



Human Impact Assessment

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The Social Dimension of Determining Significance

Introduction - All impacts have a social dimension

The social dimension of impacts can be found in subjective views concerning objective information about a development proposal. In addition to subjective views there are, of course, many social impacts that can be classified as objective. These are, for example, impacts on the local economy such as changes in employment, services etc. The reason why subjective views on objective information are stressed is that this approach is most often missing when determining significance. In determining the social significance of a project one must look not only into the effects on services (objective) but the way people will cope with and react to these effects. The latter can be assessed by analysing subjective views.

The social dimension, for example, of emissions should also be investigated. In a road planning EIA-case in Finland (Juslén 1995a), it was found that impacts such as noise should be analysed from the points of view of experts and citizens. An expert predicted and mapped the noise levels (objective) that would be caused by different routes for the new road. Citizens were consulted on the significance of noise-levels in terms of their living conditions (subjective).

The noise-expert pointed out the areas where the noise-level would be above 55dB and below 55dB. According to official standards a residential area with noise levels under 55 dB is acceptable. However, in this particular case one of the main reasons for moving to the rural residential area in question was its' peacefulness. Therefore it made almost no difference to the residents whether the noise level in their area would rise to 45dB or 55dB because in both cases their main motive for living in the rural area would be removed. Even if the noise-level remained slightly under 55dB it would probably cause residents to relocate and real estate value to decline.

The social dimension in screening

The social dimension of impact significance must be looked into in several stages of the EIA-process, for example, in screening and scoping. This paper focuses on the social dimension in screening.

Despite its importance, few articles on environmental impact assessment have thoroughly discussed the social dimension of impact significance in screening. Likewise a look into social impact assessment literature reveals that social impact assessors have written very little on social significance at this stage. This state of affairs may be due several reasons:

1. In the screening stage EIA-systems stress the importance of investigating the significance of impacts on nature - other types of impacts are seen as secondary. At present the social dimension plays a minor role in determining significance.
2. In EIA-legislature significance is usually determined by lists of projects for which EIA is mandatory. These lists generally include criteria on project size but not on impacts.

3. Experts have been unable to create sufficient methods for the determination of social significance.

Some attempts have, however, been made to systematise the investigation of social significance in screening. These will be looked into in this paper.

Examples on the determination of social significance

1. Rapid Social Assessment

The Rapid Social Assessment (RSA) method developed by the Asian Development Bank (1991) was applied in Finland on a road-planning case, not to determine the need for an EIA, but to determine how thorough an analysis of social impacts should be carried out in the EIA. Despite the fact that social significance was looked into after the decision to carry out the EIA was made, this example is worth presenting because it assesses significance from the viewpoint of different subgroups.

The data for the assessment was gathered from formal and informal sources, for example, during field visits. The following data was used in the assessment:

- demographic data, data on major subpopulations,
- data on the level of development, on services,
- data on the target populations' need/demand for the project,
- data on the absorptive capacity of the target community.

In the Mainroad 4 case the results of the RSA were presented via the type of format illustrated in table 1. A rapid assessment of the project and the subgroups to be affected showed defects in absorptive capacity and potential negative impacts for several subgroups. Due to these findings a social impact assessment was required.

Table 1. Screening in impact assessment - An example of the use of Rapid Social Assessment

Table 1. Rapid social analysis in the Mainroad 4 SIA						
Subgroups	Conditions	Level of need/demand	Absorptive capacity	Target population (%)	Specific strengths/ weaknesses	Negative impacts
Adults	medium	high	medium	67	social cohesion	noise, landscape, services, migration
Aged people	medium	medium	low	11	non-drivers	mobility, obtainability of services
Young people/children	medium	medium	medium	22	non-drivers	recreation
Work force	medium	medium	medium			migration
Business	low	medium	medium			migration
Municipality	medium	medium	high			effects on local services
The need for SIA is as follows:						
	RSA result				Response	
	1. when all the following conditions prevail: - no negative impact - high-level need/demand - high absorptive capacity				No SIA	
	2. when any of the following conditions prevail - limitations in need/demand - defects in absorptive capacity - potential negative impacts for some subgroups				SIA required	
	3. when there are high levels of potential negative impact, significant opposition, or major limitations to absorptive capacity				Relocation or rethinking of project concept	

Source: Juslén (1995b)

2. A Guide on Screening in Environmental Impact Assessment

The European Commission (1995) has published a practical guide on screening. The guide is not intended to replace any existing legislation or guidance on screening. It draws upon current practice in screening (from more than 30 EIA-systems), as one source of possible guidance to those needing to make screening decisions. The guide does not identify specific thresholds or criteria for screening. Instead it offers a checklist of screening questions on various types of impacts. The checklist includes questions on the social dimension of impacts. The aim of the guide is not to encourage detailed investigations at this stage in the EIA process. Answering the questions is not meant to require studies or investigations.

In the guide the checklist of screening questions has been arranged into four sections with a series of subheadings: project related factors, location related factors, impact related factors and wider considerations. In this paper the questions in the aforementioned sections have been divided into two groups: questions in the guide that have been classified as social and questions under other topics which include a social dimension.

The checklist on screening includes 106 questions. 11 questions were classified as 'social' or 'social & health'. In an analysis of all the questions 31 questions were found to include a social dimension (approximately 30% off all the questions). The following presentation and analysis of these 31 questions will hopefully demonstrate where the social dimension of project impacts lies.

A. Questions classified as social or health

The eleven questions in the guide that were classified as social or social & health are:

Project related factors

Social:

- will the project involve employment of large numbers of employees?
- will the workforce have adequate access to housing and other facilities?
- will the project make significant demands on facilities and services?
- will the project result in significant expenditure in the local economy?
- will the project result in changes in health conditions?

Location related factors

No factors were classified as social in this section.

Impact related factors

Social and health:

- will the project significantly affect the labour or property market in the area?
- will an existing population be physically divided as a result of the a project?
- will the project lead to a shortage of social infrastructure to cope with any temporary or permanent increase in population or economic activity?
- will the project significantly affect the demographic characteristics of the area?
- will there be an effect on the character or perception of an area?
- will the project significantly affect health conditions?

By looking at the questions under 'social' or 'social & health' one can see that they can be classified into three main groups. These three groups are: **1. the economy and infrastructure of an area** (eg employment, housing, facilities, services), **2. the health conditions of an area** and **3. the characteristics of an area** (eg demographic characteristics, character or perception of an area).

B. Questions which include a social dimension

The 20 questions in the guide that are not classified as social but include a social dimension are (*writers comments in cursive*):

Project related factors

General:

- will the project involve the storage, handling, use or production of toxic or hazardous substances? *If the answer is yes significant anticipatory fear may arise in the population.*
- will the project require the construction of new roads or tracks or the use of off-road vehicles? *If the answer is yes significant impacts on properties and recreation may occur.*

Hazard:

- will the operation of the project involve the generation of electromagnetic or other radiation which may affect human health or nearby electronic equipment? *If the answer is yes significant anticipatory fear may follow.*

Location related factors

Landscape and visual characteristics:

- will the project be located in an area which is visible to significant numbers of people?

Historic and cultural features:

- will the project be located in the vicinity of important or valuable historic or cultural resources?

Land use:

- could the proposed land use conflict with neighbouring land uses (existing or proposed)?
- will the project be located in a densely populated area or in the vicinity of residential property or other sensitive land uses (eg hospitals, schools, places of worship, community facilities)?
- will the project be located in an area of recreational/tourist importance?

Impact related factors

Land and property:

- will the project cause disturbance or loss of important land uses?
- will the project result in demolition of structures or occupation of property (homes, gardens, business)?

Aquatic environment:

- will the project limit use of waters for recreation, angling, fisheries, navigation, research, conservation or scientific purposes?

Air quality:

- could emissions from the project adversely affect human health or welfare, fauna or flora, materials or other resources?

Noise etc:

- will the project cause impacts on people, structures, or sensitive receptors/features from noise, vibration, light, heat, or other radiation?

Landscape and visual:

- will the project adversely affect an area of attractive landscape, or one where the landscape is of historic or other cultural significance?

- will the project intrude into the views from locations where numbers of people will see the site?

Traffic related impacts:

- will the project lead to significant changes in traffic (road or other) with consequent effects on conditions for other road users, *residents etc*, noise, air quality, amenity, *safety*, etc, and impacts for other receptors?
- will changes in accessibility resulting from the project lead to increased or decreased potential for development in the area? (*boom or bust?*)

Wider considerations:

- will the project cause public controversy? Has there been substantial concern about the project?
- will the project be of more than local importance?
- will the project provide facilities which could stimulate further (induced) development for example by providing service infra-structure? (eg urbanisation, industrial development, transportation requirements) *Will this have an effect on the character or perception of an area?*

The 20 questions above can be classified into several groups. There are questions concerning: **1. the social dimension of environmental changes** (these can be found in questions on the visibility of a project, recreation, noise, and toxic or hazardous substances), **2. the social dimension of changes in land use and traffic** (eg demolition of homes, location in densely populated or residential property, new roads), **3. the social dimension of public participation** (eg public controversy, more than local importance) and **4. the social dimension of the economy** (eg stimulation of further development).

The analysis of the screening questions shows that many impacts should be looked into from the social perspective in addition to other perspectives stated in the guide. A comparison of the results gained from looking at questions classified as social (A) and questions on other topics (B) reveals that one can broaden the screening of social impacts by looking at the social dimension of impacts classified under other topics. In the questions analysed above this approach revealed social dimensions linked with environmental changes, changes in land use & traffic, and public participation. These links were not stated in the guide.

The questions in the guide form a good basis for further development of the social dimension in screening. At present the questions classified as social give a rather narrow view of the social dimension. Luckily questions under other topics broaden this view.

3. A Matrix on Social Significance

A draft matrix to aid in the determination of social significance is being prepared by the Finnish Ministry of Social Affairs and Health (1996). The matrix can be found in the ministry's draft for a guide on EIA. The guide focuses primarily on the assessment of social and health impacts in the Finnish EIA-procedure.

The matrix is made up of two parts the first of which can be used to help in the identification of significant social impacts (table 2). The second part (table 3) is used to describe the nature of the impacts which were found to be significant in table 2.

Features from both the Rapid Social Analysis -method and the EC's guide on screening have been included in the tables. The social dimensions that were uncovered in the analysis of the guide on screening (economy and infrastructure, health, characteristics of an area, environment, land use and traffic, and public participation) can be found in table 2. Table 3 includes criteria found in the RSA-method, for example, absorptive capacity and target population.

Table 2. A matrix for screening social impacts

An EIA is necessary if the results of the matrix show that a project may cause several significant social impacts.

Impacts on	Significant social impacts will occur if:	Yes	No
The character of an area	the physical or social character of an area changes significantly		
The population	people are relocated or the demographic characteristics of an area change significantly		
Accessibility	there are changes in accessibility (public or private transport)		
Services	supply and demand of services do not meet		
Economy	there are changes in employment or other characteristics of the local economy		
Nature	possibilities for recreation or the state of natural areas declines		
Emissions	disturbing emissions (noise, air pollution) increase		
Fear	anticipatory fear concerning living conditions, health or safety arises		
Conflicts	conflicts arise in the area		

Source: Finnish Ministry of Social Affairs and Health (1996)

Table 3. Characteristics of significant social impacts

The social impacts that were seen as significant in table 2. can be described in this table.

Social impact	Size of the target area	Target population	Absorptive capacity	Probability of impact	Duration of impact	Reversion of impact
	(Lot, block, village, municipality, city, size of area etc.)	(Possible classifications: under 10, between 10-100, between 100-1000 etc. or groups such as children, teenagers, adults, the elderly, the disabled, tourists etc.)	(Qualitative terms such as high, medium, low can be used when more specific information is not available.)	(Qualitative terms such as high, medium, low can be used when more specific information is not available.)	(Classifications such as days, months, years, decades, during or after project construction, occasional, continuous can be used.)	(Classifications such as quickly (days - weeks), slowly (months - years), unreversable can be used.)

Source: Finnish Ministry of Social Affairs and Health (1996),
Adapted from Hildén & Paukkunen (1995) and Asian Development Bank (1991)

Conclusions

The examples in this paper show that we must be prepared to look at different types of impacts from a social perspective. The determination of social significance should not be based on a look at only those impacts which have been classified as social. Social aspects of other impacts, ie. impacts on nature and land use, should also be considered.

In the EC's guide on screening the social dimension was found in impacts that were classified as social and in other than social categories. In other words the social dimension was partially hidden. Approximately 30 % of the screening questions in the guide had social significance. However, only 10 % of the questions were classified as social. The analysis of the questions showed that social significance is linked with:

1. impacts on the economy and infrastructure of an area,
2. impacts on the health conditions of an area,
3. impacts on the characteristics of an area (demography, perception),
4. environmental changes,
5. changes in land use and traffic,
6. public participation and conflicts.

The example on rapid social assessment showed that we should look at impacts from the perspective of different groups of people. The significance of an impact may vary greatly according

to the type of subgroup that is affected because the capacity to deal with change differs among different subgroups. For example, senior citizens may find it much more difficult to deal with change compared to the young employed population of an area.

The third example in this paper introduces a matrix-based model being developed by the Finnish Ministry of Social Affairs and Health. Features from several other examples have been used in the formulation of this model. It includes, for example, the social dimension of other types of impacts and takes different groups of people into account.

All in all one could conclude that despite the examples presented in this paper the social dimension on determining significance is in need of further development in screening as well as in other stages of the impact assessment process.

References

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