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SOCIO-ECONOMIC ASSESSMENT IN ENVIRONMENTAL IMPACT ASSESSMENT: EXPERIENCE AND CHALLENGES IN LITHUANIA

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Abstract. In 2011, the Environmental Impact Assessment (EIA) Law amendment was approved and a socio-economic assessment formally became an integrated part of EIA in Lithuania. Therefore, this study examines a socio-economic assessment in the environmental impact statements (EIS) and the perceptions of the EIA experts towards a socio economic assessment. Although formally a socio-economic assessment has been validated only recently, 30% of specialists claimed having conducted a socio-economic assessment in detail prior to the amendments to the law. Thus, the EIS analysis has shown a rather poor consideration of these issues as mainly creation of work places was addressed. The survey has shown that preparation of the EIA documents after the formalisation of a socio-economic assessment would change mainly nominally. The EIA experts working in the private sector were more optimistic than those from state institutions. Reluctance of changes and personal attitudes have to be addressed, especially those particular to the experts of state institutions. In addition, methodological guidance, integrative approach and public involvement into the decision-making process could change the current situation and increase the effectiveness of the EIA process and the social impact assessment in general.

Keywords: socio-economic assessment, social impact assessment, environmental impact assessment, Lithuania.

Introduction

The Environmental Impact Assessment (EIA) has been in existence for more than 40 years already (Morgan 2012) and has been playing a particularly important role in the concept of sustainable development provisions. The EIA procedures help achieving the main objective of sustainable development, that is, harmonization of the environmental, economic and social interests of different social groups. EIA is the main tool for the integration of environmental aspects of projects and helping to implement them in the environmentally friendly manner. Since first provisions in the National Environmental Policy Act (1970), an environmental impact assessment is recognized a main tool for managing environment in a variety of international and national policy documents (Morgan 2012).

Although the socio-economic aspects are identified as one of the EIA objectives, the EIA reports are usually dominated by the environmental issues (Kruopiene *et al.* 2009; Değirmenci, Evcimen 2013). The EIA directive (2011/92/EU) is aiming to protect the environment and quality of life and at the same time to ensure that national legislation is aligned with respect to the environmental impacts of public and private projects. Despite little attention given in practice, a socio-economic assessment is recognized as important as other components considered in the process of environmental impact assessment. A social impact assessment together with the range of different impact assessments has evolved in line with EIA (Morrison-Saunders *et al.* 2014). A social impact assessment (SIA) or a socio-economic impact assessment[1] as such was developed in the 1970s and 1980s mainly in relation to the assessment of the impacts of major resource development projects, such as nuclear power stations in the US, hydro-electric schemes in Canada and the UK's North Sea oil and gas-related developments (Glasson 2009). At the

[1] Though a social impact assessment is considered to be interconnected with a socio-economic impact assessment, in this paper these two assessments are treated as similar ones although they have different methodologies and rely on different expertise (Lockie 2001). Attention in this paper is driven not to the terms but more to the content they cover regarding EIA.

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beginning, SIA was (and in some countries still is) an integral part of EIA (Esteves *et al.* 2012). Currently SIA is also used as an independent tool contributing to the development (separately or in conjunction with EIA (Franks, Vanclay 2013)). As indicated by C. J. Barrow (2002), EIA and SIA are completely different in many aspects but at the same time they are overlapping. Social and economic impacts are closely intertwined with the biophysical effects; therefore, it is almost impossible to completely separate the processes of impact assessment (Stanley *et al.* 2004). Environmental impacts may determine social impacts and those can trigger environmental ones (Burdge, Vanclay 1996).

Socio-economic impacts occur in most activities and their inclusion in a document facilitates a more balanced view of the range of impacts and provides a greater transparency of the process. Socio-economic impacts are relevant because the economic success, lifestyles, and values of people are important (Glasson 2009). The social impact assessments emphasize the human aspects of environment and seek to determine the impacts on people – who benefits and who loses. SIA helps to ensure that needs and opinions of different groups of people and communities, especially those of vulnerable and disadvantaged (Esteves *et al.* 2012), are taken into account and included into the environmental impact statement (EIS). Additionally, a socio-economic impact assessment is the process of providing social and economic impacts, allowing the decision makers an early understanding of the possible effects of planned activities on people. It could also be considered an efficient tool for the environmental conflict management (Barrow 2010).

In general, a sustainable development is the core of SIA, aiming for the "ecologically, socio-culturally and economically sustainable and equitable environment" (Vanclay 2003). However, this aim often lacks real considerations in practice (Suopajärvi 2013; Pope *et al.* 2013). Practice shows that only reports of major investment focus on the socio-economic issues in detail, and the EIA practitioners try to interpret this assignment as an opportunity to describe the favourable socio-economic impacts of planned investment, such as job level rise (COWI 2009). However, usually in such cases a social context is not taken into account (Rowan 2009).

Furthermore, a social impact assessment is a broader approach than the limited issues assessed in the EIA process (such as demographic changes, labour problems, financial protection, and the impact on a family life). Therefore, a limited approach to SIA limits the detection of social impacts compared to what is considered in related areas, such as the impact assessment on health, culture, heritage, and aesthetics (Vanclay 2003). A poor analysis of social and economic impacts within the EIA process may be stipulated by several reasons (Glasson 2009): (1) socio-economic impacts occur seldom; (2) their inclusion may understate the biophysical effects; (3) they are always negative; (4) they cannot be easily identified. There are also myths restricting the application of social assessment in the planning/decision making process (Burdge 2003): (1) social impacts cannot be measured, so they can be ignored; (2) social impacts are common, and everyone knows what they are; (3) social impacts occur rarely and therefore they should not be assessed; (4) social impacts are associated with the cost rather than the benefit, therefore, a social impact assessment muffles or suspends the project; (5) a social impact assessment is not important. Also, one of the main failures of SIA is a limited participation of local people in the process and lack of effort analysing possible advantages and disadvantages for them (Suopajärvi 2013).

Nevertheless, some authors (Morrison-Saunders, Fischer 2006) are sceptic about integrating socio and economic considerations into EIA, as, first, socio-economic issues could overcome environmental ones and, second, too aggregated assessment might oversee some important aspects and in this case might miss the main aims of EIA. In general, proliferation of various assessment types and practices might hamper integration of the results into one decision-making process and challenge promotion of sustainable development in general (Morrison-Saunders *et al.* 2014).

This paper aims to figure out the experiences of SIA in the EIA in Lithuania focusing on some reports and perceptions of the EIA experts. The paper is structured as follows. At first, we will discuss some methodology issues; and further, the results of our research based on SIA in relation to the EIA legislation in Lithuania, EIS analysis and survey data will be presented (section 3). Finally, conclusions will be drawn and some recommendations for the socio-economic impact assessment development in Lithuania will be suggested.

1. Methodology and data issues

Only several studies (Kruopiene *et al.* 2008, 2009) on EIA are present in Lithuania. Therefore, there is a need for research and discussion on improvement of the whole EIA process. This study aims to contribute to the debate on EIA effectiveness in Lithuania.

Research is both qualitative and quantitative, covering the EIA legislation analysis and focusing on SIA, prepared EIA reports and survey of the EIA experts.

In order to analyse the EIA reports and examine which environmental components are included in the environmental assessment study, 10 EIA reports (covering a period from 2006 till 2011) were randomly selected from Kaunas Regional Environmental Protection Department (REPD). During this period, Kaunas REPD has approved

36 EIA reports and issued 36 positive decisions for the planned economic activity. Though this part of the research has some limitations (e.g., small sample, not all activities are covered), it still might give some insights on prevailing trends. The analysis of environmental components covered by the EIA reports was conducted in two steps. At first, we examined whether the EIA report assessed the impacts of planned economic activity (PEA) on the components of the environment as foreseen in the EIA Law: public health, wildlife, soil, land surface and its entrails, air, water, climate, landscape and biodiversity, socio-economic environment, material values, and immovable cultural values. Later we looked in more detail at the socio-economic aspects and the elements that were considered in the EIA report: well-being of people, business and job opportunities, income and quality of life, land use, appropriate infrastructure, protection of cultural and heritage resources, suitable services.

In order to evaluate the opinion of EIA experts on EIA and socio-economic assessment in the EIA process, the survey was conducted. A prepared questionnaire consisted of closed and open questions and was placed on the website. A first part of questions was related to EIA in general and a second part focused on a socio-economic assessment, including knowledge about the EIA Law amendment, a possible influence of this change to the attitudes towards EIA and a socio-economic assessment, most important aspects of a socio-economic assessment, etc. A third block of questions was addressed to the socio-demographic variables, that is, age, gender, education, work experience, and type of institution. Some questions related to the EIA document preparation were addressed only to the EIA experts from consulting companies. In October 2011, links to the questionnaire were sent to 97 EIA experts, i.e. specialists from state institutions and randomly selected EIA documents preparers (consultants). Thirty six (36) of EIA experts answered the questionnaire, i.e. 37% of those who received it. Forty seven percent (47%) of respondents were the EIA practitioners from consulting firms and 53% of them were the EIA experts from competent state authorities. The interviewed specialists equally distributed by age: 50% of the specialists were under 40 years of age and 50% of them were over 40 years of age. Most of the respondents were female (69%). All the EIA experts had a university degree: as much as 39% of them had an environmental science background. Most of the experts had been working in the field of EIA from 5 to 10 years or 10 years or more, 40% and 37%, respectively.

Analysis is based mainly on descriptive statistics. The influence of various factors on certain attitudes and positions is assessed using a chi-square (χ^2) test. Significance level (α) of 0.05 is applied.

2. Results

2.1. A socio-economic assessment in Lithuanian EIA: legal basis

Compared to a rather long EIA and SIA practice in other countries, Lithuania, like other Central and Eastern European countries (for example, Poland (Woloszyn 2004)), has experienced an evolution of impact assessment in a rather short time.

The Lithuanian Law on Environmental Impact Assessment was adopted in 1996 and until today two revisions of the document have been made: one revision in 2000 and a second one in 2005. J. Kruopiene *et al.* (2009) presented a general EIA process in Lithuania, and since then there have not been any major changes in the process itself, except some changes in a public information provision, time for comments and revision of some EIA stages and competences and responsibility of governmental institutions depending on the level of projects.

The Law on Environmental Impact Assessment (2005) does not directly refer to the investigation of the impacts of a planned activity on a socio-economic environment. Article 4 says that one of the objectives of the EIA is to "identify, characterize and assess the potential direct and indirect impacts of planned economic activities on the public health, wildlife, soil, land surface and its entrails, air, water, climate, landscape and biodiversity, material assets and immovable cultural heritage and the interaction between these environmental components". However, Guide for the Environmental Impact Assessment (Ministry of Environment of the Republic of Lithuania 2009) says that the EIA process focuses not only on the impacts on the natural environment but also on the man-made environment, including human health and social, cultural and economic well-being. The Guide also lists the components of a socio-economic environment: (1) economic factors, such as characteristics of the labour market, labour supply and demand, etc.; (2) demography, such as population structure and population trends; (3) housing, such as housing demand and supply; (4) local services, such as services supply and demand, health care, education, etc.; (5) social and cultural factors, such as quality of life, social problems, potential conflicts with the public.

Provisions for Preparation of Programmes and Reports on the Environmental Impact Assessment (2005) also indicate that the following aspects should be examined in the EIA report regarding socio-economic environment:

– Information about the area (activity impact zone): population, permanent and visiting residents, their changes, migration trends, population characteristics, demographic indicators in the area (birth rate, mortality rate, etc.), investments, labour mar-

ket and unemployment (in the area), area development, the cost of land, houses and premises (residential areas, commercial and industrial areas), cost variation.
– Potential impacts for economic conditions, labour market, investment, prices of real estate and land, demographics, industries, transport, mining, construction of residential houses (low-rise, multi-storey), trade (wholesale and retail), living conditions, potential conflicts within society.

Despite that, J. Kruopiene *et al.* (2008) confirm that a socio-economic assessment is a problematic area in Lithuania, showing that a socio-economic assessment is the weakest one compared to the biophysical components of EIA. One of the reasons might be a lack of consistent legal basis and proper guidelines. Aiming to overcome this, on the 9th of June, 2011, amendment to the Law on EIA was adopted amending Paragraph 1 of Article 4 and including the assessment of impacts of a planned economic activity on the social and economic environment. As the result, one of the objectives of the EIA became identification, description and evaluation of potential direct and indirect effects of planned economic activities on the public health, wildlife, soil, land surface and its entrails, air, water, climate, landscape and biodiversity, socio-economic environment and material values, immovable cultural heritage and the interaction between these environmental components. Thus, after the amendment to the Law came into force, a socio-economic environment assessment became a component requiring its evaluation in EIA. Therefore, it is important to disclose how the impacts on a socio-economic environment were assessed in selected EIA reports prior to the amendment and possible changes following the amendment to the Law on Environmental Impact Assessment. Of course, only formal changes to the Law, without methodological and institutional support, are insufficient. A third section of this paper presents possible areas for improvement.

2.2. The EIA report analysis

Evaluation of such environmental components as public health, wildlife, soil, surface and underground, air, water, climate, landscape and biodiversity, socio-economic environment and material values, immovable cultural heritage is one of the objectives of the EIA. Analysis of the EIA reports of Kaunas REPD (2006–2011) revealed that none of the randomly selected 10 reports had evaluated effects on climate, material assets or flora and fauna. All EIA reports comprehensively analysed impacts of a planned activity on air and water.

Impact of a planned economic activity on a socio-economic environment has been examined in more detail only in two out of ten analysed EIA reports. Those two reports focus on the activities of logistics centre and grain processing. In the case of logistics centre, it was assessed that there would be no impact on demography and that the centre would have a positive impact on the economy, service sector and employment; activity would use services of the local surrounding businesses, that is, catering, vehicle maintenance, etc. However, the report lacks a more particular analysis on human well-being, quality of life and infrastructure. In the case of grain processing enterprise, effects on economic conditions, labour and real estate markets and influence on other economic sectors were analysed. The assessment also included analysis of the potential public dissatisfaction and potential conflict. Nevertheless, EIS lacks assessment on human well-being, quality of life, land use and services.

A socio-economic environment is not considered at all in three reports. These are reports on the heat insulation material factory, bypass construction and expansion and modernization of fertilizers' factory. The remaining reports describe only job creation as a socio-economic impact of a planned activity. Hence, analysis of socio-economic aspects in the EIA reports shows a rather narrow understanding of SIA. Despite the discussed limitations, the competent authority had no comments on the climate, material properties, flora and fauna or socio-economic assessment and all discussed reports were approved.

2.3. Attitudes of the EIA experts towards the environmental impact assessment

Thirty six (36) EIA specialists participated in the survey: 47% of them were the EIA practitioners (consultants) and 53% of them were experts from state institutions. In order to evaluate the EIA specialists' opinion on the preparation of EIA reports, only practitioners (consultants) were included; in other words, the questions were answered only by those who represented private companies and prepared but did not assess the quality of the EIA documents (screening, scoping documents and final report).

Most companies represented by the respondents specialize in preparation of the EIA documents for engineering constructions (53%), waste management, as well as the extraction and processing industry (both 29%). Such activities as agriculture and aquaculture, forestry, metal production and processing industry, rubber industry are much less dominating (under 18%). Forty one percent (41%) of companies indicate that they do not specialize in document preparation for a certain planned economic activity (PEA) and that they perform assessment of the impacts of various activities. Usually documents are of a higher quality when the specialist of a consulting company preparing the EIA has the knowledge and accumulated experience in some particular area or when a company has several specialists who are experts in certain areas – this contributes to a qualitative EIA.

Compared to other countries, specialization regarding country peculiarities is also prevailing. In Bulgaria, the EIA cases are mostly related to wind farms and holiday villages on the Black Sea coast and hydropower companies. In the Czech Republic, most cases are related to the industry business, infrastructure projects, fossil fuel and wind energy equipment, whereas in France most EIA are prepared for agriculture and infrastructure projects (COWI 2009). Therefore, the document preparation of EIA according to the economic activity is highly dependent on the country where the activities are developed, the specifics of activity, thresholds set and economic development.

More than half (65%) of respondents personally assess environmental impact for individual (particular) components of the environment, while less than half (35%) assess impacts for all environmental components. The statistical analysis results have shown that as much as 88% of respondents assessing individual environmental components are under 40 years of age ($\chi^2 = 2.784$, $p < 0.1$) (Table 1). This could be related to the fact that younger professionals specialize in the individual environmental components and older ones, being more experienced, are able to evaluate the impact on all components of the environment.

Table 1. Factors influencing the variety of environmental components covered in EIA. Survey results: the EIA practitioners

Factors	χ^2	p
Age	2.784	0.095*
Gender	2.269	0.132
Work experience	**0.625**	**0.732**
Education:		
Environmental science	**0.714**	**0.398**
Chemistry	1.111	0.292
Engineering	0.227	0.634
Other	0.096	0.756

Note: * – statistically significant when $p < 0.1$.

The EIA practitioners indicate that most often considered components of the environment are water (78%), immovable cultural heritage (67%), landscape (56%), biodiversity, socio-economic environment, weather conditions (44%), climatic conditions (44%), and air (44%). Other elements of the environment, such as climate, air pollution or noise (around 11%), are given less consideration. The fact that 44% of EIA practitioners claim to be evaluating socio-economic impacts contradicts the EIA reports' analysis which shows that a socio-economic aspects are estimated poorly and incompletely. As already mentioned, job creation is the most frequently considered aspect of a socio-economic environment.

Question about three most important elements of the environment in EIA was addressed to all EIA specialists. Air, water (both 22%) and public health (19%) are distinguished as elements of the greatest importance. The least attention is given to wildlife, soil, surface and depth, climate, landscape, biodiversity, socio-economic environment, material and immovable cultural heritage (22% all together). Nevertheless, even 53% of the respondents say that the significance of the environmental components depends on the planned economic activity and 50% say that all elements of the environment are equally important. In 2008, J. Kruopiene *et al.* conducted a study on the quality of EIA documents and found that issues related to air, water and waste management were overviewed well enough, but socio-economic environment, biodiversity and natural resources were the least analysed areas. These results are also consistent with the results of EIA reports from Kaunas REPD covering the period from 2006 to 2011, where it was found that a socio-economic environment was assessed poorly; however, air-related and water-related aspects were assessed most comprehensively.

2.4. The EIA specialists' approach to a socio-economic assessment

Questions related to a socio-economic assessment were answered both by the EIA practitioners and by the state institutions' experts. Ninety four percent (94%) of the respondents knew about the amendment to the Law on EIA, adopted on June 9, 2011. Those who had completed environmental studies and had been working in the field of EIA up to 5 years were more often aware of the amendment to the Law. This might be related to the fact that young specialists are more actively interested in news of their pursued area, and specialists who work longer are working automatically, as usual, and are not interested in or not paying attention to the alterations that do not change the procedures in general.

A rather worrying fact is that more than half (59%) of respondents think that the attitude of EIA practitioners will not change after the amendment to the Law. Those with the environmental science background are more often sceptical ($\chi^2 = 4.97$, $p < 0.05$) (Table 2). Those who work in state institutions more often think that the attitude of document preparers is not going to change, and those who work in the private sector and prepare the EIA documents believe that attitude will change ($\chi^2 = 3.927$, $p < 0.05$) (Table 2). In our case, we can assume that specialists from state institutions indicate that the amendment to the Law will not bring any practical benefits. Specialists from state institutions are older compared to those in private companies ($\chi^2 = 7.255$, $p < 0.05$) and probably have more experience in this field and are pessimistic about possibilities for quick changes in practice. On the

other hand, this could also be showing their reluctance for changes.

Despite the fact that part of the respondents (41%) think that the attitude of EIA practitioners is going to change, more than half of them believe that this will only be a formal change (57%); and only about one third (29%) think that the amendment to the Law will improve the quality of the reports. Some specialists (14%) think that the process of EIA will be more complicated. That is one more indication showing that a socio-economic environment will not gain appropriate attention during preparation of the EIA reports.

Those specialists who have completed the environmental studies more often think that the process of EIA will become more complicated following the amendment to the Law ($\chi^2 = 6.993$, $p < 0.05$) (Table 3). Of those who say that the attitude will change only formally, as much as 88% have been working in the EIA area for more than 10 years ($\chi^2 = 10.341$, $p < 0.05$). None of the experts working in a state institution thinks that the Law amendment will improve the quality of EIA reports, while 45% of specialists in private companies believe that the quality of the reports will improve following the Law amendment. This fact to some extent builds grounds for positive changes in EIS; however, competent institutions have to change their attitude to encourage these changes regarding SIA.

For 64% of respondents, legitimation of a socio-economic assessment in the EIA only partially changed their personal attitude to a socio-economic assessment. The fact that the changes are only formal and there are no clear approved guidelines for a socio-economic assessment could influence this result. Only 6% of respondents admit that their own attitude has changed, so we could expect that from now on at least some EIA specialists will pay more attention to the socio-economic issues.

More than half (56%) of respondents believe that the significance of socio-economic components depends on a specific planned economic activity, and 36% think that all components of a socio-economic environment are equally important (Fig. 1). Among the individual components of a socio-economic environment, the well-being of people (25%), business and job opportunities (25%) were mentioned most often. The least important components of a socio-economic environment were income and quality of life (8%), land use (11%), and appropriate infrastructure (14%). Such components of a socio-economic environment as protection of cultural and heritage resources, suitable services were not mentioned at all.

Table 2. Dependence of the EIA practitioners' attitude towards changes on different factors (bold values are significant at $p < 0.05$). Survey results: all respondents

Factors	χ^2	p
Age	1.943	0.163
Gender	0.008	0.928
Work experience	4.297	0.117
Type of company	**3.927**	**0.048**
Education:		
Environmental science	**4.970**	**0.026**
Chemistry	0.455	0.500
Engineering	3.331	0.068*
Other	0.010	0.919

Note: * – statistically significant when $p < 0.1$.

Table 3. Dependence of the EIA specialists' attitude on different factors (bold values are significant at $p < 0.05$). Survey results: all respondents

Factors	χ^2	p
Age	0.965	0.617
Gender	0.640	0.726
Work experience	**10.341**	**0.035**
Type of company	3.329	0.189
Education:		
Environmental science	**6.993**	**0.030**
Chemistry	0.640	0.726
Engineering	0.972	0.615
Other	2.288	0.318

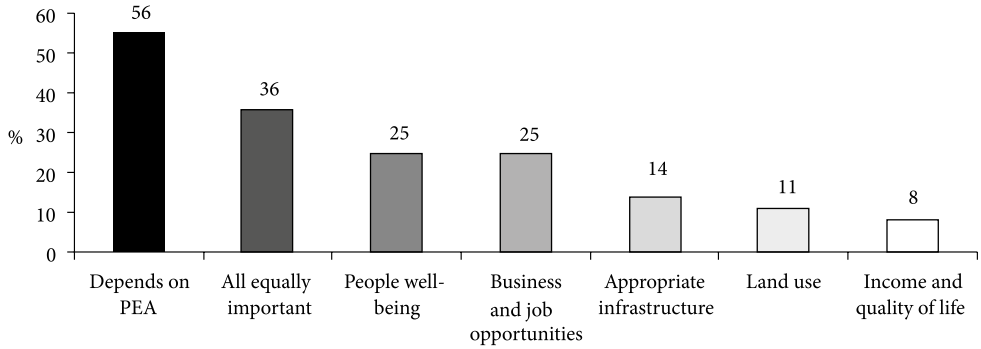

Fig. 1. The most important components of a socio-economic environment. Survey results

In general, analysis revealed that there was no consensus on the importance of the valued environmental components. It is worrying that more than half (59%) of the specialists do not see significant changes in practise even after the amendment to the Law on EIA. It is clear that new measures are required to improve the quality of EIA and to change specialists' attitudes towards the EIA process as well as expand a rather narrow understanding of SIA.

3. Discussion and recommendations

Aside from a rather long practice in other countries (e.g., USA (Burdge, Vanclay 1996)), Lithuania has no significant experience in SIA, taking into account even incorporation of SIA into EIA. Though SIA is recognized as a tool for predicting social consequences of various projects, minimizing negative impacts and increasing positive ones (Esteves *et al.* 2012), it is still only gaining attention in Lithuania. Nevertheless, socio-economic aspects were always included (though not so firmly) in the EIA legislation, and in some cases attempts to include the socio-economic issues exist.

Though some might argue that "socio-economic" is a rather narrow understanding of a social impact assessment, the Law amendment could be treated as a positive step for further improvement in planning and decision-making. However, threats of losing the value and effectiveness should be taken into account applying interdisciplinary approach and avoiding preclusion of sustainability goals (Morrison-Saunders *et al.* 2014).

The survey results show that specialists who have been working with EIA for more than 10 years often believe that the attitudes of EIA practitioners would change only formally after the amendment to the Law on EIA. The EIA experts who have completed environmental studies and are working at state institutions more often believe that the attitudes towards the socio-economic environment assessment in the process of EIA will not change at all after the adoption of changes in the EIA Law. While the formal socio-economic assessment has been validated relatively recently, 30% of experts claim to have been conducting a socio-economic assessment in detail, and more than half of the experts believe that socio-economic components assessed depend on the significance of the PEA. Human well-being, business and job opportunities are considered the most important socio-economic environment components. The least important socio-economic components are income and quality of life, while cultural and heritage resources as well as appropriate services have not been mentioned at all by the specialists. Though SIA is considered a useful tool for environmental management and planning facilitation (Barrow 2002), these results highlight problems to be resolved regarding EIA and inclusion of SIA aspects into EIA in Lithuania.

In general, effectiveness of impact assessment covers procedural, substantive, transactive, and normative effectiveness as presented by Ch. Chanchitpricha and A. Bond (2013). Therefore, whilst reviewing and improving the EIA process and incorporating SIA, all the factors behind that have to be addressed. Despite the importance of substantive and normative effectiveness, procedural issues are dominating in our research. Having a number of factors behind that might influence procedural effectiveness of EIA in general (e.g., Zhang *et al.* 2013), recommendations for improvement of the EIA process and socio-economic assessment quality would focus mostly on some procedural factors: policy, guidelines, experiences, political context, finance, and public participation.

Firstly, the EIA legislation and process itself have to be reviewed and improved. The EIA experts should be involved in the development of laws and subordinate legislation, based on their experience. In addition, personal activity and interest in law amendments, proper guidance of already adopted provisions of the Law is an issue. Here a better coordination within different institutions would be beneficial. Of course, political context and will play a crucial role in ensuring policy's consistency and succession. There is still a need to consider EIA as a tool for the achievement of economic, social and environmental benefits, and it should be seen not as a bureaucratic impediment, especially during the economic downturn.

Irrespective of the project size, it is also important to ensure the quality of the EIA documents and include into assessment not only direct but also indirect impacts on the environment components of planned activities. The competent institutions must carefully evaluate and pay attention to the effects on all components of the environment in EIA, including socio-economic issues. Not of least importance is a necessity to prepare methodological guidance for a socio-economic assessment or expand the existing one on EIA with topics related to social capital, people needs and perceptions. Clear distinction in terms and definitions could help the EIA consultants to properly assess the impacts and for the competent institution this would help to ensure the quality of the process and make a sound decision. Otherwise, the threat that no changes will take place remains. In addition to methodological guidance, problems like poor databases (especially of the socio-economic variables on the local level) and insufficient qualification of consultants may hamper a proper SIA (Barrow 2002) or impact an assessment in general. In our case, the EIA experts mostly have nature and engineering science background, thus they lack social science skills significant in conducting social impact assessment. In addition, currently existing attempts to assess the socio-economic impacts are limited to quantitative assessment mainly focusing on a labour force. Development of competencies through constantly organized compulsory

training courses for the EIA specialists could also contribute to the improvement of all EIA stages. Inclusion of social science specialists in the EIA process might be another option; this could contribute to the recognition of SIA values and expertise (Rowan 2009). It seems to be necessary to increase significance and transparency of the process, to share experiences and enhance the capacity building, and to provide an access to the on-going EIA through some national level database on conducted EIAs.

Follow-up monitoring is an issue, too. Whilst incorporating SIA into EIA, relevant legislation and practical implementation of monitoring have to be carefully addressed. So far, follow-up monitoring programs do not gain much attention in EIS and application is only a formality in most cases. No responsibilities in case of monitoring absence are foreseen and only provisions for monitoring economic activities are applied. If regional environmental protection departments are doing some monitoring of biophysical environment, there is no institution monitoring social changes arising as the result of certain economic activities.

Despite some recent changes in public involvement into the EIA process, fulfilment of one of the most important precondition for the effective impact assessment, that is, ensuring equal and effective public participation and involvement into discussions (Lockie 2001; Vanclay 2003; Esteves *et al.* 2012), remains rather challenging. The need to move from mechanistic participation approach (formal information provision) to a more collaborative one (influencing decision-making) is obvious (Morgan 2012). Though it is not only the case of Lithuania (e.g., Turkey (Değirmenci, Evcimen 2013)), passiveness of public is particularly persisting with some rare exceptions in Lithuania. Therefore, not only formal legislative changes are required but also transformational changes in impact assessment practise (methods, approaches) (Esteves *et al.* 2012) and communities' involvement are urgent in order to increase effectiveness. The necessity to involve local communities in a decision-making is already apparent (e.g., the case of shale oil extraction project).

Inclusion of other stakeholders (e.g., business, education, and health care institutions) also remains an issue. Creation of possibilities for the discussion at the earlier stages of EIA, that is, not only during EIA preparation but also already during the screening or scoping stage, holding public meetings (Woloszyn 2004; Değirmenci, Evcimen 2013) and aiming that the public concerns are taken into account in the programme content, would be an option.

Regarding future, development of SIA as a separate tool for specific projects could be discussed and experiences of other countries could be employed (e.g., Finland (Kauppinen, Nelimarkka 2004), Australia (Holm *et al.* 2013)). Nevertheless, all proposals should be adapted according to the country's peculiarities, its experiences and possibilities, as different countries, different jurisdictions and institutions might differently interpret even the same goals (Morgan 2012; Savan, Gore 2015). This might affect the assessment significance to the decision-making, influence the effectiveness of assessment in terms of time and other resources allocation as well as an overall change in attitudes towards impact assessment. Meanwhile, a better integration of SIA in EIA seems to be a most credible option in case of Lithuania; however, a question of overlapping issues (public health assessment and socio-economic assessment) should be resolved.

Conclusions

Study reveals situation in a social impact assessment in EIA in Lithuania by examining a current situation and possible integration directions and challenges:

Some references to the social aspects were existent in the EIA policy documents but not gaining proper attention in practise. Only recently, SIA was formalized more firmly to some extent in the national legislation and now it has become an integral part of EIA.

Despite the aim to identify, describe and assess the potential direct and indirect impacts on a socio-economic environment as listed in the Law on EIA, a wider definition or particular guidelines how this has to be done are not provided in more detail. Therefore, proper databases and guidelines are needed.

Engineers or environmental science specialists perform most of the assessments having a limited experience in social science methods, techniques and peculiarities. Development of competencies through routinely organized compulsory training courses for the EIA specialists or inclusion of social science specialist in the EIA process could contribute to the recognition of SIA.

Orientation to a more integrative assessment from the science and public as well as other stakeholders' participation perspectives should be taken into account to increase the effectiveness of EIA and SIA as an integral part of it.

Competent state authorities and other state institutions (municipalities, cultural heritage protection, health protection institutions, etc.) should take more responsibilities (not only formally) in the process of EIA. Monitoring and inspection responsibilities, especially related to the SIA issues, should be assigned to the separate state institution that is not making a decision on PEA.

If these aspects are overlooked, the integration of SIA might be seen as one more bureaucratic impediment or just additional costs and the significance of the impact assessments on the planning and decision-making might remain low. In addition, a progress of EIA process, normative changes and related issues is the object of further research and discussion.

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