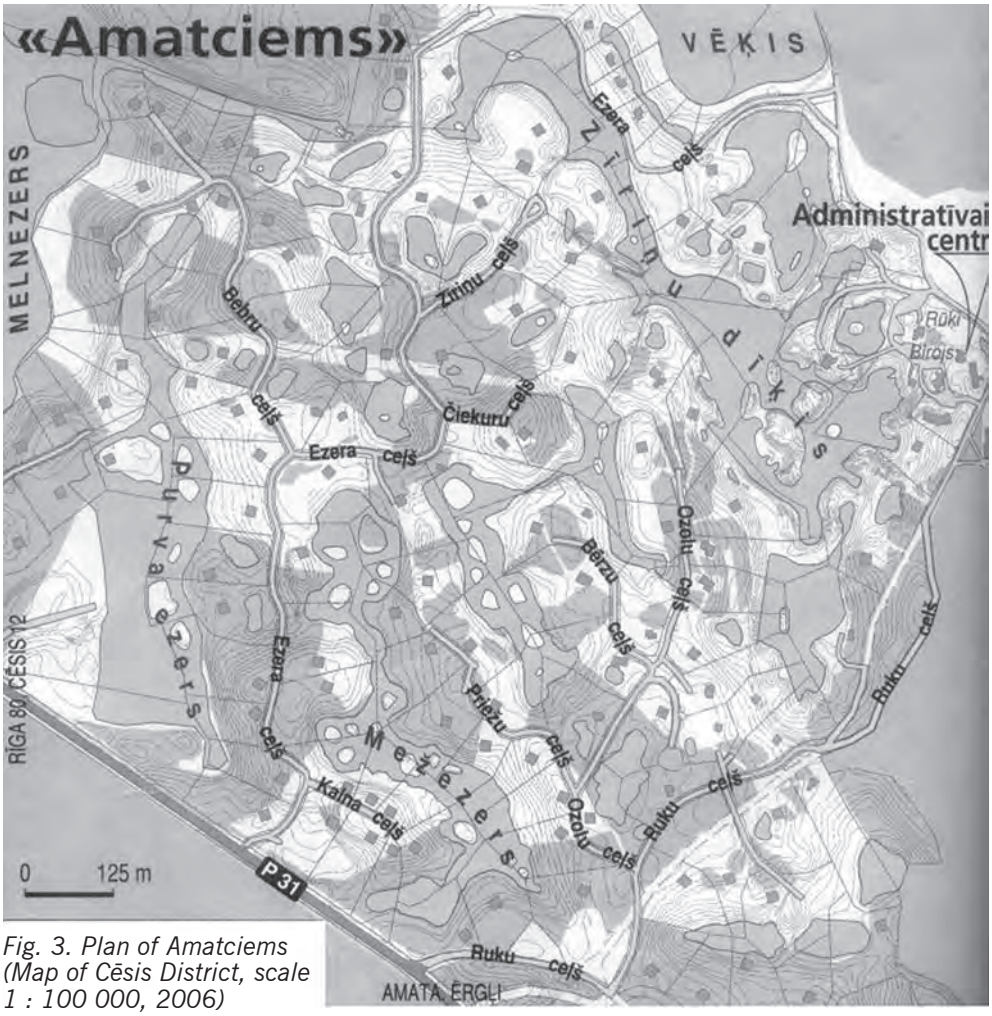


Fig. 3. Plan of Amatciems (Map of Cēsis District, scale 1 : 100 000, 2006)

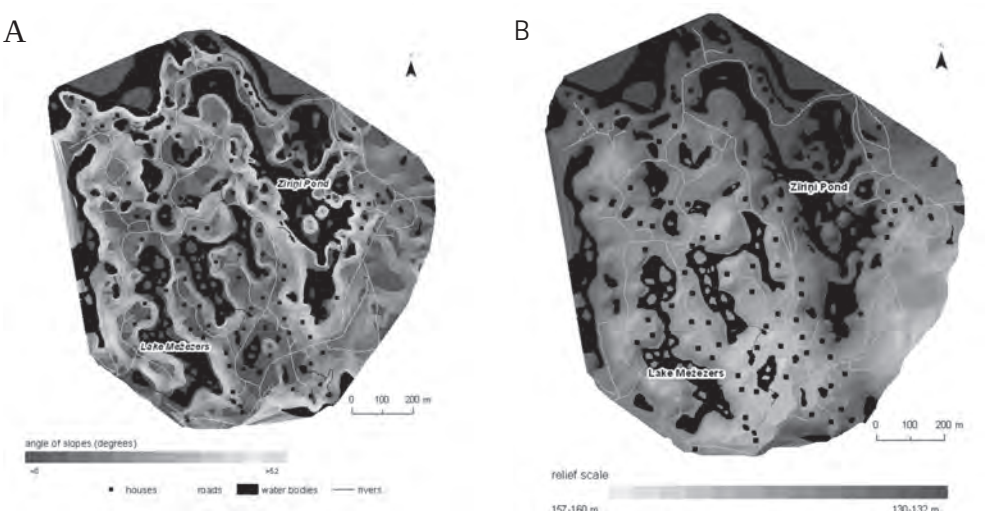


Fig. 4. Fragments of the territory of Amatciems. Relief model (2008) (after vector data of the Latvian Geospatial Information Agency): A — TIN model; B — slope analysis

transformation of the hilly relief, which is still underway.

Nowadays, the Amatciems landscape consists of clumps of forest with open spaces and artificial waterbodies, both large (up to ~5–6 ha) and small (~0.1 ha). Several chains of artificial waterbodies with small, wooded islands and peninsulas have been created in areas that were formerly bog, and in boggy hollows in the relief. The new waterbodies have a sinuous shoreline, winding around the hills, and so some of them are visually reminiscent of the natural waterbodies as they would have been before overgrowing (Fig. 5: B). The total number of waterbodies of various sizes now exceeds 30. The waterbodies with the largest area, occupying natural, partly overgrown hollows, number less than 10, and some have been named as lakes, for example Lake Purvs (Purva ezers) (~6 ha, length ~680 m) and Mežezers (~3.4 ha). Zīriņi Pond (Zīriņu dīķis) has an area of about 5.8 ha (length ~700 m), while the waterbody between Zīriņi Pond and Mežezers covers about 2.5 ha. After relief transformation the area of Melnezers is about 15 ha (with islands). The waterbodies occupy up to 30% of Amatciems (Fig. 3).

Since the original overgrown, boggy hollows were located at various elevations, the new waterbodies are also at different hypsometric levels, forming cascades. This is clearly visible in the landscape, for example, between Lake Vēķis and Zīriņi Pond, which differ in height from 132 to 136 m a.s.l. (Fig. 3, Fig. 5: C).

The changes have also affected the two natural waterbodies. As a result of transformation, Lake Vēķis has a partially altered shoreline, whereas the shoreline of Melnezers has been significantly altered, with an increase in the extent of the lake (Fig. 1).

As a result of relief transformation the dissected relief characteristic of this part of the Vidzeme Highland has been emphasised even more. In the course of creating the waterbodies the height difference between the hollows and the hilltops has been increased by several metres. A general idea of the hypsometric position and height differences can be obtained by considering the differences in height a.s.l. within the area: from 130–132

m a.s.l. right up to 150–154 m a.s.l. The tops of the highest hills reach 156–159.6 m a.s.l. (Fig. 4: A).

In transforming the hills and hollows, the angle and length of slopes has been altered: before relief transformation the slopes generally had an angle of 5–10^0, whereas after transformation the slope of the hills varies from 5–10^0 up to 10–15^0. The angle of certain hill-slopes reaches 20–30^o, and even 40^o in places (Fig. 4: B).

Overall, we can say that the landscape of Amatciems has become more diverse: the mosaic landscape consists of lakes and ponds with small islands and peninsulas in the hollows, wooded hills, as well as hills with planted trees and sown grasses, open areas, houses and yards, and a road network.

The houses are located relatively close together. Each house has a view of an attractive mosaic landscape (Fig. 1: C, D).

With the exception of some major roads, the road network has been created anew, and the roads wind along the ridge-tops. The roads are gravelled, retaining a characteristic feature of the rural landscape; only the main road to the centre of Amatciems is being asphalted (Fig. 1: A, C; Fig. 4: A).

All of the houses have been built on the left-hand side of the Cēsis–Ērgļi road. The first houses were built in 2005, a time of intensive construction of detached houses. By 2009, about 80 building plots (varying from 0.4 to 1.5 ha) had been created and sold in Amatciems (interviews, 2009). A proportion of the plots have been sold without houses, while on others house-building has commenced. The land has been purchased mainly by people living in Riga (32 out of 42 families in Latvia), and during the last year mainly by people from Russia. By 2010, in Amatciems there were 70 houses, of them 28 had been completed and were inhabited (Amatciems; interviews, 2010).

In August 2010, Amatciems had a total population of 72, or 27 families, out of which 12 live permanently in the village, the other 15 spending their summers or weekends here (interviews, 2010).

The permanent residents of Amatciems come from Riga, Sigulda and Cēsis. The families that spend the weekends or summer holidays here have permanent homes elsewhere in Latvia, mainly in Riga or Jūrmala, or abroad: in Russia, Britain, Belgium, Venezuela, Italy or Saudi Arabia (interviews, 2010).

Discussion

Creation of a new settlement will always involve visual changes to the landscape, with addition of houses and outbuildings, roads, courtyards and other elements of the cultural landscape. On any building site the topsoil is removed, replaced with a material corresponding to the demands of construction (mineral soil), and the surface layer is levelled out. After construction, the infertile layer around the structures is covered with an organic-rich soil layer. In most cases such activities are not subject to any special consideration, since in a flat area significant changes to the relief are not conspicuous, and most commonly do not involve any discussion of impacts on green areas. In hilly areas the preparation of building sites requires transformation of the relief, reduction in the extent of sloping surfaces, and increase in the extent of horizontal surfaces.

Of course, no settlement will be alike others, and the differences will be more than just visual. Amatciems differs from many other new villages built in Latvia after 1990. As architects have noted, Amatciems represents a significant innovation in spatial planning, innovative not only on the Latvian scale. It is based on an untraditional approach to the creation of a space for living within a landscape setting, combined with a high level of comfort (Blūms, 2008; Valdmane, 2008). In certain publications about ecovillages (Liepa, 2011; Polis, 2010) Amatciems has been listed among landscape ecovillages.

Although the creator of Amatciems, A. Zvirbulis, does not regard it as an ecovillage, the project does reflect certain ecovillage ideas: small properties that can be delimited by hedges, natural building materials (eco-building), an unpolluted environment, nature, a way of life in harmony with nature, and internal rules of conduct (Liepa, 2011).

The creator of the village, A. Zvirbulis, sees Amatciems as a small town in the future, similar to Mežaparks, with summer-houses. "Amatciems will be Riga's Mežaparks", where people live in harmony with nature (Dūmiņa *et al*., 2010; Majore-Linē, 2007; Amatciems).

What is it that sets Amatciems apart from other villages (compact villages) developed in Latvia?

In the first place, Amatciems is being created mainly as a holiday village. As the creators of the village themselves point out, it is to be a village where people can rest from the hustle and bustle of the city, enjoying quiet, beautiful nature and peace. The interviews also indicate that the main pre-condition for choosing Amatciems as a place of residence or holiday location for families was not only the geographical location, but also the attractiveness of nature and the landscape. Accordingly, in order to retain the functionality of the landscape and the village in accordance with the original plan, the creators of the village have drawn up "Rules on construction, conduct and use". The most important aspect of these rules is that all building plots are intended solely for the construction and utilisation of housing (house, bath-house and garage). Keeping domestic animals or fowl is not permitted in the village, so outbuildings for this purpose are not built, marking a significant difference from traditional farmsteads of rural Latvia. Apart from this, construction of sites for entertainment or services is forbidden, as is the building of commercial or production facilities (Amatciems). The people living in Amatciems have evidently accepted these rules, as laid down in the "Rules on construction, conduct and use".

The exception is the Amatciems guesthouse, and an inn and hotel planned in the future to attract tourists. At the moment Amatciems has no kindergarten, school, post office, shop or other services. Accordingly, the proximity of the town of Cēsis and the good road network are factors giving the residents convenient access to cultural events, educational establishments and various services.

At the same time, the creators of Amatciems have provided the residents with comforts in their homes, because Amatciems has a unified economic infrastructure (water supply, sewerage, telecommunications and energy supply) (Amatciems).

At present Amatciems retains its function as a holiday village. However, as noted by architect A. Blūms (2008), it is hard to say whether it will succeed in fully retaining this character in the future (Blūms, 2008).

Secondly, the development of Amatciems reflects the main idea of the developers: to bring the residents as close as possible to relatively untouched nature, and so the setting has not been "pedantically" maintained (tended). The creators of Amatciems strive to give the impression of a natural, little-altered landscape. The proximity of forest and waterbodies to the house allows the residents to have closer contact with nature: to observe how the landscape, trees and flora change with the seasons, and to see birds and animals in their natural setting. This is because the creators of Amatciems have also considered the need to provide space and shelter for insects, animals and birds, retaining ponds for waterfowl and amphibians, as well as unmanaged stands of young trees, islands in ponds overgrown with bushes and trees, and natural meadows and woods. The closeness of nature provides the residents with opportunities for many outdoor recreational activities: people can simply go walking at any season, as well as berry-picking or fishing in summer,

mushroom-picking in autumn and skiing in winter.

Thirdly, the creators of Amatciems strive to retain the typical Latvian settlement model. The houses are placed separately, like single farmsteads, thus avoiding the impression of being located in a village. Each house is named after an animal or plant, for example, *Irbītes* (The Partridges), *Vijolītes* (The Violets), *Stirnas* (The Roe Deer), *Kadiķi* (The Junipers), etc., which is a traditional practice in naming farms in Latvia. The traditional elements of historic Latvian architecture have been applied in house design: a timber frame or log house with a reed or shingle roof, or with a cover of turves. Boulder stone has been utilised in the structures. Nevertheless, the houses differ from one another, so that each retains its individuality (Fig. 5: D). The houses of Amatciems are not separated by fences. The "Rules on construction, conduct and use" do not permit high fences in Amatciems, only low wooden fences, as is traditional around the old farmsteads in the rural landscape of Latvia (Amatciems).

Being placed among trees, bushes and hills, the houses appear to be isolated from one another. The sense of isolation can vary seasonally. For example, in winter and spring, and likewise in summer and autumn, the houses along Zīriņi Pond, an unwooded area, have an extensive view towards Lake Vēķis and the old farms across the lake, towards the hills beyond Zīriņi Pond and to the neighbours' houses close by (Fig. 5: C). By contrast, the yards of the houses around Mežezers have a more "restricted" view in summer and autumn towards wooded hills and the lake with its islands, the silhouette of the neighbours' house being just visible through the trees. The view is relatively more open in winder and spring, when the trees are not in leaf. This relates to topography and visibility: in more forested areas the view is restricted, and in there is limited visibility in the hollows, while the hills provide panoramic views (Paquette *et al.*, 2001). There is no doubt that the creators of Amatciems have taken this into consideration.

In planning the development, it has been recognised that "Latvians are by nature broad-space dwellers. They dislike living cramped together, and whenever possibly they try to obtain a separate plot of land and build a single-family home", and that clusters of houses are characteristic of the Vidzeme region (Liepiņa, 2001). The road system, too, has been created in such a way that, in the first place, each resident can access their own house along their own road. The major roads, like streets in villages and towns, have been given names, for example, *Priežu ceļš* (Pine Road), *Ezera ceļš* (Lake Road), *Čiekuru ceļš* (Pine-Cone Road) etc.

Fourthly, the development of a mosaic landscape in Amatciems involves relief transformation on a scale unseen in the development of such villages in Latvia, making it unique in this country. As a result, the landscape has become even more attractive. It is not just the availability of the necessary financial means that makes it possible to undertake relief transformation and create a mosaic landscape. An important factor is the location of Amatciems within the hilly area of the Vidzeme Highland, where there is a significant thickness of Quaternary cover. It would be impossible in flat areas with a thin cover of Quaternary deposits (a few metres thick).

People have various opinions about Amatciems and the relief transformation undertaken here. Some accept the changes and approve of the landscape that has been created, regarding it as a unique village not only in Latvia, but at a Baltic scale at least. Others object to the human alterations to the landscape, and to the appearance of the village. Those in favour of the relief transformation that has taken place consider that, apart form nature reserves, there is no such thing as a landscape entirely untouched by people

Fig. 5. The effect of relief transformation in the Amatciems landscape: summer 2010, spring 2011. Photos: I. Strautnieks and I. Grīne. A — after several years, it may be difficult to distinguish which of the hills are natural and which are artificial; B — following transformation of the relief and soils, atypical plant associations are to be seen; C — waterbodies at different hypsometric levels; D — new building in the landscape.

(Benfelde; 2008; Blūms, 2008). However, thanks to relief transformation, the landscape in Amatciems is more diverse.

Relief transformation in Amatciems takes the form of the creation of waterbodies and hills. In the creation of waterbodies the height difference between the hollows and the hilltops has increased by several metres. In the many hollows, where the maximum thickness of the peat reached five metres or even more, the peat has been partially removed. In places the hollows have been deepened, excavating the sandy clay or clayey sand till. The material excavated from the hollows has been dumped and spread out on the hilltops and slopes. This means that the hollows between the hills have become deeper and the hills relatively higher. In certain places, completely new hills have been formed: hills of technogenic origin, consisting of clayey sand or sand and gravel, with a surface layer of spread out peat, gyttja or soil. One of the highest hills, and one of the largest in terms of volume, is located in the western part of Amatciems (by Lake Purvs). It is made up of sawdust, with a thin surface layer of sand and gravel, along with peat (Fig. 5 : A).

As a result of the transformation of hills and hollows, the angle and length of slopes has been altered. On the steep slopes, under the influence gravity the unstable surface layer of fill is subject to changes resulting from natural slope processes. On slopes consisting of more plastic deposits, such as sandy clay or clayey sand till, the formation of tension cracks and slumps can be observed. This is promoted not only by the plasticity of the deposits, but also by the as yet inadequate friction between the surface layer of fill and the underlying terrain, and the lower degree of compaction and higher porosity of the surface layer. With the infiltration of precipitation, the contact surface between these layers turns into a slip surface. Often, gully formation can be observed on the sandy clay till slopes along waterbodies. In many places it can be seen how the peat and gyttja removed from its natural setting, namely the wet hollows, is losing moisture unevenly, changing in volume, cracking and also causing additional surface instability. Apart from this, with the reduction in moisture and improved aeration, the organogenic material is beginning to decompose.

Essentially, as a result of relief transformation, the original fertile surface layer across a large part of the territory has been degraded, and in many locations the soil parent material has changed. Many hilltops and slopes have anthropogenic soils consisting of a spread of peat. In locations with a thicker peat layer, it can be regarded as the soil parent material, but only in a restricted sense, since its thickness will gradually decrease through decomposition and mineralisation.

Grasses have been sown on the hillslopes, and new trees planted. Tree-planting and sowing of grass has been undertaken not only in order to consolidate the slopes, but also to create, as rapidly and extensively as possible, the impression of a natural landscape, which gives Amatciems its unique character. Accordingly, the planted trees include small, young trees, as well as larger trees of such size as can be transported without damage. The trees being planted are the characteristic species of the natural landscape: birch (*Betula pendula, Betula pubescens*), pine (*Pinus sylvestris*), spruce (*Picea abies*) and rowan (*Sorbus aucuparia*). The sown grasses include white clover (*Trifolium repens*). It is important to note that, along with the transfer of the surface layer of deposits from the hollows to the slopes and hilltops, the roots of various plants have also been moved from their original locations, as a result of which damp-loving plants can be seen growing in uncharacteristic locations. Thus, for example, we can see major concentrations of such damp-loving plants as rushes *(Juncus L.)* on well-drained slopes and hilltops, although in natural conditions they are characteristic of wet hollows with water on the ground surface (Fig. 5: B). Such indicator species, along with the sown grasses, very clearly show differences between an anthropogenic and a natural landscape.

However, when planting trees and shrubs, it is necessary to consider what the landscape will be like in 5–10 years, when the trees and shrubs have grown. Such changes in the landscape can already be seen on hills that were planted with young trees during the initial phase of the village development.

After relief transformation, chains of artificial waterbodies have been created in the hollows and small bogs, and these are subject to change. The waterbodies created earlier are gradually starting to overgrow. Thus, for example, in Lake Purvs peat is floating to the surface, and so the managers of Amatciems have undertaken cleaning work (removing the peat). Similar measures have been taken at other waterbodies. As described in publications (Kristensen *et al.*, 2004; Eetvelde *et al.*, 2004), ponds and artificial lakes represent one of the most important visual elements of landscapes elsewhere in the world, too, but the possibility of creating them depends not

only on the geological structure and relief, but also on the motivation to undertake it.

Conclusions

Private villages represent a new trend in settlement development in rural Latvia. It is a trend reflecting the opportunity for people to choose the kind of house they prefer and is characteristic of the arrival of new social groups in the countryside, groups for which agriculture is not the main occupation. This marks a change of perspective regarding the countryside and its role. The countryside is increasingly becoming a living space for city dwellers who work in the city and live or spend their holidays in the country. Thus, the private villages have both permanent and part-time residents.

Amatciems is a private village, that is created in accordance with a concept developed by A. Zvirbulis, differing radically from all other villages built in Latvia so far.

The development of Amatciems reflects in full the ideas expressed by A. Zvirbulis of creating an anthropogenic, but seemingly natural mosaic landscape.

Amatciems is not just a new rural settlement, with characteristic, significant features, namely individual homesteads and waterbodies. It is also an unusual area where we can witness rapid change in the artificially transformed green areas. The intensity of these changes, for example gully-formation and slumping, will gradually decline as the natural balance disturbed by humans renews itself, but the course of natural changes and the foreseeable results of the changes need to be taken into account by the residents and developers of Amatciems.

Changes will gradually take place in the vegetation in areas where atypical plant associations have appeared following the transformation of relief and soil. In many areas a new soil profile will develop, corresponding to the soil parent material, the position in the relief, the vegetation and the climatic conditions.

The extent of open areas with a clear view will be reduced with the increase in tree height, and the proportion of forest will increase. The mosaic landscape will change, with an increase in built-up areas at the expense of grassy areas. Likewise, changes will take place in the waterbodies, unless they are periodically cleaned out.

Over time, it will come clear what changes are affecting the artificially created hill with a core consisting of timber waste (sawdust), covered by a layer of peat, on which a pine stand has been planted.

With time, it will perhaps be difficult to distinguish which parts of this hilly landscape are natural, and which are artificial.

Presumably, the development of private villages in rural Latvia will continue, and a variety of approaches will be taken. Time and experience will show which approaches are the best: whether such ambitious landscape creation and relief transformation as has been undertaken at Amatciems will be justified in the long-run and whether it will be possible to take it as an example when establishing villages elsewhere.

Acknowledgements

The authors wish to thank Aivars Zvirbulis, Anita Zembaha and Laura Zvirbule for valuable discussions.

References

Amatas novada teritorijas plānojums 2006–2018. g. I. sēj. Paskaidrojošais teksts [Territory planning of Amata country, 2006–2018. Vol. 1. Explanation text] (2006). http://www.amatasdome.lv/terit_planoj/I.sejums_paskaidrojuma_raksts.pdf, last accessed 21 October 2009 (in Latvian).

Amatas novada teritorijas plānojums 2006–2018.g. Teritorijas plānojums. Grafiskā daļa [Territory planning of Amata country, 2006–2018. Maps] (2006). http://www.amatasdome.lv/?id=44, last accessed 21 October 2009 (in Latvian).

Amatciems. http://www.amatciems.lv, last accessed 1 June 2011 (in Latvian, in English).

Antrop, M. (2004). Landscape change and the urbanization process in Europe. *Landscape and Urban Planning,* 67, 9–26. http://www.sciencedirect.com/science/article/pii/S0169204603000264, last accessed 4 October 2011.

Aunap, R. (2007). *The applicability of GIS data in detecting and representing changes in landscape: three case studies in Estonia.* Dissertationes Geographicae Universitatis Tartuensis 33. Tartu: Tartu University Press. 94 p. http://dspace.utlib.ee/dspace/bitstream/handle/10062/4761/aunap_raivo.pdf?sequence=1, last accessed 20 June 2011.

Banski, J., Wesolowska, M. (2010). Transformations in housing construction in rural areas of Poland's Lublin region — Influence on the spatial settlement structure and landscape aesthetics. *Landscape and Urban Planning*, 94, 116–126. http://www.sciencedirect.com/science/article/pii/S0169204609001716, last accessed 5 October 2011.

Bell, S., Nikodemus, O., Penēze, Z., Krūze, I. (2009). Management of cultural landscapes: what does this mean in the former Soviet Union? A case study from Latvia. *Landscape Research,* 34(4), 425–455.

Benfelde, S. (2008). Zaļā dzīve Amatciemā [Green life in Amatciems]. *Vides Vēstis*, 10(113). http://www.videsvestis.lv/content.asp?ID=113&what=4, last accessed 14 April 2011 (in Latvian).

Bērziņš, M. (2011). The role of the geographic mobility in the process of suburbanisationin Latvia. Summary of Doctoral thesis. Rīga: Latvijas Universitāte, 70 pp.

Blūms, P. (2008). Amatciems ... pēc gadiem būs kultūras piemineklis? [Amatciems ... will be a cultural monument after many years?]. *Latvijas Arhitektūra*, Nr. 1. (2008). See: http://www.abc.lv/?article=amatciems_ciris, last accessed 10 May 2011 (in Latvian).

Ceccato, V., Persson, L.O. (2002). Dynamics of rural areas: an assessment of clusters of employment in Sweden. *Journal of Rural Studies,* 18(1), January 2002, 49–63. http://www.sciencedirect.com/science/article/pii/S0743016701000286, last accessed 4 October 2011.

Dūmiņa, Z., Baņģieris, A. (2010). Čiris: mēs palielinājām cenu un darījumi atsākās [Čiris: we increase price and business activity recrudesce]. *Diena TV*, 2010.06.22. http://www.db.lv/foto-video/video/ld-video-ciris-mes-palielinajam-cenu-un-darijumi-atsakas-225010, last accessed 10 May 2011 (in Latvian).

Eetvelde, V., Antrop, M. (2004). Analyzing structural and functional changes of traditional landscapes — two examples from Southern France. *Landscape and Urban Planning*, 67, 79–95. http://www.sciencedirect.com/science/article/pii/S0169204603000306, last accessed 3 October 2011.

Eetvelde, V., Antrop, M. (2009). Indicators for assessing changing landscape character of cultural landscapes in Flanders (Belgium). *Land Use Policy,* 26, 901–910. http://www.sciencedirect.com/science/article/pii/S0264837708001373, last accessed 3 October 2011.

Ezeri.lv. Latvijas ezeru datubāze [Database of lakes in Latvia]. http://www.ezeri.lv, last accessed 1 June 2011 (in Latvian, in English).

Gaujas Nacionālā parka ainavu estētiskais vērtējums (2005). [Landscape aesthetic quality of Gauja National Park]. http://www.daba.gov.lv/upload/File/Publikacijas/ZIN_P_GNP_Ainavu_est-vert.pdf, last accessed 10 May 2011 (in Latvian).

Grīne, I. (2009). Changes in the structure of rural population and spatial pattern of settlements after the World War II (Territories of Cēsis District). Summary of Doctoral thesis. Rīga: Latvijas Universitāte, 80 pp. (in Latvian, in English).

Grīne, I., Penēze, Z. (2007). Apdzīvojuma struktūras nozīme lauku ainavas attīstībā Latvijā, Vidzemē, 20.–21. gadsimtā [Importance of settlement structure in the development of rural landscape in Vidzeme, Latvia]. In: *LU 65. zinātniskā konference. Ģeogrāfija, ģeoloģija, vides zinātne. Referātu tēzes* (43.–44. lpp.). Rīga: LU (in Latvian).

Grīne, I., Strautnieks, I. (2010). Amatciems kā jaunas lauku apdzīvotas vietas veidošanas piemērs [Amatciems as an example of the creation of a new kind of rural settlement in Latvia]. In: *LU 68. zinātniskā konference. Ģeogrāfija, ģeoloģija, vides zinātne. Referātu tēzes* (83.–84. lpp.). Rīga: LU (in Latvian).

Hunzeiker, M., Bucheker, M., Harting, T. (2007). Space and place — two aspects of the human-landscape relationship. *A Changing World Landscape Series*, 8, Part 2, 47–62. http://www.springerlink.com/content/u66005116m7mv563/, last accessed 10 May 2011.

Jauno ciematu pētījums (2007). http://www.reitingi.lv/UserFiles/File/Ciematu_Petijums_Ober-Haus_2007.pdf, last accessed 20 June 2011 (in Latvian).

Koroļova, J. (2007). *Mīts: pircēji dod priekšroku māju iegādei* [Myth: custom prefer to secure a house]. http://www.lv.lv/index.php?menu=doc&sub=temas&id=164566, last accessed 20 June 2011 (in Latvian).

Kristensen, L., Thenail, C., Kristensen, S. (2004). Landscape changes in agrarian landscapes in the 1990s: the interaction between farmers and the farmed landscape. A case study from Jutland, Denmark. *Journal of Environmental Management*, 71, 231–244. http://www.sciencedirect.com/science/article/pii/S0301479704000490, last accessed 11 November 2011.

Krūzmētra, Ž. (2011). *Changes in rural settlement patterns of peri-urban areas of Latvia.* Summary of Doctoral thesis. Rīga: Latvijas Universitāte, 74 pp. (in Latvian, in English).

Latvijas ciemi [Villages in Latvia] (2007). Rīga: Latvijas Ģeotelpiskās informācijas aģentūra, 647 lpp. (in Latvian).

Liepa, I. (2011). Ekociemi dažādām gaumēm [Eco villages for different tastes]. *Vides Vēstis,* 3(134). from http://www.videsvestis.lv/, last accessed 4 October 2011 (in Latvian).

Liepiņa, A. (2001). Multibau celtniecība [Multibau building]. *Deko*, 5, 14–19 (in Latvian).

Liepiņa, A. (2001). Lauku māja: no būdiņas līdz pilij [Farmstead: from the house to the palace]. *Deko*, 5, 20–25 (in Latvian).

Majore-Linē, M. (2007). "Gada cilvēks 2007" — Aivars Zvirbulis ["Man of the year 2007" — Aivars Zvirbulis]. *Druva*, 12 December 2009. http://www.edruva.lv/zinas/zinas_no_vecas_edruvas/datums/2009-12-12/zina/7098, last accessed 14 December 2010 (in Latvian).

Majore-Linē, M. (2007). Tas bija rakstīts zvaigznēs [It was written in stars]. *Druva*, 29 December 2009. http://www.edruva.lv/zinas/zinas_no_vecas_edruvas/datums/2007-12-29/zina/6910, last accessed 4 December 2011 (in Latvian).

Majore-Linē, M. (2009). Amatas novadā mainīsies adreses [Change of addresses in Amata Country]. *Druva*, 1 June 2009. http://www.edruva.lv/zinas/zinas_no_vecas_edruvas/datums/2009-01-16/zina/2508, last accessed 14 December 2010 (in Latvian).

Paquette, S., Domon, G. (2001). Trends in rural landscape development and sociodemographic recomposition in southern Quebec (Canada). *Landscape and Urban Planning,* 55, 215–238.

Paquette, S., Domon, G. (2003). Changing ruralities, changing landscapes: exploring social recomposition using a multi-scale approach. *Journal of Rural Studies*, 19(4), 425–444. http://www.agr.unipg.it/didattica/lingua_inglese/6CFU/Changing%20ruralities,%20changing%20landscapes.pdf, last accessed 26 May 2011.

Polis, A. (2010). Ekociemats — sapnis par harmonisku dzīvi [Eco village — dream about harmonic life]. *Vides Vēstis,* Nr. 2(127). http://www.videsvestis.lv/contennt.asp?ID=127&what=28, last accessed 4 October 2011 (in Latvian).

Reger, B., Otte, A., Waldhardt, R. (2007). Identifying patterns of land-cover change and their physical attributes in a marginal European landscape*. Landscape and Urban Planning,* 81(1–2), 104–113. http://www.mendeley.com/research/identifying-patterns-landcover-change-physical-attributes-marginal-european-landscape-13/, last accessed 20 October 2011.

Rogge, E., Nevens, F., Gulinck, H. (2008). Reducing the visual impact of greenhouse parks in rural landscape. *Landscape and Urban Planning,* 87, 76–83. http://www.sciencedirect.com/science/article/pii/S0169204608000686, last accessed 20 October 2011.

Ruiz, J., Domon, G. (2004). Integrating physical and human dynamics in landscape trajectories: exemplified at the Aulnages watershed (Québec, Canada). In: *From landscape research to landscape planning: aspects of integration, education and application. Proceedings of the Frontis Workshop From Landscape Research to Landscape Planning: Aspects of Integration, Education and Application Wageningen, The Netherlands 1–6 June 2004.* http://library.wur.nl/frontis/landscape_research/05_ruiz.pdf, last accessed 15 June 2011.

Sevenant, M., Antrop, M. (2007). Settlement models, land use and visibility in rural landscapes: Two case studies in Greece. *Landscape and Urban Planning,* 80, 362–374. http://www.sciencedirect.com/science/article/pii/S0169204606002064, last accessed 5 October 2011.

Swensen, G., Jerpasen, G. (2008). Cultural heritage in suburban landscape planning. A case study in Southern Norway. *Landscape and Urban Planning,* 87, 289–300. http://www.sciencedirect.com/science/article/pii/S0169204608001205, last accessed 20 October 2011.

Tidriķis, A. (1998). Vēķu ezers [Lake Vēķis]. In: *Latvijas daba. Enciklopēdija.* 6. sēj., 52. lpp. Rīga: Preses nams (in Latvian).

Valdmane, I. (2008). *Ziņojums (metodiskais materiāls) „Detālplānojuma izstrādes pamatojums, saturs un ietveramā informācija"* [Metodical material. Justification, contents and information for the planning]. Reģionālās attīstības un pašvaldību lietu ministrija. http://www.raplm.gov.lv/uploads/filedir/teritorijas%20planosana/Det-plan_metodika.doc, last accessed 26 September 2011 (in Latvian).

Vecgrāve, L. (2007). *Privātmāju ciemati — ne tikai Pierīgā* [Private villages — not only in Pieriga]. http://www.apollo.lv/portal/ipasums/2010/articles/101657/, last accessed 15 June 2011 (in Latvian).

Verburg, P.H., Shulp, C.J.E., Witte, N., Veldkamp, A. (2006). Downscaling of land use scenarious to assess the dynamics of European landscapes. *Agriculture, Ecosystems and Environment*, 114, 39–56.

Wascher, D.M. (2004). *Landscape indicator development: steps towards a European approach*. http://library.wur.nl/frontis/landscape/16_wascher.pdf, last accessed 26 April 2011.

Zariņa, A. (2010). Ainavas pēctecīgums: ainavu veidošanās vēsturiskie un biogrāfiskie aspekti Latgalē. Promocijas darbs [Landscape succession: historical and biographic aspects of landscape development in Latgale]. Rīga: LU, 136 lpp. (in Latvian).

Notes

[1] *Village* — a settlement with a concentration of buildings and permanent residents. The term is mainly used to refer to rural settlements, but in many cases the residential districts of the urban fringe and within towns or cities are also included in this category (applying the term *ciemats* — "compact village").

AN "UPSIDE-DOWN LAND": CONTESTED ROCK FORMATIONS IN THE NEW ENGLAND LANDSCAPE (AUSTRALIA)

Katherine Wright
Macquarie University
North Ryde, NSW 2109, Australia
Katherine.wright@students.mq.edu.au

Key words: *rock, Australia, Aboriginal, autochthony*

This paper focuses on three significant rock formations in the New England tableland landscape of New South Wales, Australia. In Australia's contested postcolonial landscape rock contains the conflicting forces of an Aboriginal sacred located in the land and essentialist non-Indigenous settler narratives of belonging.
Bluff Rock is the alleged site of an Aboriginal massacre in the nineteenth century. Thunderbolt's Rock is a boulder that celebrates a romanticised version of Australia's settler beginnings. The Australian Standing Stones are a monument to the Celtic foundations of the region. In this paper I argue that these three rock forms display non-Aboriginal, Anglo-Celtic claims of autochthonous identity that marginalise Aboriginal sovereignty in the landscape.
Positioning this discussion in Australia's current political climate of anti-immigration legislation and panic surrounding the arrival of illegal "boat people", I argue that white Australian's claims of autochthony exclude the possibility of alternative forms of belonging in the country. I propose an ethic of "surface thinking" to open up the landscape for inter-cultural dialogue and hospitality to new Australians.

Introduction

In the New England region of rural New South Wales, Australia, rock is a prominent landscape feature that seems to erupt from the soil like the resurgence of some ancient being. The Northern Tableland plateau is studded with granite outcrops — prehistoric dinosaur eggs that poke out of the dry brown paddocks. As you drive towards the sea you reach what feels like the end of the earth — an abrupt escarpment of extremely deep, entrenched gorges that cuts rocky slices out of the country.

In 1818, an English explorer, John Oxley, referred to the region as "an upside-down land" that defies "all rule" (1820, 298). For Oxley this perversion of the Alpine-style peaks of Europe was Antipodean yet uncannily familiar. Interpreting the escarpment through the frame of Northern hemisphere environments, his eyes were foggy with an opaque vision of sublime crests.

In imperial European discourse mountains are sacred[1] — pregnant with poetry and religion. Great adventurers embark on their journeys of ascent, becoming closer to their

Fig. 1. A waterfall on New England's Eastern escarpment

Judeo-Christian sky-God. This backwards place must have seemed perverse. If the spiritual is sky-bound and cloud-laced what universe was signalled by these tellurian gorges? While reflecting on the escarpment Oxley exclaimed, "[h]ow dreadful must the convulsion have been that formed these glens!" (Cited in Haworth, 2006, 26).

In this paper I am taking Oxley's vision of New England as the surreal inversion of Northern hemisphere environments as a starting point to explore the interaction of a colonial society with an alien continent peopled by an ancient culture. Rock is engaged as a poetic being that holds the deep time of the Earth and the myths of the cultures that traverse it, together, converged in its form.

The granite terrestrial creatures studded over the New England plateaux add sharp geometric shapes to cleared paddocks and grasslands. These dominating rock presences

Fig. 2. Sharp geometric rock forms in New England

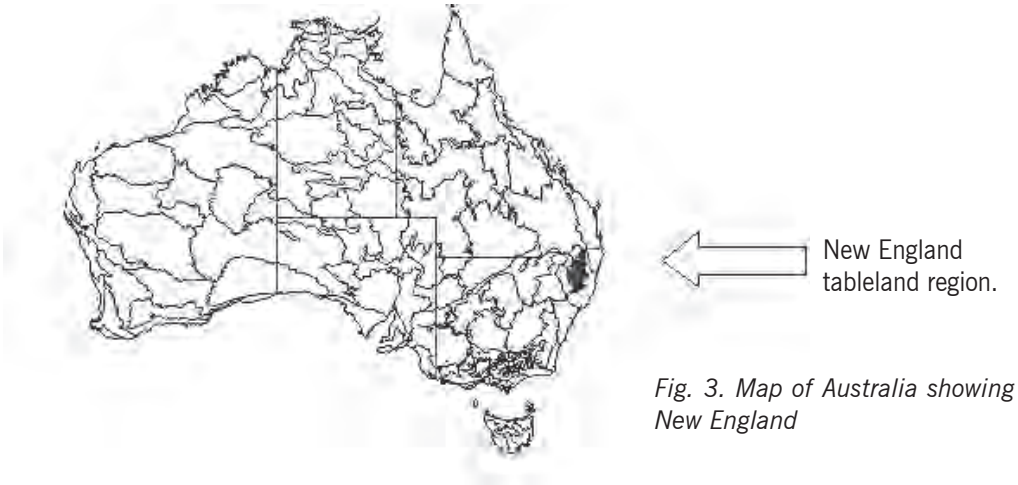


Fig. 3. Map of Australia showing New England

appear as land-dwelling icebergs — a tip poking through the surface and a deep mineral immensity beneath. Rock is an autochthonous creature, linked to the shifting tectonic history of the earth. This convergence between a subterranean geological past and the terrestrial human present is particularly fascinating in Australia's contested postcolonial landscape.

This discussion explores three significant rock formations in the New England landscape. Each site is located alongside New England's main highway and captures unreconciled ontology's and memories of settler and Indigenous Australian cultures. Bluff Rock is the alleged site of an Aboriginal massacre in the nineteenth century. Thunderbolt's Rock is a boulder that celebrates a romanticised version of Australia's settler beginnings. The Australian Standing Stones are a monument to the Celtic founders of the region erected in 1992. As mnemonic landscape features, these New England rock inhabitants illuminate the tensions between hegemonic and subaltern versions of Australian history.

Rock and time

Now determined to have been inhabited for somewhere between 40 000 to 70 000 years, Indigenous Australia possesses a Pleistocene[2] past that penetrates geological time (Griffiths, 2000, 25). Australia's "deep-running currents" of terrestrial time (Braudel, 1980, 3) echo ancient Indigenous narratives, alien to the colonising population.

Traditional Aboriginal philosophy and spirituality are grounded in autochthonous concepts, where the essence of life is held to be located in the land. Aboriginal thinker Mary Graham tells us that in an Aboriginal worldview "the land is the law" because it is "a sacred entity", it is "the great mother of all humanity" (2008, 181) — "all meaning comes from land" (2008, 182).

It is not only ethics and law that manifest autochthonously in Aboriginal Australia, but an entire spiritual system sustained through kinship and ritual. The Aboriginal Dreaming locates the beginnings of life in the soil. This eloquent spiritual tale tells of Creator Beings who arose from under the ground as humans were sleeping in embryonic form. These enormous creatures fought, danced, ran, made love and killed all over the country and their vibrant activity shaped the contours of the Australian landscape. Wherever they travelled, they left tracks, traces and signatures of themselves in geographic forms. When the humans awoke these beings taught them the "Laws of custodianship of land, the Laws of kinship, of marriage, of correct ceremonies" (Graham, 2008, 107). Once their work was

complete these Ancestral Beings sank "back in" — or else they transformed themselves into topographical features — petrified to rock, or metamorphosised into trees and waterholes. These sites are revered as sacred — of continuing teaching and power.

Aboriginal Elder George Tinamin's (1993, 4) words express the intimate connection between Aboriginal people and landscape features:

> One Land, One Law, One People
> This is not a rock, it is my grandfather
> This is a place where the Dreaming comes up, right up from inside the ground.

This sacred connection to the land poses significant threat to non-Aboriginal Australian belonging and sovereignty within the Australian nation. Indigenous Australian scholar Aileen Moreton Robinson (2003, 31) has argued that white Australians simply cannot achieve such autochthonous connection with the country and that Aboriginal belonging is ontologically incommensurate with settler belonging:

> Our ontological relationship to land, the ways that country is constitutive of us, and therefore the inalienable nature of our relation to land, marks a radical, indeed incommensurable, difference between us and the non-Indigenous. This ontological relation to land constitutes a subject position that we do not share, and which cannot be shared, with the postcolonial subject whose sense of belonging in this place is tied to migrancy.

As a means of combating the threat of an exclusive Aboriginal connection to land, settler Australian cultural imaginaries have often positioned Aboriginal culture and spirituality as an antiquated relic of the nation's presettlement history. Like the ancient granite forms of the New England landscape, Aboriginality has been petrified into the geological depths of time. This negates the continuity of Indigenous identity in modern Australia, and enacts a form of cultural *Terra Nullius*.

Terra Nullius was the legal fiction that enabled British colonisers to take possession of Aboriginal land. The doctrine declared that Australia was an "empty continent" belonging to no one prior to its colonial settlement in 1788. Under this delusion, "Aboriginal people were vanquished, yet not vanquished" (David, Langton, McNiven, 2002, 35) as *Terra Nullius* declared that no one had been conquered and therefore there was no one to contest the appropriation of Aboriginal land. The silencing of Indigenous rights and sovereignty enabled the myth of settler Australian's as "first possessors" to be consummated.

The doctrine of *Terra Nullius* was overturned in law following the Mabo decision of 1992. In the High Court case of *Mabo and others v The State of Queensland* Indigenous people of the Murray Islands were determined to retain title to their land that had been annexed to the colony of Queensland in 1879. This established native title in common law (David, Langton, McNiven, 2002, 35). Despite this, overhangs of the *Terra Nullius* doctrine persist in Australian society. The denial of Indigenous sovereignty is ongoing as the nation is continually reproduced, materially, ideologically, and discursively, as a "white possession" (Moreton-Robinson, 2007, 9).

New England's rock forms provide a rough granular surface onto which contested claims of sovereignty can be carved. These autochthonous creatures embody the engravings of a settler society attempting to appropriate an indigenous provenance by sculpting the landscape into colonial cultural forms.

Bluff Rock

Bluff Rock is a grey, ghostly cliff that looms over the New England highway. It is the alleged site of an Aboriginal massacre where a tribe of Aboriginal people were slaughtered by a small group of colonial settlers in 1844. Historian I.C. Campbell (cited in Blomfield,

Fig. 4. Bluff Rock, Tenterfield

1981, 79) documented the incident, where, after being chased across the tableland countryside, a group of Aboriginal people fled to Bluff Rock:

> The Aborigines withdrew to high ground until they found themselves between a precipice and their pursuers. The entire group, men, women and children were driven over the edge...

Australia's early history is scarred by the slaughter of Aboriginal people that continued throughout the nation until the 1920s. The Bluff Rock Massacre is by no means an isolated incident, yet the legend of Bluff Rock enacts a form of spatio-temporal demarcation, negating the far reaching impact of colonial violence.

The Tenterfield Visitors Information Sheet (n.d., 1) tells us that the truth of the Bluff Rock Massacre "will be forever in the bosom of one of the most impressive landmarks along the New England Highway". Here the granite outcrop secures a shameful history as rock functions as poetic metaphor for the containment of the massacre:

> Bluff Rock stands above the surrounding area because it has been more resistant to erosion, probably due to having fewer cracks along which water can penetrate and accelerate the erosion process.

History and geology rhyme in this tourist dialogue as the narrative "presumes a fossilised past, a past that cannot change, a past that we cannot change" (Schlunke, 2005, 35).

Katrina Schlunke (2005) in her profound and extensive work, *Bluff Rock: Autobiography of a Massacre,* argues that the Bluff Rock narrative acknowledges Australia's brutal beginning while simultaneously disavowing it. Terror is trapped at the top of the Bluff, incarcerated in the abrasive surface of a granite ancient. This produces unaccountability in the contemporary Australian population, who are conveniently distanced from the crimes of the past. Schlunke (2005, 122) writes:

Fig. 5. Thunderbolt's Rock, Uralla

> How useful and how "practical" to believe that that is where it all happened. And if we do not think of the cottages and the paddocks and the neatly organised cattle, we will never remember the cars and the roads and the reservations and the barristers and the cities which made the systematic dispossession and dispersal of Aboriginal people possible. That is far away.

This spatio-temporal encysting of settlement violence to a particular landscape site is common in colonial narratives. By restricting the foundational trauma of the nation to a geographically contained past, the continuity of Aboriginal identity and culture that threatens non-Aboriginal sovereignty is circumvented.

Thunderbolt's Rock

Connected to the marginalisation of Aboriginal presence in the landscape are mythic tales of Australia's early settlement beginnings, also sculpted into tableland granite. Thunderbolt's Rock is a collection of large granite tors on the outskirts of the small New England township, Uralla. This mnemonic landscape feature reifies a romanticised colonial narrative that obscures the uncomfortable violence of colonisation.

The rock is a tangible marker of colonial memory celebrating the life of legendary nineteenth century bushranger, Captain Thunderbolt, a.k.a., Frederick Ward. Alleged to be the vantage point for Ward's renowned coach robberies (Uralla Visitors Information Centre, n.d, 1), the rock evokes the drama of Australia's early pioneering history, consolidating the mythic position of the bushranger in the nation's foundational narrative.

The life of Thunderbolt has inspired a prolific myth-making process "as lines blur between historicity and the imaginative mass of further fictions" (Ryan, 2006, 299). Captain Thunderbolt began his life as Frederick Wordsworth Ward in Wilberforce, NSW in the early 19th century. The son of a convict,

Ward had his first encounter with the law at the age of twenty when he was convicted of stealing 75 horses and sentenced to ten years hard labour at Cockatoo Island prison in Sydney Harbour. Following his release, he continued his life of crime, committing over 200 offences across the northern section of NSW before being gunned down by Constable Alexander Walker during a highway robbery on the 25 May 1870 (Visitors Information Centre, n.d., 1–2).

John S. Ryan emphasises that Thunderbolt "has long since moved from a figure of history to one of folkloric stature, a victim of informers and magisterial injustice. Forced into 'cross' ways, he became something of a Robin Hood, righting the wrongs done to the poor" (2006, 299). This bushranger legend provides a "safe" history for the New England region, a nostalgic representation of the founding of the nation (Edelheim, 2007, 139). Jonah Edelheim, in his analysis of Thunderbolt's role in tourism, notes that "Thunderbolt is strongly connected to a larger national appeal to romanticise non-Aboriginal history in rural areas" (2007, 128). He argues that through the manipulation of colonial memory, focus on figures such as Thunderbolt create a "touristic terra nullius" (2007, 175) by recording the region's history "from the first signs of non-Aboriginal influence in an area, and [relegating] Indigenous history to [the status of] nature" (2007, 160).

Thunderbolt's Rock inscribes cultural Terra Nullius into the New England landscape. In myth Thunderbolt is evoked as a colonial ancestor whose blood has stained Australian soil. The rock marks his place in time and holds his spirit. He is embodied in the crust of the earth.

This myth is part of the production of what Rob Garbutt has described as "white autochthony". Autochthony is an essentialist claim of authenticity supposing a "magical" relationship with land (Garbutt, 2006b, 4). Garbutt observes that autochthony is a particularly compelling concept for colonial societies as new arrivals seek to naturalise there place in Antipodean country and "become unmarked: the natives born to the nation, the locals" (Garbutt, 2006b, 6). In a mixing of flesh, dirt and stone, poetic Nativism is granted to colonial migrants through the imagined autochthonous provenance "of a seed planted, of being a child of the soil, of coming from a place as distinct from the womb" (Garbutt, 2005, para. 10).

The practice of white autochthony relies on the colonial aesthetic of *Terra Nullius* where settlers are positioned as first possessors, rather than migrants. Through the disappearance of Aboriginality from Australia's foundational narratives and colonial landscapes, autochthonous connection is usurped as settlers inscribe their own cultures and myths into Indigenous Australian landscapes.

The Australian Standing Stones

The Australian Standing Stones is a collection of 24 granite monoliths in an arrangement to celebrate the Celtic foundations of the nation. Erected in Glen Innes (Population: 5944), the stones are a tourist attraction for this small tableland community. Through their combination of local material, ancient myth and Eucalypt surrounds the Australian Standing Stones evidence an attempt at settler indigenisation.

It is significant that local granite has been used to construct the monument. While the arrangement echoes Stonehenge and is based on the Ring of Brodgar[3], the indigenous provenance of the stones enacts an autochthonous resurrection of Celtic history and myth. Rooted in New England soil, and made from granite collected in a 50 km radius of Glen Innes, the ancient monoliths punctuate the landscape like the letters of a creolised language.

The stones reproduce the Australian nation as a white possession by glorifying an exclusive Anglo-Celtic myth of origin. In the

Fig. 6. The Australian Standing Stones, Glen Innes

tourist dialogue the Standing Stones are the physical manifestation of Celtic rights to the land based on a claim of first settlement. Glen Innes' Tourism's *Guide to the Australian Standing Stones* declares that the stones "reflect Glen Innes' heritage where the first settlers, largely Scots, arrived in 1838" (N.D, 1). Connell and Rugendyke in their analysis of the Standing Stones as a tourist attraction observe that Glen Innes has "chosen a specific period of history of regional significance, and exulted in it. In doing so it has excluded other historical periods, along with other settlers of non-Celtic heritage" (2010, 99).

It is noteworthy that Indigenous Australians also produced stone arrangements constructed from local granite throughout the New England tableland region. In 1963, local archaeologist Isabel McBryde reported on a series of Stone Arrangements discovered near the Serpentine River in the Ebor district, noting that "the systematic arrangement of stones, either in cairns, mounds, or in ordered patterned lines" was "part of the living traditions of the tribes concerned" (1974, 137). These sites were often sacred Bora grounds[4] or initiation grounds (1974, 138).

The importation of a Celtic stone arrangement that harvests local granite is a denigration of the little known, barely understood, Indigenous history. So it is that Glen Innes trumps Kindatchy — an Aboriginal for the region meaning "plenty of stones"; and the lands of the Ngarabal people are best known for simulacra of a Northern Hemisphere Neolithic monument. Stone is reshaped into Celtic motifs, and the Bora ground stamped out by the geometries of post-settlement colonial amnesia. The monument obscures the Australian Indigenous ancient in favour of a symbolic and tenuous link to a geographically distant Celtic mythology.

The uncomfortable collision between the resurrection of a distant Celtic sacred and the notion of an Aboriginal sacred inherent in the land is assuaged in the Publicity Notes of the Standing Stones by adopting the legal conceptualisation of the Aboriginal Sacred:

> It is important to note that the Australis Stone was originally intended to be a stone for the Australian Aborigines, suitably named. The local Land Council was approached, and the matter discussed,

> an invitation being extended to them to be involved. After deliberations amongst themselves, they agreed, only to withdraw later. They did assure us, however, that we were not encroaching on any sacred site and wished us well.
>
> (Cited in Ryan & Tregurtha, 1992, 72)

The demarcation of Aboriginal sacred sites has become a prominent issue in post-Mabo Australia. Since the Mabo decision of 1992 overturned the legal fiction of *Terra Nullius*, the Aboriginal sacred has been inextricably linked to land rights claims. That the Standing Stones were erected just four months before the landmark Native Title Act of 1993 codified Native Title recognition in law highlights the politically contested context they occupy.

The encysting of the Aboriginal sacred to contained sites can be understood as a hegemonic cultural process that spatially marginalises Aboriginal identity in the landscape. The Standing Stones thus function in a similar way to Bluff Rock demarcating designated landscape areas for Aboriginal remembrance and inhabitation so white sovereignty can prevail elsewhere.

Upside-down autochthony

When John Oxley exclaimed that New England was "an upside-down land" he was referring to the sheer strangeness of its geography. But Oxley's logic of inversion — an upside-down vision of Alpine peaks — also resonates with the cultural practices of settler culture. Just as explorers climbed grand summits and raised flags to stake claims over terrestrial lands, Australian colonisers dug deep into the pre-settlement past, mining strata's of ancient rock for sovereign belonging. As this poetic resource was narrated into colonial mythology, a carnivalesque manoeuvre turned autochthonous Indigenous claims upside down. In a "peculiar logic" of the "inside out" or the "turnabout" (Bakhtin, 1968, 11) Anglo-Celtic settler culture came to be regarded as the "real" and first Australian nation, supplanting Aboriginal autochthony. In this inverted landscape of trepidatious gorge country and erupting molten rock forms of a primeval past, culture operates as if in the midst of a carnival, twirling around in "temporary liberation from the prevailing truth and established order" (Bakhtin, 1968, 10) of Indigenous Australia.

In order to adjust this distorted logic and to put the land back on its feet, the carnival needs to come to a close. Scholar Denis Byrne has argued that one way of achieving this is for Australian archaeology to "rise to the surface" (1996,102). Byrne argues that post colonial Australian archaeology need not locate itself in the deep geological recesses of a buried Indigenous past because Aboriginality is alive in the present, and explorations of post-contact traces could explore that "relatively horizontal... space or terrain... where duration is measured in generations (lifetimes) rather than millennia" (Byrne, 1996, 102). By refusing to locate an "authentic Aboriginality" underground, the sequestering of Indigenous identity to a pre-colonial past could be countered and subverted by local Indigenous people. This would also undermine the carnivalesque logic that allows for claims of white autochthony to appropriate indigenous connections to land. In "rising to the surface", space is emphasised rather than time. This is a history of routes, rather than roots, a history that can be viewed "as a process of *migrations* rather than as *settlement*" (Garbutt, 2006a, 183).

Rob Garbutt has observed that settler Australians have no language for perceiving their arrival as migration. The migrant is always the Other that came after from somewhere else (2008, 179). In Australia's colonial myths of origin, autochthony evidences the value of "ontopological" being over "dislocated, migratory being" (Garbutt, 2008, 185). Jacques Derrida defined ontopology as "axiomatics linking indissociably the ontological

value of present-being [*on*] to its *situation,* to the stable, and presentable determination of a locality, the *topos* of a territory, native soil" (Derrida, 1994, 82). In the aesthetic of Australian settlement, the new migrant is considered to be lesser than the ontopoligically grounded white Australian.

The similarities between "boat people" arriving on Australian shores now and the ones that settled in the late 18th century are vehemently denied in dominant Australia cultural discourse. The new refugee produces an anxiety in contemporary Australia by reminding non-Indigenous settler Australians that "others can become Australians by arriving and staying" (Schlunke, 2002, para. 11). The language of "white autochthony" obscures this sameness and makes hospitality and welcome of the migrant impossible.

Philosopher Emmanual Levinas calls for the abandonment of cultural autochthony arguing that it represents the triumph of essentialist ontology's over ethical relations with others. Compassion towards the Other, according to Levinas, relies on a generous spirit of hospitality. He writes "no face can be approached with empty hands and closed home" (Levinas, 1969, 172).

Levinas argues that the adoption of hospitality necessarily disturbs autochthony, allowing the home to become an instrument for ethical encounter with the other, rather than a weapon of exclusion. He writes, "[t]he chosen home is the very opposite of a root" (1969, 172). To be rooted is to be firmly planted in a place of origin, to have grown out of the soil, to be autochthonous. For Levinas, the hospitable home is the antithesis of autochthony, a place that "indicates a disengagement, a wandering (errance)" (1969, 172). A wandering spirit of exile is shared with the guest/Other who "has no other place, is not autochthonous, is uprooted, without a country, not an inhabitant, exposed to the cold and the heat of the seasons" (Levinas, 1991, 91). In Levinas's conception, these empathic, ethical relations with the Other are *not possible* while claims of autochthony endure.

Conclusion

In this paper I have argued that New England's rock forms have become a site for settler claims of autochthony and essentialist connection to the land. This is problematic as it relies on the disappearance of Australian Aboriginal sovereignty and spiritual claims to sacredness within the landscape. Aboriginal culture is encysted into specific and delimited spatio-temporal borders, circumventing the threat of the spectral presence of Aboriginal identity and the foundational violence of the Australian nation.

Post-settlement claims of autochthony not only deny Indigenous presence enacting a form of cultural Terra Nullius, but also rely on a limited concept of belonging that excludes settlers of non-Anglo Celtic origin. This has important socio-political ramifications as Australia struggles to deal with border-security issues and migration. The panic over "boat people" in Australian politics can be seen in part as a reflection of the narrow definition of Australian belonging and the limitations of an autochthonous discourse on Australia's multicultural policy.

I have proposed an ethic of "surface thinking" as a possible combatant to "white autochthony", requiring a revision of claims of settlement, to a vision of ongoing migrations. Away from the binary of Indigene and Coloniser is the rich diversity that frames Australia's narratives. At the official opening ceremony for the Standing Stones monument, Rear Admiral Peter Sinclair made an intriguing observation. He said:

> I wonder as I see these New England granite stones, whether people visiting the site in two to three thousand years time will understand their origins — or whether the same mystery will surround them as it does with Stonehenge and the Ring of Brodgar. And are these stones

likely to outlive all other evidence of our civilisation in centuries to come, as have other Standing Stones of previous centuries?

(Cited in Ryan and Tregurtha, 1992, 76)

The projected future indecipherability of the stones is metonymy here for the transience of contemporary culture and identity. No matter how literal the reification, in this case the metamorphosis of myth into carved granite, the present is a moment in motion, always vulnerable to obscurity and disappearance in the future. While landscapes are containers of time, they do not hold it still.

In emphasising ethical interactions with diverse and plural Others, we can move away from the fixed temporality of autochthony into a realm of mobile hospitality and welcome, where stories could dance lightly across the country, moving in rhythm with others' stories, and leaving open landscape spaces for dialogue, connection and hospitality.

Fig. 7. Engravings on the Australian Standing Stones, Glen Innes

References

Bakhtin, M. (1968). *Rabelais and His World.* Bloomington: Indiana University Press. 484 pp.

Blomfield, G. (1981). *Baal Belbora, The End of the Dancing: The Agony of the British Invasion of the Ancient People of the Three Rivers — the Hastings, the Manning, and the Macleay in New South Wales.* Sydney: Apcol. 148 pp.

Braudel, F. (1980). *On History*. Chicago: University of Chicago Press. 236 pp.

*Byrne, D. (*1996). *Deep Nation:* Australia's Acquisition of an Indigenous Past. *Aboriginal History*, 20, 82–107.

Connell, J., Rugendyke, B. (2010). Creating an Authentic Tourist Site? The Australian Standing Stones, Glen Innes. *Australian Geographer,* 41(1), 87–100.

David, B., Langton, M., McNiven, I.J. (2002). Re-Inventing the Wheel: Indigenous Peoples and the Master Race in Philip Ruddock's "Wheel" Comments. *Philosophy, Activism, Nature,* 2, 31–45.

Derrida, J. (1994). *Specters of Marx.* London & New York: Routledge. 198 pp.

Edelheim, J. R. (2007). The Bushranger and the Big Banana — A Cultural Studies Critique of Tourism Studies. PhD Thesis. Sydney: Macquarie University.

Eliade, M. (1987). *The Sacred and the Profane: The Nature of Religion.* Orlando: Harcourt. 256 pp.

Garbutt, R. (2005). Local Order. *M/C Journal*, 7 (6). http://www.media-culture.org.au

Garbutt, R. (2006a). The Locals: A Critical Survey of the Idea in Recent Australian Scholarly Writing. *Australian Folklore,* 21, 172–192.

Garbutt, R. (2006b). White "Autochthony.' *ACRAWSA e-journal*, 2 (1) http://www.acrawsa.org.au/ejournal.htm

Garbutt, R. (2008). Towards an Ethics of Location. In: Offord, B., Haebich, A. (eds.). *Landscapes of Exile: Once Perilous,*

Now Safe (pp.175–192). Bern: Peter Lang.

Glen Innes Tourism. (No Date). *Guide to the Australian Standing Stones.* Glen Innes: Glen Innes and Severn Shire Tourist Association. 2 p.

Graham, M. (2008). Some Thoughts About the Philosophical Underpinnings of Aboriginal Worldviews. *Australian Humanities Review,* 45, 181–194.

Griffiths, T. (2000). Social History and Deep Time. *Tasmanian Historical Studies,* 7(1), 21–38.

Haworth, R. (2006). The Rocks Beneath. In: Atkinson, A., Ryan, J.S., Davidson, I., and Piper, A. (eds). *High Lean Country: Land, People and Memory in New England* (pp. 23–34). Crows Nest: Allen & Unwin.

Levinas, E. (1969). *Totality and Infinity: An Essay on Exteriority.* Pittsburgh: Duquesne University. 307 pp.

Levinas, E. (1991). *Otherwise than Being or Beyond Essence.* Dordrecht: Kluwer Academic Publishers. 200 pp.

McBryde, I. (1974). *Aboriginal Prehistory in New England: An Archaeological Survey of Northeastern New South Wales.* Sydney: Sydney University Press. 390 pp.

Moreton-Robinson, A. (2003). I Still Call Australia Home: Aboriginal Belonging and Place in a White Postcolonising Society. In: Ahmen, S., Castañeda, C., Fortier, A., Sheller, M. (eds.). *Uprootings/Regroundings: Questions of Home and Migration* (pp. 23–40). Oxford: Berg.

Moreton-Robinson, A. (2007). Introduction. In: Moreton-Robinson, A. (Ed.) *Sovereign Subjects: Indigenous Sovereignty Matters* (pp. 1–11) Crows Nest: Allen & Unwin.

Oxley, J. (1820). *Journals of Two Expeditions into the Interior of New South Wales,* London, pp. 260–320.

Ryan, J.S. (1967). Ned Kelly: The Flight of the Legend. *Australian Literary Studies* 3(2), 98–115.

Ryan, J.S., Tregurtha, J.S. (1992). Standing of the Array: A Celtic Tradition Re-enacted at Glen Innes, New South Wales. *Australian Folklore,* 7, 69–76.

Ryan, J.S. (2006). Stories and Prose. In: Atkinson, A., Ryan, J.S., Davidson, I., and Piper, A. (eds.). *High Lean Country: Land, People and Memory in New England* (pp. 23–34). Crows Nest: Allen & Unwin.

Schlunke, K.M. (2002). Sovereign Hospitalities? *Borderlands* 1(2), 1–7.

Schlunke, K.M. (2005). *Bluff Rock: Autobiography of a Massacre.* Fremantle: Curtin University Books. 268 pp.

Tenterfield and District Visitors Association. (No Date). *Bluff Rock: Location and History.* Tenterfield: Tenterfield and District Visitors Association. 1 p.

Tinamin, G. (1993). One Land, One Law, One People. In: Mafi-Williams, L. (Ed.). *Spirit Song: A Collection of Aboriginal Poetry* (p. 4). South Australia: Omnibus Books.

Uralla Visitor Information Centre. (No Date). *Thunderbolt: The Gentleman Bushranger, Two Alternative Stories & Significant Dates.* Uralla: Visitors Information Centre. 2 p.

Notes

[1] The European sacralisation of mountains continues ancient traditions which linked earthly terrain to the sublime. Mountains have been considered by diverse cultures as sacred, providing connections between the highest tips of the earth to cosmic, transcendental power (See Eliade, 1987, 36–47).

[2] The Pleistocene Epoch was between 1.8 million to 11 550 years ago. Skeletal remains have been dated to establish Aboriginal occupation of Australia many thousands of years into the Pleistocene era.

[3] The Ring of Brodgar is a Neolithic stone ring in the Orkney Islands.

[4] Bora Grounds are Aboriginal ceremonial sites that often also function as meeting places. They have spiritual significance to Indigenous people.

SUBJECTIVE CONSTRUCTION OF LANDSCAPES IN EVERYDAY LIFE: CASE STUDY OF A POST-MINING LANDSCAPE

Monika Micheel
Leibniz Institute for Regional Geography
Schongauerstr. 9, 04328 Leipzig
monika.micheel@gmx.de

Key words: *subjective construction, everyday experience, notions of landscape, qualitative interviews*

There recently has been a growing interest in landscape both in academic and non-academic discourse. Notions of landscape open a wide range of definitions and expectations. The focus of this paper is on the subjective constructions of landscape to gain insight into the way meanings are conferred to landscapes by the people who live therein.
The results of qualitative face-to-face interviews with people who experience different landscapes in everyday life will be discussed. The focus will be on a post-mining landscape which has been subject to dramatic alterations in recent years. It can be assumed that perceptions and attributions of significance are particularly intense when changes concern the individual's everyday life. The aim of the paper is to deepen our understanding of people's subjective construction of landscape.

Introduction

In recent years, we observe a growing interest in landscape, by scientists and other experts as well as by people who live in or make use of it. Moreover, notions of landscape open a wide range of definitions and expectations, reflecting the influence of different philosophical and political ideas. For most of us, landscape is an essential part of everyday life, being regarded as our natural surroundings. By focusing on the inhabitants, landscape can be understood as representing the lasting background of everyday life.

The starting-point for the exploration of subjective construction, e.g. perceptions and emotions, of landscape was an individualist perspective, leading to the questions how and why people characterise certain areas as "landscapes".

My study makes use of an individualist perspective to gain insights into the way in which meanings are conferred to landscapes by the people who live therein. Therefore, it is fundamental to understand that the subjects' notion is a projection of values and meanings to landscapes. The importance of the subjective approach proposed here is that it focuses our attention on the experience of landscape as well as on the construction of landscape as a symbolic environment. Thus landscape

may be thought of as an area as well as the appearance of an area, with both material and representational aspects.

This paper has two main points of departure. First, I wish to present some thoughts my research is based upon, i.e. various approaches to landscape research from material to representational and non-representational. Second, I will briefly outline some philosophical origins exploring everyday experience of landscape. Focusing on the everyday life means drawing attention to both "ordinary" people and "ordinary" landscapes. Based on these assumptions, an empirical study was conducted to sharpen the awareness of what landscape means, namely the values and meanings attributed to it.

Conceptual approaches to landscape

In cultural geography, in particular following Carl Sauer and the Berkeley school of landscape studies, landscape has been traditionally defined as the product of interactions between natural conditions and cultural practices (Sauer, 1996). From the 1920s on, research was primarily concerned with how people transformed the earth. Cultural landscape back then was a physical material reality, primarily factual and objective. Subsequently, only some academics took the human imagination and perception into account, considering landscape a mental construct rather than a world of physical features that can be empirically accessed and described (e.g. Lowenthal, 1961; Tuan, 1974). It was David Lowenthal who first investigated "the relation between the world outside and the pictures in our heads" (Lowenthal, 1961, 241).

Hereafter, the New Cultural Geography of the 1980s re-interpreted and re-theorised landscape as representation, as a symbol of something rather than as the emergence itself. Since then, landscape studies have discussed landscape as a "social construct", making use of a term coined by Peter Berger and Thomas Luckmann (1967). Landscape is now understood as a product of specific cultural values and meanings resulting from individual, institutional and societal processes, as an image, a representation or a perspective. Furthermore, it was critically argued that a relationship between the way of seeing a landscape and the material conditions must be taken into scrutiny. Against this background, studies have focussed on symbolic meanings of landscapes, emphasising, for instance, aspects of power, social identity, gender, in- or exclusion, and thus to be analysed by means of interpretative and discursive, representational approaches (e.g. Cosgrove, 1998 [1984]; Cosgrove and Daniels, 2002 [1988]; Duncan and Duncan, 1988; Rose, 1993).

Moreover, many cultural geographers have criticised the traditional accounts of nature-culture relations — dividing landscapes up into objective facts, on the one hand, and layers of subjective meaning, on the other. They argued that landscape should not simply be seen as a set of observable material cultural facts. Instead, research should also focus on the qualities of landscape — "landscape as a milieu of cultural practices and values" (Wylie, 2007, 5).

Recent work on landscape in human geography and neighbouring disciplines has started taking a closer look at practices, i.e. the ways people do things in landscape (Merriman *et al*., 2008). Initiated by Nigel Thrift (2007), there has been a shift towards non-representational approaches. Those studies — whose approach has also been termed phenomenological or performative — criticise the narrow focus on symbolic meaning and on dominant discourses (Neumann, 2011). Instead, they suggest taking everyday practices, habits, actions etc. into account, such as walking, gardening or working on the land (e.g. Brace and Geoghegan, 2010; Cresswell, 2003).

Landscape in everyday life — ordinary people and ordinary landscapes

Focusing on "ordinary" people, subjectivity of social actors in everyday life and the everyday experience of landscapes have increasingly gained importance. Subjective construction in everyday life is now considered the result of an interpretative process based on personal experience and knowledge.

So far, after the cultural turn of the 1980s, research on landscapes as seen by individuals has been conducted mainly from the perspective of academics, planners and politicians, perceiving the phenomena as elite representations. Thus, ordinary people and their everyday experience of landscape have often been neglected. Ordinary people are the people that inhabit and work in the landscapes which entails going for a walk, cycling, walking the dog, doing the garden etc.

Focusing on "ordinary" landscapes primarily means having a closer look at the sites of everyday life. Already in the 1950s, John B. Jackson attempted to explore people's encounters with landscape. He "opened out the concept of landscape … by writing from the inside and pointing to the symbolic meanings which arise from social life in particular geographical settings" (Cosgrove, 1998, 34). Moreover, Jackson established the notion of what he called the vernacular landscape, the geography of everyday places and plain-folks architecture. In doing so, he referred to "the world of houses, cars, roads … the local, inhabited world of those who Jackson saw as ordinary Americans" (Wylie, 2007, 43).

My starting point is landscape as the surroundings of people, their everyday environment. From this point of view, landscape is the place or space people inhabit and work in (cf. Cresswell, 2003). This is to respect the inhabitant's point of view in valuing everyday contemporary landscape.

Landscape phenomenology

Examining the subjective construction of landscape, I refer to phenomenological ideas in order to discover the world as it is experienced by those immersed in it. The emphasis of phenomenological thoughts may also mean a shift towards a more empirical approach to landscape. In its most basic form, phenomenology attempts at creating conditions for the objective study of topics usually regarded as subjective: consciousness and experiences such as perception, thought, judgment, memory, imagination, emotion etc. Adopting this approach, I would like to draw attention to the subjective experience of the individual, namely the way environment is perceived, intellectually and emotionally, as landscape.

The key idea of my approach originates from Alfred Schütz — regarded as the founder of the sociology of knowledge. Schütz claimed that knowledge is derived from people's practical experience of the world. He thus developed a theory of meaning and action, starting with the individual's conscious awareness within the intersubjective realm of the "natural attitude" (Husserl, 1913). Drawing upon Edmund Husserl's work, Schütz and his follower Thomas Luckmann developed the "Structures of the Life-World", pointing out the relevance of the subject's perceptions and interpretations of the life-world (Schütz and Luckmann, 1975). Fundamental ideas of the natural attitude deal with the ordinary person who questions neither the experience of reality nor the meaning of things. He or she acts pragmatically and naively takes the objects — natural and social — for granted. The subject regards his/her own body as the starting point of being, which in turn facilitates the individual's spatial orientation. The notions of being-in-the-world and embodiment are the basis of experience and fundamental to phenomenological thought. The subject's confidence in its experience of reality might be questioned when changes affect everyday

life, e.g. by the loss of familiar surroundings. The experience then has to be scrutinised and reinterpreted where needed.

In order to gain access to subjective experiences of landscape, I employed a qualitative research method. First of all, case studies were carried out for detailed examination; second, qualitative interviews were conducted for understanding people's perceptions, meanings, feelings and emotions concerning landscape.

The case study of a post-mining landscape

The empirical research is based on a case study approach in order to cover various types of landscapes as well as a range of development stages. Three case studies had been chosen for detailed examination of single examples (concerning case studies, cf. Flyvbjerg, 2011). The landscapes were selected due to their changes in function, design and use in the course of the last decades. It is assumed that perceptions and attributions of significance are particularly intense when changes touch the individual's everyday life, e.g. experiencing the loss of familiar surroundings.

The case study to be portrayed in the following is a post-mining landscape, more precisely a former uranium mining site near Ronneburg in the German federal state of Thuringia where uranium mining had taken place for decades. The site was chosen in order to examine the ways of conferring values and meanings to a rapidly changing landscape. The rapid change makes individuals more aware of their everyday landscape, since the perception of this new landscape competes with memories of the previous landscape. Due to its changes in function, design and use over the last decades, the post-mining landscape is a good example for dramatic alterations and the need for re-defining the area.

Fig. 1. Ronneburg old town and new "balcony", 2009

Fig. 2. The New Landscape Ronneburg 2009: landfill and "WISMUT" lettering remind of the mining

Fig. 3. Gessen valley 2009: reconstruction of the former valley along a newly created hillside which refers to benches of the open-pit mine

Ronneburg is a small town east of the city of Gera in rural Thuringia. Formerly a spa town, it became the source of precious uranium ore in the Cold War era. Run by the Soviet–German mining company WISMUT, local uranium deposits were exploited for the Soviet nuclear programme from 1952 to 1990. In fact, Ronneburg was the most important site for the Soviet uranium production and as such a high-security area not accessible to the public. After German reunification, the mines were closed down on 31 December 1990.

Today, the former mining area has mostly been restored. WISMUT became a federal government-owned company in charge of the development of the site, its principal task being the decommissioning, cleanup and rehabilitation of the area. A new landscape has been designed by recent planning processes. For this, the exhausted mines were converted into landfills for disposal of solid waste. A valley was reconstructed (Figs. 1, 2 and 3), a new bridge was built and a new mountain was shaped, i.e. a waste rock pile even higher than the natural hills around it (Fig. 2). From a planning point of view, the landscape's shape is complete and the site has been converted into a park. The emerging new landscape was named "Neue Landschaft Ronneburg" (New Landscape Ronneburg), and in 2007 the popular German federal garden exhibition was held on the site.

Everyday experience of landscape: Empirical findings

Drawing upon phenomenological ideas, the social scientist has to develop an unprejudiced justification of his/her basic views on the world and him/herself. Therefore, the researcher is urged to get as close as possible to what the participants are experiencing, their perceptions, meanings, feelings and emotions concerning landscape: "Phenomenology demands that we seek to discover the world as it is experienced by those involved in it. It is about the nature of human experience and the meaning that people attach to their experiences" (Wilson, 2002). The basic point of qualitative research is to get behind constituted meaning. Therefore, the communication between the researcher and research participant is regarded crucial for understanding people's experiences.

In summer 2009, the author and four research assistants interviewed 60 individuals about what landscape meant to them. The interviews were conducted at different places in and around the town. The interviewees told their own story in their own words. In the guideline-based interviews, the range of questions covered landscapes related to various places and times: inhabited landscapes, childhood landscapes, recreational landscapes and landscapes of dreams. However, the main focus was on the landscape at the site of the interview, while mention of other landscapes helped to reflect on the topic when talking about experiences.

In order to analyse the qualitative data, all interviews were transcribed and the text then hermeneutically examined by a qualitative content analysis (cf. Mayring, 2010). The material was analysed along the following key research questions:

- What is 'landscape' in everyday life?
- What does 'landscape' mean in everyday life?
- How do ordinary people adopt to their surroundings/environment?
- How do they create a sense of landscape?

A traditional perception of landscape

Overall, the survey results show a very traditional perception of and orientation towards landscape as rural and remote place. The key point here is that landscape denotes a certain idyll — pre-modern and in some ways nostalgic. This idyll is associated with tranquillity and beauty. In a long-established and deep-rooted sense, landscape is a visual form of spatial knowledge that emphasises

the ideal of the picturesque, centred on the scenery and the pastoral. In the course of the interviews, notions of romanticism were articulated, most commonly by implicitly valuing rural, pre-modern and pre-industrial ways of life. The traditional connotation expresses values and meanings of landscapes such as beauty, naturalness or tranquillity as well as positively loaded terms like 'beautiful', 'green' or 'amazing'. Yet due to the recent redesign, the new landscape is also characterised as 'man-made' and 'artificial'. The German adjective most often attributed to landscape is 'schön' (beautiful, nice). This is not surprising since 'schön' is the best suitable word to describe landscape positively, as demonstrated by Gerhard Hard in his study on landscape and language (Hard, 1970). However, the

Table 1. **Concepts of landscapes according to statements of the respondents (survey in summer 2009)**

	Concepts of landscapes	**Topoi**	**Narratives**
I	Landscape is nature	'green', vegetation ('flowers', 'trees' and 'forest'), relief ('lowlands' vs. 'hills')	metaphors for naturalness; 'green' as indicator of unadulterated nature
II	Landscape is not a built-up area	'wide open spaces' vs. 'buildings', 'tranquillity' and 'peacefulness', 'solitude'	antipode to a town or to modern infrastructure, too much noise and waste/ pollution; too many people
III	Landscape is recreation	'tranquillity', 'beauty', 'harmony'	emphasis on the scenery; meeting the needs for recreation, beauty and harmony
IV	Landscape is identity	‚*Heimat*' (home), symbols, landmarks	mental construction of belonging to a place
V	Landscape is a place of memory	childhood, working life, holidays	emotionally touching experiences; romanticising childhood
VI	Landscape is region	borders and boundaries, place names	typification of landscape features; drawing borders and naming the region
VII	Landscape is an artefact	object of planning and design, rehabilitation, business development, marketing	object which can be built and rebuilt just like a building; condition for regional development

post-mining landscape is not always delineated as 'schön' in terms of aesthetic quality. It rather means "it has become 'schön'", implying that "the situation has improved", so 'schön' here means 'good': "They have done a very good job. Now, it is great and everything has become so beautiful. In former days, we had nothing. We even didn't know where to go for a walk" (female, 65 years).

Underlying concepts of landscapes

The interviews have been analysed to identify the underlying concepts: In which contexts was landscape mentioned and which topics were used when referring to it? Examining the interviews' everyday language by means of content analysis, various concepts of landscape emerged, the following being the most significant.[1]

Principles of subjective construction

The benefit of the phenomenological thought considered here is that it focuses our attention on the subjective construction of landscape as symbolic environment rather than as nature or scenery.

The survey results reveal how individuals take recourse to knowledge and experience as a basic principle of their subjective construction in everyday life. This becomes especially vital when changes affect everyday life. Experiences of landscape then have to be scrutinised and reinterpreted.

The recently redesigned post-mining landscape still shows features of its industrial past and includes memories of destruction as well as of a once thriving economy. Despite or because of this recent history, people appreciate the efforts that have been made to rehabilitate the landscape.

Our interviewees' statements also show that the perception of the new landscape competes with perceptions of the former industrial landscape. Specific values and meanings assigned to landscape become evident, especially when impressions and images of the landscape are compared to other landscapes. For this reason, the man-made post-mining landscape can be perceived as natural in comparison to former environmental damage. Concerning the present landscape, certain visual elements have become important since they represent nature and naturalness, e.g. 'green', 'flowers', 'trees', 'forest' (Concept I, Table 1). As a matter of fact, 'nature' is the word most often used as synonym for 'landscape' in German everyday language (e.g. Lehmann, 2003, 148): "There is nothing artificial because everything is natural" (female, 45 years). Or, as a resident, who has been living in the region for all his life, put it: "I feel very comfortable. Looking at all the green, I feel that it is something healthy. That's because nothing reminds you of the uranium mining" (male, 59 years).

Besides the perceived healthiness, values of beauty and harmony are assigned to the newly designed landscape (Concept III): "I am pleased with the landscape, everything looks so beautiful" (female, 71 years). While these are visible values, there are also features such as tranquillity which can be sensed emotionally: "You will have some peace and quiet, everything is fine, actually" (female, 61 years). Both statements show an evident longing for a quiet, peaceful place. Peace and tranquillity might also be antipodes to busy urban spaces or modern infrastructure, especially given the senior age of the individuals quoted here (Concept II).

Another very important value of place referred to in our interviews is its ability to create identity (Concept IV). Landscape plays a key role in the mental construction of belonging, e.g. in calling it 'home' (see Bender and Winer, 2001). It is the memory of good experiences such as a happy childhood or good holidays that generates a positive attitude towards landscape in general. This does not only mean identifying certain features of the past landscape but also valuing the quality of social relations: "The main point is that

I am at home here, I feel comfortable and my friends live here" (male, 59 years). This statement, again by the person who has been living in the region for all his life, might also indicate re-interpreting the traditional concept of landscape, shifting it from material to immaterial values.

However, material artefacts like the conical waste rock piles are still the prevailing features of the landscape in question. They had already become landmarks both for the inhabitants of the region and for drivers on the nearby motorway A4: "Already from a distance, especially on the motorway, you could see the waste rock piles, and you knew that you were at home" (woman, 62 years old). Once visible from afar, these peculiarly shaped hills indicated a high potential for identification and were referred to as 'twin pyramids' or 'bowling pins'. In 2006, they were filled into the exhausted mines. People who appreciated the special visual shape express their disagreement with the change: "The only thing I don't like is the demolition of our nice pyramids" (man, 66 years old).

Furthermore, the case study shows that structural alterations in the physical appearance indeed challenge the meanings of landscape and might thus lead to irritation and dissonance. Yet they do not give rise to a different attitude towards traditional values and meanings. In fact, reflecting on ones' "own" landscape, namely the relation of self and world, even strengthens traditional orientations. As described above, the interviewees value the rural, pre-modern world associated with tranquillity and beauty. Nonetheless, changes of the physical appearance of landscape are more often than not pragmatically accepted and may even be seen as an improvement. Generally, the way landscape disruptions are perceived strongly depends on time. The more time has passed since the intervention, the higher people think of its effects. Thus massive yet old man-made structures like bridges or viaducts can be symbolically transformed into monuments or traditions that perfectly integrate into the present perception of landscape.

Conclusions

Everyday experiences as studied in this paper are the experiences made by ordinary people in everyday landscapes, the landscapes they inhabit. Adopting a phenomenological approach enables us to discover the world as it is experienced by those immersed in it. Thus landscape becomes a world to live in, not a scene to view. Along with this perspective, ordinary landscapes are part of the daily, routinely experienced and unquestioned everyday life. They are taken for granted and there is no thought about their character. The phenomenological notion of being-in-the-world characterises a significant aspect of the role of everyday landscapes. The individuals are embodied in them, their perspective on the landscapes is what Husserl would term 'natural attitude'.

In conclusion, I would like to call attention to two points for further research. Firstly, I would suggest focusing on the role of landscape in everyday experience. Secondly, I would like to draw attention to the individual and the importance of his/her emotions while experiencing landscape.

First, landscape can be examined as made through representations, yet is also a practice. Therefore, further research should increasingly take everyday experiences and practices into account in order to understand the subjective construction of landscape. The proposed 'practice of landscaping' means a shift from representations of landscape towards the ongoing shaping of landscape via practice and performing (Wylie, 2007, 166), i.e. familiar and recognisable things such as walking, running, cycling or gardening.

Our post-mining landscape case study shows that a majority of the respondents takes landscapes and free access to landscape for granted. Having become accustomed to the

new landscape, they do not call it into question. The new landscape has already become a familiar standard, given and natural. While traces of mining are vanishing, the new landscape has become familiar and recognisable: a part of the daily, routinely experienced and unquestioned everyday life.

Second, the subjective construction of landscape is not only based on visual experiences but is also shaped by emotions and feelings. Although landscape continues to imply visual connotations, in particular the perception of what is termed the picturesque, research should no longer be confined to this kind of single-framed view. Emotional responses may just as well define landscapes (Davidson and Smith, 2003). Human emotions and perceptions like well-being or the sense of belonging as well as the sensation of being left behind are always part of lived experience. Therefore, while examining the subjective construction of landscape, research should consider the role of emotions, feelings and the unconscious in everyday practices along with the visual aspect of the material world. Thus it may be useful to adopt what the cultural anthropologist Tim Ingold called 'dwelling perspective': "The landscape … is not a totality that you … can look *at*, it is rather the world *in* which we stand in taking up a point of view on our surroundings" (Ingold, 2000, 207, emphasis in original). Then, further research should rather take into account that we are always already emotionally engaged beings-in-the-world, both as researcher and as inhabitant of this world.

References

Bender, B., Winer, M. (eds.) (2001). *Contested landscapes: movement, exile and place*. Oxford, New York: Berg Publishers.

Berger, P.L., Luckmann, T. (1967). *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Garden City, New York: Anchor.

Brace, C., Geoghegan, H. (2010). Human geographies of climate change: Landscape, temporality, and lay knowledges. *Progress in Human Geography*, 35(3), 284–302.

Cosgrove, D.E. (1998 [1984]). *Social Formation and Symbolic Landscape.* Madison: University of Wisconsin Press.

Cosgrove, D., Daniels, S. (eds.) (2002 [1988]). *The Iconography of Landscape: Essays on the symbolic representation, design and use of past environments*. Cambridge: Cambridge University Press.

Cresswell, T. (2003). Landscape and the Obliteration of Practice. In: Anderson, K. et al. (eds.). *Handbook of Cultural Geography* (pp. 269–281). London, Thousand Oaks, New Dehli: Sage Publications.

Davidson, J., Smith, M. (2003). Emotional Geographies. In: Kitchin, R., Thrift, N. (eds.). *International Encyclopedia of Human Geography* (pp. 440–445). Amsterdam *et al*.: Elsevier.

Duncan, J., Duncan, N. (1988). (Re) reading the landscape. In: *Environment and Planning D: Society and Space*, 6(2), 117–126.

Flyvbjerg, B. (2011). Case Study. In: Denzin, N.K., Lincoln, Y.S. (eds.). *The Sage Handbook of Qualitative Research* (pp. 301–316). Thousand Oaks, CA: Sage.

Hard, G. (1970). *Die „Landschaft" der Sprache und die „Landschaft" der Geographen. Semantische und forschungslogische Studien*. Colloquium Geographicum, Nr. 11. Bonn: Ferdinand Dümmlers Verlag.

Husserl, E. (1982 [1913]). *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy* — First Book: General Introduction to a Pure Phenomenology. Heidelberg: Springer. (German 1913: *Ideen zu einer reinen Phänomenologie und phänomenologischen Philosophie.* Erstes Buch: Allgemeine Einführung in die reine Phänomenologie, Halle/Saale. http://www.freidok.uni-freiburg.de/volltexte/5973/pdf/Husserl_Ideen_zu_einer_reinen_Phaenomenologie_1.pdf

Ingold, T. (2000). *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill.* London: Routledge.

Lehmann, A. (2003). Aspekte populären Landschaftsbewusstseins. In: Siemann, W. (Ed.). *Umweltgeschichte: Themen und Perspektiven* (pp. 147–164). München: Verlag C.H. Beck.

Lowenthal, D. (1961). Geography, Experience, and Imagination towards a Geographical Epistemology. *Annals of the Association of American Geographers*, 51(3), 241–260.

Merriman, P. et al. (2008). Landscape, mobility, practice. *Social & Cultural Geography*, 9(2), 191–211.

Mayring, P. (2010[1983]). *Qualitative Inhaltsanalyse: Grundlagen und Techniken*. Weinheim: Beltz.

Neumann, R.P. (2011). Political ecology III: Theorizing landscape. *Progress in Human Geography*, 1–8. http://phg.sagepub.com/content/early/2011/02/26/0309132510390870.

Rose, G. (1993). *Feminism and Geography: The Limits of Geographical Knowledge*. Cambridge: Polity Press.

Sauer, C.O. (1996 [1925]). The Morphology of Landscape. In: Agnew, J.A., Livingstone, D.N., Rogers, A. (eds.). *Human Geography: An Essential Anthology* (pp. 296–315). Oxford: Blackwell Publishing.

Schütz, A., Luckmann, L. (2003 [1975]). *Strukturen der Lebenswelt.* Konstanz: UTB. (English 1973: *Structures of the Life-World*, Vol. 1 (Studies in Phenomenology and Existential Philosophy). Evanston, IL: Northwestern University Press.

Thrift, N. (2007). *Non-representational theory: Space, Politics, Affect*. London, New York: Routledge.

Tuan, Y.-F. (1974). *Topophilia. A study of environmental perception, attitudes, and values.* New York: Columbia University Press.

Wilson, T.D. (2002). *Alfred Schutz: phenomenology and research methodology for information behaviour research*. Paper delivered at ISIC4 — Fourth International Conference on Information Seeking in Context, Universidade Lusiada, Lisbon, Portugal, September 11 to 13, 2002. http://informationr.net/tdw/publ/papers/schutz02.html.

Wylie, J. (2007). *Landscape*. London, New York: Routledge.

Note

[1] This is a subjective classification made by myself, based on my own knowledge and experience of landscapes, and as part of the interpretation process.

DIMENSIONS OF THE SOCIAL CONSTRUCTION OF LANDSCAPES — PERSPECTIVES OF NEW INSTITUTIONALISM

Ludger Gailing
Leibniz-Institute for Regional Development and Structural Planning (IRS)
Flakenstr. 28-31, 15537 Erkner, Germany
gailing@irs-net.de

Key words: *constructivism, landscape, institutions, ontologisation, policy*

This paper contributes to debates on the social construction of landscapes through adopting a new institutionalist approach. Landscape is analysed from a broadly constructivist perspective. Five dimensions of the social construction of landscape are presented: the analytical construction by scientists, the subjective construction, the material constitution, the collective constitution, and the construction through these constructs. Aspects of the ontologisation of landscapes and of landscapes as action arenas are discussed as important facets of the collective constitution of landscape. Thus, the conceptual relationship between constructivism and the theoretical approaches of new institutionalism is analysed by means of empirical findings drawn from a case study of landscape policy in the Spreewald in the German Land of Brandenburg. The logics of sectoral institutional systems are formative for a regional agency, but they are modified largely as a result of the existence of regional informal institutions such as spatial images, symbols, or traditions. These informal institutions have an important influence on the agency of stakeholders in action arenas such as biosphere reserves or tourism regions. The paper concludes by considering the consequences for further social science research on the social construction of landscapes.

Introduction

Landscapes should not only be regarded as physical spaces, as natural scientists usually understand them. In social sciences they are more often understood as social constructions resulting from individual and societal processes. Recent work in human geography and sociology (Jones, 2006; Kaufmann, 2005; Kühne, 2008; Robertson and Richards, 2003) has widened the perspective of landscape research[1]: while the physical "reality" of landscapes remains an important point of reference, human agency, symbolic representations, normative constructions of spatial images and — more generally — forms of cultural and social practice are acquiring greater importance.

The term "social construction of landscape" emphasises not only the relevance of subjective meanings and interpretations (Duncan, 1995), but also the often neglected influence of cultural and institutional factors for any area perceived and designated as a landscape. This paper aims to enrich ongoing

discussions about a constructivist approach to landscape research through drawing on insights from a political science perspective concerned with collective phenomena: the new institutionalism. There are, however, very few studies employing political science approaches in the field of the social construction of landscapes (Görg, 2007). In turn, the topic of "landscape" is often neglected in political science research, even when the focus is on environmental resources (Young, 2002) or local environmental commons (Ostrom, 1990).

This paper[2] contributes to debates on the social construction of landscapes through adopting a new institutionalist approach. To achieve this, the article opens with a discussion of how landscape is seen and analysed from a broadly constructivist perspective. Five dimensions of the social construction of landscape are presented. In the second part of the paper the conceptual relationship between constructivism and the theoretical approaches of new institutionalism are illuminated with reference to empirical findings drawn from a case study on landscape policy in the German Land of Brandenburg, with specific regional examples from the Spreewald landscape. The paper concludes by considering the implications of the study for further social science research on the social construction of landscapes.

The social construction of landscapes: a systematisation

According to a positivist understanding, a landscape is a specific portion of the earth's surface. It is the material result of human–nature relationships in a given area, a concrete and objectively existing reality. From a positivist point-of-view, a landscape exists independently — separate from the researcher, research methods and from an appraisal of social institutions. The role of subjective forms of landscape perception is not considered, nor is the importance of collective agency in the construction of a landscape.

However, in this paper landscapes are to be understood as social constructions (Greider and Garkovich, 1994; Winchester *et al*., 2003): landscapes are perceived as spatial entities, constituted in social and cultural processes. They are more or less distinct spatial units, emerging from synthesizing processes such as ontologisations and reifications. The ontologisation of a landscape denotes that this specific portion of the earth's surface is unequivocally understood as a specific spatial entity, independent of single opinions of individual or collective actors. Its existence is not negotiable (Schlottmann, 2005). Reification entails the comprehension of a notion — e.g. "a landscape" — as a thing: understanding an abstraction as if it had a living existence (Werlen, 2000).

Through ontologisation and reification of landscapes the collective repression of their constructed character is accomplished. Socially negotiated and/or accepted criteria of homogeneity such as the "unity of land and people" (in German: "*Land und Leute"*), the "discrete and unique character" (in German: "*Eigenart*") or, in the terminology of tourism marketing and contemporary regional governance, the "unique selling proposition" of a landscape play a fundamental role. To refer to a specific portion of the earth's surface as a "landscape" puts emphasis on this specific originality (Körner and Eisel, 2003), as well as on the regional interdependency between materiality and sociality (Swyngedouw, 1999). Moreover, the notion of "landscape" is an important linguistic symbol with utopian connotations.

Consequently, landscapes should not be regarded as "given" spatial entities, but as the results of processes of social construction. We should, then, accept the "double hermeneutic", or, to put it differently, the dialectical relationship between social scientific knowledge and human practices (Giddens, 1984).

Thus, a landscape can, at the same time, be an intellectual construct by scientists as well as a general social construct. Going further, Jacobs has brought to light a threefold ontology of landscape, differentiating between the inner, the physical, and the social reality of landscapes (Jacobs, 2004).

Drawing on theoretical insights provided by A. Giddens (1984), M. Jacobs (2006), B. Jessel (1998), and D. Lowenthal (1997), I propose an analytical systematisation of the complex process by which landscapes are socially constructed. In an attempt to minimise complexity, the social construction of landscapes is seen to be composed of the following dimensions:

1) the analytical construction by scientists,

2) the subjective construction,

3) the material constitution[3],

4) the collective constitution, and

5) the construction by the constructs 1–4.

These processes are interdependent.

In the context of the *analytical construction by scientists*, the word "landscape" is a sort of analytical tool for special scientific approaches, e.g. for classical landscape geography with its synthesizing approach, for landscape ecology with its geographical classification of natural landscapes, or for the cultural landscape approach in heritage management with its research of material elements and structures of high cultural and historical value. Landscapes in these senses are unique and distinct spaces, identified on the basis of the professional interests of scientists. They are constructed intentionally with the help of the definition of scientific criteria of homogeneity. In addition to this, "landscape" has gained importance in recent years as a sort of basis for social scientist and/or interdisciplinary research. In the case of the above mentioned examples, the word "landscape" implies a multidimensional and holistic concept, unifying physical objects and mental representations at the interfaces between nature and culture, between the material and the immaterial, or between the subjective and the objective (Jones, 1991). "Landscape" legitimises research approaches and programmes, conferences and scientific articles — like this one.

The *subjective construction of landscape* is the result of the landscape perception by individuals. The landscape view is the mental ability to understand a plurality of visually observable phenomena in a certain portion of the earth's surface as a defined landscape or a landscape scenery. Landscape then, on this account, is "not merely the world we see, it is a construction, a composition of that world. Landscape is a way of seeing" (Cosgrove, 1984, 13). This landscape view refers to a privileged vision of nature, the viewpoint of an "outsider" who enjoys the leisure requisite to aesthetic contemplation. Landscape as a way of seeing is first of all dependent on subjective prerequisitions and individual feelings. At the same time, it is deeply influenced by cultural factors such as norms, values, ideologies, or attributions of meaning.

The *material constitution of landscapes* refers to natural structures as well as historical and actual land use structures. All the other dimensions of the construction of landscape refer to the materiality of physical objects in a spatial context. Landscape, in this sense, is a sort of product or by-product (Sieferle, 2003) of human agency, a unique result of the intended and unintended interaction of human beings with their physical surroundings. It is the physical, spatial, and objective (interim) result of complex socio-economic processes: the appropriation, the use, and transformation of anthropogenic and non-anthropogenic resources. The dimension of "materiality" is often neglected in social sciences, when it comes to research about the social construction of landscape.

In a sense, the *collective constitution of landscapes* dimension represents a superordinate concept for diverse perspectives. They

share the common ground that landscapes are entities constituted in social and cultural processes. On the one hand, interpreting a landscape as collectively constituted can imply an interpretation of a landscape resulting from long-term and emergent cultural processes. This focuses on the emergence of spatial representations, landscape images, or attributions of uniqueness to a specific portion of the earth's surface. Such a collectively constituted landscape can form the regional basis of individual and collective identities, of regional utopia (connected with the ideal conception of "good life"), of regional ideologies, or of the material and immaterial heritage of a bounded space.

In a short- and middle-term perspective all these ontologisations and reifications can serve as a basis for collective political action (Paasi, 1986). Thus, a landscape can be interpreted as a collective action arena or as a regional political space (Gailing and Kilper, 2009). A landscape as an action arena relies upon former collective constitution processes of that landscape. In such action arenas stakeholders managed to establish governance structures for the protection or the development of the landscape. During the past decades, a variety of action arenas, e.g. regional parks, large-scale reserves, regions of rural development, tourism regions as well as inter-municipal collaboration networks, have been constituted. Internally the establishment of a landscape as an action arena guarantees a sort of regional self-organisation and capacity to act. Externally, it renders the articulation of regional interests and marketing effects possible.

Making the social construction of landscapes a subject of research should not disguise the structural and/or institutional effects of the existence of landscapes, once they are established as ontologisations or as collective action arenas. Social constructions of landscapes act, in turn, as second natures, institutional spheres or symbolic environments and thus affect individual and social agency. It is important to consider the *construction by the above mentioned constructs 1–4* in this systematisation due to the fact that the social construction of landscape is a perpetual and ongoing process.

Amongst the numerous possibilities to analyse human-nature relationships by means of the social construction of landscapes, I will concentrate in this paper on a theoretical approach that focuses on collective and structural phenomena: the new institutionalism. Other aspects such as the subjective or material constitution of landscapes can only be considered as influencing factors.

The role of institutions in the collective constitution of landscapes — the example of the Spreewald in Brandenburg

In the process of landscape change institutions play a decisive role as driving forces. Therefore, I will focus in this section on the often underestimated role institutions play in the process of the social construction of landscape.

According to institutional theory, human agency is influenced by a wide range of social structures that have attained a high degree of resilience. Institutions are composed of cognitive, normative, and regulative elements that provide stability and meaning in social life (Scott, 2001). They are the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction (North, 1990). This understanding of institutions differs from the everyday meaning of the term as well as from other scientific approaches which often confuse institutions and organisations (Breit and Troja, 2003).

Institutional research differentiates between formal and informal institutions. Formal institutions are sets of rules and regulations or administrative structures articulated

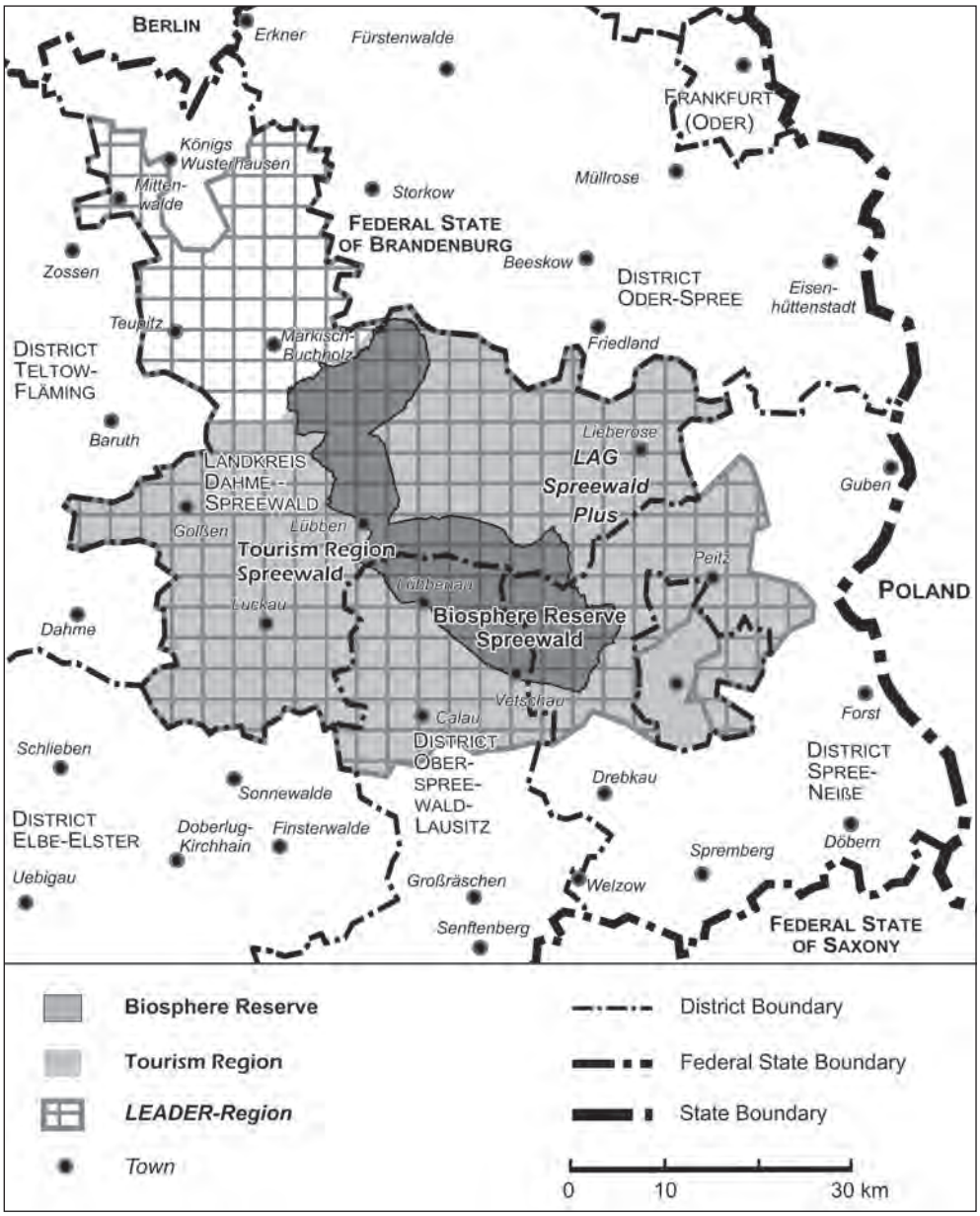


Fig. 1. Map of Spreewald in the Federal State of Brandenburg (Germany)

in constitutive documents (e.g. laws, statutes, or policy documents). It is one important asset of the so-called "new" institutionalism that institutionalist research focuses no longer only on these formal and codified institutions, but puts more emphasis on the role of informal institutions. Informal institutions are traditions, customs, shared meanings about values, perspectives and worldviews about the nature of things, interrelated practices

and routines, shared beliefs or perceptions of Good and Bad (March and Olsen, 1995). These institutions are more fundamental than formal rules.

In contrast to the earlier approaches of institutionalist and structuralist research, the new institutionalism reflects the dialectic of structure and agency (Giddens, 1990): it is important to recognise that institutions do not simply provide orientation for actors; they are, in turn, themselves subject to (re-)shaping by actors (Scharpf, 1997). This is the case for formal regulative institutions that can be changed as a result of public governance, but also for informal institutions, which are often highly resilient. These cognitive or behavioural institutions often only alter in long-term processes of societal change, e.g. the change of ontologies or of symbolical representations (Berger and Luckmann, 1987). Enhancements of institutionalist theory such as the dialectic of structure and agency as well as the fundamental role of informal institutions make it easier to connect it with constructivist thinking.

What does all this mean for the collective constitution of landscapes? Formal institutions like laws or other regulative documents in nature protection, heritage management, tourism management, or regional planning play a decisive role in the field of landscape policies. Policies concerning landscapes are always controversial due to different conceptualizations of nature, culture and landscape, different institutional arrangements and governance structures, or sectoral policy goals. Taking into consideration that the behaviour of individual actors is never completely in accordance with the requirements of formal institutions, new institutionalists place special emphasis on informal institutions. Thus, it is the main hypothesis of the paper that informal institutions on the regional scale (e.g. landscape images, symbols, or toponyms) are the most important driving forces in the process of the social construction of landscapes, especially in the relationships between the five dimensions mentioned above.

In the following, this theory-based approach to landscape will be discussed with reference to empirical findings drawn from a case study of regional landscape policy in Germany, the Spreewald.[4] The Spreewald is located in the southeast of the Land of Brandenburg in Eastern Germany. Although the German word “Wald” means “forest”, only a third of its area has remained forested. Since 1990, the Spreewald has been protected as a UNESCO biosphere reserve due to its outstanding relevance as an inland delta of the river Spree. The high level of nature conservation is justified also with the presence of traditional systems of land-use in the context of an irrigation system which consists of 1300 km of small channels. At the same time, the Spreewald is not only a biosphere reserve, that is, an action arena of the institutional system of nature conservation, but a landscape, where institutional problems of interplay (Gailing and Röhring, 2008) between competing and overlapping action arenas of sectoral policies arise. The Spreewald is

- an important tourist destination with its own tourism association,
- a LEADER area with a collaborative organisation funded by the Common Agricultural Policy of the European Union,
- an action arena for governmental measures in monument preservation, and
- a “cultural landscape”, which is a designated action arena of regional planning according to the state development plan for Berlin and Brandenburg.

So the collective constitution of the Spreewald is highly influenced by formal sectoral institutions in the fields of nature conservation, tourism policy, policy for rural areas (as a part of agricultural policy), monument preservation and spatial planning. In the regional action arenas of the Spreewald sectoral policies are operative and interact with each

other. With the exception of tourism policy, the formal institutions for these action arenas are framed far away from the Spreewald, e.g. by UNESCO, the European Union, the federal state, or the state of Brandenburg. Important formal institutions with a high impact on regional policy in Spreewald are, for example,

- the Man-and-Biosphere-Programme of the UNESCO and federal laws on nature conservation (with relevance for the biosphere reserve), or
- the instruments of the Common Agricultural Policy of the European Union to encourage the economic, social and environmental development in the countryside with subsidies (with relevance for the LEADER area).

These formal institutions provide their own sectoral worldviews, fundamental values as well as modes of governance. Laws and regulations of nature conservation, for instance, focus on ecological structures and on landscape as a traditional aesthetic ideal influenced by landscape painting or romanticism. According to institutions of tourism management, landscapes are destinations and even virtual enterprises with a common image. Within the institutional framework of the policy for rural areas, landscapes are the basis for regional labelling activities, for agro-environmental measures, and for regional collaboration activities. Due to the fact that landscape is a complex common good, institutional regimes designed to regulate the development and use of landscape as a whole cannot exist.

The formal institutions of sectoral policies are formative for regional agency. But their sectoral logics of action are considerably modified on the regional scale mainly due to the existence of regional informal institutions. Informal institutions in the field of the constitution of landscapes are factors of regional identity. They contribute to the ontologisation or reification of landscapes and were developed in long-term historical processes by means of subjective and intersubjective interpretations, objectivations, and communicative memory (Assmann, 1992). Important examples of such informal institutions are:

- Toponyms: Geographical names like "Spreewald" are a common ground for regional activities in the field of landscape policy. Naming is significant in the emergence or institutionalization of a landscape (Paasi, 2008, 517).
- Landscape boundaries: Their communicative construction is often based upon the material dimensions of a landscape like ecological criteria — such as in the floodplain landscape of the Spreewald — or upon historical borders of ancient territories that are still relevant for local stakeholders. Their most prominent functions are the demarcation and distinction from other landscape regions as well as the construction of coherence within the landscape across the differences of sectoral institutional systems.
- Traditions: Nowadays in post-traditional societies, local traditions like customs, festivities, local food, myths and legends, traditional costumes and so on are often no longer a part of the people's everyday life. However, as can be analysed in the Spreewald, they play a strategic and institutional role, for example, with regards to tourism: Sorbian[5] costumes, myths and festivities are a common point of reference for stakeholders of the LEADER area, the biosphere reserve, and the tourism association.
- Symbols and images: Symbols of the Spreewald like the haystack, the barge, the wooden house and the Spreewald gherkin are important for the spatial image of this landscape. The perseveration of these symbols in different kinds of media strengthens the ontological status of the Spreewald. Physical elements of the natural and cultural landscapes constitute

Table 1. **Examples of institutions relevant to the collective constitution of a landscape**

Formal institutions	Informal institutions
Laws and statutes (e.g. laws on nature conservation, monument preservation and spatial planning)	Toponyms (like "Spreewald")
Regulatory and policy documents (e.g. on tourism development)	Landscape boundaries (for the distinction from other landscapes and the construction of coherence within a landscape
Instruments of the Common Agricultural Policy of the European Union	Traditions (like customs, festivities, local food, myths and legends or traditional costumes)
International guidelines, statutes and conventions (like the UNESCO World Heritage Convention or the MAB-Programme)	Symbols with importance for the spatial image (like the haystack, the barge, the wooden house and the gherkin in the case of the Spreewald)

important points of reference for the spatial image of the landscape, even when they are (almost) no longer a part of the contemporary landscape. The resort to this "landscape of nostalgia" plays an important institutional role for the policy of all kinds of different stakeholders in Spreewald.

All the sectoral action arenas in Spreewald have one thing in common: the reference to the above mentioned informal institutions that are specific to this landscape. The influence of informal regional institutions tends to be stronger than the influence of formal central institutions. Regional stakeholders have established typical governance forms which are specific for the constitution of the Spreewald as a heterogeneous action arena, such as the strategic communication about historical or endangered landscape elements, the creation of thematic locations, regional marketing, and the invention of regional traditions. Informal institutions are used by the different collective actors as a basis for their agency, irrespective of their formal affiliation to a formalised sectoral institutional system.

Conclusions

The collective constitution of landscapes is a process enhanced by formal institutions rooted in sectoral institutional systems such as nature conservation, policy for rural areas or tourism policy. However, the high impact of sectoral institutional systems on the social construction of landscapes becomes less prominent in the particular action arenas on the landscape scale due to the existence of strong informal regional institutions — such as geographical names, traditions, symbols, or spatial images — and factors of

regional identity, respectively. These informal institutions serve as a sort of common ground for landscape policy at the level of regional action arenas. Nevertheless, informal institutions can, without doubt, be a potential ground for conflicts.

However, in some cases neither the formal nor the informal institutions of different sectoral institutional systems of landscape policy will be strong enough in comparison to powerful and effective sectoral institutions, such as regulations from the so-called first pillar of the Common Agricultural Policy of the EU, market forces in agriculture or transport, planning and building laws, or laws and provisions for energy supply. These institutions are strongly linked with the material constitution of landscape as a by-product. Spreewald is an example, where some action arenas overlap and many stakeholders are interested in the protection of the landscape; in other regions such as suburban landscapes or landscapes shaped by intensive agriculture this will not be the case. The power of informal institutions also depends on the existence of stakeholders in landscape policy. This aspect is worth to be examined in further case studies concerning different landscapes.

In the processes of the social construction of landscapes informal institutions can be considered as one important "bridging aspect" within the five dimensions of the systematisation of the social construction of landscape presented in the chapter "The social construction of landscapes: a systematisation". In the first instance, informal institutions are assigned to the collective constitution of landscape. However, informal institutions like spatial images or constructions of landscape boundaries

- were often generated or influenced by the scientific construction of reality,
- depend upon objectivations of prior subjective feelings and perceptions,
- can only come to social reality on the basis of material aspects of the landscape, and
- are — once they are institutionalised — effective as a groundwork for further processes of the social construction of landscape.

This points to the general need for further research that should combine the dimensions of the social construction of landscape in the chapter "The social construction of landscapes: a systematisation" with the insights of new institutionalism. Within this article, I have in particular discussed aspects of the collective constitution of landscapes as action arenas on the basis of institutionalist positions, also reflecting the constitutive role of previous social constructs such as ontologisations or reifications of a landscape. Further research questions might include: What role does the analytical construction of scientists play in the ontologisation of a landscape? How can subjective forms of landscape perception be roots for institutional change and lead to new informal institutions? And: In which way have formal and informal institutions had an impact on the material constitution of landscapes?

It should be clear that in post-positivist landscape research there is a need for different comprehensive approaches from the field of social, cultural and political sciences such as that of new institutionalism.

References

Assmann, J. (1992). *Das kulturelle Gedächtnis. Schrift, Erinnerung und politische Identität in frühen Hochkulturen*. München: Beck. 344 pp.

Berger, P.L., Luckmann, T. (1987). *Die gesellschaftliche Konstruktion der Wirklichkeit: Eine Theorie der Wissenssoziologie*. Frankfurt am Main: Fischer-Taschenbuch-Verlag. 218 pp.

Breit, H., Troja, M. (2003). Institutional change and social learning in environmental contexts: an introduction. In: Breit, H.,

Engels, A., Moss, T., Troja, M. (Eds.). *How institutions change: perspectives on social learning in global and local environmental contexts* (pp. 13–30). Opladen: Leske und Budrich.

Cosgrove, D. (1984). *Social formation and symbolic landscape*. London: Croom Helm. 293 pp.

Duncan, J. (1995). Landscape geography, 1993–94. *Progress in Human Geography*, 19(3), 414–422.

Gailing, L., Kilper, H. (2009). Shaping cultural landscapes through regional governance. In: Strubelt, W. (Ed.). *Guiding principles for spatial development in Germany* (pp. 113–123). Berlin, Heidelberg: Springer.

Gailing, L., Röhring, A. (2008). Institutionelle Aspekte der Kulturlandschaftsentwicklung. In: Fürst, D., Gailing, L., Pollermann, K., Röhring, A. (eds.). *Kulturlandschaft als Handlungsraum. Institutionen und Governance im Umgang mit dem regionalen Gemeinschaftsgut Kulturlandschaft* (pp. 49–69). Dortmund: Rohn.

Giddens, A. (1984). *The constitution of society: outline of the theory of structuration*. Berkeley: University of California Press. 402 pp.

Giddens, A. (1990). *The consequences of modernity*. Cambridge: Polity Press. 186 pp.

Görg, C. (2007). Landscape governance. The „politics of scale" and the „natural" conditions of places. *Geoforum*, 38(5), 954–966.

Greider, T., Garkovich, L. (1994). Landscapes: The social construction of nature and the environment. In: *Rural Sociology*, 59(1), 1–24.

Jacobs, M. (2004). Metropolitan matterscape, powerscape and mindscape. In: Tress, G., Tress, B., Harms, B., Smeets, P., v.d. Valk, A. (eds.). *Planning metropolitan landscapes. Concepts, demands, approaches* (pp. 26–38). Wageningen: DELTA series.

Jacobs, M. (2006). The production of mindscapes: a comprehensive theory of landscape experience (Dissertation Wageningen University). Wageningen.

Jessel, B. (1998). *Landschaften als Gegenstand von Planung. Theoretisch orientierte Grundlagen ökologisch orientierten Planens*. Berlin: Erich Schmidt. 331 pp.

Jones, M. (1991). The elusive reality of landscape. Concepts and approaches in landscape research. *Norsk Geografisk Tidsskrift*, 45, 229–244.

Jones, M. (2006). Landscape, law and justice — concepts and issues. *Norwegian Journal of Geography*, 60(1), 1–14.

Kaufmann, S. (2005). *Soziologie der Landschaft*. Wiesbaden: Verlag für Sozialwissenschaften. 369 pp.

Körner, S., Eisel, U. (2003). Naturschutz als kulturelle Aufgabe — theoretische Rekonstruktion und Anregungen für eine inhaltliche Erweiterung. In: Körner, S., Nagel, A., Eisel, U. (eds.). *Naturschutzbegründungen* (pp. 5–49). Münster: Landwirtschaftsverlag.

Kühne, O. (2008). *Distinktion — Macht — Landschaft. Zur sozialen Definition von Landschaft*. Wiesbaden: Verlag für Sozialwissenschaften. 377 pp.

Lefebvre, H. (2000). *La production de l'espace*. Paris: Ed. Anthropos. 485 pp.

Lowenthal, D. (1997). European Landscape Transformations: The Rural Residue. In: Groth, P., Bressi, T.W. (eds.). *Understanding ordinary landscapes* (pp. 180–188). New Haven, London: Yale University Press.

Löw, M. (2001). *Raumsoziologie*. Frankfurt am Main: Suhrkamp. 307 pp.

March, G.J., Olsen, J.P. (1995). *Democratic governance*. New York: Free Press. 293 pp.

North, D. (1990). *Institutions, institutional change, and economic performance*. Cambridge, New York, Melbourne: Cambridge University Press. 152 pp.

Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. Cambridge, New York, Mel-

bourne: Cambridge University Press. 298 pp.

Paasi, A. (1986). The institutionalization of regions: a theoretical framework for understanding the emergence of regions and the constitution of regional identity. *Fennia*, 164(1), 105–146.

Paasi, A. (2008). Finnish landscape as social practice: mapping identity and scale. In: Jones, M., Olwig, K.R. (eds.). *Nordic Landscapes. Region and belonging on the northern edge of Europe* (pp. 511–539). Minneapolis, London: University of Minnesota Press.

Robertson, I., Richards, P. (eds.) (2003). *Studying cultural landscapes*. London, New York: Hodder Arnold. 256 pp.

Scharpf, F.W. (1997). *Games real actors play — Actor-centered institutionalism in policy research*. Boulder, Oxford: Westview Press. 318 pp.

Schlottmann, A. (2005). *RaumSprache. Ost-West-Differenzen in der Berichterstattung zur deutschen Einheit. Eine sozialgeographische Theorie*. München: Steiner. 343 pp.

Scott, W.R. (2001). *Institutions and organizations*. Thousand Oaks: Sage. 255 pp.

Sieferle, R.P. (2003). Die totale Landschaft. In: Oswald, F., Schüller, N. (eds.). *Neue Urbanität — das Verschmelzen von Stadt und Landschaft* (pp. 59–78). Zürich: gta.

Swyngedouw, E. (1999). Modernity and hybridity: nature, regeneracionismo, and the production of the Spanish waterscape, 1890–1930. In: *Annals of the Association of American Geographers*, 89(3), 443–465.

Werlen, B. (2000). *Sozialgeographie. Eine Einführung*. Bern, Stuttgart, Wien: UTB. 400 pp.

Winchester, H., Kong, L., Dunn, K. (2003). *Landscapes. Ways of imagining the world*. Harlow: Prentice Hall. 216 pp.

Young, O.R. (2002). *The institutional dimensions of environmental change: fit, interplay, and scale*. Cambridge, London: The MIT Press. 237 pp.

Notes

[1] There are analogies to discussions about the social construction of space (Lefebvre, 2000; Löw, 2001).

[2] This article is an outcome of the joint research network "KULAKon — Constitution of Cultural Landscapes" funded by the German Research Foundation (DFG) from 2008 to 2011.

[3] I will use the term "constitution" instead of "construction" to deal with the physical substance of landscape as well as with the variety of collectively constituted results of processes of ontologisation or of collective agency. These fundamental aspects of materiality and of collective phenomena are often neglected in constructivist research.

[4] The methods of the case study were as follows: an analysis of text documents, guideline-based interviews with experts and participant observations.

[5] Sorbs are a Western Slavic people living in the South of Brandenburg and in the North of Saxony.

INFORMING IN PARTICIPATION AS A ONE- OR TWO-WAY STREET?

J. Sophie Visser
LandZij / Utrecht University, Department of Geosciences
Roomburgerweg 39, 2314 XN Leiden, The Netherlands
j.s.visser@planet.nl

Key words: *heritage, communication, information, participation, GIS*

This contribution was originally made for the special session "IN-FORM-LAND".
IN-FORM-LAND was based — as is the European Landscape Convention (ELC) — on landscape values arising from practices "from the bottom" (civil society, 'people', public) instead of "from the top" (experts) as a way to reach sustainable and integrated landscape development. From this notion, IN-FORM-LAND derived a fundamental role for information and hence for media (in forming ideas, opinions, supporting choices) and "all those representation devices useful to make people aware of their cultural heritage, starting up participatory practices". (Participatory) GISs were mentioned as an example of the use of new technologies in "decision making about changes of landscapes", making it necessary to "find out communicative codes for people, not only for experts".
Although I agree with the intention of IN-FORM-LAND, I see a need to recognize the essential point that "making people aware" implies one-way (education-oriented) communication, whereas participation requires two-way communication. Two-way communication principally applies to every action and decision in a participatory project, be it in landscape or heritage research, landscape planning, or information, technology and media decisions and design.
Based on this recognition, I identify and discuss several issues. One issue relates to questions as reflected in participation ladders and typologies that categorize the involvement of entities and participants (including 'the people', 'the public', or citizens). Another issue is participatory knowledge and research, leading to a discussion of some main participatory research approaches and of concepts like experts and expertise. Information, communication and technology are a third issue, including consequences of taking GIS as the norm, as that may hinder genuine participation. Ethics, therefore, is at stake as well. Terminology is also an issue, as it often implies a certain perspective that may become reflected in actions, choices and information systems.
In order to discuss consequences of these issues with respect to information systems, I present some distinctions between information systems.

Participation, knowledge, information on landscape and heritage

In very broad terms, participation is a certain way of thinking and acting in the context of some activity on some subject. In this contribution the emphasis is on knowledge creation (as in research) and information/communication design (activities) applied to cultural landscapes and heritage (subject).

These particular contexts — as well as their mutual interactions — are captured with (1) participation as such; (2) research, knowledge and expertise on cultural landscape and heritage; (3) information, communication and related technologies.

Although generally participation is mostly discussed from the contexts of decision making, planning or design, they are not much of an issue here.

Participation is a much used but scarcely defined concept. It mostly is used as one sees fit for the (implicit or explicit) purpose at hand. Participation can be seen as a means to an end, but also as an end in itself. In the latter case it is an ethical stance from the citizens' fundamental and moral right (or even duty) to participate in decisions which affect their living space. In the former case the purpose is to come to (more) effectiveness, legitimization, and quality of the outcomes (e.g. Van den Brink *et al*., 2007).

As Wood (2010: 160) states, "Participation is not a complicated idea. Participation means "taking an active part in activities with others", and so "it is about taking one's portion, or about getting one's share. … Passive participation is oxymoronic". In practice, though, participation mainly relates to specific 'others' — not others in general — as seen from specific perspectives. In landscape history and heritage research, it means foremost the involvement of non-scientists or non-professionals, or 'laymen'. In decision making, spatial planning and design projects, it typically means the involvement of 'the public', 'local people', or 'citizens'. In both cases 'the others' encompass massive numbers of people, seen from the perspectives of a selective few (e.g. Basten, 2010). This makes purposes like 'making people aware' — and its inherent one-way and education-oriented communication — problematic from the start: many people are already aware, do have values and opinions, *and* may have knowledge ("local experts"). As Suškevičs & Kűlvik (2011) contend, participation should be about common awareness, on both sides.

Participation in decision making, planning and design often is foremost related to people's values, opinions, preferences, and not to their knowledge, as project descriptions make clear (like in Jones & Stenseke (2011)). The European Landscape Convention (ELC, dating from 2000, although many countries ratified it much later) and its Explanatory Report (from 2003) may have contributed to that. In ELC documents, participation was originally just related to identification and assessment of landscapes as part of decision making, not to research and to knowledge other than from "lived experiences" (Jones & Stenseke (2011, 14, 15). As they put it, the intended methods and GISses showed "a very one-sided approach to public involvement". In the later ELC Guidelines from 2008 this has changed: "Participation implies two-way communication from experts and scientists to the population and vice versa. The population possesses empirical knowledge (local and naturalistic knowledge) that may be useful in completing and contextualizing specialist knowledge".

However, this still suggests a dichotomy between expert/scientist knowledge and local knowledge, and still puts experts/scientists and their knowledge perceptions central. This perspective perpetuates into information/communication and information systems. The Aarhus Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Issues actually showed this bias: "authorities share relevant information with the general public" and "public participation gives the authorities a better overview of problems as perceived by the public and allows the incorporation of the public's knowledge, values, viewpoints, and behavior in the decision making process" (Jones, 2011: 32). The authorities thus take the central stage and the public has to wait and see in the wings. Many participative

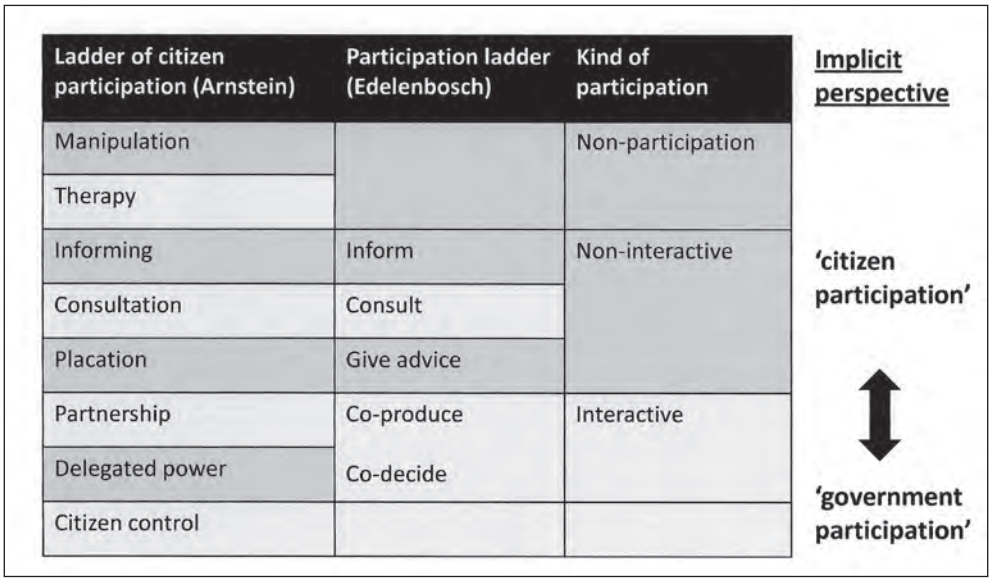


Fig. 1. Some ladders and typologies in participation in spatial planning (adapted from Van den Brink et al., 2007, 39)

projects, therefore, may not be about "activities *with* others", but about giving input for activities performed *by* specific parties like authorities and scientists. Hence, for a genuinely participatory project, its very start (problem definition, criteria, etc.) and its final completion into information systems and documents need to be participatory as well (Van Paassen *et al.*, 2011; Russo & Watkins, 2007).

Projects by local people are called 'citizen (or community) initiatives'. Logically speaking this should lead to 'government participation'. As this term is hardly heard, 'participation' reflects a biased situation. Participation ladders (or typologies) reflect to which degree the participants are actually involved (Fig. 1, after Van den Brink *et al.*, 2007).

Knowledge may suffer the most, as in many cases *scientific* knowledge — the result of scientists working according to scientific standards and procedures — is the starting point. Suškevičs & Kűlvik (2011, 278) define knowledge as encompassing "cognitive factual information (e.g. scientific knowledge), as well as knowledge based on personal experience (e.g. local knowledge)". Personal experience is typically related to feelings, meanings, and values (see e.g. Michelin *et al.*, 2011, or contributions in Bloemers *et al.*, 2010). Although broadening the knowledge concept, the dichotomization is still present. Another problem is the implied difference between 'cognitive' and 'experience' in relation to knowledge, as knowledge research has shown that the two are essentially linked to each other.

The 'factual' aspect — very much related to information as in information systems and documents — is not that simple either. A building designated as a monument at some point in time may nowadays be seen as a fact, but is less so than facts like building materials, style, year, architect, etc. The designation is the result of a decision that may change. The actual facts do not change (unless they are proven to be wrong) and may grow in time with the knowledge

base. Hence, there are essential differences between heritage systems and landscape or building history systems, i.e. in types and broadness of knowledge. This influences choices about participation in knowledge and information systems (or at least should do so). Other (inherently participatory) aspects are about choices that will (or may or can) manage and control all this. For instance, can the local people manage and control their own contributions (Russo & Watkins, 2007; Wood, 2010)?

This last question is partly dependent on choices of technology. Taking GIS as the norm has several constraining effects. The typical (commercial) GIS is too complex, time consuming, and expensive for people other than authorities, scientists and experts, leading to ethical questions as well (Van den Brink *et al*., 2007). A GIS cannot handle all information types (including narratives, lived experiences, and imaginations), needs and forms either (Michelin *et al*., 2011; Lejano, 2008). Hence, both the information and the participatory aspect may turn out to be meager (Wood, 2010; Visser, 2010).

Several of these points are mentioned by Jung Wu & Isaksson (2008) in commenting on a Swedish planning project with participatory mapping. In this project, locals were involved for their lived experience and utility values but not for their knowledge (called 'knowledge values'). The authors concluded that this was a serious lack and that locals should be able to 'add things' and 'contribute with new data': "If so, there is also a need of clarification of the concept 'knowledge values' which could include expert knowledge and local knowledge." The confusion becomes also clear from for instance Caspersen (2009), who started from involvement of citizens with "interests in or knowledge about the local area", but ended up with the goal "to increase their knowledge of the landscape, which is a necessity for an increased awareness of landscape matters".

People, public(s), citizens and participation

As may be clear, the meaning of participation can be quite different, and so are the societal groups or persons involved.

A number of authors mention the problems inherent to terms like 'citizens', 'people' and 'public', as these terms refer to 'others' or 'them', i.e. everybody that is not 'us' ('us' being authorities, experts, professionals; e.g. Basten, 2010; Van Bommel, 2008). By doing so, they "are stripped from their academic, professional, governmental, personal (etc.) knowledge and experience", signifying a downgrading categorical way of thinking. Another problem is the inherent view of all those 'people' as a uniform mass instead of the many different groups the public actually consists of. For that reason some authors, like Basten (2010), prefer the term 'publics'. Participation, therefore, should start with asking who can (and want or need to) contribute on what, and in which way. This relates to all involved, including the experts/professionals (as meant in the concept of the 'reflective practioner') and authorities. Ideas like these imply a bottom-up approach and a two-way effect.

'Citizen initiatives' (see Fig. 1) are not without problems either, even if they are acknowledged by authorities (e.g. Pleijte *et al.*, 2011; In 't Veld (Ed.), 2010). The initiatives may not be what the authorities were hoping for, while citizen groups experience problems in getting their issues and insights across to authorities and experts. As Zimmerman (2009) states, this is foremost a matter of different perspectives, expectations and frames of reference. Participation in this case would mean 'government participation', but this is anything but a common term.

Participative knowledge, research and expertise

Knowledge and expertise are complicated issues as well, both as such and from a participatory perspective. A main reason

for including local stakeholders is that researchers often miss knowledge on the specific localities (e.g. Van Paassen *et al.*, 2011). Choosing an appropriate approach for this collaborative or integrative knowledge creation is a main choice to be made. Two current major approaches are transdisciplinary research and participatory (action) research.

Transdisciplinary research

Transdisciplinary research is the participative member in the range of mono-, inter-/multi- and transdisciplinary research. Some conceptions of transdisciplinarity do include participatory research, while others do not (Pohl, 2010). The term participation generally is mentioned only if local people are included. If that is not the case, the participating parties are foremost authorities, civil servants, organizational stakeholders, and/or spatial planners and designers (like in Bloemers *et al*., 2010). But, as Van Paassen *et al*. (2011) comment, transdisciplinary research often actually concerns an intensified interdisciplinary form, based on the perspectives, values and norms of the initiators, sponsors and researchers.

Relating the level of participation to the use and purpose of knowledge — like enlightenment, decision making or negotiation (Zimmermann, 2009) — leads to transdisciplinary styles (In 't Veld, 2010). For instance, if enlightenment is the aim, co-producing is essential while consensus may be a bad thing. Participation also has consequences for the typical solution of boundary work in inter- and transdisciplinary research problems. It shifts the participatory questions to the boundary spanning, be it through shared concepts (e.g. 'landscape'), objects (models, visual designs, etc.), activities (as in 'social learning' or negotiation), or persons (In 't Veld, 2010; Van Paassen *et al.*, 2011).

Participatory (action) research

Participatory (action) research is a family of approaches with many varieties (e.g. Kindon *et al.,* 2007). They all combine inquiry with creating direct social change by means of active experiential and social learning. Some mainstream varieties are Action Research (AR), Participatory Action Research (PAR) and Participatory Research (PR) (Bell *et al.*, 2004). In PAR, the researcher and other parties share control, while in AR control foremost lies with the researcher and in PR with the other parties. Thus, PAR is more about co-producing knowledge and co-deciding than AR and PR. Examples of PR are the cases mentioned by Pleijte *et al*. (2011), in which civic groups asked researchers for help. The action research as applied in the Protection and Development of the Dutch Archaeological-Historical Landscape (PDL) scientific programme (Bloemers *et al.*, 2010) can be put at the other end of the continuum as the involved parties were authorities and landscape planners and designers (but hardly local people). Participatory ethics is a main issue, amongst others leading to reflection as an explicit and iterating step in the (P)AR cycle of "plan – act – observe – reflect".

Expertise and (non-)expert knowledge

Experts and laymen are another common but problematic distinction (Collins & Evans, 2007). Expertise in our society is typically related to science and training, which primarily are products of a specific institutional, cultural and historical context (Van Bommel, 2008). As many people actually have worthwhile knowledge, solutions have been sought in other concepts like 'cognitive communities', 'knowledge democracy' (In 't Veld, 2010), 'community science', or 'scientific literacy' (e.g. Lee & Roth, 2003). As Collins & Evans (2007) state, almost anybody acquires lots of expertise, although mostly of a ubiquitous and tacit nature. Formal training is just one way of acquiring expertise, as becomes

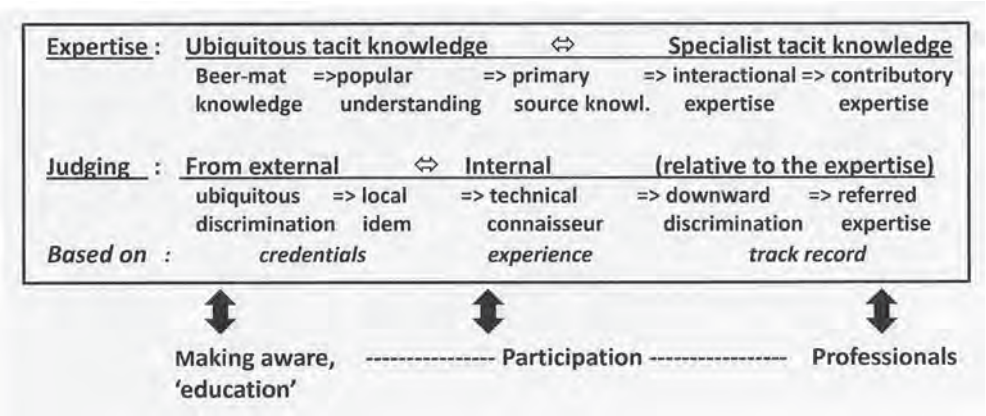


Fig. 2. Levels of expertise and their relations to judgment and participation

clear from learning foreign languages. Starting from the common-sense criterion "Know what you are talking about", they developed a "periodic table of expertises" (shown simplified in Fig. 2). It shows degrees in 'expertise' ranging from "ubiquitous tacit knowledge" to "specialist tacit knowledge". 'Judging' distinguishes the grounds used for judging the expertises, like through credentials, experience, and track record.

This scheme is equally applicable to professional and local experts and non-experts. A professional expert supposedly is proficient in general disciplinary issues, but may lack the more detailed and variable knowledge in which the local expert may be more proficient. 'Local experience' is the minimum level for participation. People who need to be made aware have not reached that level yet.

Communication, information and technology

Information, communication and related technologies

In relation to participation both information and communication are an issue (e.g. Jacobson & Servaes, 1999; Kindon *et al.*, 2007). Although the concepts of information and communication are often used intermingled, they are different. Information typically goes from one person (or machine) to another, while communication is seen as similar to exchange, interaction or dialogue. Furthermore, communication is active, while information is passive ("what is being exchanged") (Windahl *et al*., 2009; Griffin, 2009). Both feature in a definition of information as "communicated knowledge", with knowledge as a broad concept that encompasses everything a person knows and is able to exchange (Visser, 2010).

Media and technologies influence what communication is or can be about. Participatory (Planning) GISs (PGIS or PPGIS) may be a solution, but only under certain conditions (Rambaldi *et al.*, 2006; Kindon *et al.*, 2007). Other media — including the so-called "social media" — are important to consider as well. However, these considerations are hardly an issue amongst, for instance, experts in cultural landscape and heritage researchers (Visser, 2010).

Within the communication field, there are a number of traditions and approaches, such as the transmission approach and semiotics (e.g. Griffin, 2009). Many (G)ISs typically start from the transmission tradition, looking upon the meaning and content of the message from their own perspective. Many

GISs on landscape and heritage typically are supply-driven, not demand-driven (Visser, 2010). Semiotics, being based on the (different) signification of something by different people, may help in this regard.

Two-way communication is a main issue in both communication and participation literature, for instance based on the viewpoint that irrespective of who performs the research, the results must be shared. Thus "participation in information' matters as much as "information in participation".

Two-way communication is an ethical issue as well. Habermas's well-known concept of "communicative action" may be helpful, as it did for instance in spatial planning (e.g. Jacobson & Servaes, 1999). This concept is related to the idea of an "ideal speech situation" based on "discourse ethics". In the (G)ISs fields ethics mostly comes forward in critical approaches, like in critical (G)IS science and in critical (digital) landscape or heritage approaches (e.g. Cameron & Kenderdine, 2007). An ethical appreciation of PPGIS can be found in Rambaldi *et al.* (2006). A "social responsibility framework" may help in actions and choices with respect to maps and information systems (Visser, 2011).

Knowledge types and their relations to communication and technology

Knowledge can be categorized in many ways. Choosing which type(s) to include in a system can be decisive for the usability of a system, but is influenced by the technology (and vice versa).

Tacit knowledge, for instance, is difficult, if not impossible, to realize in a (G)IS. Explicit knowledge generally can, although dependent on type and technology (Boisot, 2007). Selecting knowledge for use in a GIS usually means narrowing down the knowledge types to, first formal knowledge (in abstract symbols, rules, and representations), then to codable knowledge (as in databases), and finally to what can be handled in geospatial tools (Fig. 3). Narratives, experiences and imaginations may be problematic within GISs, unless

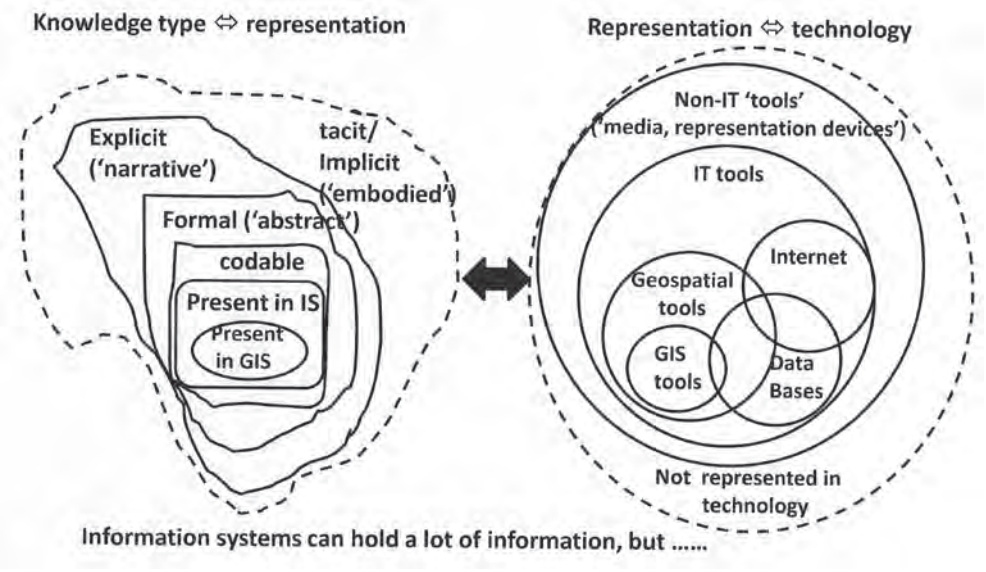


Fig. 3. Knowledge/information types and their relation to technologies

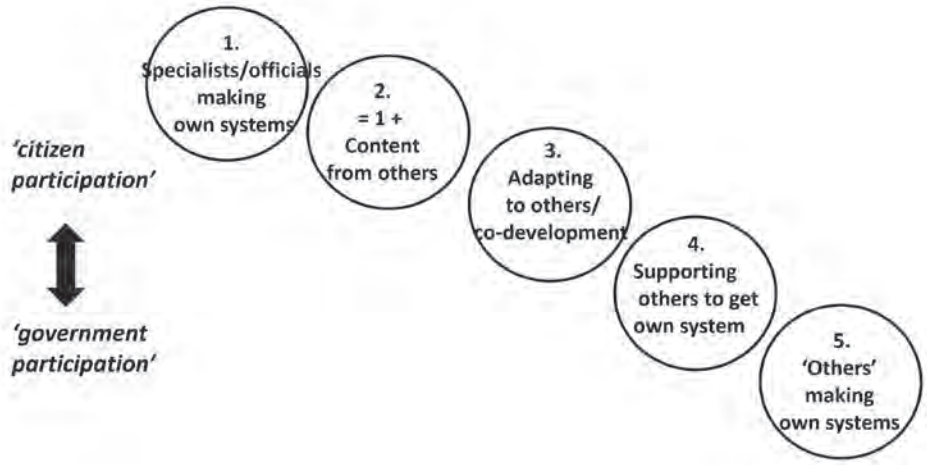


Fig. 4. Participation levels in information systems, e.g. on landscape and heritage

translated into the type of information a GIS can handle, e.g. by categorizing (Sui, 2004). However, information may thus get lost.

Choices on what and how to include may lead to other constraints. Judging by their output, many GISs on landscape heritage center on the geographic locations, keeping other knowledge to a minimum (Visser, 2010). Other choices relate to information modeling (including categorizations), to human-computer interaction, and much more. All choices together determine for which use and users a system is useful and usable.

Applying the insights: distinctions between information systems

As mentioned before, actions and choices often become reflected in information systems (GIS, websites), books, reports, etc. (Visser, 2010). The result is a variation in information products and situations. This also works the other way around, as the existing information situation may influence actions and choices (including those on participation). Those interactions are discussed briefly based on two distinctions between information systems or situations.

The first distinction links different technologies and types of information to participation levels (Fig. 4, see also Van den Brink *et al.*, 2007). This leads to differences between information systems in terms of who are involved, in which way and on which issues and activities. Categories 1 and 5 in Figure 4 are at the extremes, with complete realization by either specialists/officials (category 1, typically a GIS) or 'others' (category 5, typically non-GIS). As it appears, category 5 systems may stem from 'others' who experience unsatisfactory or unusable category 1 or 2 systems (Visser, 2010). In a category 2 system, 'others' can only add knowledge (and values) to systems designed, structured and controlled by experts/specialists. Category 3 is about co-producing a system. In category 4 specialists/officials support other people to realize their own systems, although some conditions may apply.

A system of one category may evolve into another category. The Dutch (GIS-based) national heritage system KICH (Knowledge Infrastructure Cultural Heritage), for instance, started in 2005 as a category 1 system and became a category 2 system in 2010 (www.kich.nl; Visser, 2010). On the other hand, knowledge from local (and regional) organizations and people in some *self-initiated* heritage projects, guided by a NGO,

in the south-western part of the Netherlands ended up in this category 2 KICH system, thereby becoming managed and controlled by the NGO and the KICH experts. From an ethical viewpoint this is questionable in various respects, like taking over control of local knowledge from the locals, and the inherent suggestion that knowledge needs to be put into a GIS — preferably an official one — in order to be taken seriously.

The second distinction (see Figure 5, derived from Visser (2010)) builds upon differences in types and purposes of systems, e.g. between landscape or building *history* systems (as knowledge systems) and *heritage* systems (as decision making, planning and design systems). The knowledge systems typically grow over time and are largely project- and time-independent; hence, they diverge. The typical decision making and planning system — at least on landscape and heritage — aims at consensus and choices, and therefore, at convergence. Their knowledge content generally is selective, in comparison with the knowledge system(s), while the recorded values, opinions, preferences as well as the choices are "a child of their time". Hence, participation in each system type relates to different subjects and aspects and to different social groups and parties. Knowledge systems, for instance, will be used for 'enlightenment' and searching, while in decision making systems negotiation and what-if questions are given a central position.

Conclusions

Participation has become an important issue in activities on cultural landscapes and heritage. However, scientists, experts and officials generally still hold the central position, seeing participation as something by 'others', while limiting the participation of 'people' or 'public(s)' to values, opinions, preferences, etc. and their knowledge to "lived experiences" as opposed to scientific knowledge. Local knowledge may actually be neglected upfront, as "making people aware" implies. This neglect and the concomitant dichotomization of knowledge are both core problems with respect to participation in information systems

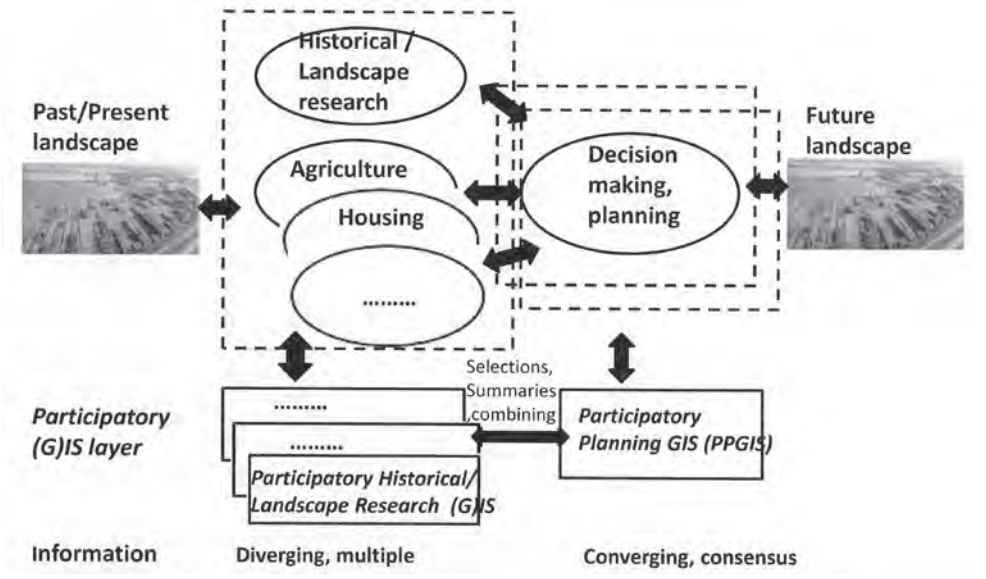


Fig. 5. Diverging versus converging systems in relation to purpose, situation and context

and knowledge creation. For instance, transdisciplinarity typically starts from a scientific perspective of knowledge. Participatory (action) research (PAR) approaches are more promising.

Other taken-for-granted but equally problematic perspectives relate to choices of technology and media. Taking GIS as the norm (like in PGISs or PPGISs) may actually hinder genuine participation and two-way communication, while the typical GIS is too complex, expensive and time-consuming for non-specialists. Hence, genuine participation — in knowledge, information systems, or otherwise — requires participation in all actions and choices, and in all steps and all respects.

References

Basten, F. (2010). Researching publics. In: In 't Veld, R. (Ed.) *Knowledge Democracy. Consequences for Science, Politics, and Media* (pp. 73–86). Heidelberg: Springer Verlag.

Bell *et al*. (2004). *Running head: Comparative Similarities and Differences*. http://www.arlecchino.org/ildottore/mwsd/group2final-comparison.html, last accessed 11 November 2010.

Bloemers, J.H.F., Kars, H., Van der Valk, A., Wijnen, M. (eds.) (2010). *The Cultural Landscape & Heritage Paradox.* Amsterdam: Amsterdam University Press.

Boisot, M. (2007). *Explorations in Information-Space; Knowledge, Actors and Firms.* Oxford: Oxford University Press.

Cameron, F., Kenderdine, S. (eds.) (2007). *Theorizing Digital Cultural Heritage*. Cambridge, MA: The M.I.T. Press.

Caspersen, O.H. (2009). Public participation in strengthening cultural heritage: The role of landscape character assessment in Denmark. *Geografisk Tidsskrift — Danish Journal of Geography*, 109(1), 33–45.

Collins, H., Evans, R. (2009). *Rethinking expertise*. Chicago: University of Chicago Press.

Griffin, E. (2009). *A first look at communication theory*. Boston: McGraw Hill.

In 't Veld, R. (Ed.) (2010). *Knowledge Democracy. Consequences for Science, Politics, and Media*. Heidelberg: Springer Verlag.

Jacobson, T., Servaes, J. (1999). *Theoretical approaches to Participatory Communication*. Cresskill: Hampton Press, Inc.

Jones, M. (2011). European Landscape and participation — Rhetoric or reality? In: Jones, M., Stenseke, M. (eds.) (2011). *The European Landscape Convention — Challenges of Participation*. (pp. 27–44). Dordrecht: Springer.

Jones, M., Stenseke, M. (eds.) (2011). *The European Landscape Convention — Challenges of Participation*. Dordrecht: Springer.

Jung Wu, C., Isaksson, K. (2008). *Participatory mapping as a tool for capturing local perspectives on cultural landscape — case study of Ostlänken*. Stockholm: KTH — School of Architecture and the Built Environment. http://www.includemistra.org, last accessed 8 October 2011.

Kindon, A., Pain, R., Kesby, M. (eds.) (2007). *Participatory Action Research Approaches and Methods*. London: Routledge.

Lee, S., Roth, W.M. (2003). Science and the "Good Citizen": community-based scientific literacy. *Science, Technology, & Human Values*, 28(3), 403–424.

Lejano, R.P. (2008). Technology and institutions. A critical appraisal of GIS in the planning domain. *Science, Technology, & Human Values*, 33(5), 653–678.

Michelin, Y., Joliveau, T., Planchat-Héry, C. (2011). Landscape in participatory processes: Tools for stimulating debate on landscape issues? In: Jones, M., Stenseke, M. (eds.) (2011). *The European Landscape Convention — Challenges of Participation* (pp. 145–174). Dordrecht: Springer.

Pleijte, M., Schut, M., During, R. (2011). Reflexivity in action research: two spatial planning cases. In: Van Paassen, A., Van den

Berg, J., Steingröver, E., Werkman, R., Pedroli, B. (eds.) (2011). *Knowledge in action* (pp. 222–245). Wageningen: Wageningen Academic Publishers.

Pohl, C. (2010). From transdisciplinarity to transdisciplinary research. *Transdisciplinary Journal of Engineering & Science*, 1(1), 74–83.

Rambaldi, G., Chambers, R., McCall, M., Fox, J. (2006). Practical ethics for PGIS practitioners, facilitators, technology intermediaries and researchers. *Participatory Learning in Action*, 54, 106–113. http://www.iapad.org/pgis2005/pla.htm, last accessed 10 September 2010.

Russo, A., Watkins, J. (2007). Digital cultural communication: audience and remediation. In: Cameron, F., Kenderdine, S. (eds.) (2007). *Theorizing Digital Cultural Heritage* (pp. 149–164). Cambridge, MA: The M.I.T. Press.

Sui, D.S. (2004). GIS, Cartography, and the "Third Culture": Geographic Imaginations in the Computer Age. *The Professional Geographer*, 56(1), 62–72.

Suškevičs, M., Kűlvik, M. (2011). The role of information, knowledge and acceptance during landowner participation in Natura 2000 designations: the cases of Otepää and Kõnumaa, Estonia. In: Jones, M., Stenseke, M. (eds.) (2011). *The European Landscape Convention — Challenges of Participation* (pp. 275–294). Dordrecht: Springer.

Van Bommel, S. (2008). *Understanding experts and expertise in different governance contexts. The case of nature conservation in the Drentsche Aa area in the Netherlands.* Wageningen: Wageningen University.

Van den Brink, A., Van Lammeren, R., Van de Velde, R., Däne, S. (2007). *Geo-visualisation for participatory spatial planning in Europe.* Wageningen: Wageningen Academic Publishers.

Van Paassen, A., Van den Berg, J., Steingröver, E., Werkman, R., Pedroli, B. (eds.) (2011). *Knowledge in action*. Wageningen: Wageningen Academic Publishers.

Visser, J.S. (2010). Cultural landscapes in the mirror. In: Bloemers, J.H.F., Kars, H., Van der Valk, A., Wijnen, M. (eds.) (2010). *The Cultural Landscape & Heritage Paradox* (pp. 605–628). Amsterdam: Amsterdam University Press.

Visser, J.S. (2011). The good, the bad and the ignorant: ethics and landscape heritage maps. Symposium Latsis EPFL 2011. *Mapping Ethics. New trends in Cartography and Social Responsibility*. Lausanne. http://digilandscape.wordpress.com

Windahl, S., Signitzer, B., Olson, J.T. (2009). *Using Communication Theory.* Los Angeles: Sage.

Wood, D. (2010). *Rethinking the power of maps*. New York: The Guilford Press.

Zimmermann, K. (2009). Changing Governance — Evolving KnowledgeScapes. How we might think of a planning-relevant politics of local knowledge*. disP*, 178, pp. 56–66. http://www.nsl.ethz.ch/index.php/de/content/download/2001/11389/file, last accessed 11 May 2011.