THE FORMING ELEMENTS OF THE BALTIC SEA COASTAL LANDSCAPE IDENTITY FROM THE TOWN OF AINAŽI TO THE ESTUARY OF THE RIVER SALACA

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ABSTRACT

The research was carried out in 2010-2011 to investigate the elements involved in forming the landscape identity of the Baltic Sea coast from the town of Ainaži to the estuary of the river Salaca covering a 14 km long coastal area in Latvia. Three aspects were distinguished in the research: visual aspects – visually recognized existing elements; historical aspects –elements existed in the past, at present have disappeared or have been destroyed; and cognitive aspects – memories, association of the place etc. Historical assessment included the study of the transformation processes of the place by using the data of scientific literature and historical materials. The case study method was used in the identification and evaluation of visual elements of the landscape by using photography, mapping and an evaluation matrix. An inquiry of experts and public was performed to highlight the existing features representing the identity of the place. The grouping of the landscape identity elements was accomplished according to their importance and meaning determined in the inquiry. The main conclusions of the research showed that there is an importance to provide landscape identity as a continuing process where the existing landscape elements interact with already disappeared features recognized in people's memories.

Key words: landscape identity, landscape elements, landscape perception, Baltic Sea coast

INTRODUCTION

This research addresses the landscape identity of the Baltic Sea coastal area in Latvia. Historically and nowadays the Baltic Sea and its coastal areas are economically essential and visually recognizable parts of Latvia. The coastal landscape of the Baltic Sea in Latvia is especially sensitive because of its attractiveness for living and recreation (*Piekrastes telpiskās...*, 2010). Sandy beaches, pine woods, healthy environment, as well as traditions and economic activities are making this place magnetic, and the area is becoming more populated and developed. At the same time the coastal area of the Baltic Sea is unique with rare biotopes, naturalness, historical heritage and diversity of landscape elements (*Kultūrvēstures avoti…*, 2008). Thus the coastal area has great potential for development based on the integration of natural, living and recreational resources (Hohlovska, Trusinš, 2009; Hohlovska, Trusinš, 2010).

However, marginalization, loss of natural and inherited values caused by the rapid development, the globalization processes and climate change have affected the pattern of this area. Therefore the coastal landscape of the Baltic Sea has changed substantially during the last hundred years. Its sensitive ecosystems and the recognizability of the places have been threatened.

The changes of the pattern and elements of the Baltic Sea coastal landscape are significant also in the context of the Latvian landscape identity. The Baltic Sea coastal area has always been and still is a part of the Latvian landscape identity. Therefore identification, evaluation and protection of specific coastal landscape elements forming the identity of this area are essential.

The research on the landscape identity of the Baltic Sea coastal area can be divided into two multidisciplinary research fields. One addresses the issue of landscape identity, the second – the Baltic Sea coastal area.

Landscape Identity

Identity is a complicated concept because of the different interpretations of it. Under the influence of globalization the concept of identity has become very popular. It is acknowledged that no country can exist without its own identity, which covers traditions, heritage, language and the environment, and also the inner world of each individual and the country as a whole.

The word "identity" has its roots in Latin – *identificare, identifico* - to identify, means to correlate the object with oneself and being in close connection with the ongoing variability of self, proving the independent existence of self and separation of self from other persons (*Новейший философский...*, 2003). On the other hand, the other word used in Latin is - *identificus* – meaning identity, absolute matching or coincidence of two objects. Scientist S. Kruks (2004) in his research has found that there are two aspects of identity,

which are often mutually mixed. "Oneness" (*memete*) is a self-similarity in the course of time, "self" (*ipseite*) is a separation of self from each other (Kruks, 2004).

The various interpretations of the concept of identity is the reason for different approaches to scientific research. Currently, the Latvian identity is mostly investigated from an economical, sociological, philosophical, political, linguistic and pedagogical aspects. But at the same time the concept of identity is closely related to the definition of landscape, where landscape is an objective reality, section of the land surface, encompassed by natural components and formations, as well as the combination of man-made elements (Ramans, 1967). Thus the concept of landscape identity is widely used by geographers, architects and landscape architects.

The research on the pedagogical aspects was carried out by M. Dirba (2003). It concerns the layered structure of the Latvian identity including ethnic, national, supranational (Latvian and / or minorities, Latvian, European and global) levels (Dirba, 2003). We can find similarity in modeling landscape identity, where a single element of landscape fits into a definite landscape, which in turn fits into the type of the landscape, region and further - into the image of Latvia.

The sociology researches cover symbolic expression of identity, for example, symbols, habits and rituals which may help to identify the nation from the outside, as well as identify it inwardly (Kruks, 2004). The symbolic meaning of separate landscape elements becomes more important when defining the identity of a specific place. The use of elements with symbolic meaning have been widely discussed in economy in connection with brands, which are most often used in the context of regional identity.

The history and culture of a specific place take great part in establishing of the identity of this territory. The historic and cultural exploration explains the existence and location of landscape structures, individual landscape elements and their groups, as well as sequentially reflects all of man's relationship with nature. Landscape identity researches have basically been focused on the exploration of regional transformation processes, sense of place and impact of urbanization processes on the landscape identity (Carter et al., 2007; Stewart et al., 2004).

Landscape researchers note the multidisciplinary and multidimensional structure of the concept of identity, where the importance of the landscape's social aspect and nature is closely connected with the level of perception, and their role in human daily activities (Massey, 1995). Researchers emphasize the importance of the political and economic processes, as well as the influence of mutual relationships of social and ethnic groups.

The assessment of historic structural elements of landscape identity is based on a comprehensive study of the history of the place - from the beginning of landscape formation, where morphological and climatic factors are of great importance, and finally to the place of each man-made element, where the changes of landscape structure and the changes of individual elements of the landscape is the result of human activities, reflecting the country's political, social and economic situation (Nikodemus, Rasa, 2005; *Piekrastes telpiskās…*, 2010). The concepts of landscape biography, landscape reading and consecutiveness of the place development have been used more often in recent years to describe interaction between man, historical events and changes in nature (Zariņa, 2010). Different matrixes have been used in landscape researches for describing historical events, where the stages of development have been shown in the context of political and economic systems, the dominant ethnic and social groups, functional changes and the appearance of new symbols in the landscape (Murzyn-Kupisz, Gwosdz, 2011).

The most important conclusion found in the works of many landscape researchers is that the identity of the landscape is changing because the landscape is a product containing natural and human elements that continuously change due to natural processes and human activities.

The Baltic Sea Coastal area

The development of the landscape identity of the Baltic Sea coastal area includes a close interconnection between natural, historical, cultural, social, political and emotional factors.

Latvian geographers A.Melluma, O.Nikodemus (Melluma, 2003; *Ainavu aizsardzība…*, 2000) and geologists G.Eberhards, J.Lapinskis, I.Grīne etc. (Eberhards et al., 2009; Eberhards, Lapinskis, 2008; Lapinskis, 2010) have investigated transformations of the Baltic Sea coastline affected by natural processes (erosion etc.). They have used topographic maps from 1935-2007, as well field surveys to evaluate these changes.

The biologists and geographers from the Latvia University have carried out scientific work to identify and preserve the Latvian seacoast biotopes and species protected on a European scale (areas of Natura 2000). This is one of the problematic issues because of the location of unique coastal biotopes in a wide range of the Baltic Sea coastal area. In the framework of this survey it is planned to establish a system of balanced conservation and management of these areas, to map biotopes, to investigate the expansion of foreign plant species, to develop individual nature protection and management plans for especially protected nature territories, and to inform the public (*Piekrastes biotopu...*, 2008). Also

the European Environment Agency addresses the public, scientists and politicians the question of importance of preserving coastal ecosystems. They points out the continuous degradation of the European seacoast which is influencing the quality of life in Europe. The recent tendencies show an increasing number of artificial and built-up territories in the seacoast areas in Europe (*Eiropas piekrastes...*, 2006).

Therefore, nowadays the possibilities of using, planning and management of the Baltic Sea coastal area is becoming more and more of a significant question. Latvian geographers A. Pužulis and K.Jansone have researched this issue in the Latvian case by pointing out the role of legislative and regulative documentation in usage, planning and management of the Baltic Sea coastal area. In their research the scientists concluded that different territories of the coastal areas should have individual development plans based on specific particularities, as well as changeability and sensitivity of the whole coastal area (Pužulis, 2010). Similar activities have been done by architects and spatial planners from Riga Technical University. The scientists J.Trušiņš and I.Hohlovska have investigated the problems and possibilities connected with the the use of the Baltic Sea coastal area for recreation. They have emphasized the role of sea coastal resorts in the historical development of specific cultural environment and heritage, as well as a necessity of sustainable development methods in the planning system of the Baltic Sea coastal areas. J.Trušinš and I.Hohlovska proposed a planning approach which includes control of the anthropogenic load, balanced consumption of nature resources by zoning the areas into active and passive recreation territories (Hohlovska, Trusiņš, 2009, Hohlovska, Trusiņš, 2010). Architects and scientists J.Briņķis, I.Strautmanis, E.Bērziņš have worked on the architectural heritage in the Baltic Sea coastal area. Those are historical buildings (resorts, summer houses etc.). Most of them are abandoned and are rarely used (Briņķis et al., 2009). The architectural heritage is one of the most important factors influencing local singularity of the sea coastal towns. Scientists have similar experiences and proposals as A.Pužulis. They pertain to the improvement of the existing legislative and regulative documentation in Latvia. Researchers J.Briņķis, I.Strautmanis, E.Bērziņš have worked out models of the development of the Baltic Sea coastal area. Those models have made it possible to interpret a development of permitted planned situations and variations in the context of definite territories (Briņķis et al., 2009).

The Baltic Sea coastal area has also been attractive for some individuals – photographers, artists, scientists etc. (Ziedonis, 2009) who have crossed the whole Baltic Sea coast from the Lithuanian/Latvian to the Latvian/Estonian border

to explore the sense of the place and natural beauty of this area. At this point it is possible to investigate the role of human perception of the place in the context of understanding of landscape identity of the Baltic Sea coastal area.
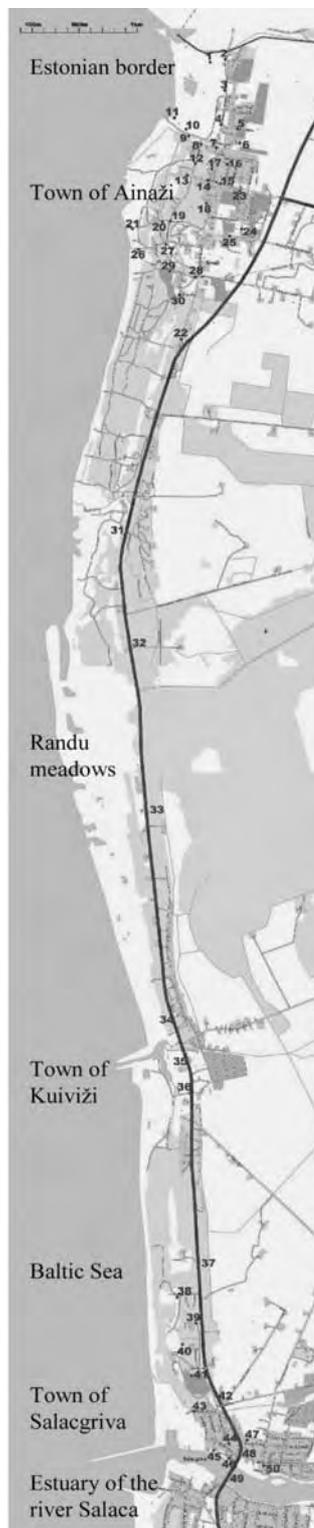
Source: maps from Google Earth's sources

Figure 1. The research object - the Baltic Sea coastal area from the estuary of the river Salaca to the town of Ainaži.

The importance of human perception and associations in landscape planning has also been pointed out in several researches of landscape scientists (Bell, 2009).

In conclusion it can be noted that researches on the Baltic Sea coastal area have mostly been carried out in the research fields of geomorphologic transformations of the sea coastal line, nature protection, spatial planning and recreation. Thus so far no extensive research has been carried out on the landscape identity of the Baltic Sea coastal area as a multifaceted and important part of the Latvian national identity.

The research of the landscape identity of the Baltic Sea coastal area was conducted in 2010-2011. The aim of the study was to investigate and determine the visual elements of different landscapes of the Baltic Sea coast involved in forming the landscape identity of this area. The research was based on a multilayered approach which included historical and field surveys, as well as human perception studies by using questionnaires of experts and inhabitants.

MATERIALS AND METHODS

Research object

The research object is the Baltic Sea coastal area from the town of Ainaži to the estuary of the river Salaca.. The research area is 14 km long and 11.3 km2 large and is located in Latvia, Vidzeme region, in the North-Eastern part of the Gulf of Riga (Figure 1). The whole area belongs to the landscape protection zone of the North Vidzeme Biosphere Reserve which is the only one of its kind a special area of conservation in Latvia. The reason for selecting this territory as a research object was – a high landscape diversity of the area which includes natural landscapes, rural landscape, small and bigger towns.

The Baltic Sea coastal area from the river Salaca to the town of Ainaži is a part of Salacgriva county. The area includes the following urban territories – the town of Ainaži, Kuiviži village and part of the town of Salacgriva located on the right bank of the Salaca river. The town of Ainaži was founded on the place of the ancient Libyan fishermen's village near the Estonian border. Kuiviži is the fishermen's village developed on the place where the river Krišupīte flows into the Gulf of Riga. The town of Salaca is the center of the Salacgriva county, and it was established on the estuary of the river Salaca.

Approach of landscape identity assessment

Approach of the landscape identity assessment of the Baltic Sea coastal area was based on the exploration of landscape elements which are the key to the perception of identity and which play one of the important roles in the formation of landscape identity. The elements forming the landscape identity were divided into three groups by following criteria: visual aspects – visually recognized existing nature and man made elements; historical aspects – nature and man-made elements that existed in the past, and have disappeared or have been destroyed at present; and cognitive aspects – human memories, association of the place, traditions, symbols, emotional experiences, etc. (Figure 2).
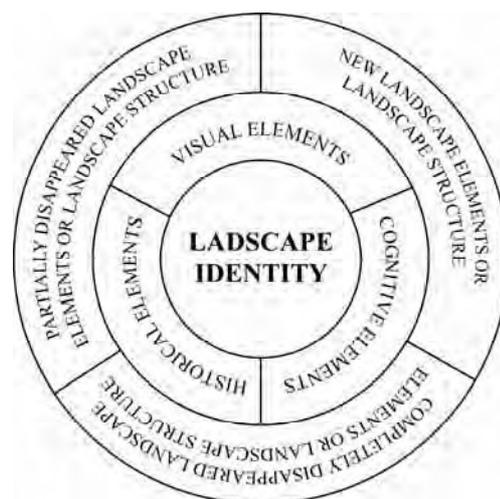
Source: N.Ņitavska

Figure 2. The groups of the forming elements of the landscape identity – visual, historical and cognitive.

The approach included the sequential investigations in all three groups and was based on determination and evaluation of the forming elements of the landscape identity. The combining of cartographical and descriptive methods, as well as questionnaires from experts and public were used in the study. According to this the research was carried out from the October 2010 till March 2011 in several stages.

Historical assessment
The historical assessment of the research area was worked out in October and November of 2010. The historical assessment included the study of the genesis of the place and transformation processes through times by using the data from scientific literature and historical materials – maps, photos and essays. In the historical assessment of the forming elements of the landscape identity the following stages were accomplished:
1. A defining historic development stages. The data from literature sources and archive materials (*Ainažu pilsētas…*, 2003; *Baltijas valstu…*, 2010; *Latvijas padomju…*, 1985; *Latvijas pilsētas*, 1999; Maldavs, Melluma, Seile, 1981; *Salacgrīvai 80*, 2008; *Salacgrīvas pilsētas…*, 2004; Renemanis, 2006) were used for exploring the transformation processes and events of the historical development of the research area.

Table 1

Historically important development stages of landscape

Landscape historic development			Landscape nowadays		
time period	actions, events, processes, etc.	landscape changes	completely or partially disappeared landscape elements or landscape structure		remaining landscape elements or landscape structure
1. Events or natural processes arising from natural factors					
2. Events or natural processes arising from anthropogenic factors					

According to these data, the content of the events, action or process and their changes in the landscape were described in the matrix shown in Table 1.

In the landscape historical development matrix the events and changes in the landscape were described by the following criteria: historical development period and the appropriate actions, events, processes and corresponding changes in the landscape. The collected historical data were grouped into characteristic historic development stages according to the significance/importance of the historical events or processes in the landscape changes, and the events were also divided into two groups – the natural or/and anthropogenic.

Here, it was important to mark whether the historical events can still be seen in the landscape as individual elements or as landscape structure. Thus the matrix contained information about the current situation - landscape elements, which have completely disappeared, wholly or partially remaining landscape elements or a landscape structure. These marks of the existing situation were drawn in the field surveys following in the next stage of the research – visual assessment.

2. The research on spatial development was based on the comparative evaluation of cartographic and photo material (*Baltijas valstu…*, 2010; *Latvijas pilsētas…*, 1999; *Latvijas padomju…*, 1985; *Salacgrīvai 80*, 2008; Renemanis, 2006) of different time periods (Eetvelde, Antrop, 2009). The data from this investigation were attached to the appropriate historical stage in the landscape historical development matrix. In the cartographical and photo survey it was important to mark the landscape elements of the long-term existence as forming elements of a definite landscape structure (Carter et al., 2007; Stewart et al., 2004),), because these elements are often the key of the landscape identity. The landscape elements detected in the historical assessment were divided into two groups: fully or partially preserved and completely disappeared. They were used in the next stages of the research. The completely disappeared landscape elements or landscape structure were included in questionnaires of the cognitive assessment (the last stage of the landscape identity assessment), in order to determine whether these landscape elements form the identity of the invisible (which is not less important) landscape. Fully or partially preserved landscape elements were included into the visual assessment.

Visual assessment
The case study method (field survey) was used in the visual assessment of the landscape from December till February 2011. The method included the identification and evaluation of visual elements of the landscape by using background information from historical assessment and literature, aerial photography, maps, photos taken by digital camera and an evaluation matrix. Visual assessment of the elements forming the landscape identity of the Baltic Sea coastal area was carried out in the following stages:

1. Developing an evaluation matrix of the visible elements of the landscape. The evaluation matrix was developed to characterize and evaluate existing landscape elements of the area by different criteria. The matrix had three parts. The first part of the matrix gives general information of the place (view) chosen for the detecting visual elements of the landscape, as well as characterizes the visual perception of the place (view). The general information contains number and geographic coordinates of the view point, investigation time, and short annotation of the place, investigation point marked in the map and shown in the photo. The second part of the evaluation matrix describes the characterizing of a visual perception of the view. The following criteria were included into the second part of the evaluation matrix: the visual accessibility, scale, terrain, color, materials, textures, diversity, rarity, naturalism, movement, sensations (Ode et al., 2008; *Landscape character…*, 2002; *Ainavu aizsardzība…*, 2000). Different values were attached to each criterion (Table 2). The third part of the matrix included all groups of elements recognized in existing landscape (buildings, individual architectural elements, roads and paths, land surface, greenery, water) to detect the dominating landscape element of the place (Table 3).

2. Field survey. The obtaining of the required data for the assessment of landscape visual elements was performed in nature by using the evaluation matrix developed previously. Firstly, different landscape types were indentified by subjective approach to choose different characteristic and unique landscapes for visual assessment. Fifty view points were detected and numbered. The geographic coordinates were added to each view point by using GPS navigation system (Becker Traffic Assisst 7926).

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Table 2

Characterization of the visual perception

Criteria of the visual perception	Characterization of criteria
Visual accessibility	unavailable, a narrow, limited, partly accessible, open, fully accessible
Scale	intimate, close, small, medium, large, wide
Terrain	smooth, flat with some hills, gently wavy, hilly, dunes, hill, cliff, steep slope, valley, gully, gorge
Color	neutral, monochrome, nuanced, vivid, colorful, checkered, with some bright elements
Materials	natural landscape, wood, stone, plaster, concrete, bricks, glass, metal, synthetic materials, other materials
Texture	smooth, soft, fine, rough, sharp, fragmented
Diversity	uniform, simple, various, complex
Rarity	common, typical, unique, rare, unique
Movement	dead, quiet, lively, uproarious
Naturalism	natural, natural with some man-made elements, anthropogenic environment with some natural elements, an urban
Sensations	boring, neutral, pleasant, safe, calming, interesting, inspiring, provocative, intrusive, unpleasant, unsafe

Table 3

Characterization of dominating landscape elements

Groups of landscape elements	Dominating landscape elements
Buildings	ruins, separate buildings, farmstead, building groups, urban settlement, village, outskirts of a town, small town, residential area, heritage buildings, industrial buildings, military buildings, harbor, railway station, other buildings, no building
Individual architectural elements	poles, electricity and other forms of communication towers, fences, walls, monuments, bridge, elevated road, observation tower, a lighthouse, wind generators, other elements, no element
Roads and paths	trampled down paths, crisp surface pedestrian trail, a hard surface pedestrian trail, footbridge, earth road, loose surface road, hard surface road, highway, railway, other roads, no road
Land surface	rocky bank, sandy bank, coastal grassland, bogged up area, moss, agricultural land, lawn, meadow, loose surfaces - playgrounds, solid surfaces - playgrounds, other types of land surface
Greenery	grass clusters, individual shrubs, groups of bushes, individual trees, tree clusters, groves, forests, allotment, alleys, squares, parks, gardens, orchards, buffer plantings, other greenery, no greenery
Water elements	marsh, ditch, stream, river, pond, lake, quarry, swimming pool, water, sea, other water elements, no water element

Each point was mapped and photographed by digital camera in panoramic view (360^0). Short description of view was presented, including key words. The evaluation matrix was filled in for each view point by choosing appropriate value of the criteria of visual perception in the first part of the matrix, and by marking the dominating landscape element in the second part of the matrix. The election of values was based on subjective approach and performed by three researchers in landscape architecture.

3. *Data processing and analysis of results.* According to the collected data, a map of landscape spatial structure and view points was created. The map contained geographic coordinates of each view point (Figure 1).

The data of the evaluation matrix were aggregated and processed by SPSS. The measurement for aggregated data was their nominal value. All matrix questions were of closed question type. For the questions which had only one response option, the data were coded and marked with numbers. But for the questions which had several response options, a dichotomous analytical method was used - each response option provided a separate variable with a column, option codes: 1 – there is an answer, 0 – no answer.

For the analysis of the results both primary and secondary data analysis were used. Primary data analysis - empirical distribution, shows the feature under investigation at a repetition rate (the number of times the version is found in the study). Secondary data analysis - analysis of contingency, determines whether there are correlations between the presences of different nominal data. The data were summarized in Table r x c, where r was the number of rows, but c was the number of columns. Set the significance level of 5% error probability (confidence level 95%). For decision making X2 and Kramer's coefficient were used.

Cognitive assessment – associative part of the research

After identification of existing landscape elements, a survey of experts and public was performed by using data, collected and analyzed in the field survey, to highlight the elements representing the identity of the place. The questionnaires were performed in March 2011. Cognitive assessment was performed in the following stages:

1. Developing questionnaires were based on the data collected in two previous stages of the research. The potential forming elements of the Baltic Sea landscape identity was selected: from the historical assessment - the completely disappeared landscape elements or landscape structure that

could still remain in people's memories, elements with high heritage value; from visual assessment - dominating and specific landscape elements.

The layout of the questionnaire had three parts. The first part represented personal data of a respondent from inhabitant group – place of residence, period of living in the research area (Salacgrīva county). In the expert questionnaire this information was replaced by questions about professional experience of the respondent. Both groups were asked to mark the age and gender of the respondent.

The second part of the questionnaire was created without images to determine an associative aspect of the landscape identity of the research area. The aim of this part was to clarify the associations of a place based on people's memories, traditions, songs, beliefs, etc. The respondents were asked: to highlight the most appropriate statement about the research area (the place is unique in the world/Latvian scale, similar only to a few places or looks like many other places); to mark 3 elements most vividly characterizing the research area; to describe emotions/memories about the research area.

The third part of the questionnaire addressed the emotional evaluation of definite landscape elements/landscape structure of the research area. Images of 10 different places were selected from the visual assessment part (representatives of typical landscapes; unique landscapes) and included in the questionnaire. Specific criteria were enclosed for describing an emotional impression of each place showed in the image. They were sensations of the place: boring, neutral, pleasant, interesting, inspiring, unpleasant, unsafe; and type of the landscape: common, typical, unique, rare, unique. The questionnaires were developed on the individually created base on the web site www.visidati.lv.

2. *Questionnaires* were performed electronically and in paper format. Invitation to take part into electronically available questionnaire was send individually to each participant. Paper forms of the questionnaire were distributed and filled in the town of Salacgrīva. 326 inhabitants of the research area and 61 experts took part in the survey. The selection of the inhabitant group was based on their place of residence. They were living or had lived in Ainaži, Kuiviži or Salacgrīva before. In the expert group the professionals from the fields of landscape architecture, horticulture, environment, geography, architecture and civil engineering and art participated.

3. *Data processing and analysis of results.* The data from the questionnaire were collected and processed in the SPSS. The measurement for aggregated data was their nominal value.

The questionnaire included both - closed and partially closed and open questions. Closed and partially closed questions with a multiple-choice

data were coded and marked with numbers. But for the questions which have several response options, a dichotomous analytical method was used - each response option provided a separate variable with a column, option codes: 1 – there is an answer, 0 – no answer. For open questions the data were grouped by similar characteristics and then encoded. For open questions there was no need to be grouped together, the data were unencoded; the more specific and interesting responses were described separately.

For the analysis of the results both primary and secondary data analysis were used. Primary data analysis - empirical distribution, shows the feature under investigation at a repetition rate (the number of times the version is found in the study). Secondary data analysis - analysis of contingency, determines whether there exist correlations between the presences of different nominal data.

The data were summarized in Table r x c, where r is the number of rows, but c is the number of columns. Set the significance level of 5% error probability (confidence level 95%). For decision making X2 and Kramer's coefficient were used.

RESULTS AND DISCUSSION

The results were obtained in three stages of the landscape identity assessment of the Baltic Sea coastal area from the town of Ainaži to the estuary of the river Salaca. These were historical, visual and cognitive assessments. The obtained data and results of each stage were selectively included in the assessment process of the following stages.

The results of the historical assessment showed that there are two groups of landscape elements – still exiting or partly destroyed historical elements; and those which have already disappeared (Table 3). From historical events influencing the forming of the landscape identity of Ainaži-Salacgrīva; the historical existence of the Baltic Sea is most significant. This promoted a development of the first settlements, as well as the harbor and naval school which according to the public and expert surveys (Figure 4) were the most recognizable landscape elements of the place.

The legacy of the soviet period – the fishing industry has mainly influenced the associations of the place. These are connected with people's memories about buying fish, such as lampreys, seeing fishermen working on fishing boats. But the other aspect of this industry is associated with multi-storey houses built for workers during the Soviet period. Those buildings have created a different pattern and image of the town of Salacgrīva.

The historically developed landscape identity of this place has been disturbed, because the scale of those buildings conflicts with small churches and old wooden houses.

Table 4

Results of the historical assessment

Characteristic historical development period	Historical events	Already disappeared landscape elements	Still exiting or partly destroyed historical elements
~ 6 500 years ago	Post- Litorina Sea	Some of elements located under water	Terrain of the coast
5th, 6th c.	First settlements of the Livs	Buildings and historical structure of the town	Place of the historical settlement
till 19th c.	The Great Northern War; under Russia	Castle, road network, buildings	Some manor houses; ruins of warehouse
19th c.	Development of the shipping; harbor; structure of the town	Railway, part of the infrastructure, buildings	Spatial Structure of the town, buildings (partly)
20th c.	World Wore I ; World Wore II; Soviet period; collectivization, industrialization	Harbor, other buildings and objects destroyed during World Wore II, later - without managing	Buildings, greenery

Table 5

Results of visual assessment

Characterization of the visual perception of the research area		Characterization of dominating landscape elements of the research area	
Criteria of the visual perception	Most referred characterization of criteria	Groups of landscape elements	Dominating landscape elements
Visual accessibility	limited 46%	Buildings	heritage buildings 21% small town 11%
Scale	medium 40%	Individual architectural elements	poles 33,6% fences 21,5%
Terrain	smooth 68%	Roads and paths	no value because of winter time
Color	neutral 30% monochrome 28%	Land surface	no value because of winter time
Materials	wood, stone, bricks, plaster 15-17%	Greenery	groups of bushes 19,2% wood 26% individual trees 16,3%
Texture	rough 72%	Water elements	no water elements 67,3%
Diversity	simple 40% complex 38%		
Rarity	common 50%		
Movement	dead 44%		
Naturalism	natural with some man made elements 38%		
Sensations	neutral 30%		

This was proved by a survey where 33 % of the experts marked the view with a church inside the multi-storey building area as unpleasant.

Still existing or partly destroyed historical elements were involved in the visual and cognitive assessment to detect their importance in the forming of the landscape identity of the research area. The results of the visual assessment are presented in Table 4. In characterization of dominating landscape elements the results showed that historical buildings were perceived as dominating buildings of the research area in 21 % of cases. And this was the highest result in this group. In the materials group the most widely used in historical buildings were wood, stone and brick. These were stated as dominant materials within 15-17% of cases. In the cognitive assessment (associative part of the research) the inhabitants' first impressions about the landscape of Ainaži-Salacgrīva and landscape elements in it were linked with the seacoast; home, family and childhood, a quiet and peaceful life.

At the same time in both survey groups (experts and public), the meaning of local activities and traditions, like Sea celebrations, festivals: Free Wave and Pozitivus etc., were pointed out as important aspects in forming the present-day landscape identity of Ainaži-Salacgrīva.

Most of the experts (61%) and inhabitants (41%) noted that the landscape of Ainaži-Salacgrīva has a specific image not found in many other places. Also the singularity of the research area in the world scale (33%) was marked in the survey of inhabitants (Figure 3).

The sensation of the landscape of Ainaži-Salacgrīva was characterized with positive feelings – pleasant (58%), inspiring (17%), and interesting (15%). Negative sensations of the place did not exceed 1.5% (Figure 4).

The harbour of Salacgrīva, jetty of Ainaži, museum of Ainaži naval school, Fishermen's park and the river Salaca were detected as more referred landscape elements in the survey from the experts and public (Figure 5). Fish (e.g. lampreys), fishermen, sun, summer and wind were pointed out as being more popular associations of the place. As it can be seen in Figure 5, the natural elements - coastal meadows, the river Salaca and Fishermen's park are of great importance in forming the landscape identity of Ainaži-Salacgrīva.

According to the results of the landscape identity assessment it is possible to distinguish the main forming elements and whole image of the landscape identity of Ainaži-Salacgrīva.It is a landscape with narrow spaces in it, on a small and medium scale. This landscape has a smooth terrain, seldom - hilly relief on the seacoast shaped during the period of the Litorina Sea. The landscape of Ainaži-Salacgrīva has a rough texture determined by architecture and old individual trees. It is sometimes intercepted with some brighter elements, but most frequently it is monochrome or neutral in colours which are reflected by the building materials – wood, stone and brick. In some parts of Ainaži-Salacgrīva area the landscape is complex, but mostly simple in its diversity.
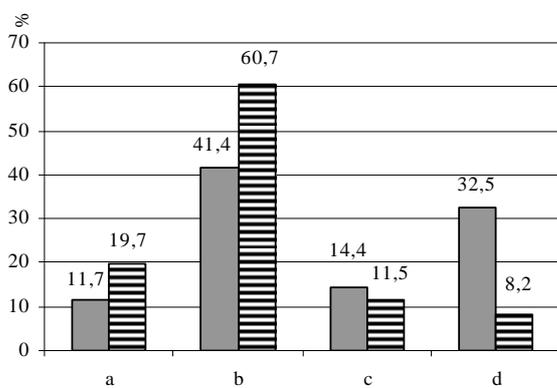
Figure 3. Landscape singularity of Ainaži-Salacgrīva, where:

■ - answers of public survey;   ▤ - answers of expert survey;

a – there are several landscapes in Latvia similar to the landscape of the Ainaži-Salacgrīva; b – the landscape of Ainaži-Salacgrīva has specific image, similar only with few other towns; c – this kind of landscape is only one in Latvia; d - .no similar landscape exists in the world.
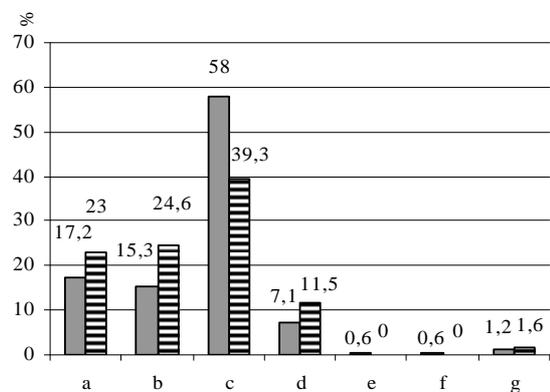
Figure 4. Emotions and memories of Ainaži-Salacgrīva, where:

■ - answers of public survey;   ▤ - answers of expert survey;

a – inspiring; b – interesting; c – pleasurable; d - neutral; e – boring; f – unpleasant; g – unsafe.
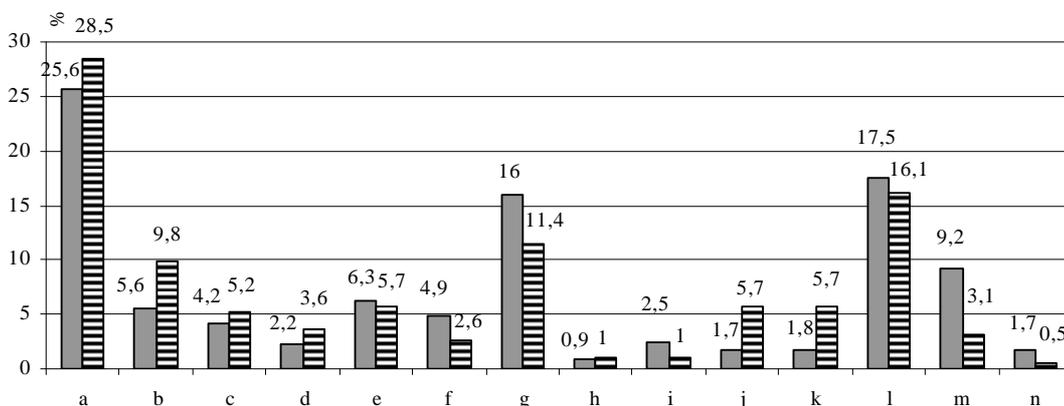
Figure 5. Elements characterizing the landscape of Ainaži-Salacgrīva, where:

■ - answers of public survey;   ▤ - answers of expert survey;

a - sea coast, Randu meadows (coastal meadows); b – harbour; c – wind generators; d – old warehouse; e – Northern jetty; f – White Sun; g - museum of Ainaži naval school; h – fishermen's cemetery; i – memorial site of soldiers killed in World War II (monument in Salacgrīva); j – stone buildings; k – lighthouse of Ainaži; l –the river of Salaca; m – Fishermen's park; n – other.

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The landscape is characterized as common or typical, in some places – unique (coastal meadows). Overall, the area of Ainaži – Salacgrīva could be described as a natural landscape with some human made elements, less – anthropogenic environment with some separate nature elements. This aspect is reflected within the movement of the landscape - dead or silent. It is alive only in places with intensive traffic and town centers.

The buildings of the research area have mostly been formed by one or two-storey heritage buildings. Fences and utility poles are the most common elements in the area. Greenery is represented by woods, individual trees or bushes, as well as alleys and allotments in the towns. Irrespective of the invisibility of the sea in the towns, it is the first element referred to as a symbol and recognizable element of the place and it plays an important role in creating the sense and identity of the place.

CONCLUSIONS

The research confirms that landscape identity has tripartite nature formed from historical, visual and cognitive aspects. Thus it is important to link all of them into one research method.

The historical assessment combined with cognitive (associative) assessment helps to understand the role of already disappeared historical landscape elements in creating the landscape identity of the place. The research results showed that still existing historical elements were more significant in the context of recognizability and visual identity of the place than the elements which had already disappeared. But those are no less important in creating a sensation and background information of the place. The visual assessment makes it possible to acknowledge the role of the existing historical elements in forming of the landscape, as well as being an important part for elaborating the questionnaire form for the public and expert surveys. The cognitive assessment with questionnaires is the last part of the research and they are substantial in defining of the landscape identity. The research showed that the cognitive aspect was of particular importance. It is proved by the perception of water elements in Ainaži-Salacgrīva case. The respondents' answers showed a significance of the sea, while the water's surface is not visible from the town.

Thus the conclusion of the research is that there is an importance to provide the landscape identity as a complex and continuing process where the existing landscape elements interact with those which have already disappeared and are recognized in people's memories and traditions, still creating a sensation of the place. Those could be re-established in a contemporary way as symbols, art works or as traditions but they should still remain as historical landmarks of the place.

There is seasonal limitation in using this method of identity assessment, because some elements are not visible or are visually different (nature elements) in the winter time. Thus it is necessary to repeat the visual assessment during different seasons.

Sometimes legislative rules and regulations influence the landscape identity more than it is considered in the method of the landscape identity assessment. This aspect should be taken into consideration for further research. For better results interviews with experts who are working in the field of sea costal landscape research should be conducted.

The method of the landscape identity assessment can be used to monitor the changes of the landscape identity. The results obtained can be used for working out guidelines for landscape design and development.

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