UNIUNEA EUROPEANĂ

GUVERNUL ROMÂNIEI

Instrumente Structurale
2007 - 2013

Clarification Paper no. 1

ROLE OF PERFORMANCE INDICATORS IN SELECTION/APPROVAL OF PROJECTS

February 2012

The document was prepared by experts who supported the implementation of the contract „Development of the capacity for the Cost-Benefit Analysis", project co-financed by ERDF through TAOP

Victor Platon / scientifique researcher principal I, National Institute for Economics

This document has an informative character.

Project implemented by:

AAM Management Information Consulting Private Company Limited by Shares

AAM Management Information Consulting SRL

Leader A.T.E.C. SRL

Intrarom SA

Infogroup Consulting SA

CONTENT

1. INTRODUCTION

Currently, in Romania, for evaluating and selecting non-major projects to be financed by EFDR and CF is used an Evaluation Grid within which certain criteria connected with the project are given marks among which are the performance indicators of the project that result from the Cost-Benefit Analysis.

As regards the methodology used for CBA, the Guide for Applicants either provides some limited instructions or makes reference to the EU CBA Guide (2008) and to the Working Document no. 4 of the European Commission.

There are several issues connected to the use of the performance indicators of CBA when appraising projects:

1. There is no common methodology for preparing CBA so as the applicants to be able to estimate or calculate coherently unit cost and unit benefits which will be used in building the cash-flow. Having the full freedom of determining the values of the costs and benefits (especially the economic ones), the authors of the projects to be evaluated "select" the sum of benefits which lead to adequate performance indicators in order to fulfill the requirements included in the Guide for applicants.
2. EU methodology of using CBA is used only partially; each Guide for applicants provides for some of the CBA performance indicators based on which marks are given and included in an Evaluation Grid, without connection with their significance and utility.
3. In some cases the full CBA is requested (financial and economic analysis) but the relative weight of the performance indicators in the Evaluation Grid is small; so the importance of the CBA is insignificant or very small in the final score that allows a project to be financed or rejected.
4. CBA is often used for many types of investments without using any information coming from the values of the performance indicators for the final decision on financing or not a project.

The objective of the working paper is to put at disposal of the interested parties guidance for an adequate use of the performance indicators in the process of the evaluation and selection of projects.

To this end, the performance indicators which are usually used in the evaluation and selection of the projects are presented in the first part of the paper while its second part includes recommendations on their use in the specific phases of the evaluation and selection process, based on the financial dimension of the projects and the investment sector to which they belong.

2. DEFINITION AND PRINCIPLES

2.1 PRESENTATION OF THE PERFORMANCE INDICATORS USED IN SELECTION/APPROVAL OF INVESTMENT PROJECTS

In order to have a less subjective selection and approval of the investment projects for co-financing, a series of indicators are used for proving that the selected projects assure the best use of the funds.

The performance indicators used in the selection and approval of investment projects are indicators that reflect the technical performances of the project and indicators that measure its economic efficiency. This second grouping includes static indicators, whose calculation is simple, but which take into consideration the time factor and among which are the indicators that result from CBA. Although their determination implies the elaboration and use of some financial/economic models and is time consuming, they reflect best the efficiency of the investment projects with a big duration of their economic life.

Table 1 presents the most used economic-financial indicators in the selection/approval of the investment projects financed by ERDF and CF.

	Indicator	Recommendations for application
A.	**Performance indicators used in the selection/approval of the investment projects financed through ERDF and CF**	
	I. Indicators resulted from CBA: NPV, IRR, B/C ratio These are dynamic indicators, which take into consideration the time factor by using the discounting technique, which represents the bringing of the sums to a certain moment in time for comparing them using a discount rate.	*Generally*: to fundament the investment decision. *For a private investor*: selection of the best choice for using the available financial resources. *For banks*: providing loans; offer information on the capacity of the investment to ensure the payment of the loan. *For bodies in charge with the appraisal/approval of the public investments*: hierarchy of the projects, in order to decide which projects worth most to be co-financed when the available funds are limited.
1	**Net Present Value (NPV)** represents the discounted value of the cumulated cash flow for an investment (the sum of the annual cash-flows discounted for a project). It is an unique value expressed in monetary units. Usually, the sold of the cash-flow during the first years is negative and becomes positive after a few years. A positive NPV means that the project generates a net benefit and it is to be wanted. The NPV value depends on the discounted rate that is being used. A project can have a positive NPV for a small discount rate and a negative NPV for a bigger discount rate. This is the main disadvantage of using NPV and, for this reason, is used together with the other indicators of CBA, IRR and the B/C ratio.	*Generally*: used for the prioritization/hierarchy of projects. Projects with a bigger NPV are desirable.
2	**Internal Rate of Return (IRR)** represents that discount rate which brings to 0 the net discounted value of the costs and benefits flows of an investment. It is expressed in percentages. IRR is the indicator of the relative efficiency of the investment. Generally, IRR must be bigger than the discount rate in order the project to be desirable. There are situations when this indicator cannot be calculated (a project with only negative flows, for	*Generally*: only the projects for which IRR is bigger or equal with the discount rate used in the calculus of NPV are desirable.

	Indicator	Recommendations for application
	instance an investment project for a county road where the financial flows are only negative) or when a project has multiple IRR (projects where the revenues are reinvested, such as for an ecological waste storage facility for which the time horizon for the analysis is given by the capacity of the facility - e.g. 30 years – but from 5 to 5 years are necessary investments for closing one cell and for opening the next one). For this reason, also IRR is used together with the other indicators of CBA, NPV and the B/C ratio.	
3	**The Benefit/Cost Ratio (B/C)** is calculated as the ratio between the sum of the discounted benefits and the sum of the discounted costs. It is a number, without a measuring unit (a ratio). In case of a B/C is bigger than 1, the project is adequate, because the benefits of the project exceed its costs	*Generally*: used for the prioritization/hierarchy of projects, usually together with NPV. Cannot be used alone in case of the projects which are excluding themselves reciprocally or in case of the alternatives for the same project.
4	**The indicators of the financial analysis (FNPV, FIRR and financial B/C)**	
The indicators of the financial analysis are determined based on the financial flows of the project. They express the profitability of the project. The positive **Financial Net Present Value (FNPV)**, calculated using a discount rate equal with the average pondered cost of the capital, shows a project which is profitable financially. A **Financial Internal Rate of Return (FIRR)** bigger than the cost of the capital used in the financing of the project shows a a project which is profitable financially.		FIRR in correlation with FNPV may be used as an eligibility criterion for accessing funds in case of the productive investments or of the investments in revenue generating infrastructures. Thus, the profitable projects have access to financing on the banking market and so they do not need non-reimbursable financing (see the basis principle of the non-reimbursable financing: the grant must not be source for profit, the non-reimbursable financing covers only what the project cannot cover). Other projects, with a lower profitability, need non-reimbursable financing, if they prove relevant for the financing programmes from which they are applying for financing.

	Indicator	Recommendations for application
5	**The indicators of the profitability of the investment (FNPV/C, FIRR/C)**	
These indicators are calculated considering all the investment costs of the project, no matter the financing sources. They show if the project is in need or not of non-reimbursable financing. Good values of these indicators (positive FNPV/C and FIRR/C bigger than the discount rate) show that the project is profitable enough for obtaining financing from a bank when the discount rate represents the cost of financing on the banking market.		In case of the productive investments or in revenue generating infrastructure, these indicators may be used as an eligibility criterion of the investment projects.
6	**The indicators of the profitability of the invested capital (FNPV/K, FIRR/K)**	
These are indicators calculated taking into consideration only the part of the capital own by the project promoter, subtracting from the value of the investment the EU contribution. They show the profitability of the project in case in which a part of the value of the investment is covered by the non-reimbursable financing and the pressure upon the promoter is decreasing. In these conditions, a FNPV/K close to 0 and a FIRR/K with a value around the value of the discount rate show that the proportion of the non-reimbursable financing is the correct one. A negative FNPV/K and a FIRR/K much smaller than the discount rate show that the project needs a bigger proportion of non-reimbursable financing and cannot be accepted but only as non-generating revenue project or as revenue generating project for which the eligible expenses were determined through the financing gap method. In case of the productive investments projects, such a situation questions the financial sustainability of the project. Though, if FIRR/K, smaller than the discount rate, is within the profitability limits of the productive sector for which the investment is proposed, the project may be accepted. In case of a positive FNPV/K (big) and a FIRR/K bigger than the discount rate and bigger than the average profitability of the sector of non-reimbursable financing is too big and should be adjusted.		They may be selected as selection indicators but also as indicators for determining the proportion of non-reimbursable financing which is going to be granted.
7	**The indicators of the financial analysis (ENPV, EIRR and economic B/C)**	

	Indicator	Recommendations for application
	The indicators of the economic analysis are determined based on the same mathematical formula as the financial analysis ones, but by applying certain corrections on the financial flows (fiscal corrections, corrections for the shadow prices and corrections for the externalities). They express to what extent the project is benefic for the society. In determining the indicators of the economic analysis the social discount rate is used. For a project to be approved for financing, this has to have good indicators coming from the economic analysis, meaning a positive ENPV, an EIRR bigger than the social discount rate and the B/C ratio bigger than 1. The projects that do not fulfill these conditions imply bigger costs for the society than the benefits they bring and cannot be financed from public funds. For private projects the calculation of these indicators is not necessary but only if the project have a considerable social or environmental impact.	Together, they may constitute an eligibility criterion for the investment projects which do not envisage the private environment and which have an impact which is measurable at national level or at the level of the development region.
	II. Indicators for measuring the sustainability of the project These indicators are static and do not use the discount technique. They supply information on the financial capacity of the applicant for ensuring the implementation and sustainability of the project.	They are used for the evaluation of the eligibility of the promoter of the project.
8	**The cumulated net cash-flow** is determined through the adding up the financial flows during the analysed period (ex: the flow cumulated for year (n) = the cumulated flow for the year (n-1) + the cumulated net cash flow for year (n)). For the first implementation year (the first two years), this is determined monthly, than on a quarterly basis during the implementation and finally yearly. It is determined for the entire system / entity, in the situation without a project (business as usual) and in the situation with project. The cumulated cash flow must e positive during each period both in the business as usual scenario and in the scenario with project, showing thus that the beneficiary does not capacity to ensure the financial sustainability of the project.	It is recommended as eligibility criteria. In case of the projects fully financed from budgetary sources (projects that do not generate revenues), this criterion is replaced by the Declaration on own responsibility of the credit release responsible regarding the assurance of the financial sustainability of the project, to which is attached the Decision of the body responsible of the unit budget (Decision of the Local Council, Decision of the County Council, Government Decision etc.).

	Indicator	Recommendations for application
9	**The debt rate (or the debt capacity)** is useful in case of projects from the private sector. It is calculated as the total of debts divided to the total of assets. It is determined including in the total of debts also the value of the contribution of the project promoter. This has to have an accepted value for the ones who give loans (banks). It shows that the promoter of the project has the capacity to borrow from banks the necessary amounts for the own contribution. The debt capacity is used in case of a public institution or of a public authority. This capacity is determined as the difference between the debt rate and the threshold set by law (presently 30% out of the total of own revenues). In case of these institutions, the debt rate is determined as the ratio between the total of the debt service for each year and the total of the own revenues for each year. It is expressed as percentage. The difference between this and the 30% threshold out of the own revenues for each year must cover the debt service for the project which is proposed for financing (meaning the debt rate calculated by including the necessary loan for the project must not exceed 30% for each year of the credit amortization period).	It can be an eligibility criterion.
10	**The debt service cover rate** is determined as the ratio between EBITDA and the service debt and is determined for each year of the period of loan payment. EBITDA = the net revenues (revenues minus costs), before interest, taxes, tariffs, depreciation and amortization. The service of debt = principal (the rate of the credit) + interest + commissions This is a number without a measuring unit (a report). For the productive investments as well as for the investments in revenue generating infrastructure, the indicator shows, in case the contribution of the promoter is covered by a loan, that the project will generate enough revenues for covering the service of debt. The rate for covering the usual service of debt must be bigger than 1,2 for each year of the credit amortization period.	It can be an eligibility criterion.
B.	**Other performance indicators which may be used for the selection/approval of investment projects**	

	Indicator	Recommendations for application
11	**The total cost of the investment** represents the sum of all the costs generated by an investment project, during all its lifetime, discounted at the date of its launching. It is a dynamic indicator. The influence of the discount rate is analyzed through a sensitivity analysis. It is used for the public projects, when the financing decision is taken, for determining the technical option with the least cost or for selecting from alternative projects which lead to the fulfillment of the same objectives. A disadvantage of its use is when the lifetimes are not equal. In these situations techniques that make the costs comparables are used. The project that has the least cost for reaching the same target is preferable.	Is used for the hierarchy of the projects or for selecting of a project / an alternative to a project by the least cost method, in situations of obligation for reaching certain targets in restricted budgetary conditions.
12	**The specific investment** represents the ratio between the total value of the project and the production capacity or the capacity to supply certain services. The production capacity is the one resulted from the project can be expressed in physical units and/or value units. The indicator may be adapted using instead of the production capacity another indicator that shows how the project contributes to fulfilling its general objective. The indicator may be used and calculated with a reverse formula: number of physical units of a result or impact indicator to a thousand lei / an investment of 10000 lei (or non-reimbursable financing). Ex.: number of newly jobs for an investment of 10000.	It may be used for selecting certain types of projects by giving marks that will score the contribution in reaching the objectives of the KAI/PA/OP based on the value of the indicator for a 10000 lei investment or for 10000 lei non-reimbursable investment. Recommended for projects with small values, from the private sector, for which the economic analysis does not lead to relevant results.
13	**The Dynamic Prime Cost (DPC)** is calculated by dividing the total cost of the investment to the discounted value of the production /services offered by the project for the entire lifetime. It may be used when the outputs of the project are homogenous and can be expressed in the same measuring unit or when methods for their equalization are available. As much DPC is smaller the better are used the available funds.	It used for prioritization of the project or for alternative analysis.

	Indicator	Recommendations for application
14	**The term for investment recovery** is a static indicator. It is determined as the ratio between the total value of the investment and the supplementary gross profit obtained through the implementation of the investment. It is expressed in number of years. The supplementary gross profit is determined by subtracting from supplementary revenues estimated to be obtained when reaching the projected parameters of the supplementary costs estimated to be necessary for the functioning of investment at the project parameters. The supplementary gross profit also may be determined as the savings of the costs obtained through the implementation of the investments. For an investment to be financed, the term for investment recovery must be smaller than the average lifetime of the investment, determined as pondered average, starting from the stipulated functioning durations provided in the legislation for every component of the project (construction, networks, installations, technological machineries, equipments).	It may be used as a selection criterion for infrastructure modernization / rehabilitation projects, for the alternative analysis and for the prioritization of the infrastructure modernization / rehabilitation projects.
15	**The Payback Period (PP)** represents the duration, measured in years, after which the contributors in financing an investment project are recovering both their investment and the expected profits. The payback period is calculated based on the available liquidities flows, discounted with the discount rate estimated for the calculation of NPV, this way: - The discounted the available liquidity flows are calculated, by annual summing up, staring with the first year of the projection (year 0). - The number of years (i) for which the available liquidity flows change from a negative value are retained – FDACi-1, for a positive value + FDACi. - The payback period is calculated using the formula: $Dr = (i-1) + \frac{|FDAC_{i-1}|}{FDACi. + |FDACi-1|}$ It has the disadvantage that does not consider the benefits after year i.	It may be used for the hierarchy of projects or for selection if there is a reference value for a certain type of investment. It is applicable only for productive investments.

2.2 RECOMMENDATIONS FOR USING THE PERFORMANCE INDICATORS FOR THE SELECTION/APPROVAL OF PROJECTS

2.2.1 THE ROLE OF CBA INDICATORS FOR SUPPORTING THE FINANCING DECISION IN CONFORMITY WITH THE EU REQUIREMENTS FOR USING CBA FOR THE PROGRAMMING PERIOD 2007-2013

The COUNCIL REGULATION (EC) No 1083/2006 requires to perform CBA for projects whose total cost exceeds EUR 50 million (hereinafter referred to as major projects) (Section 2. Major projects, Article 39 and Article 40). **The term CBA, according to EU requirements, encompasses both the financial and economic analysis of the project proposed for financing.**

More specifically, within the framework of preparation and appraisal of CF and ERDF project, the European Commission requires a CBA to fulfill two major goals:

(1) ***To assess whether a project is worth co-financing***.

The goal is to answer to the questions: does it contribute to the goals of EU regional policy? Does it foster growth and boost employment? In simpler words, if the net benefits for the society (benefits minus costs) of the project are positive, then society is better off with the project because its benefits exceed its costs. The project should therefore receive the assistance of the Funds and be co-financed. If not, it should be rejected. This assessment is performed using the indicators resulted from the *Economic Analysis*.

(2) ***To assess whether a project needs co-financing and its level***.

Besides being desirable from an *economic* standpoint a project may also be financially profitable without EU assistance, in which case it would not be co-financed by the Funds.

To check if a project *should* be co-financed and to determine the level of co-financing requires a *Financial Analysis*. This must show if the financial value of the investment (net project revenues minus net project costs) without the contribution of the Funds is negative, then the project can be co-financed. In this case, the EU grant should not exceed the amount of money that makes the project break even, so that no over financing occurs. The financial analysis measures the net cost to public finance and provides a significant comparison with other similar projects.

The CBA is therefore needed to provide evidence that, while fitting within the framework of EU regional policy objectives, the project is both desirable from an economic point of view and needs the contribution of the Funds for it to be financially feasible, but at the same time avoiding over financing.

At the same time there are two other secondary goals of the CBA:

1. <u>To determine the financial sustainability of the project and of the company/institution that will get the co-financing</u>.

Verifying the project's financial sustainability implies a cumulative positive cash flow for each year of the projection. Temporary shortfalls can be covered by a revolving credit (embedded in the model's cash flow statement), provided that the assumptions behind this revolving credit are reasonable in regard to the local financial markets. Also, when the financing structure of the project includes a long-term loan to be paid with

revenues within the scope on the financial projections, a debt service coverage ratio[1] of at least 1.2 will be required for each year of the loan amortization period[2].

2. To determine the profitability of the project.

The project's profitability will be measured by FIRR/C and FIRR/K, which will be calculated before and after the EU co-financing. In both cases, the values before the EU co-financing are expected to be low or even negative, which justifies the need for co-financing by the EU funds. After the EU co-financing is granted, the values should be around the financial discount rate in the case of FIRR/C (by definition, since this is the discount rate used to calculate the financing gap, this is the discount rate used for the calculation of FNPV/C in case of the Financial Analysis; for the programming period 2007-2013, the discount rate recommended by the Commission is 5%). For own invested capital it is required that the return not to be bigger than the required return on equity for companies in the same sector; the return of own capital is calculated with the indicator FIRR/K and this should not show an excessive return to the project promoters at the expense of the EU taxpayer.

In the next table the CBA performance indicators are illustrated in relation with the set objectives and the way how they are used for major projects according to regulation in force.

Table 2. Main objectives of the CBA in the evaluation of the projects financed through CF and ERFD during 2007-2013 and used indicators

Objectives	Used Instrument	Performance indicators for project acceptance/rejection for financing	Observations
Worth co-financing	Economic Analysis	EIRR >5.5% ENPV > 0; B/C>1	These indicators are the basis for approving/rejecting EU funding; the project must bring net benefits for the society
Level of co-financing	Financial Analysis; Funding Gap method (FG)	FIRR/C < 5% FNPV < 0	These indicators establish that only projects with very low profitability (could not be financed by a bank) will get the EU support; FG gives the amount of EU support
Financial Sustainability	Financial Analysis	cumulative positive cash flow for each year of the projection	The company/institution that carries out the project will not stop the activity due to lack of funding

[1] Measured as EBITDA/Debt Service, with EBITDA being the earnings before interest, taxes, depreciation and amortization
[2] Or higher if required by the IFI co-financing the project, when applicable.

Profitability of the project	Financial Analysis	FIRR/K < determined benchmark (See Annex 1)	Preventing excessive return to the project promoters at the expense of the EU taxpayer

2.2.2 RECOMMENDATIONS REFERRING TO THE DIMENSION OF PROJECTS[3]

The obligation to draft CBA comes only for major projects. For projects with lower dimensions (values), the Member States should draft own methodologies for their evaluation. Because CBA is a method which has as main disadvantage the quantity of needed data/information, as well as **the fact that these are in their majority estimations, it must be analyzed which is the dimension of the project over which CBA is no longer efficient to be used (the total cost of its preparation is too big in comparison with the accuracy, the relevance and the usefulness of the information for the evaluation of the project**). For this, first we present a retrospective view of the way in which the European Commission identified the major projects for which CBA is needed and useful through the calculation of the financial and economic indicators.

2.2.2.1 RETROSPECTIVE VIEW

1. Definition of major projects (1993)

At the beginning of the 90's, so far as the Structural Funds were concerned, (Art. 16 (2) of Council Regulation 2082/93 Coordination of Structural Funds) major projects have been defined as "those for which the total cost taken into account in determining the amount of Community assistance is, as a general rule, greater than **ECU 25 million for infrastructure investments or greater than ECU 15 million for productive investments**".

For such major projects the proposer was required to prepare an in-depth socio-economic appraisal and to give the Commission detailed information on its results. Obviously, the Commission expected that an appropriate investment appraisal be done by proposers for smaller projects as well, but normally the Commission focused on the evaluation of programmes and of major projects. The requirement of detailed information on the appraisal of major projects was strictly binding both when they were part of a wider programme and when individual projects were proposed to the Commission for co-financing.

The above mentioned limits of **25 million ECU for infrastructure and 15 million ECU for productive investments** had to be understood as follows:

a) the relevant economic dimension was the total amount of investment costs. In order to assess this figure, one ought not to consider sources of finance (e.g. public sector finance only, or the EC co-financing only) but the overall economic value of the proposed infrastructure or of the productive investment;

b) if investment costs are expected to be incurred over different years, one has to consider their sum across the years;

[3] In this context, the dimension of the projects refers to their value.

c) while one has to consider investment costs only, excluding running costs, it is advisable also to include in the calculation of total investment cost any once-for-all expenditure such as recruitment and training costs, licenses, preliminary studies, design and other technical studies, price contingencies, allocation for net working capital, etc.;

d) in some cases a group of small projects is so interwoven that it is better understood as one large project (e.g. five sections of the same highway, each section at a cost of 6 million ECU, should be treated as a major project of 30 million ECU).

2. Definition of major projects (1999)

In 1999 the lower limit of major project was raised up to €50 million.

For Structural Funds, the Art. 25 Reg.1260/1999 said: as part of any assistance, the Funds may finance expenditure in respect of major projects, i.e. those: a) which comprise an economically indivisible series of works fulfilling a precise technical function and which have clearly identified aims and b) whose total cost taken into account in determining the contribution of the funds exceeds **EUR 50 million**.

For the Cohesion Fund, the regulation said (the Art. 10(3) cons. Reg.1164/94): Applications for assistance for Projects under Article 3 (1) shall be submitted by the beneficiary Member State. Projects, including groups of related projects, shall be of a sufficient scale to have a significant impact in **the field of environmental protection or in the improvement of trans-European transport infrastructure networks**. In any event, the total cost of projects or groups of projects may in principle not be less EUR **10 million**. Projects or groups of projects costing less than this may be approved in duly justified cases.

In case of **ISPA projects**, the regulation said (Art.2/4 Reg.1267/1999): **measures shall be of a sufficient scale to have a significant impact in the field of environmental protection or in the improvement of transport infrastructure networks**. The total cost of each measure shall in principle not be less than EUR 5 million. In duly justified cases, taking into account the specific circumstances concerned, the total cost of a measure may be less than EUR 5 million.

3. Definition of major projects (2007)

In the programming period 2007-2013, in the General Regulation for the Structural and Cohesion Funds, major projects are defined as those with a total cost **exceeding €25 million in the case of the environment and €50 million in the case of all the other sectors** (Article 39 Regulation 1083/2006). This financial threshold is **€10 million for IPA[4] projects** (Article 157(2) Regulation 718/2007). The following types of investments can constitute a **'major project'**:

- a project, that is an economically indivisible series of tasks related to a specific technical function and with identifiable objectives;
- a group of projects, that indicatively:
    - o are located in the same area or along the same transport corridor

[4] Instrument for Pre-Accession Assistance

- achieve a common measurable goal;
- belong to a general plan for that area or corridor
- are supervised by the same agency that is responsible for co-ordination and monitoring;

- a project phase that is technically and financially independent and has its own effectiveness.

In 2009 the lower limit for environmental projects to be considered major was raised at €50 million.

2.2.2.2 THE ANALYSIS OF THE CBA RELEVANCE BASED ON THE DIMENSION OF PROJECTS

From this short retrospective it can be noticed that, in time, the notion of "major-project" was modified in each programming period through increasing the minimum threshold. From €25 million the lower limit now we have a limit of €50 millions. CBA was asked from the beginning only for big projects.

Treatment of environmental projects has changed as well. In the previous two programming periods, a major project in environment was around 50% of the value of an infrastructure project. This lower limit increased from €10 million to €50 million in the present. The tendency is to consider environmental projects as any other project.

The only atypical case was the one of ISPA projects for which CBA was demanded with a lower limit of €5 million (eligible costs). The practice to perform CBA was common in all candidate states so is well known in Romania too. We consider that a €5 million has a sufficient scale to produce a significant impact in the Romanian economy and, that is why, is necessary to require CBA in order to be co-financed. For this reason, we recommend requesting CBA (both economic and financial analysis) for projects that are higher than €5 million (without VAT).

For projects whose values are less than 5 million Euro, a different approach is necessary also based on the type of the investment:

- For public infrastructure rehabilitation/modernization projects, which do not generate revenues, with values up to 1 million Euro, it is recommended to use other indicators for justifying the relevance of the project and its contribution in fulfilling the objectives of KAI/PA/OP; CBA is not justified because such projects cannot have, at individual level, a measurable impact at least at the level of the region, their need being analysed when deciding over the Key Area of Intervention and, for the projects which do not generate revenue, the financial analysis does not come out with any new relevant information. Taking into account the small dimension of the project the cost of preparing a CBA is not justified and the CBA indicators do not add new information that can support the evaluation of the project.
- For productive investment projects, a financial analysis is recommended, one which is developed the same way as requested until now for the small investments for SMEs and micro-enterprises, by using a model put at disposal by the Managing Authority, focusing on the evaluation of the financial sustainability of the project, as well as on avoiding over financing. This financial analysis will not have to respond to the question if the project needs co-financing because, when deciding the eligible productive sectors, it will be analysed the profitability a sector level and those profitable sectors will not be eligible for financing. In case a certain sector is very profitable and attracts alone capital, and a project from this sector proposed for financing presents weak indicators of the financial analysis, which point out the

need for non-reimbursable financing, this means that either the analysis is not correct or the involved entity has a management problem. In case of ERDF and CF, the EU intervention is not for solving the management problems of the enterprises.

- For projects which have their value between 1 and 5 million Euro, it is recommended to focus on the determination of the need for financing and over the financial sustainability of the projects. The CBA indicators can be used both for selecting between alternatives as well as for determining the need for non-reimbursable financing; for deciding over the relevance and importance of the project other indicators will be defined which will help the investment decision in strong correlation with the programme indicators (it is not necessary to require an economic analysis). Exceptions to this are the road without tariffs projects for which the specific methodology, which imply an economic analysis before the financial analysis, will be observed. This is the case of the county roads for which in evaluation the indicators of the financial analysis will not be used because these do not bring supplementary information for the evaluation and selection.

2.2.3 RECOMMENDATIONS REGARDING THE UTILITY AND RELEVANCE OF PREPARING THE ECONOMIC ANALYSIS

This section approaches the non-major projects and the utility of preparing the economic analysis.

2.2.3.1 UTILITY TO PERFORM CBA

The utility of performing CBA is presented in the COUNCIL REGULATION (EC) No 1083/2006. The term CBA, according to EU requirements, encompasses both the financial and economic analysis of the project.

The issue is the modality of using the economic indicators in making the financing decision for a project with a value less than 50 million Euro for which there are not any dedicated provisions of the Commission.

A simple answer would be the next: if economic indicators (ENPV and EIRR) are not used in the final decision to finance a project, no matter the type of the project, then the economic analysis should not be performed. If the economic indicators are used in a significant way and contribute to the financing decision then, of course, the economic analysis should be performed.

The idea is that, in case an analysis is required, no matter its type, the indicators resulted from analysis to be used in the final decision to finance a project. It is very painful for applicants to spend money for all sort of analysis that are not taken into account in the end.

The precondition to take into account CBA indicators is to have a quality control of the modality of the calculation of the indicators. If in drafting the CBA there are not enough information on economic and social benefits and costs, if there is no standardized approach and each applicant could be very imaginative in estimating costs and benefits then the performance indicators means almost noting and the decision to finance the project will be distorted. As long as standardized tables with costs and benefits are not used consistently by all applicants the result will not be relevant and will create distortions.

The lack of a quality control for CBA leads to a dilution of its importance. As well important is the way in which the CBA is examined and corrected if necessary. Instructions and correction protocols are needed in order to have more accurate performance indicators based on which to take a good decision.

2.2.3.2 APPRAISAL OF EXTERNAL EFFECTS IN THE ECONOMIC ANALYSIS[5]

Appraisal of external effects for non-major projects could be difficult to carry out. Some of these effects cannot be measured, the project impact being a smaller one.

This should be executed in three steps.

In the **first step** all externalities, both positive and negative, should be identified and properly described.

In the **second step** the effects should be quantified. For example in the case of improved quality of drinking water, the beneficiary should quote epidemiological statistics with regard to relevant gastric illnesses in an analysed region caused by sub-standard quality of the drinking water-sewage service and estimate the reduction of such gastric illnesses due to an improvement in water quality.

In the **third step** the beneficiary should assess the cost to society imposed by an externality effect. This means that the beneficiary should monetize the external effects (see Pearce et al (2006) for a very accurate review of valuation methods). Continuing the example, the beneficiary should estimate the cost to society of handling a single case of the gastric illness or other injury (foregone production, costs of medical treatment, etc). This should be the basis for an overall assessment of the benefits to society resulting from mitigation of the externality produced by the project.

Further recommendations for non-major projects:

- It may be too costly to carry out a separate valuation study of the economic benefits for each project. In some cases a reasonable result can be established though benefits transfer, i.e. using estimates from valuation studies executed in other countries (see Pearce at al (2006) on this). A review of valuation studies that are relevant for water, waste water and solid waste management is in Faircloth and Barnes (1999) and ECOTEC (2001).
- Some external effects cannot be monetized due to prohibitive costs of valuation study, or lack of economic techniques for valuation of a given external effect. Still it is important to describe such effects in detail and strengthen argumentation by a statement that some important benefits have not been included in the calculation of CBA indicators and why so.
- In such cases a qualitative and quantitative assessment is recommended. The beneficiary should list and describe in detail all relevant environmental, economic and social impacts of a project and present them in quantitative terms. In addition, the beneficiary should refer to a cost-effectiveness analysis, showing that the investment represents the least cost-option to the society.
- Because the economic analysis reflects the project relevance for the KAI/PA/OP/public policy, at least those externalities which demonstrate the contribution of the project towards reaching the general objective should be measured and monetised.

Interpretation of CBA results is straightforward, similar to a standard financial analysis. However, **the results are interpreted from the point of view of a decision maker that represents the society**, and not an investor. If

[5] For the a more detailed look on how to consider the external effects in the economic analysis please consult the Working Paper No 7 dedicated to the externalities

ENPV > 0, EIRR > 5,5%, B/C[6] > 1 – a project is worthwhile for the society as its implementation improves welfare. Please note that if one of these conditions is met, all others also should be met. The main conclusion in such cases is that the discounted stream of benefits to society is larger than the discounted stream of costs put on the society.

Rigorous treatment of CBA implies that a project should not be supported unless the abovementioned conditions hold. However, in some cases a decision maker may still be justified in supporting (and allocating EU grants to) the project although this did not pass the test of indicators. First, the CBA performance indicators may underestimate true economic efficiency of the projects if there are substantial positive external effects that have not been monetized. Second, in the case of projects that respond to compulsory EU standards, the Member State is required to achieve compliance with the EU acquis even in cases where there are non-satisfactory CBA.

In the latter case the beneficiary should ensure that the least cost option to implement the investment is selected and, to demonstrate this, the beneficiary should refer to the cost-effectiveness analysis. The economic rationale for the grant intervention in such cases is therefore that (1) despite weak CBA, the investment is required to meet directive compliance; (2) the investment is carried out using the least cost approach.

It is recommended to limit these situations in order to avoid abuses.

2.2.3.3 RECOMMENDATIONS FOR THE SITUATIONS WHEN THE USE OF ECONOMIC ANALYSIS INDICATORS IS INDICATED

For the avoidance of doubts, the CBA would be compulsory for projects > EUR 5 million in all sectors (without VAT), as shown above.

Referring to the level of performance indicators, in well documented peculiar circumstances, the beneficiary should not be afraid of presenting results that are not plausible in terms of rigorous CBA, provided the investment is justified to meet directive compliance and is carried out in a least cost approach. Such projects could be eligible for grant funding.

It is preferable to have accurate information for policy makers (even if the CBA results are weak), rather than to have positive CBA results based on inflated assumptions which may be open to challenge because the CBA indicators have been obtained based on incomplete calculations.

For projects with values less than 5 million Euro, it is to be analysed if the impact of the project at the level of the region can be measured.

In case of the projects aimed at the private sector, the economic analysis for such projects (smaller than 5 million Euro) should not be required, because these do not have a strong negative impact (a social one or on the environment) and their positive impact can be measured with the help of other indicators (most of the times the positive impact refers to job newly created or maintain existing jobs), and the indicators of the economic analysis do not offer additional information for the evaluation of the project.

[6] This requirement is redundant because if NPV>0, automatically B/C>1 and the other way round.

The public investment projects with values less than 1 million Euro do not need an economic analysis for two reasons:

– their impact at the national or regional level, being a small one, cannot be measured (and individualized); this makes the indicators of the economic analysis irrelevant for the evaluation of the project.

– the cost of preparing a correct economic analysis is not justified in comparison with the dimension of the project, given the conditions that, taking into consideration the current cost standards, the value of the studies necessary to prepare a public investment project cannot exceed 3,5% out of the value of the investment, and CBA represents only a small part of this value, the technical part representing the most important one; thus, in case of these projects will result a bigger real cost for CBA than the one accepted through this cost standard.

In case of public investment projects with values between 1 and 5 million Euro, distinction must be made between the rehabilitation/modernization projects and the projects that refer to new investments or extensions of existing investments. The first category (modernization / rehabilitation projects) does not need an economic analysis, its indicators not adding supplementary information that justify the need for the project and its opportunity, except those that have special requirements and for which exist special methodologies for monetizing the impact (e.g.: the projects on renewable energies or energy savings, reduction of carbon emissions etc.). The second category (new investments / extensions) needs an economic analysis, its indicators proving that the socio-economic benefits, related to development and reduction of the disparities, exceed the possible social and environmental costs especially.

The economic analysis indicators are relevant for projects valued more than €5 million Euro. The Working Paper No 2 includes a proposal for a set of projects for which the CBA indicators are relevant for supporting the financing decision, as well as a series of other methods that can be used with the same purpose.

2.2.4 RECOMMENDATIONS REFERRING TO THE USE OF THE PERFORMANCE INDICATORS IN THE ELIGIBILITY OR SELECTION PHASE

2.2.4.1 THE STANDARD PRACTICE USED UP TO NOW

The role of the performance indicators depends on the Guide for applicants and/or on the in force legislation (Government Decision No 28/2009). Though, in many cases, the national legislation is and cannot be fully observed[7] due to some missing or unclear provisions and in certain cases the Guides for applicants come with own values and requirements. Annex 2 shows this diversity in CBA use.

In case of non-major projects which are appraised for obtaining EU financing, the general practice is to use an open tender (open call, with continuous submission / first come, first served) with two evaluation phases. In the first phase, the administrative conformity and the eligibility of the applicant are checked against the requirements from the Guide for applicants. Usually a YES/NO grid is used. The projects which pass this phase enter the next appraisal phase. The projects are not compared between themselves.

[7] For example, GD 28/2009 does not set any value for the discount rate. This leaves the liberty of using any value for the discount rate.

In few cases closed tenders[8] (calls with deadline for submission) are used, in which groups of projects that compete for limited amounted of money are appraised. In this case, the projects are compared between themselves and a hierarchy is made based on certain criteria.

In the second phase of the evaluation, an Evaluation Grid is used in which an evaluator or a team of evaluators give marks for criteria regarding the project and the applicant, such as: technical aspects, the experience of the team that will implement the project, environment issues, market issues, correlation, project maturity, financial issues, etc. There is a limit / a minimum benchmark for the score so as every project situated above this minimum threshold may obtain co-financing. The projects which score less than the minimum threshold are rejected[9].

The logic of this process with two phases is based on the "first come, first served" principle, until all available funds are allocated. This logic does not allow comparison between projects so, if are many simpler projects at the beginning of the evaluation phase, the funds may be spent and complex projects which need a longer period for their preparation risk not being financed.

Among the criteria used in evaluating a project are included some performance indicators resulted from CBA. The relative ponders of the performance indicators depend on the OP and the Guides for applicants issued for the Pas.

From the analysis of the Guides for applicants, two approaches were identified.

One approach is that used in the process of project selection for the Regional Operational Programme. Based on the Guide for applicants, the project performance indicators are used in the selection phase. Thus, indicators like FIIR/C, EIRR/C, FNPV and ENVP are used. Based on the values of the mentioned indicators a project either gets maximum of points (6) or minimum (0); there are not intermediary scores. If a project gets zero points is rejected (at least in theory).

In this way almost all projects get maximum points due to the fact that there is no clear methodology to estimate economic costs and benefits and there are no benchmarks for external effects of various projects. So, in order to get the maximum points, the applicant may take into account all sorts and hard to prove benefits and of the magnitude that will correspond to the criteria in the grid. In fact almost all projects get six points. There are very few projects that do not fulfill the CBA criteria and receive 0 points. These projects are not eliminated totally due to the fact that they already passed the eligibility/conformity criteria. So the practice is to send back the project for making the necessary correction and the projects is submitted again.

This approach makes the use of CBA performance indicators in the project selection phase irrelevant because by scoring only a minimum or a maximum a yes/no decision (for the majority of projects the performance indicators have values over the limits required by the Guide for applicants so they receive the maximum number of points) so there is no way to differentiate between projects by using CBA. In this context, the fact that the exaggerations of the applicant in benefit estimation further complicates the

[8] The closed tenders were used almost exclusively in PHARE programmes.
[9] In case of the Regional Operational Programme, the scale is from 0 to 6; the projects which score over 3.5 points are selected. In case of the Increase of Economic Competition OP, the scale is from 0 to 100 and the projects which score at least 65 points are qualified.

situation. It must be underlined that such an approach keeps under control the costs through relative detailed budgets but leaves for the applicant to decide over the number and value of the economic benefits.

The situation is complicated by the fact that CBA is demanded for all[10] infrastructure projects that are dealing with social infrastructure such as rehabilitations/modernizations of schools, hospitals, social centers, museums even churches for which the social benefits are very hard to estimate and some of them are small so CBA for these projects does not bring the pertinent information for justifying the approval or rejection of a project.

Another approach is the one applied for the selection of projects under the Operational programme Increase of Economic Competitiveness. Thus, in the evaluation grids a series of performance indicators have been included for which scores are given, but different from one Priority Axis to another or from one KAI to another. For instance some projects are approved if the next condition is fulfilled 0 < FIRR(C) < 13% (SOP IEC 2007-2013, Productive infrastructure and equipment purchase, PA 1, KAI 1.1 New businesses capacities and expanding of existing ones (see Annex 2)). The condition FIRR(C)<5% was introduced by the European Union in order to finance only projects that are not financed by banks due to low profitability but that are economically useful for society. The projects that have a financial ratability higher that 5% should get financial support from the banks. In the case mentioned the limit is extended from 5% to 13% without clear explanation of the 13% upper limit (it was considered that this will be the average cost of the credit on the market at the date of launching the call).

For research-development projects a decision was taken, which we consider adequate, not to use the CBA performance indicators (Operation 2.1.2 Research infrastructure, Operation 2.2.1. Procurement of the research equipment, Operation 3.1.1 Procurement of the IT hardware and software, broadband connection, Operation 3.1.4 IT solutions for schools and education institutions) (see Annex 2).

In the case of Operation 4.1.1 Productive equipment for industry to reduce energy consumption, co-generation, energy conservation etc. the points are given in opposition[11] with instruction of the WD no. 4 which is recommended to applicants. Instead of penalizing profitable projects and supporting less profitable projects the methodology is doing the opposite.

In the case of Environmental protection by reducing energy losses and modernisation of the electric grid that is deteriorated, the approach is more complex and is more in line with WD no. 4.

2.2.4.2 RECOMMENDATIONS FOR USING THE CBA INDICATORS IN THE PROJECT ELIGIBILITY AND SELECTION PHASES

The use of the CBA and related performance indicators for evaluation of non major projects should be done in a rational way taking into account the two phases 1) eligibility/conformance and 2) selection. So far the inclusion of the performance indicators in the selection phase (in the technical and financial evaluation grid) was not productive: the result is a reduction in the importance of the CBA performance indicators in supporting the financing decision.

[10] Only the investments financed through KAI 4.3, the procurement of productive investments for micro-entreprises, does not follow this approach.
[11] The following score is given for co-generation projects: 1. FIRR>12% - 7 points; 2. FIRR between 12% and 7% - 6-3 points; 3. FIRR<7% - 1 point.

In order to have a good use of the CBA, three pre-conditions are needed:

1. Existence of a comparable methodology to be applied by all applicants with Excel sheets attached (templates to be used for calls for projects);
2. Existence of the recommended values (min-max) for the external costs and benefits, as well as of methodologies for monetizing of those externalities which refer to the general objectives of the projects (see the Working Papers No 7 and 5);
3. A method for CBA quality control and for the validation of the performance indicators for all the projects that are over 5 million Euro; Annex 1: CBA Checklist.

➢ **Recommendations regarding the use of the CBA performance indicators in the project selection process (applications with continuous submission)**

So, we recommend the inclusion of the CBA performance indicators in the two phases of project evaluation the following way:

Phase I Eligibility/Conformity. In this phase we propose to include the indicators in two steps:

1. Verifying the quality of CBA and drafting a CBA quality Report/Correction and Observations Protocol drafted by the evaluators; the performance indicators may be validated by the evaluators or the corrections of the analysis may be required in case mistakes, incorrect calculation, etc. are noticed. In extreme cases the rejection of the project may be recommended based on the CBA results. In this phase is proposed: the acceptance of the project, its rejection or asking clarifications and justifications for the analysed calculation.
2. The performance indicators (financial and economic) are analysed in the eligibility check phase. These indicators will allow the continuation of the evaluation of the project in case the criteria set through the Guide for applicants are observed. If not, the project will be rejected based on the quality Report for CBA or it may be required to recalculate in case of major errors.

Phase II Selection of projects in two steps:

1. The technical and financial selection is made through giving marks/points to the project; these points are cumulated following the application of the selection criteria (the technical and financial evaluation grid); it is recommended to avoid including in the evaluation grid performance indicators resulted from CBA, in order to preempt their double counting. For instance, on a scale from 1 to 100, a project fulfills the selection conditions if it receives more than 50-60 points.
2. The verification and modulation of the public contribution. The public contribution will be checked, especially for the projects which receive state aid. The modulation of the public intervention is done through reducing the grant if excessive co-financing is identified. Thus, it is recommended to adjust the public contribution for avoiding the excessive gain of the project promoter.

In **Table 3** are briefly presented the phases of the evaluation of the investment projects and the recommendations for using the performance indicators resulted from CBA when applying the evaluation procedure for projects with values less than 50 million Euro.

Step/Phase in the evaluation and selection process	Intermediary steps	Indicators to be verified		Action
1. **Project Eligibility/conformity check**	1.1 Quality control of CBA and validation of performance indicators	EIRR ENPV B/C	FIRR/C FNPV	Validation and verification of the CBA calculations
	1.2 Verification of the performance indicators and of project sustainability	EIRR >5.5% ENPV > 0; B/C>1		Approval of the project if the indicators were calculated correctly and their validation observes the requirements
		FIRR/C < 5% FNPV < 0		
		Cumulative positive cash flow for each year of the projection		
2. **Technical and financial Evaluation of the project (project selection)**	2.1 Technical and financial selection of the project	Evaluation grid (technical and managerial criteria and other criteria)		Giving notes on a scale (0-100); if the score >50 the project could be financed; Proposal for financing
	2.2 Verification and modulation of the public contribution	FIRR/K> 12%	Reduction of grant with 25%	Modulation/reduction of the public contribution in accordance with the FIRR/K; higher FIRR/K will mean lower public contribution
		12%>FIRR/K >10%	Reduction of grant with 15%	
		10%>FRR/K >8%	Reduction of grant with 5%	
		FRR/K<8%	No reduction	
		EXAMPLE		

➢ **Recommendations regarding the use of the CBA performance indicators in the project selection process (applications with deadline for submission)**

In case of application with deadline for submission the role of the performance indicators resulted from CBA can be valorized even more. The projects can be in a descending hierarchy using economic indicators. This procedure was extensively used in PHARE tenders. Following the CBA evaluation, two lists will be made. A first list will include the projects with the biggest values of the economic indicators, listed in a descending manner until the allocated budget is covered. A second list will include the reserve projects which are the projects with smaller indicators and for which there is no financing available. These projects from the reserve list will replace the projects from the first list if these are removed due to different reasons.

After that, the third step from the previous scheme can be applied.

3. CONCLUSIONS

1. CBA should be used for projects between €5-50 million (without VAT) but is needed a proper procedure for CBA quality verification. The lower/upper limit does not depend on the type of investment.
2. In case of projects with values between 1 and 5 million Euro, the economic analysis is only recommended only for the public projects representing new investments or extensions.
3. For projects with values less than 1 million Euro, CBA is not recommended, being too costly compared with the information it brings for the evaluation; the attention of the evaluators should be concentrated towards the verification of the applicant capacity for ensuring the project financial sustainability (in the eligibility/conformity phase).
4. Supplying proper information to the decision makers: even if the CBA results are not satisfactory, but the CBA is solid, it is to be preferred that these are assumed. The alternative is a CBA with positive results but which can be contested because they have been obtained based on exaggerated or even incorrect data.
5. Based on the remarks above, it is recommended to finance the projects with strategic importance for development objectives (big EIRR), which are not excessively generating revenues comparing with the costs of the investment, but which are viable on long-term (-3% > FIRR/C > 5-6%) and the EU grant should be not too high as to generate an extra rent to the proposer (FRR/K<7-9%).
6. The performance indicators should be used, in generally, in the eligibility phase.
7. It is very important to have in place three preconditions to make good use of the CBA:
   a) Existence of a comparable methodology to be applied by all applicants with Excel sheets attached (templates to be used for calls for projects);
   b) Existence of the recommended values (min-max) for the external costs and benefits, as well as of methodologies for monetizing of those externalities which refer to the general objectives of the projects (see the Working Papers No 7 and 5);
   c) A method for CBA quality control and for the validation of the performance indicators for all the projects that are over 5 million Euro; Annex 1: CBA Checklist.

4. ANNEXES

4.1 ANNEX 1: REPORT FOR VERIFYING THE QUALITY OF CBA AND FOR THE VALIDATION OF THE PERFORMANCE INDICATORS

The purpose of this Annex is to provide a checklist through which the quality of a CBA can be assessed. This Checklist is based on the seven steps as described in the Guide to Cost-Benefit Analysis of Investment Projects, published by EC in 2008. The checklist can be used in case of investment projects and for those involved in reviewing CBA, for example in case of investment projects that require EU funding. It is suggested to make this checklist a 'living document', i.e. to adjust the CBA checklist based on future reviews of CBAs.

I. Objectives definition

- Does the project have a clearly defined objective in terms of socio-economic variables?
- Are these socio-economic benefits attainable with implementation of the project?
- Are the objectives connected logically? Has Logical Framework Analysis been applied to support the process of defining the logic between objectives (not a requirement, but a useful tool)?
- Are the overall welfare gains arising from the project worth its cost?
- Have all the most important direct and indirect socio-economic effects of the project been considered?
- Are the means of measuring the attainment of objectives indicated?
- Is the project coherent with the EU objectives of the funds (the objectives of the social, economic and cohesion policy of the EU for the current programming period)?
- Is the project coherent with the EU objectives specific to the sector of assistance (is it relevant for KAI/PA/OP under which applies for financing)?

II. Project identification

- Does the object constitute a clearly identified unit of analysis, according to the CBA principles (in case of EC funding)?
- Does the project satisfy the financial thresholds are respected: equal or more than €5 million (without VAT in case this can be recovered)?

III. Feasibility and options analysis

- Has the application dossier given sufficient evidence of the project's feasibility (from an engineering, marketing, management, implementation, environmental points of view)?
- Has the applicant demonstrated that alternative options have been adequately considered, at least in terms of do nothing or do-minimum alternatives?

IV. Financial analysis

- Has a proper time horizon been set for the project?

- Has an adequate discount rate been applied for the project, i.e. consistent with comparable projects in Romania (or preferably based on national guidelines)?
- Have financial costs and benefits been defined and are they realistic?
- Are unit prices for costs and valuation of benefits in line with comparable projects or in line with those used on local markets?
- Is there no double-counting?

V. Economic analysis

- Are effects on society as a whole incorporated?
- Have economic costs and benefits been defined and are they realistic?
- Are unit prices for costs and valuation of economic benefits in line with comparable projects or in line with those recommended by the MA/IB?
- Are corrections made for and how much:
    - Externalities
    - Fiscal corrections
    - From market to accounting prices
- Is the discount rate used the discount rate recommended for Romania (decided based on national guidelines)?

VI. Sensitivity and risk analysis

- Are the project's critical variables identified?
- Are tests done on outcome of financial and economic analysis based on variation of the variables?
- Are results used to safeguard the delivery of the critical variables?
- Were identified the main risks and mitigation and prevention measures were proposed?

VII. Other criteria

- Are other effects included in the analysis, e.g. distributional effects?
- Are there negative side-effects of the project, not captured in the CBA?

DATE _____

PREPARED BY ----------

SIGNATURE _____

4.1 ANNEX 2 – MAIN INDICATORS USED CURRENTLY FOR SELECTION/APPROVAL OF THE PROJECTS SMALLER THAN 5 MILLION EURO

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
Road infrastructure	POR 2007-2013 AP 2 DMI 2.1	No	**20**	WD no.4 and a Short instruction	EIRR ≥ 5.5% B/C ratio ≥ 1	FIRR ≤ 5% şi FNPV < 0 **6 pct** FIRR > 5% **0 pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Rehabilitation of polluted sites and building new infrastructure	POR 2007-2013 AP 4 DMI 4.2	DA	**20**	WD no.4 and a Short instruction	EIRR ≥ 5.5% B/C ratio **≥** 1 Social rate 5,5% *Financial rate: 9%*	1. FIRR/c < 5% **(6 pct)** 2. FIRR/c between 5-9% **(3 pct)** 3. FIRR/c > 9% **(0 pct)** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Hospital infrastructure	POR 2007-2013 AP 3 DMI 3.1	NU	**15-20**	WD no.4 and a Short instruction	EIRR/C ≥ 5,5% şi ENPV/C ≥ 0	FIRR/C <5% and FNPV/C < 0, EIRR/C **≥** 5,5% and ENPV/C **≥** 0 **6 pct** FIRR/C **≥** 5% and FNPV/C **≥ 0 pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
Social infrastructure	POR 2007-2013 AP 3 DMI 3.2	NU	**20**	WD no.4 and a Short instruction	1. ENPV > 0; 2. EIRR. ≥ 5.5%; 3. B/C ratio>1	EIRR ≥ 5.5% and ENPV/C ≥ 0 **6 pct** EIRR/C < 5,5% and ENPV/C < 0 **0 pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Equipment for emergency situations	POR 2007-2013 AP 3 DMI 3.3	NU	No indications	No indications	No indications	No indications
Education infrastructure (Schools, universities, campuses etc.)	POR 2007-2013 AP 3 DMI 3.4	NU	**15-20**	WD no.4 and a Short instruction	FIRR/C <5% FNPV/C < 0	EIRR ≥ 5.5% and ENPV/C ≥ 0 **6 pct** EIRR/C < 5,5% şi ENPV/C < 0 **0 pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Infrastructure for businesses development	POR 2007-2013	DA	**20**	WD no.4 and a Short instruction	1. ENPV > 0; 2. EIRR. ≥ 5.5%;	1. FIRR/c < 5% **(6 pct)** 2. FIRR/c between 5-9% **(3 pct)**

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
	AP 4 DMI 4.1				3. Ratio B/C>1	3. FIRR/c > 9% **(0 pct)** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Achisitions of equipments for SMEs	POR 2007-2013 AP 4 DMI 4.3	DA	**No indications**	Simplified financial analysis	FIRR/c <= 9%, FNPV/c < 0 9% < FIRR/c <= 13%, FNPV/c ≥ 0	FIRR/c <= 9%, FNPV/c < 0 **6pct** 9% < FIRR/c <= 13%, FNPV/c ≥ 0 **3pct** FIRR/c > 13%, FNPV/c>0 **0pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Cultural Infrastructure	POR 2007-2013 AP 5 DMI 5.1	NU	**No indications**	WD no.4 and a Short instruction	EIRR ≥ 5.5% B/C ≥1 ENPV>0	FIRR/C <= 5 % and FNPV/C < 0 **6pct** FIRR/C > 5 % and FNPV/C ≥ 0 **3pct** **Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Tourism infrastructure	POR 2007-2013	DA	**10**	WD no.4 and a Short instruction	FNPV/C <0, FIRR/C < 5% (public)	EIRR ≥ 5.5% **6pct** EIRR < 5.5% **0pct**

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
	AP 5 DMI 5.2				FIRR/C>9% FIRR/C < 9% (public/privat)	**Max. point 6 pct, minim 3,5pct** If one project gets zero point it is eliminated.
Productive infrastructure and equipment purchase	POS CCE 2007-2013 AP 1 DMI 1.1 max. 1.075.000 lei for IMM	DA	**7**	WD no.4 and EU Manual on CBA	0 < FIRR(C) < 13% (Applicants Guide, pag.58)	0<FIRR/C< 5% **8pct** 5%=<FIRR/C< 13% **5pct** 0>=FIRR/C≥13% **0pct** **Maxim points 100, minim 50 pct** If one project gets zero point it is eliminated.
New businesses capacities and expanding of existing ones	POS CCE 2007-2013 AP 1 DMI 1.1 1075001-6450000 lei	DA	**10**	WD no.4 and EU Manual on CBA	0%<FIRR/C<13% (Applicants Guide, pag.63)	0<FIRR/C< 5% **8pct** 5%=<FIRR/C< 13% **5pct** 0>=FIRR/C≥13% **0pct** **Maxim points 100, minim 50 pct** **Projects that get minimum 60 pct get a regional**

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
	for IMM					**bonus (multiplier): 1,05 pct** for Regions Centru, NV, Vest, SE; **1,10 pct** for Regions NE, Sud Muntenia, SV.
Research infrastructure Operation 2.1.2	POS CCE 2007-2013 AP 2 DMI 2.1	DA	No indications	No indications	No indications	No indications
Procurement of equipment for research Operation 2.2.1	POS CCE 2007-2013 AP 2 DMI 2.1	DA	No indications	No indications	No indications	No indications
Equipment and IT sofware procurement, broadband connection etc. Operation 3.1.1	POS CCE 2007-2013 AP 3/DMI 3.1	DA	**7**	No indications	No indications	No indications
IT solutions for schools and other	POS CCE 2007-	DA	No	No indications	No indications	No indications

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
education establishments Operation 3.1.4	2013 AP 3 DMI 3.1		indications			
Productive equipment for industry to reduce energy consumption, co-generation, energy conservation etc. Operation 4.1.1	POS CCE 2007-2013 AP 4 DMI 4.1	DA	**15-20**	WD no.4 and EU Manual on CBA	No indications	**A.** FIRR for co-generation projects: **1.** FIRR > 12% -**7pct** **2.** FIRR between 12% and 7% -**6-3pct** **3.** FIRR < 7%; **1pct** **B.** FIRR for energy conservation: **1.** FIRR > 14% -**7pct** **2.** FIRR between 14% and 12% -**6pct** **3.** FIRR between 12% and 10%- **5pct** **4.** FIRR between 10% and 8% -**3pct** **5.** FIRR < 8 % - **1pct** **Maxim 100 points, minim 50 points**

Project Type	OP/PA	State aid (YES/NO)	CBA horizon (years)	CBA Instruction	Benchmarks for approving a project	Performance indicators in the evaluation grid (points)
1. Environmental protection by reducing energy losses 2. Modernisation of the electric grid that is deteriorated	POS CCE 2007-2013 AP 4 DMI 4.1	DA	**10-20**	WD no.4 and EU Manual on CBA	FNPV(C[12])≤0 FIRR(C)≤5% FIRR(K)=5÷8% ENPV(C)>0 EIRR(C)>25%	FNPV(C)≤0, FIRR(C)≤5% **10pct** FNPV(C)>0, FIRR(C)>5% **0pct** FIRR(K)=5÷8% **10pct** FIRR(K)=8÷10% **5pct** FIRR(K)<5% **5pct** FIRR(K)>10% **0pct** ENPV(C)>0, EIRR(C)>25% **10pct** ENPV(C)>0, EIRR(C)=15÷25% **6pct** ENPV(C)>0, EIRR(C)=5,5÷15% **3pct** ENPV(C)<0, EIRR(C) <5,5% **0pct**

[12] (C) refers to the calculation of the performance of the investment and (K) refers to the calculation of the performance of the capital invested by the operator

5. REFERENCES

1) Boardman, A., D. Greenberg, A. Vining, D. Weimer, 1996, Cost-Benefit Analysis: Concepts and Practice, Prentice Hall, Upper Saddle River.

2) ECOTEC, 2001, The Benefits of Compliance with the Environmental Acquis for the Candidate Countries, a report for the EU Commission prepared by ECOTEC Research and Consulting Limited, Birmingham.

3) European Commission, 2008, Guide to cost-benefit analysis of investment projects, http://europa.eu.int/comm/regional_policy/sources/docgener/guides/cost/guide08_en.pdf .

4) European Commission, 2008, Guidance on the methodology for carrying out Cost-Benefit Analysis, Working document no. 4, Brussels.

5) Faircloth, P. and C. Barnes, 1999, A study of the Benefits of Compliance with the EU Environmental Acquis, Draft Final Report – June 1999, a report for the EU Commission prepared by EPE and EDC, Brussels-Dublin.

6) Pearce, D., G. Atkinson, S. Mourato (2006), Cost-Benefit Analysis and the Environment. Recent Developments, OECD, Paris.

7) MINISTRY OF ECONOMY AND FINANCE., Authority for Coordination of Structural Instruments., GENERAL GUIDELINES FOR COST BENEFIT ANALYSIS OF PROJECTS TO BE SUPPORTED BY THE STRUCTURAL INSTRUMENTS, drafted by JASPERS

8) Armstrong, Harvey W. European Union Regional Policy: Sleepwalking to a Crisis, *International Regional Science Review. Vol. 19 (3). p 193-209. 1996.*

9) Armstrong, H.W., Kehrer, B., Wells, P., 2001, *Initial Impacts of Community Economic Development Initiative in the Yorkshire and Humber Structural Funds Programme*, Regional Studies, Vol 35 (8). P.673-88.November.

10) Bachtler, J., Michie, R., 1995, *A New Era in EU Regional Policy Evaluation? The Appraisal of the Structural Funds*, Regional Studies, Vol. 29 (8), p. 745-51, December 2008.

11) Barry, F., ed. *Understanding Ireland's economic growth.*, New York: St. Martin's Press; London: Macmillan Press. P/. xii, 242. 1999.

12) Barry, F., Bradley, J, Hannan, A., 2001, *The Single Market, the Structural Funds and Ireland's Recent Economic Growth*, Journal of Common Market Studies, Vol. 39 (3). P.537-53, September.

13) Barry, T. V S. Infrastructure and Regional Growth in the European Union, *University of Birmingham, Department of Economics Discussion Paper: 96/25. p 18. August 1996.*

14) Begg, Iain. *Previsiones sobre convergencia regional en la Union Europea*. (With English summary.), Papeles de Economia Espanola. Vol. 0 (80). p 100-122. 1999.

15) Belli, P., Anderson, J. R., Barnum, H.N, Dixon, J. A., Tan, J-P, 2001, *Economic Analysis of Investment Operations. Analytical Tools and Practical Applications*, WBI, World Bank, Washington D.C.

16) Bradley, John, et al. *Regional aid and convergence: Evaluating the impact of the structural funds on the European periphery*, *Aldershot, U.K.; Brookfield, Vt. and Sydney: Ashgate, Avebury. p xiv, 299. 1995.*

17) Bristow, G., Blewitt, N., 2001, *The Structural Funds and additionality in Wales: Devolution and Multilevel Governance*, Environment & Planning A. Vol. 33(6). P. 1083-99, June.

18) Boldrin, M. and Canova, F., *Regional Policies and EU Enlargement*, CEPR Discussion Paper No. 3744, February 2003.

19) Dauce, P., 1998, *L'evaluation des politiques communautaires de developpement regional: Enjeux, methodes, resultats*. L'exemple de l'objectif 5b en Bourgogne, Revue d'Economie Regionale et Urbaine, Vol. 0(3). P.379-94.

20) Cost-benefit analysis of infrastructure projects in an enlarged European Union: an incentive-oriented approach., Massimo Florio and Silvia Vignetti., CSIL-Centro Studi Industria Leggera Corso Monforte Milano., 2003

Any comments or suggestions regarding this document may be submitted on:
http://www.evaluare-structurale.ro/index.php/en/cost-benefit-analysis/forum

Additional information are available on internet:
http://www.evaluare-structurale.ro

Contract No 46/ 8.12.2010

„Development of the capacity for the Cost-Benefit Analysis"

Project co-financed by the European Regional Development Fund through the Technical Assistance Operational Programme 2007-2013