

Summary

The method used in the decision-making process for transport infrastructure to systematically identify social impacts (a social cost-benefit analysis as described in the guidance document on infrastructure effects 'Overzicht Effecten Infrastructuur' – OEI) is in principle also suitable for use in integrated area development assessments. However, there are a number of methodological and practical issues that require attention. This study shows that the aspects specific to integrated area development assessments can be adequately covered by the standard methods, ascertains the points that require further attention and identifies the initiatives that have already been taken in this area.

Integrated area development assessments evaluate complementary investments in housing, employment, accessibility, water and nature conservation. Integrated assessments differ in three respects from the standard assessments of transport infrastructure projects. First, the efficiency gains or synergy advantages arising from coordinating or bundling investments are a major consideration. A second important characteristic is that they involve plans from various sectors and disciplines. This means that a wide range of different types of effects can be expected, including those that are difficult to measure and evaluate (called 'weak values'). Third, many parties are involved, from both government and the private sector, that all seek to ensure their goals and interests are given full consideration in the evaluation.

Central government is seeking to improve the coordination and complementarity of investments in new development and mobility. To this end the various investment budgets have been combined in the Multi-annual Programme for Infrastructure, Spatial Development and Transport (MIRT). Most area development projects, such as those financed from the National Spatial Strategy budget, are at the district or neighbourhood scale, whereas the integrated area development assessments arising from the regional agendas for the MIRT decision-making process are on a larger scale. These are assessments of plans for developments on a regional scale, such as the Rijk-Regioprogramma Amsterdam-Almere-Markermeer, Rotterdam Vooruit and the Integrale Benadering Holland Rijnmond.

The Netherlands Institute for Transport Policy Analysis (KiM) has investigated whether the method of cost-benefit analysis currently used for infrastructure projects is also suitable for integrated area development assessments within the MIRT decision-making process and whether additional guidance may be needed.

Synergy can be clearly revealed

Cost-benefit analysis is a good way of identifying the advantages of the simultaneous implementation or coordination of different projects, which are often referred to as synergy. These synergy benefits can be revealed by breaking down a (combined) project into subprojects and then identifying and comparing the costs and benefits of each of these subprojects. Comparing the sum of the social returns of the separate projects with the social returns of the combined project gives an impression of the nature and degree of synergy. Synergy benefits (or costs) are therefore reflected in the cost-benefit balance of the combined project, but they do not form a separate item in a cost-benefit analysis.

Consider coordination benefits early in the process

Under the slogan 'Quicker and Better' the rules for making decisions on investments in the Multi-annual Programme for Infrastructure, Spatial Development and Transport have been altered. A numerical cost-benefit analysis is carried out at a single point in the assessment stage. That is the moment when decision-makers must choose between three project alternatives, leading to what is known as the preferred decision ('sieve moment 2'). To obtain an overall impression of the coordination benefits it is also useful to review the costs and benefits of the projects at an earlier stage to obtain a picture of all the effects, but using a simpler calculation. In general, this can help with finding options for improving projects and alternatives that deliver better returns. Specifically for area development assessments, it can also provide insights into the global coordination or synergy benefits at an early stage in the process. If it becomes apparent earlier in the process that no synergy advantages can be expected, this may be a reason to decide against an integrated cost-benefit analysis and to take a simpler, more sectoral approach instead. The absence of synergy advantages, or even the occurrence of negative synergy, indicates that the coordination advantages do not lie with the combined implementation of the plans, but elsewhere.

Numerous effects not a problem; determination of effects not equally advanced

A feature of integrated area development assessments is that they bring together projects from different sectors. This means that different disciplines are involved and there are often many different types of effects and impacts on the environment.

Cost-benefit analysis is eminently suitable for dealing with a wide range of effects, because it makes effects comparable by bringing them together under a single heading (as far as possible) and it presents effects in a consistent manner. The methods for determining and valuing effects are more advanced in some sectors than in others. Using cost-benefit analysis in sectors where it is not yet frequently used will in these sectors lead to a demand for more research into the determination and valuation of effects. In time this will reduce the differences between sectors and disciplines in the development of these techniques.

Land development calculations: compatibility with cost-benefit analysis needs addressing

Integrated area development assessments almost always involve spatial effects. Estimates of the effects of spatial developments usually start with the profitability assessment of the land developer. It is easy to extract figures from these analyses because they are always available. However, the procedures and accounting methods in land development are such that they cannot be used directly to obtain a correct reflection of all the spatial effects from a social perspective. The Ministry of Infrastructure and the Environment is therefore currently studying how land development accounts can be adapted to make them suitable for use in social cost-benefit analyses. The outcome will deliver concrete proposals for improving the method. The availability of easily applicable spatial equilibrium models would provide an alternative to using figures from land development calculations, but much still needs to be learned in that area as well.

When using figures from land development accounts it should be borne in mind that area development projects are often more likely to be amended than, for example,

transport infrastructure projects. Area development projects are often affected by changes in the real estate market and changes developers make to their plans in response. Making an assessment by means of a numerical cost-benefit analysis at a single point in time is risky, because the market may change at a later date. For this reason, integrated assessments, because of their spatial component, entail a greater risk of falling back to an earlier stage of decision-making than projects that involve only transport infrastructure. Carrying out a sensitivity analysis as part of the cost-benefit analysis of integrated area development assessments can lengthen the 'shelf life' of this aspect of the decision-support information.

Presenting effects in their own units

Integrated area development assessments often involve effects on the environment. These include, for example, environmental and landscape impacts and effects on the visual appeal and image of an area. These effects are not reflected in a market for financial transactions or are just one of the multitude of effects that determine the price. This makes it difficult to derive a monetary valuation of these impacts. The fact that these sorts of impacts frequently play a role in area development assessments makes it more difficult to draw up a complete inventory of costs and benefits in purely monetary terms.

The above mentioned 'weak values' are certainly no longer a 'blind spot' in our knowledge as numerous studies have been carried out and research in this area continues. However, these studies do not all point in the same direction. One strand goes as far as possible in expressing effects in monetary terms, often based on the idea that these effects can then at least be accounted for in the financial balance of costs and benefits. However, this balance is often given undue weight. Others believe that these valuation methods are still inadequate or think that expressing these effects in monetary terms obscures their nature and their real impact. For the cost-benefit analysis it is more urgent that this issue is resolved than that the available volume of research output on this topic is expanded further.

In line with the OEI guidance document on infrastructure effects, it is desirable not only to present a balance of costs and benefits, but also to provide an overview of the effects in their own 'units' (for example, the number of affected residents, the area of impacted landscape, etc.). This would allow government officials and politicians, the people who eventually take the final decision, to form an impression of the actual nature and scale of the effects.

If the correctness of a method for expressing an effect in monetary terms remains disputed, it may help to make assumptions or suppositions about the valuation of effects, define the margins within which these values are expected to lie and to assess the sensitivity of the outcomes with regard to the assumptions made. If no suitable method is available for expressing an effect in monetary terms, that effect is then mentioned in the balance of the cost-benefit analysis as an unquantifiable item. In such cases it may sometimes be possible to indicate whether this is a (highly) positive or (highly) negative effect. It is important that the people using the decision-support information are aware that there are relevant items that cannot be properly expressed in monetary terms; the unquantifiable items in the cost-benefit analysis are therefore not negligible residual items. This is true for every cost-benefit analysis, but particularly for cost-benefit analyses for area development assessments.

More and better communication enhances the clarity of cost-benefit analysis outcomes

Another specific feature of integrated area development assessments is that they involve several stakeholders with varied backgrounds. Transcending administrative boundaries means the involvement of various government authorities, each with its own interests, and that those involved will each have different levels of knowledge and experience of using cost-benefit analyses. Bringing these stakeholders together in a session to explore the possible effects of the plan at the beginning of the planning and decision-making process will create a broader base of shared insights into the effects of the plan and how these translate into welfare changes relevant to the cost-benefit analysis.

In addition to the effects expected by the stakeholders that can be identified one-on-one in the cost-benefit analysis, some effects can remain 'hidden' in the calculations. This may occur in three ways:

1. Effects are hidden in a redistribution effect. Example: Region A becomes more accessible and attracts more businesses. However, this is at the expense of region B, which loses businesses. At the national level there is no net effect, but at the level of region A, though, there is clearly a change. Because different stakeholders are involved in area development assessments, it is relevant to ensure that the cost-benefit analysis also reveals the spatial redistribution effects. The OEI guidance document used for infrastructure projects shows that this is possible, but it is often not done in practice. It is even more urgent that this occurs in integrated area development assessments.
2. Effects are hidden in a non-specified aspect of a wider effect. Example: Emissions of PM10 are included, but not separately specified, under the category 'Emissions'. The safety of cyclists is incorporated within the item 'Reduction in number of deaths and injuries'. The involvement in area development assessments of stakeholders with limited knowledge and experience with cost-benefit analyses requires more explanation of how such effects are recorded.
3. The effect has to be 'translated' into a cost-benefit term. Example: A local authority expects a project to lead to 'improved competitiveness for the business community'. These improvements can (largely) be traced to 'gains in travel time and travel time reliability', for which there is an explicit item in the cost-benefit analysis. This, too, requires further explanation.

Finally, local stakeholders may consider certain effects that do not appear in the cost-benefit analysis to be important. These are effects that fall outside the scope of the cost-benefit analysis because they do not have any economic welfare effects. For example, a local authority may consider that a measure should 'contribute to a balanced population composition', whereas it is not clear that this objective will contribute to greater prosperity. The outcome of the cost-benefit analysis can be made more accessible and comprehensible to the various (regional) decision-makers and politicians by also providing a description of the degree to which projects contribute to meeting policy objectives.

Quicker and Better, also for integrated area development assessments

Bringing stakeholders together in a session at the beginning of the planning and decision-making process in order to explore all the possible effects of the plan might slow down the decision-making process. In the interests of a 'Quicker and Better' process, this would appear at first sight to be unfavourable. However, this investment in time can reap dividends later in the process by generating broader support and delivering a 'Better' project.