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# EX POST EVALUATION OF INVESTMENT PROJECTS CO- FINANCED BY THE EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF) AND COHESION FUND (CF) IN THE PERIOD 1994-1999

## **INCEPTION REPORT**

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DIRECTORATE-GENERAL  
REGIONAL POLICY  
POLICY DEVELOPMENT  
EVALUATION

MILAN, FEBRUARY 24, 2011

This study is carried out by a team selected by the Evaluation Unit, DG Regional Policy, European Commission, through a call for tenders by open procedure no 2010.CE.16.B.AT.036.

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The authors are grateful for the very helpful insights from the EC staff and particularly to Veronica Gaffey, Kai Stryczynski and Anna Burylo. The authors are responsible for any remaining errors or omissions.

This report contains provisional considerations that may be revised in the Final Report of the study. Quotation is authorised as long as the source is acknowledged along with the fact that the results are provisional.

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# FOREWORD

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The Commission awarded to CSIL, Centre for Industrial Studies, in partnership with DKM Economic Consultants, a contract<sup>1</sup> to carry out a study concerning the Ex post evaluation of investment projects co-financed by the European Regional Development Fund (ERDF) and Cohesion Fund (CF) in the period 1994-1999.

The objective of this ex post evaluation is to analyze the long term contribution of 10 projects in transport and environment infrastructure implemented during the 1994-1999 programming period in Greece, Ireland, Italy, Portugal and Spain and co-financed by the ERDF or CF, to economic development as well as the quality of life and well-being of society. This is to contribute to the wider effort engaged in by DG Regional Policy to undertake ex post evaluation of cohesion policy.

The present Inception Report describes the way in which the study team intends to carry out the study, both from methodological and management perspectives. The report further details the proposals made in the Technical Offer (submitted on 26 August 2010), taking into account the first inputs from the Commission discussed during the kick-off meeting of the project (8 December 2010, Brussels).

The Inception Report is organised as follows: after referring to the objectives and specificities of the study, the methodology mobilised to carry out the activities foreseen by the Terms of Reference is detailed by describing, firstly, the overall conceptual basis and, secondly, the specific evaluation tools to be used per task of the study. Finally, a concluding section deals with the organisational arrangement adopted for carrying out the research. Annexes comprise:

- a preliminary list of references for the conceptual model;
- an amended list of projects for case studies selection;
- a preliminary project summary sheet template.

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<sup>1</sup> Contract n° 2010.CE.16.B.AT.036



# 1. OBJECTIVES AND SPECIFICITIES OF THE EVALUATION

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A large share of the EU budget is spent on infrastructure, especially transport (road, rail, waterways, airports, seaports, urban transport) and environment (energy, water, sewage and waste treatment). In the period 1994-1999, 784 financing decision of major infrastructure projects were taken for ERDF (individual and included in Operational Programmes) and CF, for a total of 16.43 Billion Euro paid. As part of the wider effort engaged by DG Regional Policy to undertake an ex post evaluation of EU cohesion policy results, the main purpose of this evaluation is to analyze the long term contribution to economic development, as well as to the quality of life and well-being of society, of 10 selected projects co-financed by ERDF or CF during the 1994-1999 period in the transport and environment sectors, selected out of a list of 35 projects (covering indicatively 12% of the total financing decision and around 33% of the overall disbursement). The rationale for focusing on a relatively small share of projects stems from the intention of digging more into the causal chains making long-term contribution to socio-economic development and quality of life as well as social well-being materialise<sup>2</sup>.

From the specifications of the ToR the requirement to assess the following emerges, in particular:

- *What kind of long term contribution can be identified for different types of investment in the field of environment (water supply, waste water treatment and waste treatment) and transport (road transport, rail transport, urban transport) infrastructure?*
- *How are long term contributions generated for different types of investments, i.e., what is the causal chain between short term and long-term socio-economic returns?*
- *What is the minimum and average time needed for a given long term contribution to materialise and stabilise?*

## LONG TERM EFFECTS

The above questions immediately draw attention to the main specificity of this evaluation, and its methodological challenge, which is to draw policy lessons from a thorough assessment of the long run impacts of the selected projects. Part of the uniqueness of the present evaluation relies, indeed, on the time elapsed since the completion of the investments. Infrastructure projects under assessment were constructed during the programming period 1994-1999 and although this time span represents only a fraction of the reference useful lives of projects typically belonging to the concerned sectors<sup>3</sup>, it is long enough to allow a meaningful and comprehensive assessment of the long term effects that the projects may generate, not only on the local economy, but also on the

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<sup>2</sup> It has to be noted that an ex-post evaluation of a higher number of project (60) co-financed by the Cohesion Fund in the period 1993-2002 has been already carried out, focusing more on effectiveness and efficiency issues. See *Ex Post evaluation of a sample of projects co-financed by the Cohesion Fund (1993-2002)*, Ecorys (2005).

<sup>3</sup> For example the following sectoral reference time horizons are given in the Table 2.2 of the EU CBA Guide: water and environment, 30 years; railways, 30 years; roads, 25 years

general welfare of the society. Moreover, the minimum and average time needed, in the different types of investment sectors and sub-sectors, for a given long term contribution to materialise and stabilise will be also matters of further investigation and assessment, as requested by the ToR.

### **QUALITY OF LIFE AND WELL-BEING OF SOCIETY**

Further developing the above evaluation questions, it can be said that this evaluation focuses on how different channels of influence (either direct or indirect) link infrastructure endowment with economic development, quality of life and the well-being of society. Those channels basically relate to the possibility of providing new or enhanced services to citizens, which are expected to trigger productivity gains in other sectors (e.g. more efficient transportation services enable entrepreneurs to cut production costs) and improving living standards (e.g. a better quality of drinking water enhances the satisfaction of users and may have positive effect on health). In the case of infrastructure co-financing, therefore, the role of the Structural Funds is significant but influences in a rather indirect way the ultimate provision of the service, which is the main element impacting on economic development and quality of life. In fact, investing in infrastructure brings positive effects in terms of employment and income, but it is a “one-shot” operation. In order to have durable effects, once an improved or adapted facility is constructed, the service provision needs to be managed, operated, maintained and financed in a sustainable manner. The actual long-term contributions greatly depend upon those, essential, aspects.

### **SPECIFIC PROJECTS ELEMENTS**

This general objective underpinned, some requirements of the ToR put emphasis on projects’ specific elements or capacities, evidence for which must be carefully analysed to support the study findings. In particular, the following aspects shall be investigated:

- The interrelationship between project’s long term contributions and the stakeholders affected (*who could be larger or smaller categories of actors directly or indirectly concerned by the project*) at different geographical levels.
- The capacity of the projects to adjust and adapt to changing internal and/or external conditions, and the risk of unpredicted events happening (*what has changed in the long run as a result of the project? Were these changes expected [...] or unexpected?*).
- The possibility that alternative project options could have achieved different results (*was the selected project the most promising option (the best option) among all feasible alternatives?*).

The analysis of these aspects is necessary to build the overall picture of the projects contribution to economic development and well being in a long term perspective. For example, understanding *where* the effects are located and *who* has standing is the starting point to have a comprehensive evaluation, since it entails the definition of the socio economic context and of the actors that have been affected by the project implementation. Given the possibility of unintended effects, this may not necessarily correspond with what expected ex ante. Also, the evaluation requires understanding of *how* projects’ contributions had happened, in terms of conditions for their attainment and their

causal chains. Despite the efforts put into any ex-ante appraisal, all the projects, especially the large ones, always show deviations between the ex-ante forecasts and actual attainment. In the specific case of large infrastructures, problems in designing, managing, operating and maintaining the infrastructure, may result in failures in the provision of the service and therefore undermine the potential contribution to economic development and society well-being. Those problems may be related to aspects which can be either specific and internal to the project under implementation or related to the external context (exogenous shocks). They can come from the supply or the demand side; sometimes they are predictable, at least to some extent, sometimes they are totally erratic. Thus, the evaluation requires an investigation of the conditions mostly influencing positively or negatively the results achieved, together with an analysis of how alternative project solutions, technological options, or different routes could have positively or negatively changed the outcome observed.

### ***METHODOLOGICAL CONSIDERATIONS***

Finally, besides the immediate result of assessing the long-term impacts of the sampled projects, this evaluation exercise can additionally contribute towards understanding which methodology or set of methodologies is best suited to assessing the socio-economic effects of transport and environmental infrastructures in the long run, and their contribution to regional development objectives. In fact, the ToR specifically require to develop a concept of long term contribution and to answer the key evaluative question *“what are the existing evaluation methods to capture a given long term contribution for different types of investment in the field of environment and transport infrastructure?”*. This is a key high value output of the entire study, and is effectively a requirement to extend the state-of-the-art with regard to project evaluation.

## 2. METHODOLOGY

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### 2.1 CONCEPTUAL BASIS

In this section the overall conceptual basis of analysis is presented and discussed. While the detailed methodology, and the specific evaluation tools to be used per task, is described in more detail in the next section (2.2), the following remarks outline the conceptual basis of the proposed evaluation activity.

The core of the conceptual basis lies on the combination of the methodological framework for case studies and the approach for drawing conclusions and recommendations.

#### 2.1.1. CASE STUDIES METHODOLOGY: TWO DIMENSIONS OF ANALYSIS

The key evaluation question of the ToR is recognized in the following: *What has changed in the long run as a result of the projects?* In order to answer this question the team designed a methodology along two different dimensions. These envisage a suitable mix of analyses and perspectives that allow the building of a comprehensive picture of project ex post evaluation, to answer the evaluation questions. The following steps will be carried out:

1. **Cost Benefit Analysis.** A standard ex-post Cost Benefit Analysis<sup>4</sup> (CBA) will be carried out for each case study. At this stage, the aim is to obtain project data to fill a model in an organized and standardized way. In particular, a standard set of cashflow tables will be produced, namely:
  - Investment cost
  - Operating costs and revenues
  - Financial rate of return on investment
  - Financial rate of return on capital
  - Financial sustainability
  - Economic rate of return

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<sup>4</sup> CBA is typically a microeconomic approach enabling the assessment of the overall social impact of a project through the calculation of economic performance indicators (Economic Net Present Value, Economic Rate of Return, Benefit Cost Ratio), which are sufficient statistics of welfare changes. CBA seeks to capture all the costs and benefits of a project, from society's point of view, expressing them in monetary terms. This includes also the evaluation of non-market impacts and environmental externalities. Financial and social discount rates (the latter defined as the cost of capital for society as a whole) are applied to all cash flows, to convert them into a single Net Present Value (NPV). In this way, projects in different sectors, regions and Member States can be compared on a consistent basis. For the purpose of the present evaluation, the logic of cost-benefit analysis will be applied in its fully-fledged version for the assessment of ex post financial and economic project performances, with the use of standard methodologies: willingness to pay/to avoid/to accept, long run marginal cost, benefit transfer, revealed preferences and so on.

The specificity about the use of cost benefit analysis in this evaluation lies in the fact that CBA will be not used merely to calculate performance indicators, or to just have homogeneity among case studies. Rather, it will represent a preliminary structuring exercise to unveil what are the crucial aspects of projects' ex post performance.

In particular, beyond the calculation of the rates of returns, the cost benefit analysis exercise forces the evaluators to think about the rationale and foundations behind an investment decision, as well as about the implementation problems that may be embedded therein. In other words, this exercise will allow assessment of all project aspects at quantitative micro level and will be the starting point for a first, consistent, screening of the main factors influencing projects' performance.

Answers to many of the evaluation questions included in the ToR will be developed on the basis of the conceptual thinking intrinsically implied by the cost benefit analysis effort.

For example, to evaluate an externality (e.g. reduction of accidents on a road network) to be included in the CBA model firstly implies an understanding of what happened to a given segment of population, in a given geographical area, as a consequence of the project. Or, the calculation of the net effect of a series of positive and negative environmental externalities gives the opportunity to reflect on the sustainability of the economic development triggered by a project. The identification of an unexpected impact on project users may, on the other hand, indicate the existence of unintended effects. In broader terms, the identification, quantification and monetisation of main project effects - typical of any CBA framework - allows one to elaborate, first, on what *has changed as a result of the project*, but also on the relationships between these changes and the stakeholders affected, on the predictability of the changes and on the concept of "sustainable development".

Another example derives directly from the application of the principle of incremental cash flows. Accordingly, project effects in cost benefit analysis are evaluated "incrementally", i.e. in comparison with a reference scenario in which the project is not implemented. This technique requires the evaluator to try to reconstruct ex post a scenario that determines what would have happened without the project. Consequently, all effects included in cost benefit analysis are project impacts that would have otherwise not occurred. If contributions to welfare of a given project were not identified in relation to such a reference scenario, the key question posed by the ToR "*What has changed in the long run as a result of the project?*" would not be answered correctly.

Similarly, the necessity to carry out an ex post option analysis - i.e. to reconstruct all project solutions that could have been feasible, before commencing the analysis of the selected project - is a precondition to assessing whether *the selected project was the most promising option or not* (see ToR p. 10).

Finally, economic performance can be, for this evaluation, too crude an indicator of welfare, if it is not associated with some thinking explaining the performance. For example, the achievement of a positive Economic Rate of Return may be the driver for arguing whether and why the changes generated by a project *have matched the objectives set and addressed*

*the existing development needs*, which is another key evaluation question. Reasons behind the achievement of the objectives set may be found, for example, in the resilience of the project, in the capacity of the management to react to unfavourable external conditions. Reasons behind a failure may be found in cases of information asymmetry or moral hazard, on the other hand. All these factors can be however “discovered” by applying the methodology of cost benefit analysis, according to which a clear relation between cause and effect must be always identified.

Also, the magnitude of the CBA performance indicators can give indications that help us to reflect on the degree of objective achievement, and on the reasons behind a possible discrepancy between what was expected and what was actually achieved. The reasons for an outturn being better or worse than expected might relate to external (e.g. an international economic crisis) or internal factors, such as the quality of the forecasting assumptions, the management of the project, or its inherent design. Thus, the first distinction that has to be made is whether the deviation is attributable to endogenous or exogenous factors, because while exogenous factors are hardly predictable and they are outside the control of the project management, endogenous ones should have been included in the ex ante analysis to reduce the related risks. Basically, endogenous forecasting error is a matter of cost, effort, or incentives of the ex ante appraisal. Only a careful distinction between forecasting errors in exogenous versus endogenous stochastic variables can offer a meaningful ex post evaluation.

Cost Benefit Analyses will be performed in Milan by the core team, liaising with the country experts, who will provide the data to feed the financial, economic and risk analyses.

<p><b>COST BENEFIT ANALYSIS: KEY ISSUES/ EVALUATION QUESTIONS</b></p> <p>For each project under assessment Cost Benefit Analysis will:</p> <ul style="list-style-type: none"><li>- measure the main direct economic effects and the (quantifiable) externalities, i.e. the welfare changes attributable to the project (what has changed in the long run as a result of the project?);</li><li>- discuss whether these changes are better or worse than expected and whether they were expected or not (have these changes matched the objectives set? Were these changes [...] already planned at the project design stage, e.g., in terms of pre-defined objectives or [...] emerged, for instance, as a result of changes in the socio-economic environment?);</li><li>- assess what are the determinants (reasons) of these changes.</li></ul> <p>Examples of direct economic effects and externalities for transport and environment investments are:</p> <ul style="list-style-type: none"><li>- for transport: travel time savings, reduction of vehicle operating costs, road network decongestion, reduction of accidents, increased noise, decreased air pollutant emissions;</li><li>- for environment: improved water quality, improved health conditions, water purification cost savings, groundwater savings, increased added valued from energy recovery, decreased odours</li></ul>
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**2. Qualitative analysis.** Cost benefit analysis results will be complemented by a qualitative assessment of project effects, following a strategic approach that combines the perspectives of economics with the broader frame of the social sciences. Given the quantification of the welfare changes resulting from the CBA exercise (direct economic effects and externalities), qualitative analysis aims to deepen the evidence gathered by:

- a) introducing the concept of *side effects*. These relate to:
  - o Qualitative effects: all those effects that, by their nature, are not quantifiable and are excluded from the cost benefit analysis, but are relevant for the scope of the evaluation;
  - o Indirect and wider economic effects: how direct project effects have further affected households and/or firms' economic behaviours;
- b) analysing project governance and organisational arrangements to find correlations between certain projects results and motivations, responsibilities and roles (decision making process and stakeholders involvement).

Thus, the qualitative analysis has the strategic role of mitigating the limitations of relying only on CBA. The rationale for adopting this strategy lies in the acknowledgment that a project is - first of all - a socially and culturally embedded process, and not just physical facility.

As far as point *a)* is concerned, the core idea is to deepen the analysis of project performance by investigating the *side effects*, a key variable to be checked in each project.

Side effects relate to both qualitative and quantitative aspects. As far as the former are concerned, projects' long-term contributions may include effects of very different natures: from economic impacts to more intangible and non-quantifiable effects, such as institutional learning of key stakeholders, improvement in the living standards of the affected citizens, social inclusion outcomes, political awareness, etc. Consequently, the qualitative analysis will explore key variables that are normally excluded from a quantitative data analysis. The box below provides examples of qualitative issues to be tested in the case studies, although for a more detailed argumentation refer to section 2.2.1.

The exploration of the qualitative side effects will be instrumental to assess *how social behaviours of different actors have changed as a result of the projects*.

As far as the quantitative dimension of the side effects is concerned, two types of effects can be distinguished: indirect effects and wider economic effects. The former are defined as monetary effects occurring in secondary markets related to the primary market by complementarity or substitutability relationships, while the latter are distortions occurring in unrelated secondary markets (e.g. firms agglomeration phenomena, increased competition, increased tourism, etc.). To give an example, a transport project may have had the immediate direct effect of reducing significantly travel time for a given journey from one region to another. Thanks to reduced travel time (and cost), new firms may be attracted to

enter a market or existing firms to increase production, because they find it more profitable to offer their products now than in the situation without the project. This is an example of wider economic effect that will be assessed and described in the case studies work.

In our analysis, both the indirect and wider economic effects a project may have produced will be expressed in qualitative terms in order to describe *how economic behaviours of households and/or firms have indirectly changed as a result of the projects*. Thus, the exploration of these effects can be seen as a qualitative description of economic behavioural changes, complementary to the quantification of the direct net project effects, contributing to the assessment of what happened in the *long term*.

To summarise, the analysis of the project *side effects* (both qualitative and quantitative) will be carried out to answer in a more comprehensive way the ToR's key questions about *what has changed as a result of the project*, whether these changes were *expected or not* and *how they have matched the objective set and addressed the existing development needs*.

As far as point *b*) is concerned, the aim to deepen the analysis of the variables influencing project contribution(s) to economic development, as well as quality of life and social wellbeing, through the investigation of the project governance and stakeholders involvement processes.

The key concept is that a large range of actors is usually involved in the realisation of a major project, as well as in the management of the related service. These actors may have conflicting or consistent interests, and the governance and partnership arrangements set up for the purpose of project implementation and management are relevant dimensions to be explored. Motivations to cope with any change, internal and external to the project, planned or unplanned, and to achieve the stated objectives, are – in fact - inevitably influenced and ruled by the contractual arrangements in place that define rights, responsibilities and obligations.

Given this context, historical analysis of the decision-making processes and the organisational responsibilities over the course of the project will be undertaken to shed light on how the arrangements in place have positively or negatively influenced the final output. This entails assessing the degree of flexibility and adaptability of the project itself, i.e. the way the management governed the whole project process, the ownership and the corporate structures, the risk management and the way in which all these actions worked as incentives to the various stakeholders.

The exploration of decision-making and governance processes will be instrumental to analyse *why social and economic behaviours have changed as a result of the projects*.

## **QUALITATIVE ANALYSIS: KEY ISSUES/ EVALUATION QUESTIONS**

For each project under assessment Qualitative analysis will assess:

- how social behaviours have changed as a result of the project (qualitative effects);
- how economic behaviours have indirectly changed as a result of the project (indirect and wider economic effects);
- whether a causal relation exists between changes and governance/stakeholders' involvement arrangements.

In the following some possible side effects and governance issues to be analysed in the case studies are illustrated. The list is illustrative, and elaboration will be further developed under Task 1.

### **Political:**

- What was the political debate around the project?
- Did the project induce any institutional learning at regional administrative level?
- Did it raise the political awareness over a specific theme?

### **Demographic:**

- Did the project have an impact on population dynamics?
- Did it play any role in urban-rural dynamics?
- How have travel patterns (e.g. for commuters or localisation decisions) been affected by its implementation?

### **Social:**

- Did the project indirectly improve the conditions of specific segments of the population (e.g. elderly)?
- Did it promote social inclusion through, for example, better access to recreational facilities?

### **Health:**

- Did the project have impacts in terms of health condition?
- Did it improve social wellbeing through, for example, increased life expectancy?

### **Environmental:**

- Were there any environmental issues related to project implementation?
- Did it alter the wildlife habitat?
- Did it affect the ecosystem?

### **Economic:**

- Did the project change the consumption of a substitute good in such a way as to transform the strategic decisions of firms?
- Did the project indirectly increase tourism flows in the target area?

### **Governance:**

- Who were the stakeholders involved and what were their roles?
- What was the composition of the partnership?
- What was the interest for each partner to participate?

By combining the qualitative and the quantitative analysis, the case study report will offer a comprehensive picture regarding the long term effects, in all their aspects, produced by the project. The strategy for reporting the ten different case studies will be that of “telling the story”.

Thus, while stressing the need for a consistent cross-analysis of the different case studies - on the basis of a common template - the evaluators acknowledge the importance of the storyline flowing throughout the text, and particular attention will be devoted to the narrative effort of developing a “history”, more than to a mechanical exercise of answering the key evaluation questions. Within a comprehensive grid of evaluation questions - in fact - it is most unlikely that each case study will provide interesting discussions about all of the issues. Therefore, for each project assessed, an effort will be made in order to isolate the main aspects explaining its long-term performance, in all its specificities. This is instrumental for further aggregation and comparison into a synthesis providing ideas and recommendations at operational policy level for the future (see below).

### 2.1.2. POLICY THEMES AND LESSONS

Finally, the ten project histories will be put together to extract some key ideas (strongly supported by evidence) for policy learning and to derive meaningful recommendations. In other words, the overall strategy will not stop at the ten case study histories as such, since individual project cannot provide relevant and broadly applicable key lessons. On the contrary, putting them together under a coherent vision is the most interesting and challenging task, and represents the real added value of this evaluation, which should be able to provide key ideas for policy learning.

The approach to be followed in the synthesis activity is inspired by the work of A.O. Hirschman in his book *Development Projects Observed*<sup>5</sup>, where he reports about the results of a number of investment projects financed by the World Bank all over the planet.

In this unsurpassed exercise of ex-post evaluation of individual projects, A.O. Hirschman points to, on the one hand, the different nature of sources of uncertainty (ranging from technological problems to religious aspects) challenging the project performance during its lifetime, and on the other, the mechanisms that motivate the key actors to undertake achievement-oriented behaviours. In the emerging picture, one of the most informative aspects is the description of the processes through which results were achieved and of the behaviours of different actors. In particular, he unveils the importance of aspects that cannot be straightforwardly treated in technical terms, which are sometimes the determinants of success and failures of a project. He uses, for example, the expression the ‘hiding hand’ to stress how the obvious unfeasibility to predict every future state of the world - which translates in a systematic underestimation of the costs or difficulties of a project - may be beneficial, being indeed the occasion for creative solutions and unplanned resources and energies to be put in place during the course of the project that otherwise would have not materialised. His observations suggest that a key success factor of a project is its capacity to promptly adjust to unpredicted events (resilience) and to manage the sources of uncertainty.

Following the same perspective adopted by A.O. Hirschman, policy lessons and recommendations will be drawn according to a set of “themes” (see box below).

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<sup>5</sup> A. O. Hirschman, 1967, *Development Projects Observed*, The Brookings Institution, Washington, D.C.

## POLICY LESSONS AND RECOMMENDATIONS: THEMES

The following themes will be explored in order to extract key ideas for policy learning and operational recommendations:

- *The “hiding hand”*. The synthesis activity will analyse what kind of and how unexpected problems, or threats, arose during projects construction or running, and what has been done, in different circumstances to react to such unpredicted events. The concept behind this proposition is that unexpected problems are the rule, so that the key success factor of investment projects is quite often the promptness in reacting to them with creative solutions. Lessons will be drawn in terms of the capacity put in place by project managers and decision-makers to adjust to unpredicted events. Within this framework, two issues emerge and deserve attention:
  - o Why were these threats unexpected? Due to their purely exogenous and ex ante unpredictable nature? Or, due to poor planning capacity? Or lack of proper incentives to disclose true information about them?
  - o In case of unpredicted threats, what are the mechanisms that incentivise proactive reactions? Is project visibility a relevant political incentive (the ‘labelling’ or ‘showing up’<sup>6</sup> strategy)? Did contractual arrangements improve the coordination of different stakeholders towards achievement-oriented results?
- *Uncertainty*. This theme is related to the previous one and focuses on the analysis of project risks. The proposition is that, since socio-economic contexts are complex and dynamics unpredictable, projects are affected by a risk component which could lead to strong deviations from what was expected ex ante. Risk mitigation measures become important to alleviate the possibility of risk failure. Different types of project uncertainty exist: technological, administrative, financial. As far as technological uncertainty is concerned, lessons from case studies will shed light on the necessity, with respect to the initial project design, of introducing new technological elements to solve an unexpected event. Financial uncertainty, on the other hand, will be explored by assessing the capacity of project management to find solutions in case the sources of financing did not been provide the expected flow of resources. Administrative uncertainty is a key aspect in a multi-stakeholder and multi-level governance settings such as those for the ERDF and CF implementation.
- *The public-private mutual relationship*. Even if the case studies can be defined as public investments, their implementation necessarily affected also the private sphere. Projects using public funds and managed by public authorities have distributional effects, induce changes in relative prices and deal with affordability issues. Likewise, private investments may operate within a regulatory framework, partly taking the form of legislative and other controls, and partly that of charging, as, for example, investments in services paid for by consumers with tariffs regulated by public authorities, so that they can be defined as “public”. Considerations under this heading concern:
  - o How can a public investment have influenced private expenditure?
  - o In what ways has society gained from the projects?

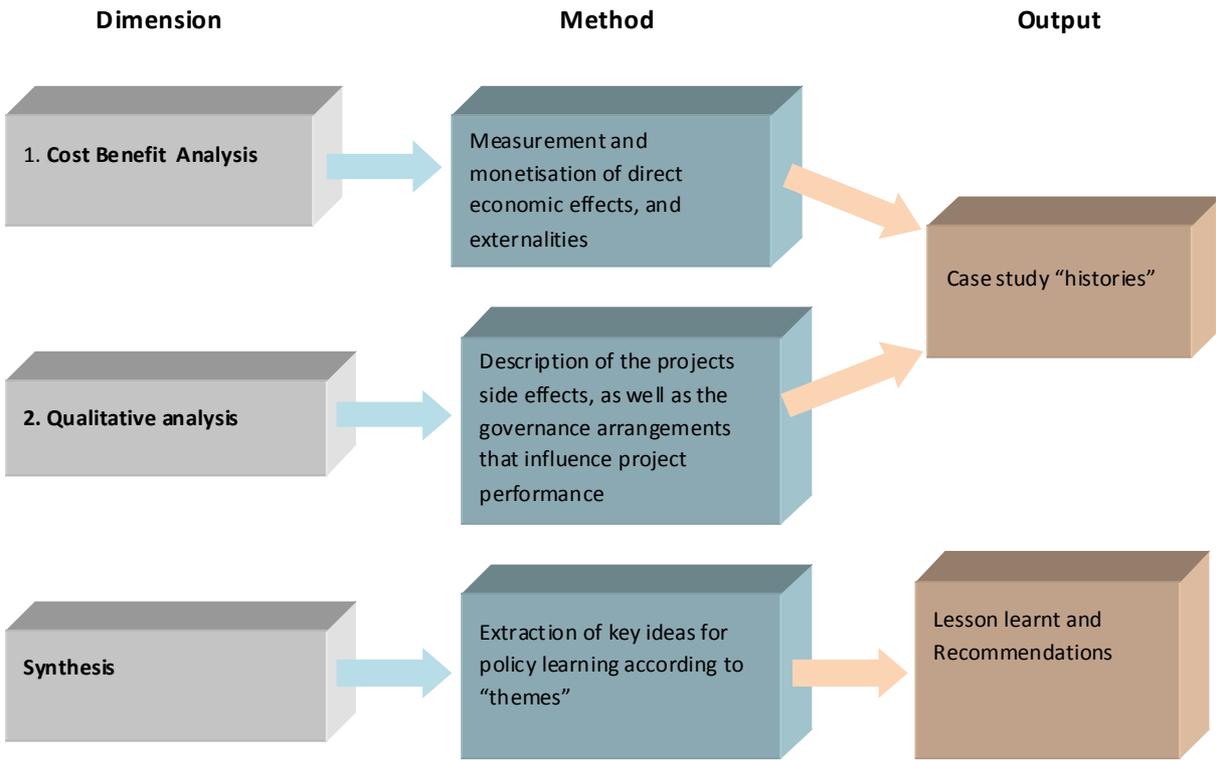
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<sup>6</sup> Hirschman uses the Italian ‘fare bella figura’ for this.

- Have the projects induced re-distributional effects among EU tax payers?
- *The centrality of side effects.* The hypothesis is that, aside from the output of goods and services which is the projects' primary aim, projects have a variety of more intangible, yet important, effects affecting different fields: from institutional to social, from economic to environmental, and so on. Thus, policy learning will be also derived from the conceptualisation that project contributions to economic development and wellbeing are linked to changes in the economic and social behaviours of citizens and institutions, as defined by the side effects. In this regard, some ideas will be "extracted" from the case studies to illustrate:
  - whether or not side effects are natural consequences of the projects themselves, for how they have been designed (i.e. considering their "structural" characteristics);
  - if such effects are embedded in the projects in such a way that they even turn into "factors" whose presence is required to make the projects work.

The core deliverable resulting from the synthesis of the case studies will be the Final Report.

Fig. 1 Dimensions of analysis in the conceptual basis



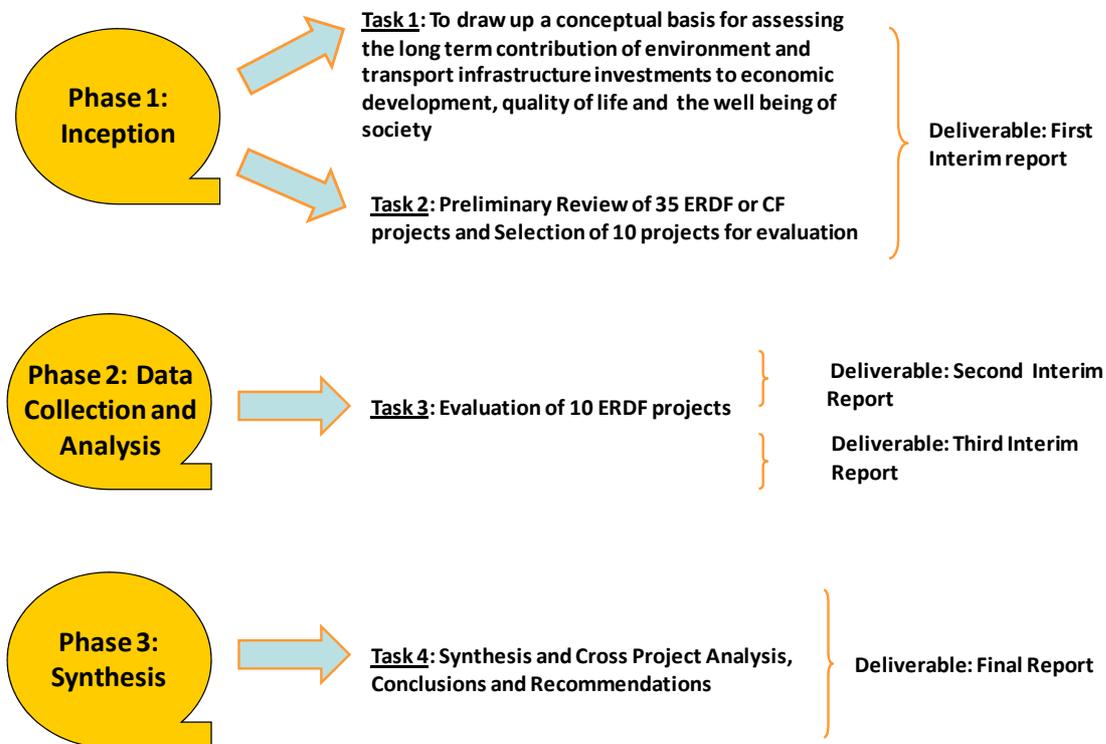
Source: Authors

## 2.2 SPECIFIC TASKS AND METHODOLOGIES

The evaluation study will be carried out along three main phases and four main tasks (Fig. 2):

1. Inception phase: conceptual basis (Task 1) and case studies selection (Task 2);
2. Data collection and analysis: assessing the long-term contribution of the selected projects (Task 3);
3. Synthesis: cross-project analysis, conclusions and recommendations (Task 4).

Fig. 2 Evaluation study phases, tasks and deliverables



In the following, the methodological tools mixing quantitative and qualitative approaches will be presented for each of the 4 Tasks required by the ToR.

### 2.2.1 TASK 1: CONCEPTUAL BASIS

The purpose of the conceptual basis is to:

- (i) Agree on a common terminology to define the long term contribution of environment and transport infrastructure investments to economic development, quality of life and the well-being of society.

- (ii) Develop a conceptual basis of ex-post evaluation of such long term contribution.
- (iii) Operationalise the conceptual model to guide Tasks 2, 3 and 4 of the study, applicable on a consistent basis across five countries and two sectors by developing a set of key evaluation questions and template for case studies.

In order to achieve this, Task 1 will undertake a comprehensive review of the technical literature, to assess the state-of-the-art on project appraisal. The literature to be covered will span:

- Theoretical and empirical,
- Techniques and use of ex-post evaluation,
- Quantitative and qualitative, and
- European and ex-Europe (developed and developing world).

The review will not limit itself to a narrow economic focus, but will also consider political and policy aspects, as well as exploring sociological, institutional and other issues.

Having ascertained a comprehensive view of the state-of-the-art, the key piece of work will be to develop from this the conceptual model referred to above. Indeed, it is the intention to advance the state-of-the-art as it relates to ex post analysis, in particular by bringing fully up-to-date both the understanding of quantitative/technical thinking and the incorporation of wider, qualitative approaches.

#### **KEY EVALUATION QUESTIONS TO BE ADDRESSED IN THE CONCEPTUAL FRAMEWORK**

As per the Terms of Reference, this conceptual evaluation framework must be capable of addressing the following key questions<sup>7</sup>:

- What kind of long term contributions can be identified for different types of investment in the field of environment (water supply, waste water treatment and waste treatment) and transport (road transport, rail transport, urban transport) infrastructure?
- How is this long term contribution generated for different types of investment in the field of environment and transport infrastructure, i.e., what is the causal chain between certain short term socio-economic returns and long term returns from investment?
- What is the minimum and average time needed for a given long term contribution to materialise and stabilise? What are these time spans for different types of investment in the field of environment and transport infrastructure?
- What are the existing evaluation methods to capture a given long term contribution for different types of investment in the field of environment and transport infrastructure?

Our initial consideration of these questions is as set out in the table overleaf. It is necessarily imprecise and uncertain, given the early stage of the analysis, but describes the key issues and questions as we see them from the current viewpoint.

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<sup>7</sup> As per page 7 of the Terms of Reference for the project.

Tab. 1 Key issues by infrastructure category

Infrastructure category	Kind of long term contributions	Causal chain between short term socio-economic returns and long term returns	Minimum and average time needed for a given long term contribution to materialise and stabilise	Existing evaluation methods to capture long term contribution
<b>Environment</b>				
Water supply	<ul style="list-style-type: none"> <li>• Increased GDP, through lower cost and greater availability and quality of inputs.</li> <li>• Improved quality of life and societal well-being through upgraded environment and improved health.</li> </ul>	<ul style="list-style-type: none"> <li>• Consolidates or increases capacity of land to cater for a range of economic and social development (industrial, agricultural, housing, commercial, tourism).</li> <li>• Opens up underdeveloped land for same.</li> <li>• May improve environment and amenity by reducing abstractions from existing water sources, making affected areas more attractive to live and work in.</li> <li>• Potentially improve population health in areas of poor water quality.</li> <li>• Investment programmes may increase local administrative and technical/industrial capacity to deliver and operate complex, large-scale infrastructure projects.</li> <li>• Demonstrably improved environment may encourage increased private investment by environmentally sensitive firms (e.g. FDI).</li> <li>• Potential initial crowding out of private investment (less so with external funding), followed by subsequent private crowding in.</li> <li>• Proper pricing and maintenance of infrastructure is important for generating long term benefits.</li> </ul>	<p>Likely to depend on pre-existing demand levels. If there is a high level of pre-existing pent up demand, short term impacts will materialise quickly (1-5 years?), and enable more rapid feed through to longer term contributions (5-10 years?), dependent on other factors such as delivery of related policy initiatives.</p> <p>If capacity is put in place in advance of demand, long term contributions will be highly dependent on the implementation of a range of other policy initiatives to take advantage of new capacity. If these are not implemented or are not successful, long term contributions may not arise at all or only very slowly.</p>	<ul style="list-style-type: none"> <li>• CBA</li> <li>• EIA</li> <li>• CVM/WTP/WTA</li> <li>• Hedonic price models</li> <li>• MCA</li> <li>• Surveys, interviews, workshops with policymakers, firms, households;</li> <li>• Benefit transfer</li> </ul>
Waste water treatment	<ul style="list-style-type: none"> <li>• As for water supply.</li> <li>• Investment aimed primarily at meeting regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>• As for water supply.</li> <li>• More direct environmental, wildlife, amenity, tourism and health benefits, particularly where involves rehabilitation of degraded water bodies.</li> </ul>	<ul style="list-style-type: none"> <li>• As for water supply.</li> <li>• Investment aimed primarily at meeting regulatory requirements (e.g. UWWTD) may generate</li> </ul>	As for water supply

Infrastructure category	Kind of long term contributions	Causal chain between short term socio-economic returns and long term returns	Minimum and average time needed for a given long term contribution to materialise and stabilise	Existing evaluation methods to capture long term contribution
	(e.g. UWWTD) may generate limited long term contributions.	<ul style="list-style-type: none"> <li>Investment aimed primarily at meeting regulatory requirements (e.g. UWWTD) may generate limited socio-economic contributions.</li> </ul>	limited long term contributions.	
Waste treatment	As for water supply	<ul style="list-style-type: none"> <li>As for water supply.</li> <li>Additional potential benefits through capturing and utilisation of landfill gas.</li> <li>Enforcement of anti-dumping laws/ regulations vital to delivering benefits.</li> </ul>	<ul style="list-style-type: none"> <li>As for water supply.</li> <li>Contributions may take longer to materialise but may last longer, give nature of landfill-related pollution.</li> <li>Dependent on degree to which old landfills are rehabilitated/retro-fitted with anti-pollution infrastructure, as well as on enforcement of anti-dumping laws/regulations.</li> </ul>	As for water supply
<b>Transport</b>				
Road	As for water supply, more direct impact on GDP, less direct impact on quality of life/societal well-being	<ul style="list-style-type: none"> <li>Increased transport capacity reduces or removes constraints in existing network, leading to reduced business costs, increased domestic and international competitiveness, feeding through to increased employment and reduced consumer prices.</li> <li>Increased geographic linkages and access regionally, nationally and internationally, opening up local markets, leading to increased competition, employment and reduced consumer prices.</li> <li>Network benefits may enable/contribute to industrial clustering.</li> <li>Safer network leads to fewer accidents and thus injuries and fatalities; leads to reduced healthcare costs, avoided loss of earnings and reduced material damage.</li> </ul>	<p>Likely to depend on pre-existing demand levels. If there is a high level of pre-existing pent up demand, short term impacts will materialise quickly (1-3 years?), and enable more rapid feed through to longer term contributions (3-10 years?), dependent on other factors such as delivery of related urban renewal investments.</p> <p>If capacity is put in place in advance of demand, long term contributions may take significantly longer to materialise (10-20 years+?). They</p>	As for water supply

Infrastructure category	Kind of long term contributions	Causal chain between short term socio-economic returns and long term returns	Minimum and average time needed for a given long term contribution to materialise and stabilise	Existing evaluation methods to capture long term contribution
		<ul style="list-style-type: none"> <li>• Improved urban environment, reduction in congestion and pollution in by-passed towns, leading to improved health, reduced damage to buildings, catalyst for urban renewal and increased tourism.</li> <li>• Potential initial crowding out of private investment (less so with external funding), followed by subsequent private crowding in.</li> <li>• Proper pricing and maintenance of infrastructure is important for generating long term benefits.</li> </ul>	<p>may not arise at all or only very slowly if the anticipated demand does not materialise as expected.</p>	
Rail	As for road	<ul style="list-style-type: none"> <li>• As for road investment, but likely to focus more on passenger rather than goods transport;</li> <li>• Can reduce congestion on crowded inter-urban road networks.</li> </ul>	<ul style="list-style-type: none"> <li>• As for road investment.</li> <li>• Perhaps greater danger of expected long term contributions not materialising, where capacity put in place in anticipation of demand, or where road capacity also added on same corridor.</li> </ul>	As for water supply
Urban	As for road	<ul style="list-style-type: none"> <li>• Increased urban transport capacity expands local labour market and social accessibility/inclusion.</li> <li>• Reduced business costs leading to same benefits as above.</li> <li>• Improved urban environment, as above.</li> </ul>	<ul style="list-style-type: none"> <li>• As for rail.</li> <li>• Highly dependent on delivery of related urban development infrastructure and good spatial/urban planning.</li> </ul>	As for water supply

A specific requirement of the study is to develop a conceptual basis of long term contribution of environment and transport infrastructure investments to **economic development, quality of life** and the **well-being of society**. What is meant precisely by the three terms is therefore of key importance. How transport and environmental infrastructure projects impact on them is an equally important and related issue that must be dealt with in the appraisal process.

Economic development is straightforward and relatively well-understood, and therefore the least controversial. Measures of national output and national income (GDP, GNP) as well as of productivity changes are well-established and regularly produced on a consistent basis by national statistics offices and Eurostat, and there is general agreement that these statistics are a reasonable measure of economic development (notwithstanding issues around sustainable development, environmental state, etc.). The means by which infrastructure developments impact on economic development are also reasonably well understood, in terms of direct economic activity during construction, and benefits of the outputs of the infrastructure - reduced average and variability of travel times, market prices of additional outputs (road tolls, train revenues, water services, etc.), although it is also the case that some investments have a less obvious impact on economic development than others.

Quality of life and well-being of society are more subjective concepts and as such more difficult to specify and come to an agreed definition on than economic development. That said, economic conditions have a clear impact – employment and freedom from poverty are basic factors in quality of life and societal well-being<sup>8</sup>.

Quality of life and well-being of society are rarely comprehensively defined in a manner that allows for policy and investment appraisal. Among the potential criteria are:

- longer life,
- better health,
- increased leisure time,
- improved environment,
- improved accessibility and opportunity,
- income equality (including across regions),
- social cohesion and solidarity, and
- general happiness and satisfaction with life.

All to some extent can be linked to investment in transport and environmental infrastructure. There are significant difficulties in making these links in a consistent robust manner, however, including:

- (i) So many other factors impact on these criteria, and the effect of individual infrastructure projects, even very large ones, is usually small for most residents of a region or State.
- (ii) Many criteria are difficult to quantify and combine in a consistent measure, to weigh against other impacts of investment.
- (iii) The definition of and value placed on these criteria may not be consistent across regions, Member States and cultures.

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<sup>8</sup> Albeit it is widely agreed that beyond a certain level further increases in income have a reduced incremental benefit (see for example the UN Human Development Index).

Other issues that could be considered include improved administrative and policymaking capacity, although public perception of these may be low and identification of concrete impacts may prove difficult.

Notwithstanding the foregoing, the same techniques that measure economic development impacts can go some way towards measuring quality of life/societal well-being benefits, most obviously in the case of reduced journey times for leisure-relating travel and commuting, and reduced risk of death through improved environment or safer roads, using valuations of Quality Adjusted Life Years (QALY).

Other techniques such as Contingent Valuation Methods (CVM) and Willingness-To-Pay (WTP) studies can capture more subjective aspects, such as for instance amenity and wildlife benefits, and improved health. However, in other cases economic techniques may miss relevant issues altogether, for instance where there are winners and losers as a result of a particular change, which may have relevance for social cohesion<sup>9</sup>.

Qualitative techniques clearly have a strong role to play in assessing quality of life and well-being of society impacts, such as interviews, workshops, review of media and policy documents, and so on. Insights from other fields of knowledge, including sociology, psychology and politics, are also likely to be of value.

There is a particular advantage to ex post analysis where these matters are concerned, specifically as the infrastructure is in place and in operation, and the impacts are actually being felt. Qualitative analysis benefits greatly from this, as the matter in question is more concrete and thus for example interviewees should be in a better position to assess and describe the impacts they are experiencing. Unforeseen impacts, often qualitative in nature, may also have materialised in an ex post context.

A finalised definition for current purposes of quality of life and societal well-being, as well as the channels through which transport and environmental infrastructure investments impact on them, awaits the completion of this conceptualisation study. However, the foregoing has set out some of the issues that arise and will need to be addressed.

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<sup>9</sup> Classical microeconomic analysis has little to say about income distribution issues. A change is economically efficient provided the gainers gain more than the losers lose, and thus the former could in theory compensate the latter and still be better off (a potential Pareto improvement). There is no requirement for compensation to actually be paid, and in many cases it may not be practicable to do so.

At a wider level, the question of winners and losers and community solidarity also arises with the EU Cohesion, Structural and other Funds. These Funds represent transfers from better-off Members States (net contributors to the EU Budget) to less well-off States (net gainers from the budget), so in a direct sense residents of the former lose while residents of the latter gain. At an EU level, a higher value is therefore being placed on incremental development in the less well-off States than in the better-off States. One could argue that this is a reflection of diminishing marginal returns on investment in an already well-endowed region, although it is rarely articulated as such, and institutional structures in Member States are also important in determining marginal returns.

Tab. 2 Tentative structure of the conceptual framework

Section	Section Headings	Key Issues and comments
Introduction	<ul style="list-style-type: none"> <li>➤ Background to report;</li> <li>➤ Task of report;</li> <li>➤ How it fits with the rest of the study;</li> <li>➤ How it fits with the body of knowledge on project/programme appraisal</li> </ul>	<p>Comprehensive literature review to assess the state of the art and apply to the current study. Literature to cover:</p> <ul style="list-style-type: none"> <li>- Theoretical &amp; empirical</li> <li>- Ex post evaluation and its use</li> <li>- Quantitative &amp; qualitative</li> <li>- European and ex-Europe</li> </ul> <p>Purpose of the conceptual framework</p>
The Concept of Long Term Development	<ul style="list-style-type: none"> <li>➤ What is long term development?</li> <li>➤ Economic development</li> <li>➤ Quality of life</li> <li>➤ Societal wellbeing</li> <li>➤ Long term vs. short term</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of these terms – competing definitions, recommended definitions</li> <li>• Linkages with other concepts</li> <li>• What are the best measures? What impacts should we be looking for? How do they happen?</li> <li>• Over what period should we expect to find them and for them to stabilise?</li> <li>• What is the causal chain from short term impacts to long term impacts?</li> <li>• Do they differ for transport Vs. environmental infrastructure projects?</li> <li>• Do they differ geographically or by ex ante development level? If so, how?</li> <li>• Preferences for development in particular regions (e.g. poorer Vs. richer regions)</li> <li>• Behavioural changes</li> <li>• What are the existing methods for evaluating long term contributions for different investment types (<i>lead into next two chapters</i>)</li> </ul>
Project Evaluation – Quantitative Approaches	<ul style="list-style-type: none"> <li>➤ Ex Post Analysis</li> <li>➤ CBA <ul style="list-style-type: none"> <li>– Description</li> <li>– History and development</li> <li>– Non-market valuations</li> <li>– Strengths and limitations – theoretical and empirical</li> <li>– Latest usage and thinking (e.g. Eva-Tren)</li> </ul> </li> <li>➤ EIA, MCA and other techniques</li> <li>➤ Benefits Transfer</li> </ul>	<ul style="list-style-type: none"> <li>• Issues with Ex-post analysis – definition of the counterfactual; what is being analysed – actual performance or how accurate was the ex ante CBA? Reasons for deviation? Impact assessment? A mixture?</li> <li>• Ex ante and ex post perspectives – advantage of ex post perspective – more known; how accurate were ex ante analyses; how well did they cater for risk; what lessons can be learnt from ex post?</li> <li>• Importance of unforeseen/unforeseeable impacts?</li> <li>• CBA as the key evaluation technique, partial Vs. general equilibrium approaches</li> <li>• Incorporation and valuation of non-market costs and benefits - limitations and resistance to usage?</li> <li>• Lifetime costs and appropriate evaluation timeframe?</li> <li>• Limitations of CBA – difficult to capture all impacts, which will vary by sector, reducing comparability; danger of mechanistic approach by stakeholders/policymakers.</li> </ul>

Section	Section Headings	Key Issues and comments
	<ul style="list-style-type: none"> <li>➤ Conclusions</li> </ul>	<ul style="list-style-type: none"> <li>• Additionality and displacement.</li> <li>• “wider effects” problem with CBA – definition of project and its impacts – “where do you draw the line”? Over-accrual of benefits, over-allocation of network benefits; direct, indirect and induced impacts.</li> <li>• Limitations on application of EIA and on its use for evaluating individual projects.</li> <li>• EIA better at capturing network effects?</li> <li>• Uses and limitations of MCA</li> <li>• Uses and limitations of Benefits Transfer</li> <li>• Challenge of separating the impact of the project from all the other things that were happening (i.e. defining counterfactual).</li> <li>• Challenge of incorporating value for money considerations – benchmarking?</li> </ul>
Project Evaluation – Qualitative Approaches	<ul style="list-style-type: none"> <li>➤ A more narrative approach – telling the story - Hirschman</li> <li>➤ Qualitative techniques <ul style="list-style-type: none"> <li>- Interviews</li> <li>- Review of media/government reports</li> <li>- Other techniques</li> </ul> </li> <li>➤ Contribution of other/related disciplines <ul style="list-style-type: none"> <li>- Location theory/ new economic geography, sociology, psychology, etc.</li> </ul> </li> <li>➤ Developments and latest thinking – Flyvbjerg et al.</li> <li>➤ Conclusions</li> </ul>	<ul style="list-style-type: none"> <li>• The “hiding hand” and underestimation of difficulties/over-estimation of benefits - strengths and limitations; applicability to European experience.</li> <li>• Importance of positive side-effects; impacts on behavioural change.</li> <li>• What happened during/after project – were events internal /external to project? Were external changes predictable? Were deviations unavoidable or result of good/bad decision-making?</li> <li>• What drove change – incentives, contractual arrangements, role of stakeholders, ownership, etc.?</li> <li>• How to investigate and identify these.</li> <li>• Approach of Flyvbjerg and others – incentives towards and negative implications of underestimation of difficulties/over-estimation of benefits.</li> <li>• Setting the socio-economic, institutional and behavioural context for project – how conceived, chosen for aid, planned, implemented.</li> <li>• Alignment of economic and policy priorities (e.g. meeting EU Directives)?</li> <li>• Behavioural changes by producers/consumers.</li> <li>• Challenge of achieving objectivity and comparability.</li> <li>• Treatment of non-market costs and benefits.</li> <li>• Better at finding out why projects succeeded/failed?</li> <li>• Better at capturing quality of life and societal benefits?</li> </ul>
Synthesis of Approaches	<ul style="list-style-type: none"> <li>➤ What can be learnt from various approaches <ul style="list-style-type: none"> <li>- Quantitative</li> <li>- Qualitative/narrative.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Key task is to take the state of the art from a range of approaches and advance the conceptual framework for ex post project evaluation, specifically for transport and environmental infrastructure.</li> <li>• Address and answer the questions as from ToRs</li> </ul>

Section	Section Headings	Key Issues and comments
	<ul style="list-style-type: none"> <li>➤ Recommended approach for current study.</li> <li>➤ Set of key questions/evaluation template on which to base subsequent Tasks in the study.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop this into a consistent evaluation template.</li> <li>• Key role of CBA as basis for overall evaluation approach.</li> <li>• Guidelines on where and how to use various techniques</li> </ul>
Terminology	<ul style="list-style-type: none"> <li>➤ Recommendations for a synthesis of terminology.</li> </ul>	
Conclusions		
Bibliography	See preliminary list of reference	

## 2.2.2 TASK 2: PRELIMINARY REVIEW OF 35 ERDF OR CF PROJECTS AND SELECTION OF 10 PROJECTS FOR EVALUATION

This Task initially requires a preliminary screening (Task 2a) of a sample of 35 proposed projects, followed by a determination (Task 2b) of the most suitable 10 transport and environment ones, selected for more in-depth analysis and ex-post evaluation under Task 3.

In particular, Task 2a will consist of a preliminary review of proposed projects, culminating in a set of one page “project summary sheets” containing project identity information and brief content description. In addition, a rating of each project’s evaluability will be provided, based on a qualitative assessment of its relevant features from an evaluation viewpoint, to facilitate further the selection process of those projects that will be then fully ex-post evaluated as part of a subsequent Task of this project<sup>10</sup>.

A first list of 35 projects has been provided in the Specifications’ Annex. In accordance with the strategy agreed during the kick-off meeting, this list has been slightly modified and adapted by the Contractor to include a new Irish and two Italian projects: the “Dublin Region Water Supply”, the A3 motorway Naples-Pompei-Salerno and the Port of Salerno. Considerations for the inclusion of those three projects are the following:

- the project “Dublin Region Water Supply”, funded by Cohesion Fund is of great interest, since it serves a large city which had limitations on water supply. The contractor has specific knowledge of the project that could facilitate the data gathering activities. Finally, no water supply projects were included in the original list for Ireland.
- As for the Italian projects, a preliminary interaction with the Italian geographical desk at the DG REGIO indicated that the original rail link in the Basilicata region was actually discontinued, therefore it offers limited or no scope for the ex-post evaluation. In order to provide alternatives for Italy, two projects are suggested for the preliminary screening with the following justification: the port of Gioia Tauro is considered of international economic relevance, as after its completion it rapidly became the largest transshipment terminal in the Mediterranean sea. On top of that some documents regarding this project are available from the geographical desk. The motorway Naples-Pompei-Salerno also has a significant impact on traffic flows at the national level, and the knowledge of the team of the regional context suggests that it could be a good candidate for selection.

In order to keep the final list of projects fixed at 35, the following replacements are proposed:

- Leave out project n. 24 “Rail link between stations of Ferrandina and Matera-La Martella, Basilicata” for the reasons described above.

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<sup>10</sup> The overall purpose of the evaluability assessment in this particular case is mainly to function as a stepping stone toward the next and main phase of the ex-post evaluation, by assuring that all the necessary prerequisites and conditions exist in order for the selected projects to be properly and credibly ex-post evaluated. This type of preliminary study will also help further elaborate on the purpose of the ex-post evaluation, identify what data resources are currently available and accessible by each project, and consider different methods for best conducting the evaluation in relation to each project’s characteristics.

- Leave out project n. 30 “Ligne du Nord”, Portugal, since the rail sector is already significantly represented in the country list for Portugal, and the project has been completed later than others in the same sector so that long terms effects would not yet be fully visible.
- Leave out project n. 34 “Systeme multimunicipal d’approvisionnement de Grand Porto Sud”, Portugal, since this include only the first phase of the project and a similar but completed project is already in the list for Gran Porto Nord.

Furthermore, preliminary interactions with the Portuguese desk advise that the documents related to those projects from the Commission side is really poor or non-existent.

Annex 2 presents the proposed list of ERDF and CF projects, for which information and documents will be collected and analysed, in order to finally select 10 projects for evaluation under Task 3.

To accomplish the above and conduct the projects reviews, data gathering activities will be carried by the country experts with the coordination of the core team. These activities will rely on:

- project documentation: feasibility studies, application forms, financing decisions and any other relevant document available at the Commission services and/or the Managing Authorities and/or the beneficiaries;
- quantitative and qualitative information reported on the projects via other sources, e.g. evaluations, studies, articles, etc.
- consolidated knowledge of the country experts on the project.

With regard to the first point, a preliminary check of what is available at the Commission services has been already carried out by the core team. The results of this check are illustrated in the Table below.

For those projects for which documentation is available, contacts with the geographical desks will be made by the core team to collect what is available and generate information. The team is aware that the available documentation at the European Commission is limited. Country experts will be then responsible for collecting data available on field. A first source of information to be explored by the country experts will be the Managing Authorities and the beneficiaries in order to understand what documents are available, who can be contacted and the likely level of support these people may give. Also, for many projects, websites will provide preliminary description on project implementation.

Tab. 3 Results of preliminary check of projects' documents (updated at 24/01/2011)

Greece	Spain	Ireland	Italy	Portugal
For the 4 Greek projects, the country desk identified which information is available either at the DG REGIO premises or at the historical archives.	A preliminary contact is established and an indicative exchange regarding availability of information has been made.	The country desk contact sent all the available documents on projects financed in the period 1994-1999.	Preliminary indication about availability of data have been discussed with the desk.	Preliminary indication about availability of data have been discussed with the desk.
On the 2 <sup>nd</sup> and 3 <sup>rd</sup> of February the core team's members will collect the available documents at the DG REGIO premises.	On the 2 <sup>nd</sup> and 3 <sup>rd</sup> of February the country desk will assist the core team's members in collecting the available documents at the DG REGIO premises	The country expert examined the received documents and saw that only general documents not project-specific are included. On the 4 <sup>th</sup> of February the country expert will visit the geographical desk to obtain further information.	If some documents are available, on the 2 <sup>nd</sup> and 3 <sup>rd</sup> of February the core team's members will collect them at the DG REGIO premises.	No information are available neither in the DG REGIO premises nor in the Historical Archives.
A request for consultation is going to be transmitted to the historical archives.		Country experts have been already invited to contact the Managing Authorities.	Country experts have been already invited to contact the Managing Authorities.	Country experts have been already invited to contact the Managing Authorities.

After data gathering, project summary sheets will be developed providing a concise set of key information per project. Each project sheet will disclose the following information:

1. **Key project info** such as sector, sub-sector, financial size and country/region of implementation.
2. **Project intervention logic** and history of the decision-making process at the time the project was implemented: what the project objectives were, what the needs addressed were, the target area and population, the project promoters, the beneficiaries and the relevant stakeholders that had a role or voice in the decision-making process.
3. **Service provided:** typology of service that is being delivered by the infrastructure; data on completion of works and entry into force of the service; any modification to the implemented intervention from that which was originally planned.
4. Indication of the category(ies) of potential contribution(s) of the project to economic development as well as the quality of life and well-being of society (**long term effects**),

and **potential interest** of the projects in terms of contribution to answering the key questions developed in the ToR and the conceptual model.

5. Identification of available **data sources** and **outstanding issues on data availability and quality**;
6. Identification of **main contact persons** to explore availability and willingness to participate in the evaluation.

The preliminary template of the summary sheets is presented in Annex 3<sup>11</sup>.

The added value of the project review process is that selection criteria for the ten projects to be studied in detail will be also developed at this stage.

In fact, project data collected for the review process, besides being presented in the summary sheets, will also provide the necessary input for a rating exercise aimed at facilitating the case studies selection, which represents Task 2b.

The rating will reflect the outcome of an evaluability assessment of the 35 ERDF or CF proposed projects, a systematic process of determining whether a project is in a condition to be evaluated, i.e. whether its evaluation is justifiable, feasible and likely to provide useful information within the timeframe, resource constraints and operational objectives of the present study. In particular, projects evaluability will be assessed along 3 criteria, each one with a different weight to express its relative importance in the project selection.

- **Strategic relevance for the evaluation purposes (40%)**. This criterion measures the extent to which the project can contribute to answering the evaluation questions identified in ToR and the conceptual model.
- **Availability and quality of data from existing sources and availability of key contacts for potential interviews (40%)**. This criterion captures the extent to which the information (both ex ante and ex post) needed for the evaluation is already available, as well as being relevant and appropriate to the scope and purpose of the evaluation and of good quality (no incomplete files, etc.). Also, considerations about the willingness of people contacted to provide support to the evaluation are part of the judgment.
- **Amount of new ex post quantitative data required to support evaluation (20%)**. This criterion measures the extent to which new ex post data is needed to be generated to have a sufficient set to carry out the ex post evaluation. For example, new customer satisfaction surveys.

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<sup>11</sup> Please note that the template elaborated at this stage is a preliminary version subject to revision in parallel with the development of the conceptual framework. In particular, the list of typologies of long term effects is purely indicative as it will be the main output of Task 1.

A pre-requirement relates to the time elapsed since its completion: the project is in a basic condition for being appraised if it has been operational for a sufficient time span. The evaluability assessment of the 35 ERDF / CF projects will be based on their rated performance in meeting the above criteria. The evaluability checklist below (Table 4) indicates precisely what conditions should be met for an effective ex-post evaluation of projects. The checklist complements and is effectively part of the project summary sheets. To arrive at a total score for a given project, country experts will first assign a score to each of the questions suggested under each criterion. These questions are intended as a declination of the criterion and will guide the country experts in formulating their assessment. Scoring will be done by utilizing a five-point ordinal scale, as follows: 1 = Very low or nil; 2 = Low; 3 = Medium; 4 = High; 5= Very high.

By summing up the scores and weighting for their relative importance of the criterion, total scores per criterion will be calculated. These scores will be accompanied by a qualitative explanation of the reasons underlying the judgments made. Finally, as an outcome of the project evaluability assessment exercise, each project will receive a total sum *P rating* (the sum of the single macro-scores per criterion) that will allow the orderly ranking of projects and the determination of the most evaluable projects (see Table 4). These are expected to form the project “pool” out of which the 10 most suitable projects will be identified for further in depth ex-post evaluation as part of the subsequent sub-Task.

Tab. 4 Projects evaluability checklist and scoring formula

Evaluability criteria	Qualitative assessment	Quantitative assessment		
		Key Questions	P rating <sup>12</sup> (1 to 5)	Total
<b>A) Relevance for the evaluation</b>		✓ To what extent did the project generate observable long term changes?		score * 0.1
		✓ To what extent do the long term effects of the project allow for a quantitative ex-post assessment in the light of the methodology proposed?		score * 0.05
		✓ To what extent does the project generate additional effects on the socio-economic context or quality of life and social wellbeing suitable for a qualitative discussion?		score * 0.05
		✓ To what extent is the ex-post evaluation of the project likely to produce relevant policy lessons?		score * 0.2
<b>B) Availability and quality of data from existing sources</b>		✓ Did the project foresee a systematic capacity to generate data for its evaluation via a regular and accessible monitoring process?		score * 0.05
		✓ Did the project have SMART <sup>13</sup> indicators, documenting its impact on key target-areas of intervention?		score * 0.05
		✓ Does regional or sector-specific baseline (prior to the project's implementation) quantitative and qualitative information exist?		score * 0.05
		✓ To what extent data available reliable, of good quality and appropriate to the scope of the evaluation?		score * 0.2
		✓ To what extent have contacted people been cooperative and helpful to facilitate data collection?		score * 0.05
<b>C) Amount of new primary data required to support evaluation</b>		✓ Is it necessary to collect additional ex post data, such as costumer surveys, to support the evaluation?*		score * 0.1
		✓ Would be possible to gather extra data at reasonable cost?*		score * 0.1

<sup>12</sup> Performance Rating.

<sup>13</sup> Acronym for (S)pecific, (M)easurable, (A)chievable, (R)elevant, (T)ime-bound.

Evaluability criteria	Qualitative assessment	Quantitative assessment		
		Key Questions	<i>P rating</i> <sup>12</sup> (1 to 5)	<i>Total</i>
			<i>Total project evaluability</i>	<i>Sum A + B + C</i>

NB: 1 = Very low or nil, 2 = Low, 3 = Medium, 4 = High, 5= Very high.

\*For these questions a negative response is equal to high scores, such as 4 or 5. On the other hand, the necessity to resort to extra data gathering will be rated with low scores (1 or 2).

As a result of the ratings attributed a shortlist of potential case studies will be drawn up. This shortlist will be coupled with other objective criteria, such as coverage of all Member States, Funds, balance between sectors (and subsectors), type of service provided, and will end up with a final proposal of 10 projects.

This method of selecting examples constitutes purposeful sampling that assures maximum credibility and utility, which are the main concerns given the small sample size.

This second stage of the project selection process refines the basic data gathering and “project summary sheet” drafting processes described above, but at a more comprehensive level by improving the sampling frame and reducing the cost for data collection and analysis. This approach matches evaluation design to purpose, in this particular case by reviewing project credentials (characteristics, data availability etc.) by reference to established selection criteria and the rating process, to arrive at the proposed sub-set of the original 35 ERDF or CF transport and environment projects that is most suitable for the ex-post evaluation exercise. Through this judgmental matching of the projects and criteria, the rigorous exploration of the causes and drivers of socio-economic development and impacts on quality of life and well-being of society (outcomes-impacts pathways) attributed to the infrastructure projects will be conducted under Task 3.

The final proposal of 10 projects, to be further agreed with the Commission, will be included in the First Intermediate Report. For each of the proposed projects, an “extended”, enriched, summary sheet of around 2 pages will be prepared. In accordance with the requirements of the ToR, this summary sheet will build upon the “one-page summary sheet” previously prepared, enriched with the additional following information:

- more detailed information on further data and analysis needed to evaluate the project’s long-term contributions, as well as details on how these data will be gathered, structured and analyzed;
- information on evaluation methods to be applied under Task 3 in accordance with the concept developed under Task 1; different methods may be used for different projects.

Finally, a key deliverable of Task 2, will be the production of a preliminary common template for case studies (to be later tested with the pilot cases). The template will reflect the conceptual basis developed in Task 1 and will specifically address the main evaluation questions to be answered. Some key clarifications on the use of the common template are:

- while having a common template to allow cross-project analysis, the individual project analysis will be tailored to the project specificities and may provide different levels of detail for similar aspects, as long as this is relevant for the overall story to be told;
- different research tools for data gathering and processing may be used for the assessment of similar aspects.

The Tasks 1 and 2 output is the First Interim Report, consisting of the literature review, conceptual basis for the evaluation methodology, review of 35 projects (one page summary sheets), proposal for 10 projects for in-depth assessment (two pages summary sheets), and preliminary template for case studies.

### 2.2.3. TASK 3: EVALUATION OF 10 ERDF OR CF PROJECTS

Task 3 constitutes the main task of this evaluation. The objective is to carry out the ex post evaluation of the 10 selected projects. The task implementation will be divided in two phases: a pilot phase, aimed at testing the reliability and feasibility of the methodology proposed, and a second phase of implementation of the remaining 8 cases.

The conceptual basis underlying the steps for the evaluation of the selected project has been fully described in section 2.1, identifying two levels of analysis for the case studies:

- a quantitative data collection and analysis represented by the Cost benefit Analysis;
- a qualitative integration of the results obtained above with a social analysis of the long term effects produced by the projects (in terms of behavioural changes), and the reasons behind them, in order to develop project “histories”.

The execution of these activities will be sufficiently exhaustive to cover and accomplish all the sub-tasks identified in the Specifications (3.1 to 3.3.). Thus, in the following we briefly describe how the dimensions described above fit into the analytical structure of sub-tasks proposed in the Specifications.

Tab. 5 Methodological tool and tasks to be performed

	Cost Benefit analysis	Qualitative analysis
Task 3.1. Context and objectives		√
Task 3.2 Analysis of long-term contribution	√	√
Task 3.3 Financial sustainability	√	

A more general and cross-cutting issue, however, concerns data gathering activity, which will be carried out by the country experts to develop the case studies. Relevant data can be of two different natures:

- Ex ante: all data and documents prepared before the project implementation, such as feasibility studies, EU funds application forms, financing decisions, cost benefit analyses, environmental impact assessments, economic impact assessments, etc. The team is aware that the official existing ex-ante documentation could be poor or even non-existent.

- Ex post: all data and documents elaborated after the project completion and during the operational phase, such as monitoring data, project accountability, mid-term and final evaluation reports, studies, customers surveys, polls, etc.

Country experts will be responsible for collecting all ex ante and ex post data available, on the basis of the preliminary indications on availability and quality stemming from the reviewing process (Task 2). In particular, the following sources of information will be investigated:

- **European Commission services**, in particular for application forms and financing decisions (ex ante), but possibly mid-term and final evaluations too. As already mentioned in section 2.2.2, it is already known that little information exists. Thus, one way to obtain information could be to go back to people in charge of the projects file at that time, trying to reach them even if they are now working in other institutions or they are retired. The interplay between the Commission and the MSs, and the final decision, was – in fact - a key aspect of the projects’ design so that its reconstruction, whenever possible, will give essential input for the relevance, detail and appropriateness of the case studies’ narrative.
- **Consultants:** the possibility of contacting the consultants that prepared the feasibility studies and other analyses (e.g. EIA) at that time will be explored, to complement the evidence.
- **Managing Authorities:** policymakers and civil servants at the national or regional authority that was responsible at that time for managing the contract with the Commission and for project implementation may be helpful, to gather both ex ante and ex post data and analysis and to gain specific insights into the project.
- **Beneficiaries/service operators:** these are likely to be the principal sources, and interviews will be conducted in order to gather qualitative ex post data. By accessing the files of the administration (monitoring data, project accounts) it should be possible to gather data necessary to carry out the cost benefit analyses. Qualitative interviews with key actors (e.g. project managers) will also contribute to identifying the social effects generated by the project. Beneficiaries/service operator managers should be also aware of other information that could have been generated along the project lifetime, such as interim and final evaluations, polls or customer satisfaction surveys. In conclusion, both quantitative data collection - to estimate costs, revenues, construction times, etc. – and qualitative interviews with project managers, directors of works, etc. - to understand what effects have been produced and to investigate the possible causes of discrepancies from expectations - will be performed at the beneficiaries/service operator premises.
- **Other:** as already mentioned, the Contractor will need to know everything that is behind the project under assessment. This means that consultations with local, regional and national stakeholders, not directly participating in the management of the infrastructure (e.g. academic experts) but with knowledge of it, will be carried out to complement the understanding of how investments have impacted over time and space. Also, press (e.g. newspapers articles) and other media sources will be searched in order, for example, to shed lights on what the public debate around the projects

was. Finally, municipal and parliamentary minutes of meetings or public procurement articles could be gathered.

The methodology to be used for the organisation of case studies data-gathering will comprise a common template, structured in such a way as to allow a further horizontal reading of the projects sample, alongside the issues presented under Task 3, including: the history of the decision-making process, the reconstruction of the projects' intervention logic, the role played by the stakeholders, the options considered, the scope and the geographical impact area, the long term contributions produced, in terms of economic sustainable development, well-being and quality of life. Thus, the methodology will be vertically oriented at the beginning – all Task 3 issues will be analysed singularly for each case study; then it will be horizontally oriented, issues being analysed simultaneously within every project in order to draw cross-cutting issues and derive conclusions and recommendations (task 4).

### ***TASK 3.1: SUBJECT OF THE ANALYSIS, SOCIO-ECONOMIC CONTEXT, OBJECTIVES AND ALTERNATIVE OPTIONS***

The ToR require in the first part of Task 3 to define the subject of the analysis, analyse the socio-economic context, and identify and explore alternative options for each of the selected ten projects.

At this stage, the most appropriate dimension of analysis is that of “telling the story”, following a more qualitative approach. The following considerations will be included:

- First, the analysis will describe the project with a critical focus on its identification. Appraising its identification translates into assessing whether the project can be considered as a self-sufficient unit of analysis or not. This will be done by analysing its essential features, to verify that none of them or of its components was left out of the scope when the decision was taken. Other key requirements in terms of project identification relate to its scoping, in geographical as well as technical point of view.
- Consideration of the objectives that were expected to be accomplished by the investment will follow, assessing the coherence between these objectives and the socio-economic context<sup>14</sup>. This discussion will also include consideration of the relationship between the project objectives and the priorities established in regional, national plans or at EU level (for example the inclusion within the TEN-T priorities or the compliance with EU environmental directives), as well as the consistency with the goals of the EU Funds. In particular, the analysis will focus on the reconstruction of the

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<sup>14</sup> In order to analyse the socio-economic context, quantitative data over the condition of the province/region/country where the project has been realized will be collected, In particular, Eurostat and National databases will be searched and indicators (when available) of labor market, transport networks, environmental conditions and industrial structure at NUTSIII/NUTSII level will be used and analysed.

project intervention logic and the history of the decision-making process, by asking questions such as:

- Why was project considered?
- What was the main need to be met?
- Was it addressed to a specific population target?
- Was the local political context favourable to the project?
- Were there any social or institutional binding constraints?
- Who argued for it?
- Were there any stakeholders against it?

Historical analysis of the decision-making processes and the organisational responsibilities over the course of the project will be performed to shed light on how the arrangements in place have positively or negatively influenced the final project output.

- Finally, the analysis will explore if there were other feasible options considered at the time of the application, and if and why they were excluded. In practice the analysis will assess whether the project design (scale, location, etc.) was solidly justified against alternative scenarios ('business as usual', 'do-minimum', 'do-something' and 'do-something else'). This is indispensable to measure the performance of the project, as it could turn out that, for instance, different options would have been more appropriate to the local socio-economic context or more tailored to the specific needs of the territory.

This exercise will enable evaluation of the overall rationale and foundations of the project design, which is instrumental to understand the reasons and factors behind the eventual contribution of the project to economic development and whether eventual deviations from the expected achievements could have been predictable or not.

### ***TASK 3.2 ANALYSIS OF THE LONG-TERM CONTRIBUTION OF THE PROJECT TO ECONOMIC DEVELOPMENT AS WELL AS THE QUALITY OF LIFE AND WELL-BEING OF SOCIETY***

The Contractor will assess each project from various angles using different methodological approaches, with the goal of providing a complete picture of if and how the project operations influenced the socio-economic context over time, and vice-versa.

Both the quantitative approach of the Cost Benefit Analysis and the qualitative approach of social analysis of behavioural changes are suited to this analysis and they are integrated for the conduct of sub Task 3.2.

In particular, the study team will define what are the specific qualitative and quantitative parameters related to the typology of contributions to be taken into account in assessing the

long-term effects of the project. According to CBA principles, effects of the project under analysis will be divided into:

- direct effects: those originated by the project and falling within the scope of the project's influence (basically on the users of the project);
- externalities: those effects without a market value spilling over from the project towards third parties (e.g. environmental externalities);
- indirect/wider effects: market consequences of the project on secondary markets.

Once the above-described effects are identified, the Contractor will first carry out the quantification and economic valorisation of those economic impacts where this is possible.

The methodology proposed for this purpose refers mainly to the economic cost benefit analysis. In the CBA approach, a well-performed economic analysis appraises the net - positive and/or negative - contribution of the project to the economic welfare of the region or country. It is made, indeed, on behalf of the whole of the society rather than just the owner of the infrastructure or other particular stakeholders.

The socio-economic effects (positive or negative) of the investment will be quantified and monetized by using accounting shadow prices, based on the social opportunity cost, instead of observed distorted market prices. Market prices will be converted into accounting prices by applying appropriate conversion factors (CF's), differently derived for tradable and for non-tradable goods. The CF's allow the correction of, among other things, the distortions due to shadow wages and taxes.

Project impacts that are relevant for society, but for which a market value is not available (e.g. externalities), will be also included. Due to their nature, externalities are not well captured by the shadow profits assessment (either through the application of conversion factors to operating revenues or the use of empirical WTP or LRMC) so that they need to be evaluated separately, for example through willingness-to-pay or willingness-to-accept estimates of the external effect.

Secondly, impacts for which quantification and monetisation will not be possible, being more in the sphere of social behaviours, will be identified and analysed in qualitative terms, following the approach of a social scientist. As described in section 2.1, direct observations bringing as much viewpoints as possible from the ground and acute interpretation of "how things work" will be conducted and project histories will then follow. In some cases, especially for more complex projects involving different typologies of stakeholders, focus groups could be organised in order to compare the different views of the actors involved, and provide a shared interpretation of the key success/failure factors of the project assessed.

Each project history will return a message that reconstructs the long term vision behind the project, not only focusing on the economic growth triggered, but also on other effects

impacting on social well-being and citizens' quality of life. Therefore, for each project assessed, an effort will be made in order to isolate and analyse:

- non-quantifiable long-term contributions to quality of life and well-being, such as institutional learning of key stakeholders, improvement in the living standards of the affected citizens, social inclusion outcome, political awareness, etc.; and
- the main aspects behind the long-term performance, in all its specificities.

After that, the positive or negative long term changes due to project implementation will be analysed by the Contractor in relation to the identified stakeholders, who could be larger or smaller categories of actors directly or indirectly affected by the project. The results of the assessment activities carried out during the methodological phase above-described, allow the identification of (qualitatively and, as far as the data are available, quantitatively - see also below) the main changes to the factors in the impact area, since the project implementation.

In order to summarise the analysis, a matrix will be developed linking each project effect with the sectors and the stakeholders, as defined above, affected by that impact. This methodology draws from the approaches of the SE Matrix suggested in the RAILPAG Guide<sup>15</sup> as well as the BIT table (Benefit Incidence Table, sometimes called a Morisugi table from the name of its inventor) used in Japan for the appraisal of transport projects<sup>16</sup>.

In filling the matrix, preference will be given to a quantitative measure of the effects, as coming from CBA. However, the need to complement the CBA results with a social analysis of the overall effects of the project on a regional, state and/or EU scale will result in additional data to be included for analysis in the matrix. Thus, a quantitative appraisal of the main effects will be carried out, complemented by more qualitative judgements, analysed per groups of stakeholders.

Finally, as a further contribution of the study, it would be interesting to explore also if the fact of being co-financed by the ERDF/CF influenced in some way the actual performance of the project and in which direction, besides the positive effect on financial sustainability provided by the funds received. In particular, it has been shown in recent studies and evaluations that a key role played by the Structural Funds (and more widely by the EU policy) consists of setting standards and incentivizing good practice in the provision of key services. In some cases, it has been observed that the Structural Funds provided a 'labelling' to the supported projects, that allowed for better and more efficient performance of the interventions. Moreover, Structural Funds may have a role in structuring the partnerships in the management and provision of services related to transport and environment infrastructure.

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<sup>15</sup> RAILPAG (Railways Project Appraisal Guidelines), available at [www.railpag.com](http://www.railpag.com)

<sup>16</sup> For further details see EVA-TREN, Improved Decision-Aid Methods And Tools To Support Evaluation Of Investment For Transport And Energy Networks In Europe. D1 Evaluating the State-of-the-Art in Investment for Transport and Energy Networksfor, p. 108. Available at [www.eva-tren.eu](http://www.eva-tren.eu)

Tab. 6 Example of analysis of long-term contribution on different stakeholders

Stakeholders Effects external/internal	Users (by categori es)	Non users (or alternati ve service users)	Service operating companies (managers/emp loyees /shareholders)	Contracting and supplying companies (managers/emp loyees /shareholders)	Taxpayers (local/regional/ national/EU)	Firms (by secto r)
Effect 1						
Effect 2						
Effect 3						
Effect 4						
.....						
Effect n						

### TASK 3.3 FINANCIAL SUSTAINABILITY

Finally, the ex post evaluation will analyse projects' financial sustainability over time, during the investment and operational phases. This sub-task will be accomplished by means of the Cost Benefit Analysis.

The crucial issue to be assessed here is the timing of cash proceeds and payments. In order to be financially sustainable, a project should demonstrate how, over the project time horizon, sources of financing (including revenues and any kind of cash transfers) had consistently matched disbursements on a year-by-year basis. Sustainability checks will be made on the basis of the positivity of the net flow of cumulated generated cash flow for all the years considered.

A further relevant issue to be explored in this task is the affordability of the tariffs applied. Once the infrastructure has been financed, finding a balance between financial sustainability and affordable tariffs remains a key issue in the provision of the service. Although the Structural Funds provide significant financial resources, in order for the service provided to stay affordable arrangements such as price differentiations, cross-subsidies, and, finally, the recourse to taxation, are generally needed. Moreover, investing in an infrastructure may yield an increase in the quality of the service and (or) in the efficiency with which the service is delivered. While the EU support makes the investment affordable for the national authorities and citizens in the construction phase, once the infrastructure has been constructed or renovated, an increase in operational costs is usually encountered. The risk here is of having an increase in costs transformed into an unsustainable increase in prices. The issue at stake is whether despite the increased costs, access to the service nevertheless stays affordable.

Task 3 outputs will be presented in the Second and Third Interim Reports, consisting of two pilots and the remaining 8 projects out of 10 ERDF or CF projects selected for evaluation, respectively.

#### 2.2.4 TASK 4: SYNTHESIS AND CROSS-PROJECT ANALYSIS, CONCLUSIONS AND RECOMMENDATIONS

The objective of Task 4 is to synthesise the findings from the case studies carried out under Task 3 and generalise the findings via a cross project analysis. This will allow for a comprehensive analysis of the contribution provided by the transport and environmental projects assessed, and could enable some generalisation in terms of classification of typologies of contribution, channels through which such contributions can materialise and key success conditions or factors. In the light of the above-mentioned generalisations, some conclusions and policy-oriented recommendations will be highlighted.

The key activities of the task are to:

- Report on the long term impacts of the ten projects, their different natures and magnitude and conditions for their realisation.
- Identify and present the main messages in terms of policy learning.
- Make recommendations with regard to future usage of these evaluation methodologies. These should include recommendations on monitoring and reporting requirements for future projects, in order to improve the validity of evaluation and the overall performance of the project.

As fully described in section 2.1.1, the approach that will be followed for the synthesis activity will be the “Hirschmanian” approach.

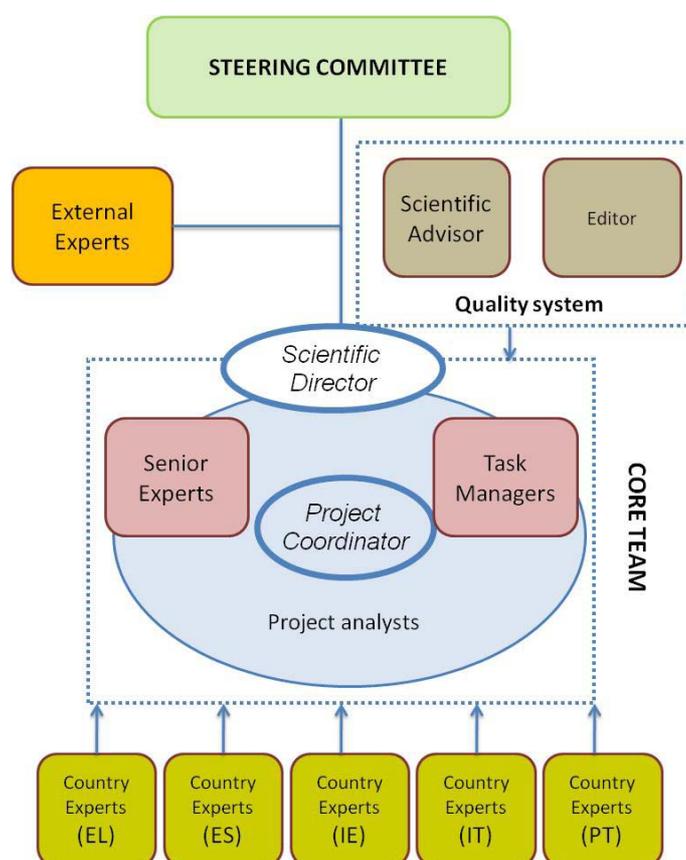
Task 4 output will be presented in the Final Report.

## 3. WORK ARRANGEMENTS

### 3.1 TEAM AND ORGANISATION OF THE WORK

The study team is composed of 24 experts and analysts, covering all the fields of expertise that are needed for the purpose of the whole evaluation. The fields of expertise range from EU Structural Funds Policies Evaluation, to Transport and Environmental policies, cost-benefit and macroeconomic analysis and Regional Development expertise.

Fig. 3 Organisation chart of project management



As illustrated in Figure 3, the team's members are organised in three main groups: the core team, a group of country experts and an internal quality system. The team is also supported by a team of External Experts. Table 7 shows the list of members, their field(s) of expertise and their position(s) in the team.

Tab. 7 Composition of the study team

Name	Field of expertise	Core Team					Country Experts	External Experts
		Sc. Director	Project Coord.	Task Manager	Senior expert	Scientific Advisor		
M. Florio	Regional development and cost benefit analysis	√						
S. Vignetti	Cohesion policy and cost benefit analysis		√				Italy	
J. Lawlor	Project evaluation, infrastructure development			√			Ireland	
D. Sartori	Cohesion policy and cost benefit analysis			√			Italy and Spain	
J. Pellegrin	Regional development and EU policies evaluation			√				
U. Finzi	Project appraisal, infrastructure development					√		
M. Genco	Cost benefit analysis, environmental expert				√		Italy	
A. Hughes	Regional economics and industrial policy evaluation				√		Ireland	
A. Massarutto	Environmental policy, water and waste treatment				√			
M. Martinez	Transport development and governance				√			
A. Moroni	Cost benefit analysis and evaluation						Italy and Spain	
E. Woelger	Economic impact studies in transport sector						Ireland	
R. Blomeyer	Evaluation and impact assessment						Spain and Portugal	
F. Santos	Regional development and environmental studies						Portugal	
M. Turró	Evaluation of transport projects in Spain						Spain	
M. Sanchez-Borras	Civil engineering, transport and urban planning						Spain	
P. Liveris	Civil engineering and evaluation						Greece	
A. Mousios	Evaluation of programmes in Greece						Greece	
G. de Rus	Transport policy and project appraisal							√
P. Johansson	Environmental policy							√
E. Ley	Development Evaluation and Cost benefit analysis							√

The core team includes the largest number of experts and analysts, organised into a group of senior experts and a coordinating and operational unit including the project coordinator, the task managers and the project analysts. The core team is in charge of structuring the conceptual model, the implementation of the cost-benefit analyses for the ten selected projects, the analysis of the contribution of the major projects selected and the drawing of general conclusions from the case studies. The Scientific Director has the ultimate responsibility for the scientific quality of the output produced.

The country experts are responsible for the field work, will support the Core team in the implementation of the CBAs by providing data to fill in the model, and are the authors of the case studies.

An internal quality control system, made up of a Scientific Advisor and an editor, is in charge of ensuring a quality review of the content of reports under scientific, linguistic and editorial aspects, through feedback to other Senior Experts and the Project Coordinator.

External experts will provide methodological insights on the conceptual basis and will perform a peer review function on the intermediate and final deliverables of the study.

#### **SCIENTIFIC DIRECTOR**

Massimo Florio, as Scientific Director, will support the definition of the conceptual model, will give crucial inputs on the consistency of the analysis and provides new insights on policy priorities. Moreover, he will attend all the meetings with the Steering Committee and the external experts in Brussels.

#### **SENIOR EXPERTS**

Four senior experts have been selected to give their advice in the conceptual basis formulation, case studies analysis, and provision of feedback on the results. They will specifically give inputs on their field of expertise, sources of information, templates and analytical grids, case studies and reporting. Senior experts include the following:

- Mario Genco, as CBA coordinator expert. He is in charge of supervising, coordinating and guaranteeing uniformity and consistency of the cost benefit analyses of the ten selected projects. To carry out this task, he collaborates with the other core team members and assists the country experts. He is also country expert for Italy.
- Annette Hughes gives specific inputs on the Irish projects, from the project summary sheets to the case study drafting.
- Marcello Martinez, gives specific inputs on the projects in the transport sector, with particular reference to Italy, from the project summary sheets to the case study drafting;
- Marcello Massarutto has the task of reviewing the environmental case studies providing scientific support and methodological hints.

### **PROJECT COORDINATOR**

Silvia Vignetti is the project coordinator of the study. She will supervise all the project activities as well as the definition of the conceptual basis and related templates and grids. Moreover, she will act as the link between the scientific director, the task managers and the senior experts, and is responsible for good communication between the three parts. Another important function is to ensure the consistency and coherence of the regional case studies.

As external tasks, the project coordinator is responsible for all the project activities vis-à-vis the Commission, in particular for communication with DG REGIO on contractual issues, consultation with DG REGIO on key issues related to the assignment, participation in Steering Committee and external experts meetings, consultation with the task managers on management of tasks and reports delivery.

### **TASK MANAGERS**

Three task managers are responsible for the day to day management and for the coordination and quality of the individual activities within the contract. Their responsibilities comprise the coordination of activities carried out by senior experts and project analysts, the preparation of templates and directives for internal organization of the group, the support and coordination of the country experts and reports drafting related to their specific Task.

In particular:

- John Lawlor, as task manager for Task 1, is responsible for the activities related to Task 1 and contributes to all the other main deliverables. He is also country expert for Ireland and in charge of proof-reading all the deliverables.
- Davide Sartori, as task manager of Tasks 2 and 3, is responsible for the implementation of the First, Second and Third Interim Report. He also supports the CBA expert in the cost-benefit exercise. He is country expert for Italy and Spain.
- Julie Pellegrin, as task manager for Task 4, is responsible for the cross-cutting review of case studies report, the generalisation of the findings and the development of policy conclusions and recommendations.

### **PROJECT ANALYSTS**

Three project analysts will provide back office support for all the operational activities and project organization. In particular they will be responsible for data processing, reporting and providing assistance to the project coordinator, the task managers and the senior experts in their activities.

### **SCIENTIFIC ADVISOR**

Ugo Finzi, who has over thirty years of experience in international development evaluation and management at the World Bank, besides reviewing all major deliverables and ensuring

methodological consistency and scientific robustness of the output, will give inputs and comments on the generalisation of case studies findings in Task 4.

#### **EXTERNAL EXPERTS**

With strong experience in the fields covered by the study, the external experts will provide additional inputs to the study. They will participate to the meetings in Brussels and provide the core team with written insights on the project. They will also provide written comments on the main deliverables: Inception, First Interim, Second Interim, Third Interim and Draft Final reports.

The selected external experts include the following:

- Ginés de Rus, as expert of project evaluation in the transport field;
- Per-Olov Johansson, as expert of project evaluation in the environment field;
- Eduardo Ley, lead economist of the World Bank, specialised in the evaluation of International Development Projects<sup>17</sup>.

#### **COUNTRY EXPERTS**

A total of 13 country experts, with thorough knowledge of projects appraisal and evaluation in Europe, have been selected to carry out the CBA exercise and the qualitative analysis of the case studies for which they are responsible. They usually have previous knowledge of the projects that are likely to be eventually selected. They also have sectoral experience and have knowledge of the national and local experts where the projects have been implemented. They also provide the national linguistic knowledge to carry out interviews and field work.

Their contribution is in drafting the project summary, the selection of the 10 projects for ex-post evaluation and drafting the case studies. For this purpose, they have to identify sources of statistical and empirical data, interview key stakeholders and arrange country visits. They will liaise with the core team on the CBA exercise.

## **3.2 WORK PLAN**

All tasks and activities are scheduled to be performed in 18 months from the signature of the contract. According to the division of work described in the previous section, the allocation of resources has slightly changed, since two of the five senior experts originally foreseen have been included as experts in the Scientific Committee.

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<sup>17</sup> He is included in the study team in place of Robert Picciotto, who is no longer available to take part in the evaluation study.

The resource allocation by category of experts is described in Table 8 below, with a breakdown by task and activity. The final allocation of working days among the different country experts for the case studies will be made as soon as the projects are identified.

Figure 4 illustrates the timeframe of activities and deliverables, as agreed at the kick-off meeting. In particular, the deadlines of main deliverables are listed in Tab. 9.

**Tab. 8 Deadlines of main deliverables**

<b>Deliverable</b>	<b>Inception report</b>	<b>First Interim report</b>	<b>Second Interim report</b>	<b>Third Interim report</b>	<b>Draft Final report</b>	<b>Final report</b>
Deadline	21 January 2011	21 May 2011	End of August 2011	15 March 2012	End of May 2012	21 June 2012

In addition to the deliverables specified above, the Consortium will prepare a progress report by the 21<sup>st</sup> of every month when no other deliverable is scheduled. Each progress report, consisting of maximum two pages, is aimed at informing the Commission on the work carried out so far. The deliverables above will include what is requested in the tender specifications and will fit the formats, layouts, language requirements and versions indicated in the tender and/or to be specified by the Commission. In particular the Consortium will provide:

- A hard copy and an electronic version (WORD format and pdf format) of each interim report;
- Three hard copies and an electronic version (three CD, WORD format and pdf format) for final reports according to the details provided by the Commission for the layout of the reports;
- Presentation material for each of the final reports in English (PowerPoint) for the use of Commission services.

All reports will be delivered in English. The summary of the final report specified above will be delivered in English, French and German.

Tab. 9 Resource allocation by categories of experts and single experts – *man days*

Task	Activity	Scientific Director	Scientific advisor	Project Coordinator	Task 1 Manager	Task 2-3 Manager	Task 4 Manager	CBA expert	Senior experts	Project analysts - CSIL	Project analyst - DKM	Country experts	External experts	TOTAL
0	Kick off	0,5		1	0,5	0,5				1				3.5
	Draft of Inception Report	0,5		2	1	2				2				7.5
1 – Conceptual basis	Literature review				2				2		5			9
	Terminology				1						3			4
	Conceptual model	1			3		1		2		1			8
	First Interim Report -conceptual framework	1	1	1	10						5			18
2 - Preliminary review and selection of projects	Methodology and template for case study			1		1		1		2				5
	Data gathering								2	5	3	35		45
	Preparation of project summary sheets									1	1	35		37
	Review of project summary and selection	1		1		2								4
3 - Evaluation of 10 ERDF or CF Projects	First Interim Report -summary sheets		1	1		4				3				9
	CBA coordination							20						20
	Data gathering								3	5	2	50		60
	Interviews and field visits											50		50
	CBA	2		5		8		4		5		30		54
	Qualitative analysis								2	10	5	100		117
	Second Interim Report	2	2	2		2				10	3	24		45
Third Interim Report	2	6	5		8				10	3	100		134	
4 - conclusions and recommendations	Horizontal reading of case studies						1			10	5			16
	Lessons learnt and recommendations	2					2		1					5
	Draft Final Report	1	1	1			4		1	5	5			18
	Final Report	1	1	1			2			5	2			12
	Presentation of the results	1		1										2
Project Management	Overall coordination			20										20
	Monthly progress reports			3						3				6
	Attend meetings in Brussels	5		5	2,5	2,5							15	30
Total		20	12	50	20	30	10	25	13	77	43	424	15	739



### 3.3 QUALITY CONTROL SYSTEM

The team is committed to providing DG REGIO with deliverables that fully meet their requirements. The members of the consortium have indeed gained considerable experience in the evaluation of public policy, programmes and projects on behalf of the EC.

The overall scientific quality will be ensured by the Scientific Director (Massimo Florio), while the quality management of the whole process will be ensured by the project coordinator (Silvia Vignetti). As Director of the Evaluation Unit she has complete access to all the internal resources, if required, should the smooth implementation of the project require fine-tuning and re-planning.

An internal quality system will take overall responsibility for the quality of all reports submitted as well as for the quality of work undertaken and completed by the whole project team. This internal quality system will be applied to the scientific contents of the report (by the Scientific Advisor, Ugo Finzi) as well as to the editorial and linguistic aspects of the reports (by Silvia Da Pozzo, editor). In particular, a specific share of the resources dedicated to quality control will be applied to the realisation of the case studies.

The quality control system will be in line with the quality criteria stated in the EVALSED "Guide to the evaluation of socio-economic development".

Specifically:

- the study will be consistent with professional standards and it will deal with all the evaluation questions specified in the Terms of Reference, addressing the right focus and scope;
- the proposed methodology will be further tailored and fine tuned in order to comply with the DG REGIO's specific requests during the implementation process of the study. In particular, the evaluation will be conducted in order to provide robust and complete results, supported by evidence and rigorous analysis;
- the evaluation activities will be appropriately organised and resourced with tasks and responsibilities distributed according to the experts' specialisation and relevant professional or academic experience. Senior and junior experts will be involved in the development of the Inception, Interim and Final reports, under the guidance of the project coordinator. The latter will not only be leading the project from a management perspective, but also be participating to the research activities;
- the evaluation process will be carried out in a transparent way: besides the scheduled meetings, an open communication with the DG REGIO Evaluation Unit will be pursued. If any problem or delay occurs, the team will inform the Evaluation Unit immediately;

- due to the transnational aspect of the evaluation, the interaction with external parties (regional managing authorities) will be conducted by country experts, on the base of central and homogeneous indications;
- the conclusions of the study will be clear and communicated in such a way that they can contribute to the policy review process of the new programming period.

Furthermore, the Scientific Director, with relevant expertise in the field of Regional development and EU Structural Funds policies evaluation, will guarantee the general quality of the content of the reports through constant feedback to the project coordinator.

Finally, all the reports will have the same layout, style and format and will follow a common structure in order to ease the legibility and intelligibility of the results.

Well aware of the high visibility of the ex post evaluation work-packages, as all the reports will be published on the Inforegio website, professional linguistic checking and high level reporting standards will be assured for all the deliverables, particularly for the final synthesis report.

# ANNEX 1. PRELIMINARY LIST OF REFERENCES FOR CONCEPTUAL MODEL

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## General

Alegre J.G., et al., 2008, *Composition of government investment in Europe: some forensic evidence*, EIB Papers, Vol. 13, N° 1, 2008.

Aschauer, D.A., 1989, *Is public expenditure productive?*, Journal of Monetary Economics Vol. 23, Pages 177-200.

Asian Development Bank, 2006, *Guidelines for preparing performance evaluation reports for public sector operations*, Operations Evaluation Department, available at: <http://www.adb.org/Documents/Guidelines/Evaluation/PPER-PSO/default.asp>.

Barro R.J., 1990, *Government spending in Simple Model of Endogenous Growth*, Journal of Political Economy, Vol. 98, Pages: 103-125.

Belli P. et al., 2001, *Economic Analysis of Investment Operations*, The World Bank, Washington D.C.

Biehl D. et. Al, 1986, *The contribution of infrastructure to regional development*, Commission of the European Communities, Study Group, Bruxelles.

Boardman A.E. et al., 2006, *Cost-Benefit-Analysis – Concepts and Practice*, Third Edition, Pearson, Prentice Hall, New Jersey.

Boldrin M. and Canova F., 2003, *Regional policies and EU enlargement*, CEPR Discussion paper 3722, CEPR Discussion Papers.

Button K., 1998, *Infrastructure investment, endogenous growth and economic convergence*, The Annals of the Regional Science, 1998, Vol. 32, Pages 145-162.

European Commission, 2004, *A new partnership for cohesion – Convergence, competitiveness, cooperation*, third report on economic and social cohesion, February 2004.

European Commission 2007, *Growing Regions, growing Europe - Fourth Report on economic and social cohesion*, communication from the Commission, May 2007.

European Commission, 2005, *Strategic Evaluation on Environment and Risk Prevention under Structural and Cohesion Funds for the period 2007-2013*, Directorate General Regional Policy, Synthesis report N° 2005.CE.16.0.AT.016.

European Commission, 2008, *The Growth Report – Strategies for sustained growth and inclusive development*, Commission on Growth and Development.

European Commission, 2008, *Guide to Cost Benefit Analysis of Investment projects*.

European Investment Bank, 2000, *Basic Infrastructure Investments in South-Eastern Europe – Regional project Review*, Regional Funding Conference for South-Eastern Europe, Brussels, 29-30 March 2000.

Florio M., ed., 2007, *Cost-Benefit Analysis and Incentives in Evaluation. The Structural Funds of European Union*, Edward Elgar.

Flyvbjerg B. et al., 2003, *Megaprojects and risk. An anatomy of ambition*, Cambridge U.P., Cambridge, Great Britain.

Flyvbjerg B., 2006, *From Nobel Prize to Project Management: Getting Risk Right*, Aalborg University.

Gramlich E., 1994, *Infrastructure Investment: A review Essay*, Journal of Economic Literature, Vol. 32, Pages 1176-96.

Hirschman, A.O. 1967, *Development Projects Observed*, The Brookings Institution, Washington, D.C.

Inter-American Development Bank, 2006, *Ex-post evaluation of operations*, General Operational Policies available at: [www.iadb.org/exr/pic/VII/OP\\_305.cfm](http://www.iadb.org/exr/pic/VII/OP_305.cfm).

Institute of Public Administration, 2004, *The Cohesion fund in Ireland*. Dublin: IPA.

New Economics' Foundation, 2009), *National Accounts of Well-being: bringing real wealth onto the balance sheet*. London: NEF.

Pohl G & Mihaljek D, 1991, *Uncertainty and the discrepancy between Rate-of-Return estimates at project appraisal and project completion*, World Bank Working Paper 761, World Bank, Washington D.C., USA.

Pohl G & Mihaljek D, 1992, "Project evaluation and uncertainty in practice: a statistical analysis of rate-of-return divergences of 1,015 World Bank projects", *The World Bank Economic Review*, Vol.6, No. 2, 255-277, World Bank, Washington D.C., USA.

Puga D., 2002, *European regional policies in light of recent location theories*, CEPR Discussion Paper 2767, April 2001, revised December 2001.

Ray, A., 1984, *Cost-Benefit Analysis – Issues and Methodologies*. World Bank.

Straub S., 2008, *Infrastructure and growth in developing countries: recent advances and research challenges*, Policy Research Working Paper Series 4460, The World Bank.

Verbeek J., 1999, *The World Bank's Unified Survey projections: how accurate are they? An ex post evaluation of US91-US97*, World Bank, Washington D.C., USA.

The World Bank, 1994, *Assessing development effectiveness: evaluation in the World Bank and the International Finance Corporation*, World Bank, Washington D.C., USA.

The World Bank, 2004, *Monitoring & Evaluation. Some tools, methods & approaches*, World Bank, Washington, USA.

The World Bank, 2005, *Influential Evaluations: Detailed Case Studies*, Operations Evaluation Department, World Bank, Washington D.C., USA.

The World Bank, 2006, *Measuring Results*, available at: [web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,contentMDK:20120723~menuPK:41393~pagePK:41367~piPK:51533~theSitePK:40941,00.html](http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,contentMDK:20120723~menuPK:41393~pagePK:41367~piPK:51533~theSitePK:40941,00.html).

## **Transport**

Adler H.A. , 1987, *Economic appraisal of transport projects. A manual with case studies*, The John Hopkins University Press, Baltimore, USA.

Albalade, D., and Germà B., 2009. What Local Policy Makers Should Know About Urban Road Charging: Lessons From Worldwide Experiences. *Public Administration Review* 69, 5,: 962-974.

Boarnet, M., 1997, "New Highways & Economic Productivity: Interpreting Recent Evidence," *Journal of Planning Literature*, Vol. 11, No. 4, May 1997, pp. 476-486.

Brockner J et al, 2004 IASON deliverable 6.

Campos, J., and de Rus, G., 2009. Some stylized facts about high-speed rail: A review of HSR experiences around the world. *Transport Policy* 16, 1,: 19-28.

Chapulet, JN, et al., 2005, *The New Ex Post Evaluation Methods For Large Projects In France*. European Transport Conference (ETC) 2005. Available at <http://www.etcproceedings.org/paper/the-new-ex-post-evaluation-methods-for-large-projects-in-france>

de Rus, G. and Inglada, V., 1997. Cost-benefit analysis of the high-speed train in Spain. *Annals of Regional Science* 31(2): 175-188.

De Rus, G. and Nash, C. 2007, *In what circumstances is investment in HSR worthwhile?* ITS working paper no 590. University of Leeds.

ECORYS, 2005, *Strategic Evaluation on Transport Investment Priorities under Structural and Cohesion Funds for the Programming Period 2007-2013*, synthesis report, N° 2005.CE.16.AT.014, Rotterdam, October 2006.

ECORYS, 2005, *Ex Post evaluation of a sample of projects co-financed by the Cohesion Fund (1993-2002) - Synthesis Report*. Report for European Commission, DG Regional Policy. [http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/pdf/cohesion\\_project.pdf](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/cohesion_project.pdf)

ECMT, 2001, *Assessing the benefits of transport*, OECD, Paris, France.

EVA-TREN, 2007, *Improved Decision-Aid Methods And Tools To Support Evaluation Of Investment For Transport And Energy Networks In Europe*. [www.eva-tren.eu](http://www.eva-tren.eu)

ESPON, *Accessibility, Transport and Communication Network – Thematic Study of INTERREG and ESPON activities*, final report, 2005.

European Commission, 1990, *The European High Speed Rail Network*. Report of the High Level Group, Brussels.

European Commission, 2001, *White paper – European transport policy for 2010: time to decide*, Brussels, 12 September 2001.

European Parliament, 2006, *The impact of Trans-European Networks on cohesion and employment*, TRT.

Ferrary, C, 2011. "Is there a Crisis in Transport Appraisal?", *The Review*, Issues 4, January 2011, Steer Davies Gleave.

Frontier Economics et al., ongoing, *Ex Post Evaluation of the Cohesion Fund and ISPA (2000-2006): Work Package B – Cost Benefit Analysis of Selected Transport Projects*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wpb\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wpb_en.htm));

Goodwin, Ph., Persson, S., 2001, *Assessing the Benefits of Transport*, European Conference of Ministers of Transport; OECD.

Greene, D., Jones, D. and Delucchi, M. eds. 1997, *The Full Costs and Benefits of Transportation*, Springer.

Hay A., Meredith K., Vickerman R., 2004a, *Ex post analysis of the regional impacts of major infrastructure: the Channel Tunnel 10 years on*, draft paper presented at the 44th Congress of Regional Science Association, Porto, Portugal.

Helling, A., 1997, "Transportation and Economic Development; A Review," *Public Works Management & Policy*, Vol. 2, No. 1, July 1997, pp. 79-93.

Hensher, DA, 2004, *Handbook of transport geography and spatial systems*, Volume 5, Emerald Group Publishing.

Hook, W., 2003, *Appraising the Social Costs and Benefits of Road Projects*, Institute of Transportation and Development Policy.

OECD, 2002, *Impact of Transport Infrastructure Investment on Regional Development*, OECD, Paris, France.

Odgaard T., Kelly C.E. and Laird J.J., 2005, *Current practice in project appraisal in Europe – Analysis of country reports. Deliverable 1, HEATCO – Developing Harmonised European Approaches for Transport Costing and Project Assessment*. Funded by the 6th Framework RTD Programme, IER, Stuttgart, Germany.

Quinet E., 1990, *Analyse économique des transports*, Presses universitaires de France, Paris, France.

RGL Forensics et al., 2009, *Ex Post Evaluation of the ERDF in Objective 1 and 2 (2000-2006): Work Package 10 – Environment and Efficiency (Major Projects)*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wp10\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp10_en.htm)).

RGL Forensics et al., ongoing, *Ex Post Evaluation of the Cohesion Fund and ISPA (2000-2006): Work Package A – Contribution to EU Transport and Environment Policies*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wpa\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wpa_en.htm));

Rothengatter W. and Schaffer A., 2004, *The impact of transport infrastructure and other immobile production factors on regional competitiveness*, Working Paper Institute for Economic Policy Research, University of Karlsruhe.

SACTRA, Standing Advisory Committee on Trunk Road Investment, 1999, *Transport and the Economy*, London.

Schade, W. and Rothengatter, W., *Research Issues in Transport economics; Dynamics, Integration and Indirect Effects*, in *Applied research in environmental economics*, Böhringer, C., Lange, A., eds, 2005

Spieckermann K. and Wegener M., 2006, *The role of transport infrastructure for regional development in south east Europe*, [http://www.boeckler.de/pdf/seer\\_2006\\_01\\_spiekermann\\_wegener.pdf](http://www.boeckler.de/pdf/seer_2006_01_spiekermann_wegener.pdf)

Standing Committee on Trunk Road Assessment, 1997, *Transport Investment, Transport Intensity and Economic Growth*.

Steer Davies Gleave, 2010, *Ex Post Evaluation of the ERDF in Objective 1 and 2 (2000-2006): Work Package 5A – Transport*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wp5a\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp5a_en.htm)).

Union Internationales des Chemins de Fer, 2008, Infrastructure Charges for High Performance Passenger Services in Europe. UIC, Paris.

Vickerman, R, 2006, Indirect and wider economic impacts of high speed rail. Paper given at the 4th annual conference on Railroad Industry Structure, Competition and Investment, Madrid.

Vickerman, Roger. 1997. High-speed rail in Europe: experience and issues for future development. *Annals of Regional Science* 31, 1,: 21-38.

Weisbrod, G. 2000, *Synthesis of Current Practice for Assessing Economic Development Impacts from Transportation Projects*, NCHRP Study 20-5, TRB, National Academy Press.

## **Environment**

ADE SA et al., 2009, *Ex Post Evaluation of the ERDF in Objective 1 and 2 (2000-2006): Work Package 5B – Environment and Climate Change*, Report for European Commission Directorate General for Regional Policy Evaluation Unit.

([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wp5b\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp5b_en.htm));

Alberini, A., A. Hunt and A. Markandya, 2004. Willingness to pay to reduce mortality risks: Evidence from a three-country contingent valuation study. The Fondazione Eni Enrico Mattei Note di Lavoro Series Index: <http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm>

Amato A., Conti M., 2005, *The economics of the water industry: technology, ownership and efficiency*, FrancoAngeli, Milano

Bateman I. J., A. P. Jones, N. Nishikawa, R. Brouwer, 2000. *Benefits transfer in theory and practice: a review and some new studies*. CSERGE and School of Environmental Sciences, University of East Anglia.

Berg, C. van den, 2000, *Water Concessions. Who wins, who loses and what to do about it*, in *Public Policy for the Private Sector*, October 2000, note n. 217

Bhattacharyya A., Parker E., Raffiee K., 1994, "An examination on the effect of ownership on the relative efficiency of public and private water utilities", *Land Economics*, 70, 197-209

Brouwer, R. and F. A. Spaninks, 1999. "The validity of environmental benefits transfer: further empirical testing" *Environmental and Resource Economics*. Vol 14 No. 1.

COWI, ongoing, *Ex Post Evaluation of the Cohesion Fund and ISPA (2000-2006): Work Package C – Cost Benefit Analysis of Selected Environment Projects*, Report for European Commission Directorate General for Regional Policy Evaluation Unit.

([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wpc\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wpc_en.htm)).

Curtis, J., 2003. "Demand for leisure based water activity", *Journal of Environmental Planning and Management*, Vol 46, No. 1, Jan, Carfax.

DKM Economic Consultants, Aquavarra Research, ESRI, 2004, Economic Evaluation of Water Supply & Waste Water Projects – Cost-Benefit Analysis Methodology Paper.

ECORYS, 2005, *Ex Post evaluation of a sample of projects co-financed by the Cohesion Fund (1993-2002) - Synthesis Report*. Report for European Commission, DG Regional Policy.

Environmental Agency, UK, 2003. *Assessment of Benefits for Water Quality and Water Resources Schemes in the PR04 Environment Programme*.

European Investment Bank, 2006, *Environmental and Social Project Appraisal Guidelines*.

Foundation for Water Research, 1997. *Assessing the benefits of surface water quality improvements*, FR/CL0005, Marlow, Foundation for Water Research.

Hammit, J. K., 2002. How much is a QALY worth? Admissible utility functions for health and wealth. Department of Health Policy and Management and Center for Risk Analysis, School of Public Health, Harvard University, May.

Johansson, P-O., 2002. "On the Definition and Age-Dependency of the Value of a Statistical Life", *Journal of Risk and Uncertainty* 25, 251-263.

Johansson, P-O., 2002. "The Value of a Statistical Life: Theoretical and Empirical Evidence", *Applied Health Economics and Health Policy* 1, 33-41.

Koss P., Sami Khawaja M., 2001, "The value of water supply reliability in California: a contingent valuation study", *Water Policy*, 3, 165-174

OECD, 2006, *Cost-benefit analysis and the Environment*, OECD, Paris, France.

OECD 1999, *Pricing for water services*, Paris

Pearce, D, 1998. "Cost-benefit analysis and environmental policy", *Oxford Review of Economic Policy*, Vol 14 No. 4, Winter, Oxford University Press.

RGL Forensics et al., 2009, *Ex Post Evaluation of the ERDF in Objective 1 and 2 (2000-2006): Work Package 10 – Environment and Efficiency (Major Projects)*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wp10\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wp10_en.htm)).

RGL Forensics et al., ongoing, *Ex Post Evaluation of the Cohesion Fund ad ISPA (2000-2006): Work Package A – Contribution to EU Transport and Environment Policies*, Report for European Commission Directorate General for Regional Policy Evaluation Unit. ([http://ec.europa.eu/regional\\_policy/sources/docgener/evaluation/expost2006/wpa\\_en.htm](http://ec.europa.eu/regional_policy/sources/docgener/evaluation/expost2006/wpa_en.htm));

Scott, S, 2001. "Discharges to water and use of water services", chap 2 in S. Scott, J. Curtis, J Eakins, J. Fitz Gerald and J. Hore, *Environmental Accounts: Time Series + Eco-Taxes*. Project for EC DG XI and Eurostat B1, ref. no. KITZ99/274, Sub 99/39963.

Strand, J., 2006. "Valuation of environmental improvements in continuous time with mortality and morbidity effects", *Resource and Energy Economics*

Turner, RK, Bateman, IJ & Pearce DW, 1992, *Valuing Environmental Performance: the UK Experience*, CSERGE Working Paper GEC 92-04.

Viscusi W., Huber J., Bell J., 2004, *The value of regional water quality improvement*, Discussion paper 477, 6-2004, Harvard Business School.

## ANNEX 2. AMENDED PROJECT LIST

N.	Domain	Country	File Reference	File Title	Sector	Sub-sector	EURO Amount
1	ERDF	Ellada		Athens Ring Road, Pallini-Spata, Imitos, Attica sections	T	R	63.000.000
2	CF	Ellada	1993GR16CPT901	Double track railway Evagelismos-Leptokarya	T	RA	234.855.00
3	CF	Ellada		VIA EGNATIA*	T	R	175.693.502
Continuation in 2000-2006 (N. Projects: 5)							341.449.971
4	CF	Ellada		Works to supply Athens with water	E	W	180.990.755
5	ERDF	España		Extension of Valencia underground railway	T	RA	50.380.00
6	CF	España		Water Supply Madrid	E	W	86.630.577
7	CF	España	1995ES16CPE019	Assainissement integral Ria de Vizo	E	WWT	68.367.390
8	CF	España		Autoroute Madrid-Valencia: section Minglanilla-Caudete de las Fuentes	T	R	302.004.069
9	CF	España		Autoroute Rias Bajas	T	R	789.856.527
10	CF	España		Autoroute Bailen-Granada	T	R	264.865.605
11	CF	España	1997ES16CPT902	COHESION-METRO DE MADRID ACCES A L'AEROPORT DE BARAJAS	T	UT	139.917.248
12	CF	España		TGV MADRID-BARCELONE-FRONTIERE FRANCAISE*	T	RA	926.914.652
Continuation in 2000-2006 (N. Projects: 13)							1.420.390.636
13	CF	España	1997ES16CPE039	COHESION-RESIDUS SOLIDES DE GALICIA	E	WT	71.843.277
14	CF	España		Corridor mediter.200/220 km/h Tr. Valence-San Vicente Calders Phase I	T	RA	339.970.872
15	CF	España	1995ES16CPE039	Epuracion d'eau cote catalane	E	W	58.919.562
16	CF	España	1995ES16CPT910	Modernisation reseau ferroviaire conventionnel	T	RA	109.679.544
17	CF	España	1996ES16CPE056	Saneamiento integral de Madrid 1-2-3 (9611610301-9611610302-9611610303)	E	WWT	82.023.651
18	CF	Ireland	1993IE16CPT023	Amelioration du reseau ferroviaire	T	RA	58.584.441
19	CF	Ireland		Dublin Region Waste Water Treatment (Stage I and II)	E	WWT	62.901.762
20	CF	Ireland		Dundalk Sewerage Scheme	E	WWT	53.037.243
21	CF	Ireland	1996IE16CPT903	Mallow-Tralee Track Upgrade	T	RA	61.156.395
22	CF	Ireland		N1	T	R	109.611.750
23	CF	Ireland		N7-N8	T	R	84.108.175
-	CF	Ireland		Dublin Region Water Supply	E	W	
24	ERDF	Italy		Rail link between stations Ferrandina and Matera-La Martella, Basilicata	T	RA	61.560.000
25	ERDF	Italy		Water supply in Palermo	E	W	46.000.000
-	ERDF	Italy		Port of Gioia Tauro	T	P	32.000.000
-	ERDF	Italy		A3 motorway Naples-Pompei-Salerno, Campania	T	R	65.000.000
26	ERDF	Portugal		Metro leger de surface de Porto, Norte	T	UT	72.000.000
27	CF	Portugal		A3	T	R	153.207.503
28	CF	Portugal	1993PT16CPE014	Assainissement de' la costa do Estoril (931061014-961061018)	E	WWT	50.564.972
29	CF	Portugal	1993PT16CPT003	Circular Regional exterior de Lisboa	T	R	103.284.320
30	CF	Portugal		LIGNE DU NORD*	T	RA	277.431.865
Continuation in 2000-2006 (N. Projects: 2)							214.227.610
31	CF	Portugal	1994PT16CPT904	Modernisation de la ligne Beira Alta	T	RA	51.513.600
32	CF	Portugal	1995PT16CPE023	Station d'incineration de dechets solides LIPOR II	E	WT	77.625.226
35	CF	Portugal		Approvisionnement en eau de la region de Grand Porto Nord	E	W	90.810.609
34	CF	Portugal	1995PT16CPE020	Systeme multimunicipal d'approvisionnement de Grand Porto Sud (1e phas)	E	W	112.142.514
35	CF	Portugal	1995PT16CPE021	Traitement des residus solides urbains de Lisbonne-Nord (Valorsul)	E	WT	94.094.604

**Note:** Project's n. 24, 30 and 34 are proposed to be dropped. Projects highlighted in green are proposed to be added to the list.

**Legend:** \* Project continuing in 2000-06.

Sector: E (Environment), T (Transport)

Sub-sector: P (Port), R (Road), RA (Rail), UT (Urban Transport), W (Water), WT (Water Treatment), WWT (Waste Water Treatment)

# ANNEX 3. PROJECT SUMMARY SHEET TEMPLATE

## PROJECT TITLE

KEY PROJECT INFO	
Project Ref. Number	
Location (country and region)	
Sector	
Sub-sector	
Financial volume (of which ERDF/CF)	
PROJECT INTERVENTION LOGIC	
Objectives and needs	MAP
Target area/population	
Beneficiary	
Governance: list of stakeholders involved, project promoters, others..	
SERVICE PROVIDED	
Description of works	
Timeline (construction / operational phase)	
Typology of service	
Modifications to original structure (if any)	
DESCRIPTION OF TYPOLOGIES OF LONG TERMS EFFECTS	
Transport	Environment
LIST OF AVAILABLE DATA	
Ex ante	Ex post
Outstanding issues on data availability and quality	
KEY CONTACT POINTS	
Name	Institution
POTENTIAL CONTRIBUTION TO ANSWER THE EVALUATION QUESTIONS	