

WHAT HINDERS AND WHAT FACILITATES GOOD LIVING IN THE OIL SHALE MINING REGION?

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Abstract. *The aim of this paper is to examine the role of the public perception of oil shale mining and industrial heritage in regional revival. Oil shale mining and chemical operations have left an imprint on both the people and the landscape of Ida-Viru County, NE Estonia. Along with increasing or decreasing production volumes of oil shale mining, heritage has been overlooked, left to naturally deteriorate or to be destroyed or recultivated. Heritage-awareness revival projects for similar natural resource post-industrial situations have proved to be successful in culture, sports and recreational tourism. The current view on oil shale mining heritage is investigated through focus group interviews and a questionnaire. Unemployment, language barriers and social problems are considered to be the most important issues, and the responsibility for solving these problems is primarily deemed to be the role of the national government. At the same time, in general, people are willing to participate in processes and regard coordinated planning as crucial to holistic development. Post-industrial areas should be utilized to support the development.*

Keywords: *oil shale, mining heritage, industrial landscape, participatory planning, regional development.*

1. Introduction

The industrial mining of oil shale in NE Estonia has occurred for almost one hundred years. This has had an impact on the environment, landscape, society, economy and culture. Due to the sale of oil shale electricity to the other republics of the Soviet Union, the mining volume at the beginning of

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the 1980s was greater than 30 million tonnes per year, the highest volume ever. The production started to decrease after a new reactor was launched at Leningrad nuclear power plant in the town of Sosnovy Bor in Leningrad Oblast, Russia, in 1982, and export to the other Soviet republics also dwindled, for political reasons [1, 2]. Nevertheless, before the opening of the electricity market on January 1, 2013, over 90% of Estonia's electricity was produced from oil shale, making Estonia a rather unique country in the world. On a global scale, the nearly 450 km² of landscape adversely affected by mining is not worth mentioning, but of Estonia's territory it forms 1% [2, 3].

Ida-Viru County in NE Estonia has been described as a region of contrasts. The county is most known for its industrial waste hills, but is also famous for the Baltic Klint with its many waterfalls, and the Gulf of Finland with its sandy beach at Narva-Jõesuu. Other industrial features (mines, quarries, chemical industrial complexes, industrial buildings, settlements and architecture) also play a significant role in landscape perception, as do natural features, such as forests, lakes and swamps, and culturally historical places, as well as the characteristics of the multinational and -cultural population [4].

The oil shale mining heritage has been ignored and left to naturally deteriorate or to be destroyed for new technological innovations or recultivated, mostly disregarding its heritage value. Recultivation is primarily understood as the grading and afforestation of quarries, which began in the 1960s and was considered to be a very progressive approach at that time [5, 6]. Several studies have been conducted on the ecological and environmental aspects of mining and the chemical industry [7, 8] and the afforestation and natural vegetation of mined areas [9]. Some studies [10–12] have shown that from a biodiversity perspective it is best when areas are left for nature to take over. The potential usage of underground mined areas in Estonian oil shale deposits has also been investigated [13, 14]. The question today is how to proceed when there is a need to foster regional development and afforestation is far from proper managing.

The development of large industrial districts requires public-opinion polls to be conducted concerning the local identity and the valuation of heritage and the surrounding environment, both among local inhabitants and people from outside the region. Participatory or collaborative planning is not a new approach at the global scale [15–18], but in Estonia there are certain hangovers from the Soviet period when the opinion of the people was usually not asked (top-down planning policy instead of bottom-up action [19]). Now public opinion has occasionally been asked, but only to a limited extent, whereas considering today's democratic practices, the people should be involved in consultations and discussions about large-scale landscape changes. There has been a lot of debate over how to mine and, more recently, also over how to reclaim the exhausted lands. However, until now these issues have almost exclusively been the area of experts.

In 2011 and 2012, the Estonian University of Life Sciences conducted an in-depth study “Possibilities for the Valuation and Exploitation of Mining Heritage”, with the aim to determine how to value, preserve and more multi-purposefully use the oil shale mining heritage, how to enhance the understanding of possibilities of landscape values and tourism opportunities of Ida-Viru County as a whole, how to increase civil activity and improve cooperation between different parties in such a way as to promote the development of the county and to identify development possibilities. The idea behind the study was to give a second life to landscapes altered by mining and chemical operations, and with the remaining infrastructure, to generate income in the areas of culture, sports and recreational tourism in the declining economic situation of Ida-Viru County in NE Estonia.

2. Methodology and materials

Focus group interviews were conducted for two reasons: first, to determine the opinions of certain stakeholders, and second, to prepare a questionnaire for both the non-residents and the residents of Ida-Viru County. Different viewpoints emerged between individual focus groups, as well as between the focus groups and questionnaire respondents.

The interviews included six groups: 1) representatives of a mining enterprise (Eesti Energia Kaevandused AS, the biggest oil shale mining and industrial company in Estonia), 2) leaders of local governments, 3) representatives of the sports sphere, 4) representatives of the cultural sphere, 5) elderly people, and 6) basic and secondary school students. There were 32 participants in total (ages ranged from 15 to 79), among them 12 women and 20 men, 28 Estonians and four of other ethnic groups. All of the participants were local and with sufficient Estonian language skills. The interviews were conducted at the head office of the mining enterprise, the local government office, the sports union office, Kohtla-Järve Museum of Oil Shale, a day-care centre for the elderly, and a schoolhouse. The groups were created randomly, with participants invited by contact persons, except for the representatives of local governments, who received their personal invitations by e-mail. Interviews were recorded, and later transcribed and analysed for contents.

The interviews were conducted on the basis of eight core questions, each subsequent question being related to the previous one. In the course of interviewing, there were asked leading and/or supplementary questions to direct answering or get more information. The interviews revealed differences in the degree of importance of mining landscapes and heritage among the groups – an issue that evoked a lively and long discussion in one group was only briefly addressed by another.

The questionnaire was divided into three sections: 1) comprehension of mining heritage and tourism potential, 2) problems, and 3) possibilities for

the holistic development of the county. In this article, the last two sections are discussed. The sample was composed using the quota sampling method and the questioning was conducted using the random choice method via an online service provider over the Internet, by e-mail, by phone, and face-to-face. For the web-based approach, the selection included a diverse mix of people from all across Estonia, whereas e-mail and phone surveying methods were used for contacting local authorities as well as local sports, tourism, educational and cultural institutions and associations. Face-to-face surveys were conducted with local ordinary people. Respondents had the option to decline any questions. A total of 255 individuals were surveyed, however, with the omission of incomplete responses the sample was reduced to 247 respondents (Table).

The survey's 30 questions were mostly multiple-choice or open-ended questions, with the Likert scale [20] used for the question concerning the importance of development factors. Open-ended questions involving descriptive statistics were generalised and categorised for statistical analysis using Microsoft Excel. In the case of a Likert scale question, the principal component and factor analysis in the SAS 9.1 software (SAS Institute Inc., Cary, NC, USA) was used to uncover the main patterns and structures in the responses concerning the important factors in terms of the keywords and potential developments of Ida-Viru County.

Table. Characteristics of 247 questionnaire respondents

Parameter	%	Count
Residence		
Resident	50.6	125
Non-resident	49.4	122
Ethnic nationality		
Estonian	80.6	199
Russian	17.0	42
Other	2.4	6
Ethnic nationality of residents		
Estonian	65.6	82
Russian	29.6	37
Other	4.8	6
Age		
16–25	17.4	43
26–35	32.8	81
36–45	21.9	54
46–55	15.0	37
56–65	10.9	27
> 66	2.0	5
Gender		
Female	67.6	167
Male	31.2	77
Unknown	1.2	3

3. Results

3.1. Themes to be discussed

At first, the most significant thoughts of the focus groups' representative are presented, followed by listing four questions from the questionnaire: 1) the biggest problems and steps to resolve the problems, 2) who is expected to address the problems, 3) improvement of involvement of different stakeholders, and 4) the importance of eighteen pre-determined factors from the perspective of development of the county. In addition to the overall view, graphical illustrations are presented to differentiate the focus groups' representatives by residence (resident/non-resident), the locals by ethnic nationality (Estonian/other, "other" including all non-Estonians), and age. As differences in answers between men and women were mostly small, the division of respondents by gender is not shown.

Altogether, the focus group participants were accommodative, open and outspoken; people were also quite willing to answer the questionnaire. In the latter case, Estonians proved to have more to say as their open-ended answers were more complete and profound. This may partly be due to the fact that Russians are somewhat less participative at the societal level [21].

3.2. General viewpoints of focus groups' representatives

Among problems, emigration, low quality of social infrastructure of the county (services, daily entertainment opportunities, etc.), and integration were highlighted. Unemployment as well as the lack of qualified specialists were mentioned several times. According to the elderly, criminality and vandalism were serious issues. Also, garbage dumping into old quarries has been a problem for several decades, although recently this tendency has somewhat decreased.

Besides employment, socialisation is important to the younger generation. Representatives of the cultural sphere expressed regret at having but little reason, if any, to leave home in the evenings because there was simply nowhere to go. Although the trend of leaving smaller settlements by young people is a worldwide phenomenon, emigration was seen a great problem in the county. This is also due to the fact that more and more people wish to get a higher education. However, at the local level, favouring the return of young people to their home county should be of prime importance.

One of the biggest problems is that the county is not attractive enough as a place to live in, and even utilizing its industrial heritage does not make it desirable for living because a place also has to offer good quality services, entertainment, businesses, educational opportunities, and infrastructure. From public administration perspective, an industrial heritage location where new functions have effectively been implemented works well, but to increase its attractiveness as a place of residence, improvements must be made in terms of the above social aspects.

In view of integration, representatives of the mining company considered the overall tolerance in the region to be higher than in Estonia on average due to the multinational and -cultural community, whereas “outsiders” are often biased by the media against the county, especially when it comes to security and environmental conditions. However, those who have never been to the area before and hold a very low opinion of it are fascinated at its charms, once visited. Additionally, some differentiation is made between Estonians and Russians, but rather outside the county than within it. As one of the cultural sphere group’s representatives said: “It was a very serious problem earlier because at that time, differentiation was often knowingly favoured. But in essence it is mostly a problem at the teenager level. However, the topic is being continuously kept hot by those unwilling to improve communication at the community level, even by some politicians. But if differentiation is started to make according to ethnic nationality, many goals would not be achieved. The reality yet today is that many non-Estonians do not know much about the country they live in, about its Song and Dance Festivals [22], famous sportsmen, writers and singers, and other values. Therefore, instead of offering numerous language courses, the county’s people should be taken on a sightseeing tour of Estonia to get acquainted with its places of interest.”

The questions of who should solve and what steps should be taken to resolve the problems were not touched upon at focus group discussions. However, representatives of both the cultural sphere and the mining enterprise referred to the example of France where the national government obligated every region to organise the evaluation, conservation and use of its industrial heritage and landscapes and to promote tourism and enterprise in those areas as these activities are funded from public resources and the State eventually benefits from it. In Estonia, reclamation of an industrial area is required by national boards, whose power to influence the whole process is yet limited as they are only observing legislation that does not consider a holistic approach.

When it comes to public involvement, the attitude of people today may stem from the times when the mine was still working and on a society level, there were officials or activists who dealt with all problems, social included. This was characteristic of the Soviet period as a whole, there was neither cooperation between nor involvement of people in public matters. And yet today, the few and overtasked active people mostly work alone and there is usually none other to count on.

In general, all the groups were convinced that it is the continuity of industry that guarantees development. According to the elderly, that does not even matter if groundwater disappears, it is most important that people have job and there is bread on the table. Although having no particular standpoint about the continuation of industrial activities in the region, students believed the creation of various attractive facilities with potentially new and innovative uses in post-mining areas to favour development.

Other factors can be subdivided into oil shale mining related and general ones. Considering the former, the national government should support municipalities where mining has ended, because they no longer receive the resource tax but still suffer from the negative consequences of mining, e.g., mine collapses, changes in infrastructures, etc. The oil shale resource tax should be returned to Ida-Viru County in full, instead of 25%, as the county's number of cities (seven) and municipalities (22) are the highest among the other fourteen counties of Estonia, and its administration requires more financial resources to effectively function. The negative impacts of mining should be taken as a challenge and weighing all the aspects, turned to advantage. For this purpose, post-industrial areas should be reclaimed and various attractive facilities with potentially new and innovative uses in the mined areas created although, according to basic and secondary school students, availability of finances could pose a problem. Tourism, including industrial tourism, should be promoted and a network of oil shale mining heritage sites and objects formed to make the issue easier to approach. Among the general factors the following was highlighted:

- carrying out administrative reform;
- promoting the region among inhabitants of Russia and facilitating tourism from Russia, to boost regional development;
- shaping a holistic vision of regional development, involving all stakeholders in the process;
- renovating buildings, including historical, and selling real estate;
- taking full advantage of the uniqueness of landscapes and the plurality of cultures and nationalities.

The administrative reform was mostly considered highly necessary because there are municipalities with abundant financial resources (those with continuing mining activities), and others with insufficient funds (those with active mining in the past or having no oil shale resource). In the course of the reform there would take place a merger of some municipalities, which makes public administration more efficient. It would also be of help for some city councils still using Russian as the working language in implementing Estonian-language administration.

3.3. Problems perceived

In the case of the open-ended question, “What in your opinion are the three biggest problems that need to be resolved?”, unemployment was mentioned as the biggest one, including the lack of workplaces compatible with worker competency (46.2% of 247 respondents) (Fig. 1a). (Unemployment is the highest or one of the highest in Ida-Viru County among Estonian counties. According to Statistics Estonia, the respective figure was 18.6% in 2004, 8.9% in 2007, 25.6% in 2010, and 15% in 2013. At the same time, the country's average was 10.1, 4.6, 16.7 and 8.6%, respectively.) The second biggest problem was language barriers, which also includes the lack of integration of Russian-speakers into the society. (Russians and other ethnic

groups form over 80% of Ida-Viru County's population.) Social (criminality, vandalism, alcoholism, etc.) and environmental problems were ranked third and fourth, in terms of importance. Due to stricter environmental requirements established for oil shale mining and industry in recent years, pollution has decreased, which may be the reason why people no longer perceive environmental issues as primary. When it comes to the multi-response question, "Sort by importance environmental problems that affect you daily most or that have been dealt with by the media most", the respondents mentioned first the spoiled landscape (collapsed mines, destroyed buildings and houses, etc.), followed almost equally by such issues as unpleasant surroundings, problems with drinking water (poor quality and shortage) and poor quality of air (dust, odour, air pollution). The irreversible destruction of natural and cultural landscapes due to mining was of less concern and noise was only a minor problem. Among other problems waste deposited in forests, dried-up springs, and rivers polluted due to industrial activities were mentioned.

Maintenance problems include everything concerning the surroundings (poorly maintained settlements, poor condition of greenery and infrastructure), and social infrastructure includes daily services and possibilities for spending leisure time for both the locals and tourists (options for getting education, availability of kindergarten places, existence of hobby and sports clubs, availability of daily entertainment and services, such as cafés, pubs, restaurants, places of accommodation, cultural and sports events). Problems indicated by less than 10% of the respondents were: emigration, poor availability of information, low standard of living, bad reputation of the county, low quality of services, unused and deteriorating industrial heritage, isolation from the rest of Estonia both logistically and cognitively (ethnic and cultural differences), low level of enterprise, and poor opportunities to get education or undergo re-training. Other problems included general backwardness, lack of cooperation between big and small tourism enterprises, and the fact that many local leaders live outside the county and are not interested in what is happening on the spot daily.

Local inhabitants found the lack of interest of the State in dealing with problems of low standard of living, unemployment, unattractiveness of social infrastructure and low quality of services to be a remarkably bigger problem than non-locals did (Fig. 1b). This difference may be explained by the experience of locals encountering those issues frequently on a daily basis. For tourists, the greatest problems were the lack of language skills and existence of ethnic differences, as indicated by over half of the respondents, whereas only slightly more than 20% of local respondents regarded these issues as a problem. This may be due to that local people have knowledge of both Estonian and Russian, while tourists, domestic included, mostly do not know Russian. Also, social problems, finding new uses for industrial heritage and poor availability of information about heritage sites, events and services were perceived as bigger issues by nonlocals than by locals.

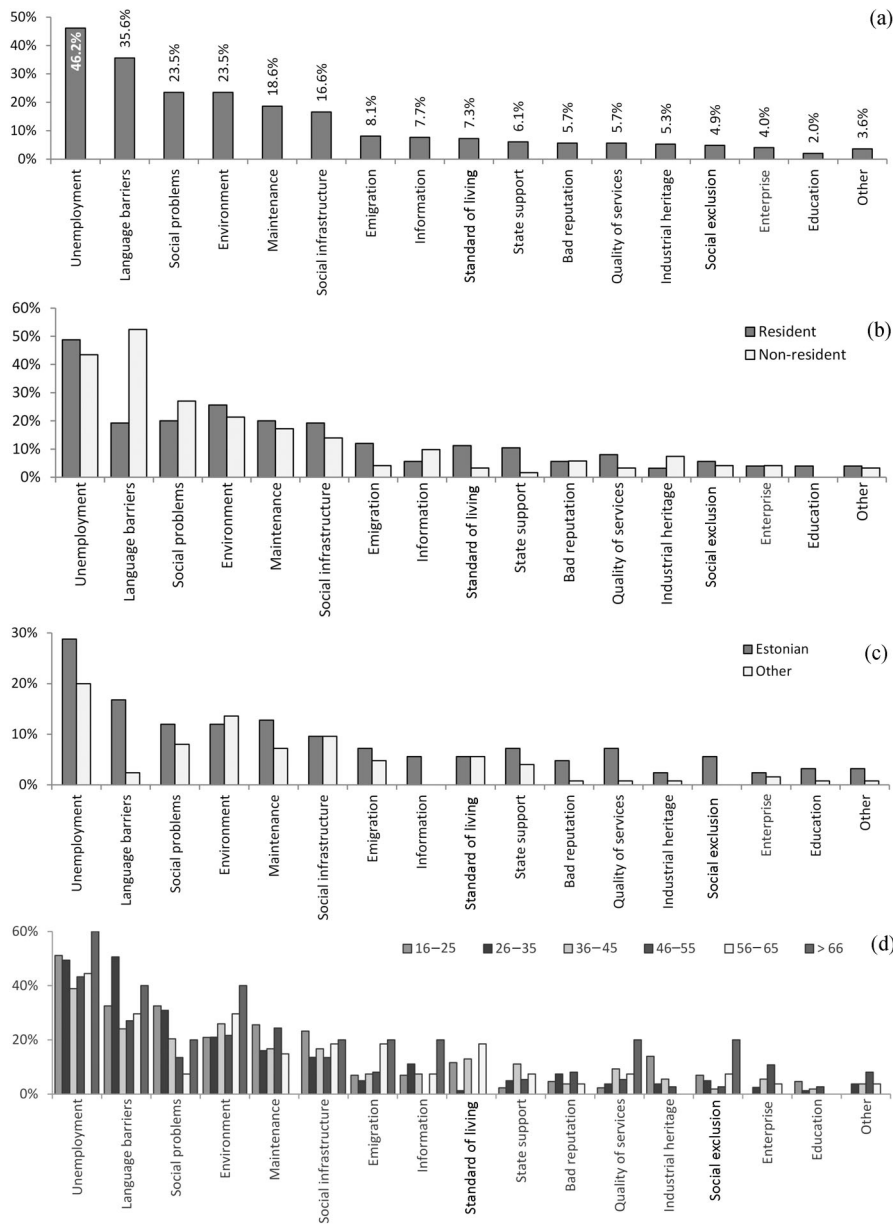


Fig. 1. Problems perceived: (a) overall view, (b) by residence, (c) by ethnic nationality of locals, (d) by age.

According to residents' ethnic nationality (Fig. 1c), Estonians, unlike non-Estonians, considered language problems and non-integration to be far greater problems and they were also more worried about unemployment, the low quality of services and poor maintenance of settlements and landscapes.

Environmental problems troubled Russians and other ethnic groups only slightly more than Estonians, whereas poor availability of information and isolation from the rest of Estonia were no problems, in their opinion.

With regard to age, respondents over 66 considered unemployment a bigger problem than any other age group did. Language barriers, environmental problems, lack of information, low quality of services and social exclusion were also marked as significant by this age group (Fig. 1d). However, the poor maintenance of settlements and landscapes, low standard of living and lack of the interest of the national government, as well as some other issues were no big problems to this group's mind. This may be because the elderly people have already lost hope and they are accustomed to cope with the little their low pension can afford.

The respondents aged between 16 and 25 years were more concerned about finding new uses for industrial heritage, the poor quality of social infrastructure, poor maintenance of houses and landscapes, social problems and slim possibilities for getting education than any other age group. Also, in the opinion of this group, unemployment and low standard of living were issues to be more addressed. In the case of the age group 26–35, there is nothing significant to report except that this group deemed language barriers to be a greater problem than any other age group, and unemployment was an issue the group was highly aware of. The low standard of living was a problem of higher concern to those aged 56–65 than to any other age group. This may be explained by that these people have already retired or are nearing the retirement age and their possibilities for increasing income and improving life are quite slim. Their attitude towards the issue of emigration was similar to that of the over 66 age group.

Men perceived such issues as the need for a stronger participation of the national government, environmental problems, the need to increase the attractiveness of the region as a place of residence and a point of destination for tourists, as well as unemployment more clearly than women. At the same time, for women language barriers and the non-integration of other ethnic groups, low standard of living, emigration, social problems and isolation from the rest of Estonia were bigger problems than for men. This could be expected as women are usually thought to be more anxious about social issues than men.

Answers to the question, "What steps you consider to be the most important to resolve the problem?" were quite similar to those given to the question about problems – the steps were not specified, but mostly the wording of problems was repeated. Reduction of unemployment was seen as the most important step. Great importance was placed on the establishment of financial support to promote entrepreneurship and (industrial heritage) tourism, the reduction of language barriers and non-integration, the improvement of the State involvement, and the need for devising an overall vision of the region to be actually fulfilled. The diversification of educational opportunities and finding solutions to environmental problems were

also viewed as important. Surprisingly, the necessity for involving the public was ranked only after the aforementioned steps, followed by the need for more information about mining heritage sites, the improvement of the county’s reputation in Estonia as a whole and soothing of the somewhat negative attitude of locals towards their home county. These steps were in turn followed by the need to further develop the social infrastructure and solve social problems, as well as support the continuation of industrial activities, develop tourism and widen cultural possibilities.

3.4. Who should solve the problems?

In the case of the multiple-choice question, “Who is supposed to deal with resolving the problems?” it was possible to choose several of the pre-defined answers and/or suggest their own. As shown in Figure 2a, 78.1% of the respondents believed that the national government should be the first to address the problems. The prime responsibility of the local government was indicated by 67.6% of the respondents, and the roles of the county government and community were perceived as almost equal. Under “Other”, enterprises, including mining and chemical enterprises, educational

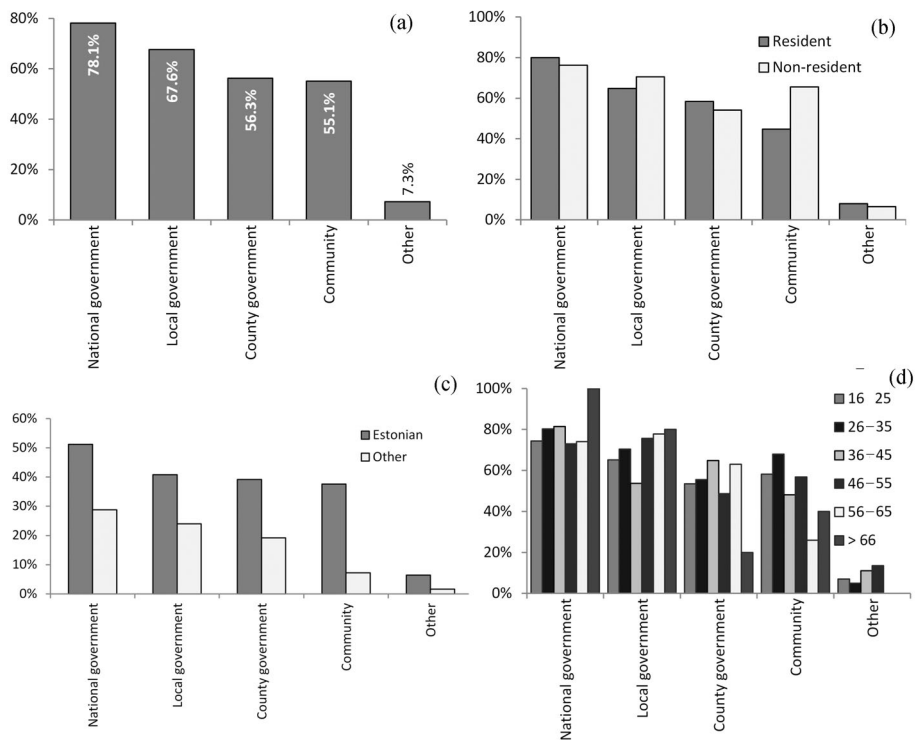


Fig. 2. Who should solve the problems: (a) overall view, (b) by residence, (c) by ethnic nationality of locals, (d) by age.

institutions, the Environmental Board, non-governmental organisations (NGOs), employees, investors, anyone (“every citizen is responsible for the growth of the region”), various parties were mentioned.

The reason why non-locals considered the community’s role much more important (Fig. 2b) may be that they as outsiders are not supposed to participate in local life. A comparison shows that the community’s role was considered to be far more important by Estonians than by other ethnic groups (Fig. 2c), which may again point to the fact that Estonians are more ready to contribute. In men’s opinion, unlike women’s, the responsibility of the national government was higher than that of the local government.

3.5. Participatory planning

To the open-ended question, “How could involvement of different stakeholders (sports sphere, educational employees, local government agencies, etc.) in the development of mining areas be improved?” a great number of respondents (41.3%) either answered by “I do not know”, gave an insignificant answer, or left unanswered. The reason may be that many people did not even know what was meant by “involvement”. The answers given by the rest were as follows:

1. finding out viewpoints, opinions, expectations and needs of local communities and interest groups by means of questionnaires, at round table discussions, open seminars, workshops and brainstorming, web forums, etc. (23.9% of the 247 respondents);
2. improving communication, for example, through social media and information days (14.6%);
3. finding better uses for mining heritage and promoting more widely the existing possibilities (8.1%);
4. strengthening the support systems targeted at the development of mining areas and business activities (6.9%);
5. involving people in the preparation and implementation of projects (e.g., design competitions) and fulfilment of communal tasks related to industrial heritage (5.7%);
6. determining the benefits for every stakeholder, preparing a carefully considered action plan (addressing problems of industrial heritage, unemployment, etc.);
7. organising cultural, sports, etc., events to attract people from all over Estonia and from abroad;
8. increasing the involvement of the national government.

Under “Other”, respondents mentioned that the experience of other countries in reviving industrial areas and sites should be investigated, also, subjects of oil shale mining and its history should be included in secondary school programmes. Environmental problems need to be solved, and to increase awareness, mining heritage related games and competitions should be organised.

Non-residents considered dissemination of information a far more efficient way to increase involvement than residents (19.7% vs. 9.6%). Also, determining the benefits of the development of industrial areas for every stakeholder was found to be much more important to non-residents than to residents (8.2% vs. 1.6%), followed by the usefulness of devising strategic development plans for the region. Residents believed financial support to be a more effective measure to develop the region, unlike non-residents (9.6% vs. 4.1%). According to Estonians as residents, it was more important to find out the opinion of stakeholders and the public (32.9%), contrary to non-Estonians (9.0%), whereas the latter found financial support to be more effective (16.3% vs. 6.1%). The need to learn the opinions of all those involved was pointed out most by respondents aged from 36 to 45 years, and least by those aged between 56 to 65 years, however, the attitude of both the age groups towards financial support was similarly positive. Respondents in the over 66 age group placed greater importance on finding new uses for industrial heritage and organising more events than any other age group did. The 26–35 age group stressed the importance of development plans, and those aged 56 to 65 years, the initiative of the State. The only remarkable difference between men and women was that the latter emphasized more the significance of finding out public opinion (18.2% vs. 26.9%), while the preparing of a development plan was rated only slightly differently (men's 6.5% vs. women's 3%).

3.6. Factors supportive of development

To define the importance of different determinants from the perspective of regional development, the following 5-point Likert scale was used: 1) insignificant, 2) less significant, 3) neutral, 4) significant, and 5) crucial. The following determinants were used:

1. employment – creating new jobs (cutting down unemployment);
2. social problems – finding possibilities for mitigating social problems (crime, heavy drinking, drug addiction);
3. renovation – improving the appearance of towns and settlements, including the renovation of buildings and maintenance of public spaces;
4. tourism potential – making better use of tourism potential;
5. new function – finding new functions for mined areas;
6. awareness – raising the awareness about Ida-Viru County;
7. cooperation – improving cooperation between the national government, local governments, authorities, mining enterprises, developers and tourism institutions, considering the valuation and use of mining heritage;
8. solidarity – strengthening the solidarity between people through joint action;
9. territories – utilising old mining areas;
10. information – giving more information about the possibilities of using mining heritage to the public;

11. entertainment – opening more daily recreational and entertainment facilities;
12. EU financial support – providing more EU financial support targeted at the valuation of mining heritage and usage of mining areas;
13. involvement – involving the public more strongly in decision-making processes on the future uses of mining areas;
14. regional policy – developing and implementing regional policy;
15. mining heritage – evaluating and conserving mining heritage;
16. constructions – utilising former mining constructions;
17. administrative reform – implementing the reform and affiliating local governments;
18. Russian border – opening the border with Russia for visa-free travel (resulting in better access for tourists).

Component analysis of important factors in terms of potential developments uncovered only one distinguishable component (accounted for 23.6% of the total variability). This component is positively related to all of the factors (the only factor with a slightly smaller but still positive correlation was “opening the border with Russia”) and reflects the tendency that positively disposed respondents gave higher points to all developmental factors, and vice versa. There was no clear difference between the groups of respondents, except that men, ethnic groups other than Estonians, and older people were slightly less optimistic. The application of the varimax rotation with factor analysis revealed that six more specific factors accounted for more than 6% and in summary 61.7% of the total variability (Fig. 3).

The first factor is primarily related to the evaluation and conservation of mining heritage, information about the possibilities of using mining heritage, and EU financial support targeted at the valuation of mining heritage and the usage of mining areas. There were no big differences between the groups of respondents; only women and older people had slightly higher scores for this factor. The second factor is related to raising the awareness about the county, making better use of its tourism potential and opening more daily recreational and entertainment facilities as factors that are important from the perspective of development, which was a predominant factor among young people and was almost not mentioned by non-Estonian respondents. The third factor reflects the role of development and implementation of administrative reform (including the affiliation of some local governments) and regional policy, as well as the role of opening the border with Russia to promote tourism and was mentioned more frequently by non-Estonians. The fourth factor is related to reducing unemployment and finding solutions to social problems and was more important for non-Estonians and for respondents over 36 and under 66 years. The fifth factor is related to a stronger involvement of the public in decision-making processes on the future uses of mining areas, strengthening the solidarity among people through joint action, and improvement of cooperation in the valuation and use of mining heritage as important factors for regional development,

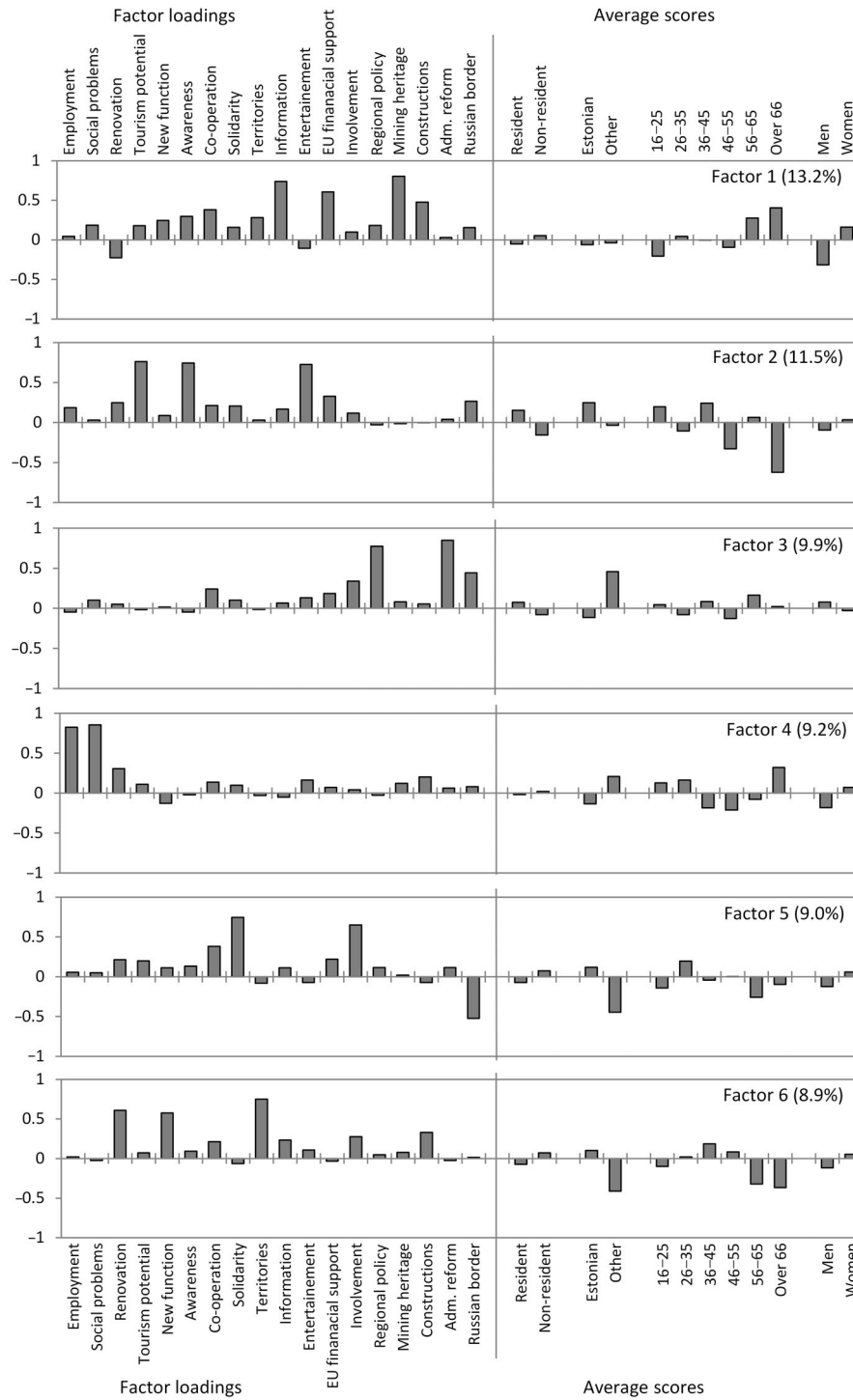


Fig. 3. Factor analysis of development factors (abbreviation used: Adm. – Administrative).

whereas the role of opening the border with Russia was regarded as relatively insignificant in this context. There were no big differences among the groups of respondents; rather, this factor reflects the opinion of a certain group of people of different gender, nationality and age. Similarly to the first factor, except instead of the valuation and conservation of mining heritage and the use of EU financial support for that purpose, the sixth factor is related to the utilisation of old mining areas and the valuation and conservation of mining heritage combined with utilising former mining constructions and improving the appearance of towns and settlements, including the renovation of buildings and the maintenance of public spaces. Thus, people tend to see a general picture rather than thinking about the actual sources of financing. Such a pattern of opinions prevailed among older people as well as non-Estonians.

4. Conclusions

The decrease in oil shale mining volumes has caused economic and social problems, high levels of unemployment and emigration, aging of the (immigrant worker) population, low standard of living, crime and vandalism, and the poor condition of settlements, landscapes and industrial heritage. These types of problems are familiar to all of the areas where natural resources have been mined to exhaustion, have been closed for reasons of low cost-effectiveness or have been considerably downsized, as is the case in Estonia.

The initiative should be taken by the national government to coordinate the holistic development of the region, as results of this research show. It can be assumed that due to a certain mental legacy from the Soviet period some people still expect that everything is arranged and performed by the national government, but it is unlikely that this is the main reason why people refer primarily to the responsibility of the national government. While there are several good examples from abroad (e.g., the Nord-Pas de Calais region in northern France [23], industrial districts in Germany [24, 25]), the initiative and support in this area of Estonia have been almost next to nothing. The oil shale mining and industrial area is too big and the problems are too complicated to be dealt with solely by NGOs. Neoliberal capitalism should not be expected to operate successfully in itself.

The first problem to be solved is unemployment and, as many respondents suggested, effective measures could include fostering business and industrial activities and tourism and diversifying educational opportunities, including re-qualification. To reduce unemployment, national programmes to develop local businesses could be initiated, e.g., financial support for start-ups, or tax incentives that would also account for the risks of enterprisers taking advantage of the programmes. In addition, establishing more the so-called idea laboratories could prove efficient as has been done in other

countries, e.g., in Völklingen Ironworks in Germany [26], where old industrial buildings have been adapted for that purpose because their unconventional interior is considered to enhance creativity and innovativeness. Although a variety of programmes exist, such as the foundation Enterprise Estonia [27] and the Garage48 Foundation launched in Estonia [28], these are neither clear enough nor has information about these possibilities reached its target in NE Estonia.

In regard to the citizens' initiative, Ida-Viru County is even more underdeveloped than the rest of Estonia. There are some differences between the focus group interviews and the questionnaire answers in willingness to participate. It may be due to that people were eager to give "correct" answers when completing a questionnaire, but in reality things are not so positive. An excellent example of the initiative of civil society is the "Let's Do It!" project aimed at cleaning up a country from illegally dumped waste [29]. The campaign was launched in Estonia in 2008 and by 2013 had become global (112 countries had joined, as of 10.10.2014). The question is how to overcome the problem that people are not enterprising and charismatic leaders are too few [4]. One of the reasons behind the low level of enterprise among the people of Ida-Viru County may be fear of failure, as the overall economic conditions in the county cannot grant success. One of the solutions might be to provide business and management education on a local level, in conjunction with the previously mentioned idea laboratories.

Due to the Soviet period, Estonia does not have much experience in using participatory planning, however, people do recognise the need for it. The idea has been commonly known for a long time, but in Estonia it has never been implemented on a regional level, all the more when developing an industrial region. Public involvement has primarily taken place on the level of thematic or other plans of similar kind (e.g., a general plan of a county). Such plans are usually placed on public discussion for the period of two weeks, during which people can get acquainted with them and provide their comments. However, the whole process is yet quite passive and the people's comments are mostly not taken into account. In theory it is that the public should be consulted already at the stage of drafting a plan, policy or development plan, because later, after formulizing the materials, nobody is willing to amend the final documents. Every such process of planning should also strictly follow the time schedule purposely drawn up. In reality, the problem is that the local governments responsible for the implementation of plans are also performing other duties and quite often tasks are completed in a hurry. At the same time, active or enterprising people in Estonia are too few to form a foundation or a non-profit organisation for every planning activity.

As county governments have no sufficient authority, administrative reform is expected not only to draw new borders within the county but also to distribute functions and finances more efficiently (compared to the current arrangement in case of which resources reach primarily the biggest towns).

The opening of the border with Russia was suggested by several focus groups, but respondents to the questionnaire remained comparably modest about it. As focus groups representatives are more engaged with development issues, including promotion of tourism, respondents are mostly ordinary people who see it from the perspective of foreign policy and security. And, as for integration, although there exist differences in opinions and attitude towards some issues among the people of Ida-Viru County, there is also a lot of effective cooperation, as in a multinational and multi-cultural society it is not possible to ignore some ethnic groups. Altogether, the lack of integration is bigger in case of people outside the county and the locals who are not disposed to development, involvement, and cooperation.

From the questionnaire results it is evident that non-Estonians are not as interested and participatory as Estonians, although language barriers and non-integration are bigger problems for non-residents than for residents because local people, especially the elderly and Estonians, speak mostly both languages. This shows that the low level of integration of Russians does not stem from communication problems, but rather from a general lack of their interest in social issues, as well as from the enclosure in a specific cultural space and, to some extent, Russian-mindedness. Lastly, one should not forget that many Russian-speaking residents have relatives in Russia and they are not interested in the acquisition of Estonian citizenship because this would mean losing the possibility to travel visa-free to Russia [21]. To reinforce integration, introducing and promoting Estonia among non-Estonians even more should be favoured.

It is worth mentioning that environmental problems are no longer as acute as they were 10 or 20 or 30 years ago, and today, social and economic problems are more topical. That could partly be because environmental issues begin to worry people only when their primary needs are satisfied (and they often are not), and partly due to stricter environmental requirements for industrial activities that have resulted in the reduction of pollution. Additionally, many townspeople do not encounter environmental problems daily.

Overall, the common standpoint is that industrial activities must continue in Ida-Viru County, otherwise there would be even more unemployment (and consequent emigration) and even less finances for local municipalities to maintain the infrastructure and improve the quality of public services. A positive change that has occurred since the beginning of the survey is that the industrial production of oil shale has been on the rise and mining volumes have been increasing [11], which is largely due to the ever-growing importance of oil shale-based oil production on a global level. As the representatives of mining enterprises said, "Until oil shale mining takes place, scientists can come and do their research on related themes if Ida-Viru County is still alive."

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REFERENCES

1. Kattai, V., Saadre, T., Savitski, L., Kaljo, D. *Estonian Oil Shale: Geology, Resource, Mining*. Akadeemia Trükk, Tallinn, 2000 (in Estonian).
2. Reinsalu, E. Oil shale and its use. In: *Mining and Rehabilitation in Estonia* (Kaar, E., Kiviste, K., eds.). Ecoprint, Tartu, 2010, 6–13 (in Estonian, summary in English).
3. Reinsalu, E. Environmental impact of underground oil shale mining. In: *Mining and Rehabilitation in Estonia* (Kaar, E., Kiviste, K., eds.). Ecoprint, Tartu, 2010, 267–270 (in Estonian, summary in English).
4. Metsaots, K., Printsman, A., Sepp, K. Public opinions on oil shale mining heritage and its tourism potential. *Scand. J. Hosp. Tour.*, DOI: 10.1080/15022250.2015.1024817.
5. Kaar, E., Lainoja, L., Luik, H., Raid, L., Vaus, M. *Recultivation of Oil Shale Quarries*. Valgus, Tallinn, 1971 (in Estonian).
6. Sepp, K., Metsaots, K., Roose, A. Appreciating and redeveloping landscapes changed in the course of mining operations. In: *Mining and Rehabilitation in Estonia* (Kaar, E., Kiviste, K., eds.). Ecoprint, Tartu, 2010, 105–128 (in Estonian, summary in English).
7. Luud, A., Pensa, M. Alternatives of reforesting oil shale opencasts in Estonia. *Oil Shale*, 2004, **21**(1), 3–11.
8. Luud, A., Liblik, V., Sepp, M. Landscape evaluation in industrial areas. *Oil Shale*, 2003, **20**(1), 25–32.
9. Pensa, M., Sellin, A., Luud, A., Valgma, I. An analysis of vegetation restoration on opencast oil shale mines in Estonia. *Restor. Ecol.*, 2004, **12**(2), 200–206.
10. Kahru, A., Põllumaa, L. Environmental impact of open depositions of solid waste from Estonian oil shale industry: ecotoxicological aspects. In: *Abstract book: International Oil Shale Symposium*, June 8–11, 2009, Tallinn, Estonia, 40–41.
11. Šommet, J. Sustainability assessment of Estonian oil shale mining. *Oil Shale*, 2013, **30**(2S), 363–370.
12. Pensa, M., Karu, H., Luud, A., Rull, E., Vaht, R. The effect of planted tree species on the development of herbaceous vegetation in a reclaimed opencast. *Can. J. Forest Res.*, 2008, **38**(10), 2674–2686.
13. Karu, V., Valgma, I., Kolats, M. Mine water as a potential source of energy from underground mined areas in Estonian oil shale deposit. *Oil Shale*, 2013, **30**(2S), 336–362.

14. Karu, V. *Potential Usage of Underground Mined Areas in Estonian Oil Shale Deposit*. PhD Thesis. Tallinn University of Technology, 2012.
15. Davoudi, S., Strange, I. Space and place in twentieth-century planning: an analytical framework and an historical review. In: *Conceptions of Space and Place in Strategic Spatial Planning* (Davoudi, S., Strange, I., eds.). Routledge, London, 2009, 7–42.
16. Ferreira, A., Sykes, O. Batey, P. Planning theory or planning theories? The Hydra Model and its implications for planning education. *J. Educ. Built Env.*, 2009, **4**(2), 29–54.
17. Healey, P. Collaborative planning in perspective. *Plann. Theor.*, 2003, **2**(2), 101–123.
18. Lane, M. B. Public participation in planning: an intellectual history. *Aust. Geogr.*, 2005, **36**(3), 283–299.
19. Gentile, M., Sjöberg, Ö. Intra-urban landscapes of priority: the Soviet legacy. *Europe-Asia Stud.*, 2006, **58**(5), 701–729.
20. Jupp, V. *The SAGE Dictionary of Social Research Methods*. SAGE Publication Ltd., 2006.
21. Lauristin, M., Kaal, E., Kirss, L., Kriger, T., Masso, A., Nurmela, K., Sepel, K., Tammaru, T., Uus, M., Vihalemm, P., Vihalemm, T. *Estonian Integration Monitoring 2011*. Estonian Ministry of Culture, 2011.
22. UNESCO World Heritage Centre. *Baltic song and dance celebrations*. 2014. <http://www.unesco.org/culture/ich/RL/00087> (accessed 28 September 2014).
23. UNESCO World Heritage Centre. *Nord-Pas de Calais Mining Basin*. 2014. <http://whc.unesco.org/en/list/1360> (accessed 25 September 2014).
24. Bergeron, L. The heritage of industrial society. In: *Industrial Heritage Re-tooled: The TICCIH guide to Industrial Heritage Conservation* (Duet, J., ed.). Latitude Press, China, 2012, 31–37.
25. SEE. *IBA-Halbzeitdokumentation 2000-2010*. (Kuhn, R., ed.). INPETHO® Medien-produktion GmbH, 2005.
26. *Ideenlaboratorium Völklinger Hütte*. 2014. <http://idee.voelklinger-huette.org/> (accessed 25 September 2014).
27. EAS. *Enterprise Estonia*. 2014. <http://www.eas.ee/en/> (accessed 15 September 2014).
28. *Garage48*. 2014. <http://garage48.org/en> (accessed 25 September 2014).
29. *Let's do it! World Cleanup: Let's clean the world together!* 2014. <http://www.letsdoitworld.org/> (accessed 25 September 2014).

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