Data of Environmental Impact Assessments and Information Systems

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Introduction

Prior to realising, abandoning or enlarging certain establishments or projects it is compulsory or in some cases advisable even without any legal obligation to carry out Environmental Impact Assessment. In Hungary the Government Decree No. 314/2005 (XII. 25.) on environmental impact assessment and the integrated environmental permit stipulates the necessity of the Environmental Impact Assessment (BÁNDI 2007).
The task of the Environmental Impact Assessment is to decide the execution of the establishment on the basis of the examinations. In general we can say that impact assessment is a process of information acquisition and analysis. In order to get as useful as possible information through representative tests and measurable results in view, we need reliable data (PÁJER 2006). Conducting impact assessment is time-consuming primarily because of the lack of the possibility for directly transferring actual data from information systems for the indication of the condition of the area under study.

Methods

The aim of the research was to explore the data required to perform the environmental impact assessment as well as to study the possibilities of transferring those data from electronic databases. The basic method applied was the investigation of pertinent literature, law, available impact studies and electronic databases. The question to answer was what types of environmental data are necessary and satisfactory for carrying out the impact analyses of roads. In the course of the research the general requirements on data for impact studies were investigated, we have not attempted to go into specific cases and unique data-pretensions. It was further studied to what extent the data content of the relevant domestic information systems and databases are suitable to satisfy the data-pretension of environmental impact studies and how readily they can be transferred for concrete studies.

Results

According to the investigations there are no concrete standards to the requirements on data of Environmental Impact Assessment. Therefore, the main parameters of the environmental elements and systems that are necessary for the environmental impact assessment can be established (*Table 1*) . The databases examined in this study roughly contain the necessary data, so ideally they can be useful in the environmental impact assessment process. However in practice transferring actual data from information systems is difficult and time-consuming. It should be noted that since these networks do not cover the whole of the country it is not guaranteed that we can find data for the area under study. The databases and systems examined in this study are accessible for the public with difficulties. Data can often be queried from the respective authorities only; in the case of special needs users are supposed to pay fees for the supply of data. There exist databases to which access can be obtained after complicated registering processes. The information and monitoring systems studied are not compatible, data is not possible to be transferred from one database to another; often there is no conformity between the individual modules of the same database. In the course of examining the databases we met data that were found in several databases, but depending on the supplier of information for the given system or on the authority inspecting the operation of the system these data showed different values. It was experienced several times that access to data can not be provided in the course of development or updating of the database, resulting in sustained interruption of the supply of data. It can be established that the databases studied are not open for the needs of unique investigations; these can only be built in the system with difficulties or not at all.

Conclusion

For the problems it could be a solution to establish a database which can be continuously developed and is accessible for the public. It should cover the whole of the country to avoid the lack of data. More emphasis should be also laid on the relationships between the individual inspecting and operational organisations. This system would not only reduce the time of preparation of impact studies, but also speed up the impact assessment process.

Acknowledgement

Table 1. The necessary and satisfactory data for EIA of roads

Environmental elements and systems	Types of data
Topography, soil and parent material	• topography, parent material, relife • soil type, soil quality • soil layers location and water balance • stability, vulnerability • physical, chemical, biological characteristic (for example pore volume, porosity, permeability, humus content, thickness of humus layer, ph, acidification-leaching tendency, naturally occurring heavy metal content) • protected geological values
Surface and groundwater	• location of surface and groundwater • sensitivity, stability, vulnerability • size and location of drainage basin, watercourse and water storage • flow direction, quantity and velocity of runoff • significant water flow • physical, chemical, biological parameters • number of wells • protected hydrological values
Air	• prevailing wind direction, wind speed • precipitation conditions, spatial and temporal distribution of rainfall • dominant atmospheric conditions • air quality • average and extreme temperature data • atmospheric inversion • rate of snow melt
Flora an fauna	• species composition of the roadside environment • protected species, • biodiversity • sensitivity of plant species • animal species sensitivity against noise and vibration
Ecosystem	• type of ecosystem • extent of ecosystems • stability of ecological processes • sensitivity of the roadside environment • movement and behavior of animals
Urban environment	• noise and vibration load • condition of roads and buildings • built-in area • cultural values
Landscape	• landscape, land use • nature-function and protected areas