Methodologies for Assessing Social and Economic Performance in JESSICA

Final report

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1 Executive summary

Purpose of the study

The main objective of the study is to identify the most suitable tools and techniques that can be used to assess the non-financial performance of JESSICA-type operations.

The development of an overall performance measurement framework is important in assessing the impact of JESSICA-type instruments and improving their effectiveness as tools to encourage sustainable urban development, considering that many are currently in use in different regions across Europe and a coherent approach to assessing their non-financial performance in spite of their diversity is needed. The development of such a framework aims to incorporate both quantitative and qualitative components while bearing in mind the practical and resource constraints that implementing bodies will face on the ground.

This study sets down a methodological framework for assessing the social and economic performance of Financial Instruments promoted by the JESSICA Initiative at different stages of the implementation cycle. Various performance assessment paradigms are assessed vis-à-vis their practicability for the various players and recommendations are drawn for JESSICA stakeholders, primarily the MA and UDF managers. This report contextualises this in the evolving EU regulatory and evaluation practice and demonstrates how a socio-economic performance framework can contribute to and support broader OP monitoring and evaluation practices.

The report does so bearing in mind:

- The relative lack of track record and standardised procedures in assessing social and economic performance of JESSICA Financial Instruments;
- The need for flexibility to reflect the heterogeneity of JESSICA operations; and
- The evolving Structural Funds context, with significant differences in current draft provisions for European Structural and Investment Funds and previous programming periods in terms of a reinforced results-oriented focus for performance assessment activities.

This performance assessment framework should be primarily seen as a flexible approach offering a menu of assessment tools that can be used throughout the phases of the JESSICA implementation cycle.

JESSICA in brief

Joint European Support for Sustainable Investment in City Areas, the "JESSICA Initiative" is a technical assistance initiative developed by the European Commission and the European Investment Bank, in collaboration with the Council of Europe Development Bank, supporting sustainable urban development and regeneration through financial engineering mechanisms. The initiative was launched to assist Member States in considering the option of using some of their 2007-2013 Structural Fund allocations to establish financial instruments for urban development.

JESSICA has been launched in the context of the 2007-2013 programming cycle as an initiative to support Managing Authorities to deploy Financial Instruments for urban development as part of their Operational Programmes (OPs) which lay down the overall scope of eligible intervention using Structural Funds within EU Cohesion Policy.

JESSICA is meant to facilitate sustainable urban development by bringing together public and private financial and non-financial resources. The scope of supported projects is wide-ranging, such as brownfield regeneration, multi-purpose urban development schemes, and energy efficiency interventions in existing buildings within the framework of integrated plans for sustainable urban development.

The four stage cycle of implementation for JESSICA Financial Instruments is as follows:

- *Policy programming* which sets the broader policy framework and strategic objectives for the use of JESSICA Financial Instruments by the relevant Managing Authority, linking them with the Cohesion Policy strategic objectives and those in the applicable Operational Programme.

- *Strategy formulation* where in the 2007-2013 programming cycle a JESSICA evaluation study or equivalent analysis –may have been undertaken to assist MAs in defining a suitable JESSICA architecture and investment strategy in accordance with the respective OP objectives. In the 2014-2020 programming cycle this analysis is part of the mandatory ex-ante assessment required in Art. 37.2 of the CPR.[1]

- *Operational implementation* where OP resources are allocated to JESSICA Financial Instruments, either through a Holding Fund, if this option is adopted, or directly by the MA. It should be noted that in the 2014-2020 regulatory framework the term "Fund of Funds" replaces the term "Holding Fund" in the previous period.[2]

- *Assessment of non-financial performance* of JESSICA operations should be carried out as part of the cycle in addition to the financial performance analysis essential to establish carried out by the HF/UDF managers. In 2014-2020 the term "UDF" is not included in the regulatory framework, which refers more generally to "the bodies implementing financial instruments". In this document the term "UDF" should be interpreted as a body of this type, when referring to financial instruments for urban development to be established in 2014-2020.

[1] See REGULATION (EU) No 1303/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund covered by the Common Strategic Framework and laying down general provisions on the European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Council Regulation (EC) No 1083/2006 – referred to in this document as the "Common Provisions Regulation" (CPR).

[2] The text in Article 2 (Definitions) of the Common Provisions Regulation (CPR) is " 'fund of funds' means a fund set up with the objective to contribute support from programme(s) to several bodies implementing financial instruments".

Rationale for the proposed framework

Although the framework proposed in this document has been developed on the basis of the JESSICA initiative and the experience in the current programming period, its indications have a significant relevance for stakeholders interested in the application of Financial Instruments in the forthcoming one for several reasons. The 2014-2020 regulations[3] for 2014-2020 contain several innovative concepts such as Partnership Agreements as well as a stronger territorial and urban focus. Especially relevant is the much wider scope for FIs and an emphasis on an ex-ante assessment for FIs. The Regulations also show a strong results-oriented approach and need for an appropriate performance framework.

The regulations call for the programmes to be clearly articulated in terms of their objectives and intervention logic with clear and measurable milestones and targets to ensure progress is made as planned. Along with this, ex-ante conditionalities are proposed to ensure the most effective and efficient use of ESIF. Overall, it is clear that having robust and appropriate performance measurement systems will be more important than ever before.

Against this backdrop, investing by urban development funds, the Financial Instruments promoted by the JESSICA initiative in 2007-2013 – as well as Financial Instruments, for urban development and other cohesion policy objectives, to be established in 2014-2020 - should also be seen as part of the impact investment industry, aiming to deliver acceptable financial returns and a range of measurable non-financial impacts. Viewing UDFs as impact investors may deliver benefits in terms of:

- *Increasing co-investment* - presenting JESSICA operations as impact investments with measurable socio-economic outcomes may facilitate attracting other investors (private and public) who may share the same concern on bringing about durable impacts on sustainable urban development, such as investors with strong attachment to particular places or with ethical considerations.

- *Improving performance measurement practices* - MA and UDF managers in JESSICA can learn from best practices in the impact investment industry – and vice-versa.

The methods underlining the performance measurement framework

Recent Commission studies[4] highlight that a well-grounded programme performance assessment framework (and indeed overall performance) hinges strongly on having limited (concentration) and clear objectives and a sound intervention logic (explicit and strong). This intervention logic articulates the route leading from high-level objectives, interventions and activities to measurable outputs, results and impacts (the theory of change).

[3] See CPR in previous footnote.

[4] European Commission (2013) Results Indicators 2014+: Report on Pilot Tests in 23 Regions/OPs across 15 MS of the EU

This setting of a logical framework is a fundamental step to facilitate any further assessments and ex-post evaluation. Figure 1 shows the EC's logical framework, which has been recently reformulated building on previous versions.

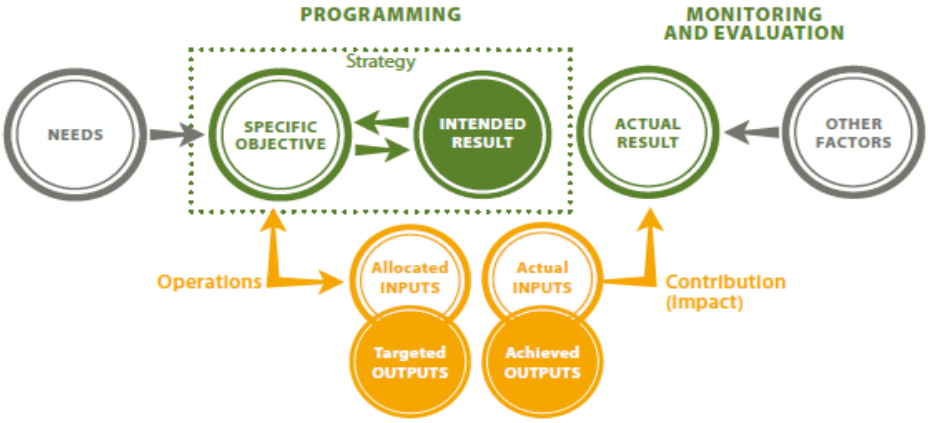


Figure 1. Outputs, results and impact in relation to programming, monitoring and evaluation, Source: European Commission's Guidance document on Monitoring and Evaluation, January 2014

This logical framework provides the basis for five evaluation paradigms that can be employed to comply with the enhanced emphasis on a results-based policy approach. How and when these evaluation paradigms are used will depend on circumstances – such as which phase the JESSICA operations are in and who the stakeholders are. The evaluation paradigms that have been identified in the literature and professional practice as the most useful to assess the non-financial performance of JESSICA operations are:

- *Multi-criteria analysis to assess the likely performance and trade-off between alternative courses of actions at the strategic planning stage and ex-ante assessment stage* - this would be particularly useful to assess the performance and trade-off between alternative courses of actions, generally using a combination of qualitative and quantitative information to characterise and rank alternatives.

- *Value for money assessment to assess different courses of action* - using a range of methods to enable judging to what extent alternative options allow to achieve intended public interest outcomes with a satisfactory use of public sector financial resources.

- *Cost-effectiveness analysis to enable a quantitative impact analysis of JESSICA in cases where robust metrics exist* – This can be done by linking data on outputs and results to costs borne (or inputs allocated) to achieve them[5]. It should be the aspiration for most projects and programmes.

- *Cost Benefit Analysis to monetise both costs and benefits using today's prices thus allowing comparability between heterogeneous projects* - CBA can help to

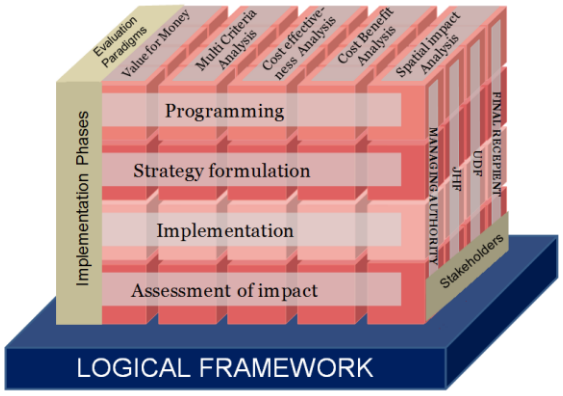
[5] Note that the 2014-2020 regulatory framework (the CPR) does not refer to "outputs" but to "results". In footnote 2 of the Commission's guidance on monitoring and evaluation it is stated that, for the purpose of the guidance, the meaning of the term of "result" is the same as "outcome". So in this document in cases where reference is made to "outputs", the term is to be intended as equivalent to "results".

overcome the difficulty of comparing different kinds of costs, benefits and project outcome metrics. However, a full CBA is less likely to be practically applicable in relatively small JESSICA-type investments projects.

- *Spatial/territorial impact analysis to recognise area-based dimension* – where area-based regeneration within cities is a leading objective, the geographic area within which impacts are intended to take place need to be considered in judging the performance of JESSICA operations.

Tailoring the framework

How this performance measurement framework can be implemented depends on implementation phase, the players/stakeholders and the evaluation paradigm (as illustrated, right).



The design of the most practically relevant performance measurement framework will depend on the specific policy environment. As such, it needs to be customised, combining in the most appropriate way methodologies drawn from the evaluation paradigms, depending on the players/stakeholders concerned – MA, HF, UDF or final recipients - and phases in the JESSICA implementation cycle. Also, the relevance of the specific dimensions in the framework will vary depending on investment types - for instance area-based regeneration vs energy efficiency for residential buildings.

As shown in the table below, the suitability of each evaluation paradigms will depend on the stage of the JESSICA implementation cycle. Fitting the paradigms to the Investment cycle should be done as follows:

- *At the strategic level*, where it is unlikely that targets will be fully quantified, then a logical framework will be core and Multi-Criteria Analysis may have an important role to play in providing a clear organising framework to assess performance across a range of objectives or types of potential intervention.

- As the investment cycle moves towards a more tangible level of *programme*[6] */ portfolio and project appraisal*, then it becomes more important to quantify potential non-financial benefits and, ideally, monetise them. While Cost-Effectiveness analysis is especially important at this stage, for many JESSICA interventions it should be possible to derive estimates of potential monetary value of non-financial benefits as well.

- During the *implementation* of the Operational Programme there is a requirement on the MAs to ensure monitoring of relevant OP indicators so that the techniques

[6] Please note that the reference to programme / portfolio performance in this context does not refer directly to procedures to evaluate an Operational Programme, but more generally to issues arising in multi-project investing over time.

involved in cost-effectiveness analysis have a vital role to play and project quantitative output performance may be an important requirement.

- As the investment cycle begins to consider what *non-financial impact* JESSICA investments have actually had, then Cost-Effectiveness Analysis and Cost Benefit Analysis can assume a central role to play in performance measurement.

		Logical Framework	Value for Money	Multi Criteria Analysis	Cost-effectiveness Analysis	Cost Benefit Analysis	Spatial Impact Analysis
Project phase	Strategic planning (e.g. preparation of urban development plans)	✓✓✓		✓✓✓		✓✓✓	
	Programme appraisal (e.g. UDF funding agreements and investment strategies)	✓✓✓	✓✓✓	✓✓✓			
	Project appraisal		✓✓✓	✓	✓✓✓	✓✓✓	✓✓✓
	Monitoring	✓✓✓					✓✓
	Impact evaluation			✓✓✓	✓✓✓	✓✓✓	✓✓
Sector		All sectors					
Project size		All sizes	All sizes	All sizes	Medium and large scale projects	Medium and large scale projects	Medium and large scale projects

✓= moderately useful for some types of JESSICA intervention; ✓✓ = useful for most types of JESSICA intervention;
✓✓✓ = very useful for most types of JESSICA intervention

Figure 2. Investment cycle and non-financial assessment - paradigms

Overall, the framework for assessing non-financial performance should fit specific JESSICA policy environment by selectively adopt contributions from different evaluation paradigms.

The Annexes to this study use a range of worked-out examples to demonstrate how the evaluation paradigms can be applied in practice and selectively incorporated into a performance measurement framework in a range of different types of urban investment. These include the redevelopment of brownfield sites, urban infrastructure, energy efficiency, heritage and cultural sites, urban knowledge base and innovation.

2 Introduction

The study was undertaken by a joint team from PricewaterhouseCoopers (PwC), Ove Arup & Partners Ltd. (Arup) and Cambridge Economic Associates. The version provided in July 2012 was successively revised and updated by European Investment Bank staff.

2.1 Overall study purpose

The main objective of the study is to identify the most suitable tools and evaluation techniques that can be used to assess the non-financial performance of JESSICA operations. Furthermore, considering that many JESSICA Financial Instruments are currently in use in different regions across Europe it is important to build a coherent approach to assessing their non-financial performance in spite of their diversity.

The development of an overall performance measurement framework is important in assessing the impact of JESSICA instruments and improving their effectiveness as tools to encourage sustainable urban development. The development of such a framework aims to bring both quantitative and qualitative components while bearing in mind the practical and resource constraints that implementing bodies will face on the ground.

2.2 The purpose of the JESSICA performance measurement framework

The rationale for developing a performance measurement framework is based on the vision of JESSICA as a practical tool to enable investment capable of generating long-term impacts on sustainable urban development. An appropriate performance measurement framework should be capable of:

- **Linking public policy objectives to urban investments** in order to allow the prioritisation of investment to achieve the intended social, economic and environmental impact;
- **Demonstrating the value added of JESSICA instruments** in addressing sub-optimal market performance;
- **Characterising the trade-offs between financial and non-financial performance** of JESSICA operations, ideally both at Urban Development Fund (UDF) and at project level; and
- **Providing criteria to identify indicators** that can be incorporated into the performance measurement system and may help to inform the selection of JESSICA investments and to monitor their performance under the relevant Operational Programme.

2.3 Background to JESSICA

JESSICA - Joint European Support for Sustainable Investment in City Areas - is a policy initiative of the European Commission (EC) developed jointly with the EIB and in collaboration with the Council of Europe Development Bank (CEB) which is aimed at supporting sustainable urban development and regeneration through financial engineering mechanisms.

Under procedures applicable in the 2007-2013 programming period, Managing Authorities (MAs) in the Member States (MS) are offered the possibility to invest some of their Structural Funds (SF) allocations in financial engineering instruments ("Financial Instruments")[7] supporting urban development and so recycle financial resources in order to enhance and accelerate investments in Europe's urban areas.[8] These financial instruments are Urban Development Funds (UDFs) investing in projects ("Urban Projects"), i.e. Public-Private partnerships (PPPs) and other projects included in integrated plans for sustainable urban development. MAs can also decide to channel funds to UDFs using Holding Funds (HFs) which are set up to invest in several UDFs.

In the 2014-2020 programming period the scope of investing Cohesion Policy resources through FIs has been substantially widened to encompass all European Structural and Investment (ESI) Funds – including the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF) in addition to the Structural Funds - and all thematic objectives foreseen in Art. 9 of the CPR.[9] Some terminological differences will also apply, such as the use of the term "Fund of Funds" rather than "Holding Fund" and the generic wording "bodies implementing financial instruments" when referring to entities – like the UDF in the case of urban development –implementing financial instruments.

JESSICA responded to the need to support sustainable urban transformation by addressing a perceived shortage of investment dedicated to integrated urban renewal and regeneration projects and was therefore launched with a view to providing new opportunities to MAs responsible for the implementation of SF Operational Programmes (OPs) in the 2007-2013 programming period by:

- ensuring long-term durable support to urban transformation processes through the revolving character of the SF's contributions to Financial Instruments for urban development;

- contributing financial and managerial expertise from specialised institutions such as the EIB, the CEB, other IFIs and financial institutions;

- leveraging additional resources for PPPs and other urban projects in the regions of the EU; and

7 Please note that the term "Financial Instruments" will be used in this document to refer to both "financial engineering instruments" foreseen under Art. 44 of Regulation 1083/2006 for the 2007-2013 programming period and "financial instruments" as defined in Article 2 (p) of the Financial Regulation and referred to in Title IV of the Common Provisions Regulation for 2014-2020.

8 As a reminder, Financial Instruments established under Art. 44 (a), (b) and (c) of Regulation 1083/2006, are the following:

- "financial engineering instruments for enterprises, primarily small and medium-sized ones, such as venture capital funds, guarantee funds and loan funds";
- "urban development funds, that is, funds investing in public-private partnerships and other projects included in an integrated plan for sustainable urban development";
- "funds or other incentive schemes providing loans, guarantees for repayable investments, or equivalent instruments, for energy efficiency and use of renewable energy in buildings, including in existing housing".

9 See previous footnotes 1 and 7.

- creating stronger incentives for successful implementation by final recipients.

Financial Instruments supported by JESSICA can also act as powerful catalysts for the establishment of partnerships between MS, regions, cities, EIB, CEB, other banks, investors, etc. that will be required to address the problems with which urban areas are currently confronted.

Each UDF must be established on the basis of a business plan which needs to reflect the requirements of an investment strategy (the "Investment Strategy") as spelled out by the MA – or the Holding Fund acting on behalf of the MA – setting out the investment objectives to be pursued by the UDF in the context of the Operational Programme. In the 2014-2020 programming period the investment strategy should be resulting from, or closely linked to, the analysis contained in the ex-ante assessment required before the implementation of financial instruments as stipulated in Art. 37 of the CPR.

UDF investment in Urban Projects should be structured so that, along with expected financial returns adequate to ensure that the resources employed can operate as revolving funds, adequate socio-economic impacts are also taken into account and achieved. In this way, JESSICA is expected to build up a lasting legacy of EU and domestic funds, to be reinvested in the long term in the field of sustainable urban transformation.

3 Approach

3.1 Methodology

Defining the JESSICA performance measurement framework requires a consideration of the "state of the art" of methodological approaches which have been developed in the literature and good practices resulting from operational experience, in order to determine which ones are the most relevant and applicable for JESSICA operations.

This analysis has been developed as follows:

- In Chapter 4 the context, rationale, aims and objectives underpinning the JESSICA Initiative have been reviewed, with consideration of how Financial Instruments promoted by JESSICA can be seen as impact funds. Assessing impacts requires a performance measurement framework that is underpinned by a robust methodology linked to the instrument's implementation cycle;

- Chapter 5 introduces the conceptual approaches that have been adopted in existing theory and practice of programme and project evaluation, with an assessment of how they can relate to JESSICA interventions;

- Chapter 6 provides guidance for the implementation of the JESSICA performance measurement framework, the scope for further operational tools to assist with both monitoring and evaluation and recommended next steps to further tailor and draw maximum benefits from the proposed performance measurement framework; and

- Chapter 7 summarises the overall recommendations.

More detailed information and analysis underlying the proposed guidance are annexed to the report:

- Annex One explains terms and acronyms used in this report in a glossary.

- Annex Two gives specific indications on how to ensure that the different types of investment by Financial Instruments for urban development can be incorporated into a coherent yet flexible performance measurement framework.

  The selected types of investment include:
  (i) Redevelopment of brownfield sites;
  (ii) Urban infrastructure;
  (iii) Energy efficiency;
  (iv) Heritage or cultural sites; and
  (v) Urban knowledge base and innovation.

- Annex Three provides examples of pathways to impact for JESSICA operations; and

- Annex Four outlines the potential for the JESSICA performance measurement framework to incorporate Impact Investing concepts.

3.2 Study audience

As in any other field, an impact investment strategy in the context of EU urban policy will require effective governance in order to achieve its goals and public support to translate objectives into solid investments that have demonstrable wider economic, social or environmental benefits.[10]

The conceptual understanding and the subsequent recommended approach to performance measurement must be underpinned by an understanding of the needs of the Managing Authorities (MA), other responsible ministries, municipalities, Urban Development Fund (UDF) managers and project promoters.

Financial Instruments promoted by JESSICA are meant to facilitate sustainable urban development by bringing together public and private financial and non-financial resources, potentially at all stages of the urban investment cycle. In this respect the performance measurement framework for JESSICA operations has to meet the expectations of a range of players.

Without prejudice to the centrality of Member States and Managing Authorities as privileged stakeholders, we have considered the audience for the performance measurement framework to include:

- The EU Member States, Managing Authorities, other ministries and local authorities and municipalities;
- The European Commission, principally DG REGIO;
- The investment community involved in the financing of JESSICA operations, including financial institutions, specialist fund managers and potentially institutional investors;
- UDF managers and bodies implementing Financial Instruments for urban development, and where applicable Holding Funds (Fund of Funds in 2014-2020). As managers of part of Operational Programme resources on behalf of the MAs these entities have the responsibility to report on the financial and non-financial performance of the projects they support and will benefit from an appropriate approach to monitor this performance and account for the use of public funds;
- Final recipients implementing Urban Projects with financial resources received from Financial Instruments, including project promoters and professionals like developers, urban specialists, architects, economists, planners, practitioners, civil servants etc.

[10] Impact Investing- A Framework for Policy Design and Analysis, The Rockefeller Foundation

3.3 Study objectives

The objective of the study is to provide a performance measurement framework that can guide the design, functioning and delivery of JESSICA operations in respect of:

- Building JESSICA project portfolios and pipelines;
- Project prioritisation and practical investment decisions;
- Project reconfiguration (if applicable) – to make projects more suitable for funding through revolving finance ;
- Improving the structure of the information system, namely collecting meaningful and practical metrics that can assist in performance assessment; and
- Developing recommendations on how to assess the non-financial performance of JESSICA operations as they are rolled out across cities and urban regions in the EU.[11]

3.4 Indicator terminology used in this study

As various different terminologies are used seemingly interchangeably with regard to indicators, the terminology used for the purpose of this study for assessing performance in the context of JESSICA is aligned with that of the European Commission. Conceptually it is important to bear in mind that there is a causal chain leading from the resources employed in a programme or action and – ultimately - the effects on the policy objectives that can be attributed to the resources employed.

Hence the following terminology is defined:

Inputs are the resources that are allocated to programme measures. In the context of JESSICA this can be defined as the sum of Structural Funds (primarily ERDF)[12] contributions, national co-financing and any additional financial resources committed to and disbursed by JESSICA Financial Instruments and possibly co-investors at project level. If necessary, a distinction can be drawn between the ERDF and national co-financing on one side and additional private and public resources on the other side, especially if channelled through the same Financial Instrument, such as a UDF. While the former are strictly bound to Structural Funds regulations and their eligibility requirements, the latter can pursue the UDF investment strategy, without necessarily complying with OP eligibility constraints.

Outputs are *direct products* of the programmes, here the urban investments and the directly achieved (often physical) outputs, which can be attributed to the resources

[11] It should be noted that the performance framework approach proposed in this study is wider than the performance framework in the meaning of Article 21 and Annex II of the CPR. Although they do not fully overlap, it is intended for the two be aligned and capable of working together to facilitate the succesful implmentation and effective management of financial instruments.

[12] As a reminder, although JESSICA-type Financial Instruments in 2007-2013 have been co-financed exclusively with ERDF resources, the option to use Structural Funds including the ESF was available and in 2014-2020 resources from the five ESIF can be used to support Financial Instruments. The reader should be aware that this reminder applies to the whole document.

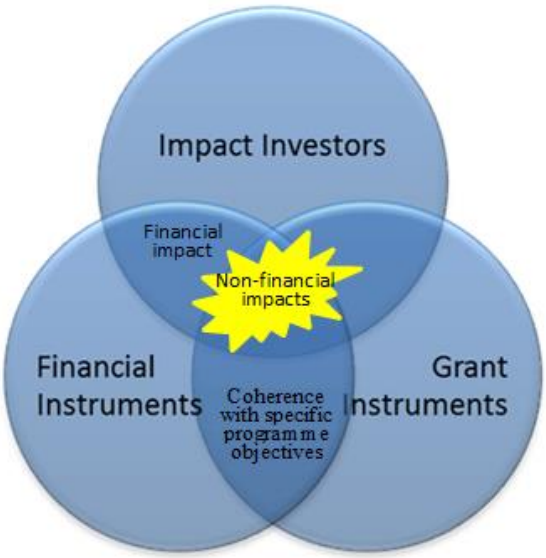
employed by JESSICA intervention. Outputs are measurable policy actions whose intended task is to contribute to *outcomes / results*.

Outcomes or Results refer to the (intended) policy objectives, measurable from a baseline and resulting from outputs, given a set of assumptions and factor interactions. Outcomes can be both achievements and opportunities to achieve, recognising that behavioural changes might affect the actual outcomes. Normally baseline figures for outcome / result indicators need to be established before outcome / result targets are set.

Impact is the effect of the contribution of the outputs supported by the policy to the *change in the result indicator*. It is crucial that, while external factors are recognised in contributing to the actual impact, the achieved change has to be credibly attributed to the intervention. It should be noted that impact evaluation is often subject to a substantial time lag and the need to separate the impact attributable to a given intervention from the contribution of others factors, and should be seen in the context of the wider monitoring and evaluation process, specified later in this chapter. 'Effect of an intervention' and 'contribution of an intervention' are alternative expressions to describe impact that have been used by the EC.

4 Impact Investing in a Cohesion Policy context

JESSICA is an initiative to support Managing Authorities (MAs) to deploy Financial Instruments for urban development as part of their Operational Programmes (OPs) in the 2007-13 programming period. Operational Programmes and the related regulatory framework set the overall scope of eligible intervention for using Structural Funds within EU Cohesion Policy. The investment activity of financial instruments promoted through JESSICA - more generally, all investments carried out through Financial Instruments - can be considered as a form of 'impact investing'. 'Impact investing' is a general and relatively new concept that extends well beyond EU Cohesion Policy. These are broadly defined as investments which intend to create positive impact beyond (an acceptable) financial return and require the management of social and environmental performance[13].



The impact investing concept was mostly developed independently and within the private sector. Its relevance in the context of this Study and for Cohesion Policy is because impact investors share common goals with those implementing financial instruments. These goals are around achieving non-financial impacts and a financial performance that allows resources to be used in a revolving way.

4.1 Investments by JESSICA-type FIs and the OP Cycle

The need for policy intervention is analysed and identified during the OP programming phase, normally through a deliberative political process and negotiation between the Member States (MS) and the EC. This process determines the intervention logic which is the basis for OPs and provides the wider background for the development of JESSICA investment strategies.

Within the OP context, the JESSICA implementation cycle can be divided into the four phases illustrated in the figure below, where the analysis (i.e. ex-ante assessment, on-going assessment, ex-post evaluation) can be carried out at different stages in the cycle. For clarity it should be noted that according to EU regulations, ex-post evaluation is made at the level of OP, and this is a normal phase in the overall cycle, common to all EU supported programmes. The diagram below simply extends the concept to the performance assessment framework which could be applied to investments carried out through Financial Instruments.[14]

[13] JP Morgan, 2010, 'Impact Investments: An emerging asset class' accessed from http://www.rockefellerfoundation.org/uploads/files/2b053b2b-8feb-46ea-adbd-f89068d59785-impact.pdf

[14] For clarity, this does not imply that an ex-post evaluation is required for all schemes supported by Financial Instruments.

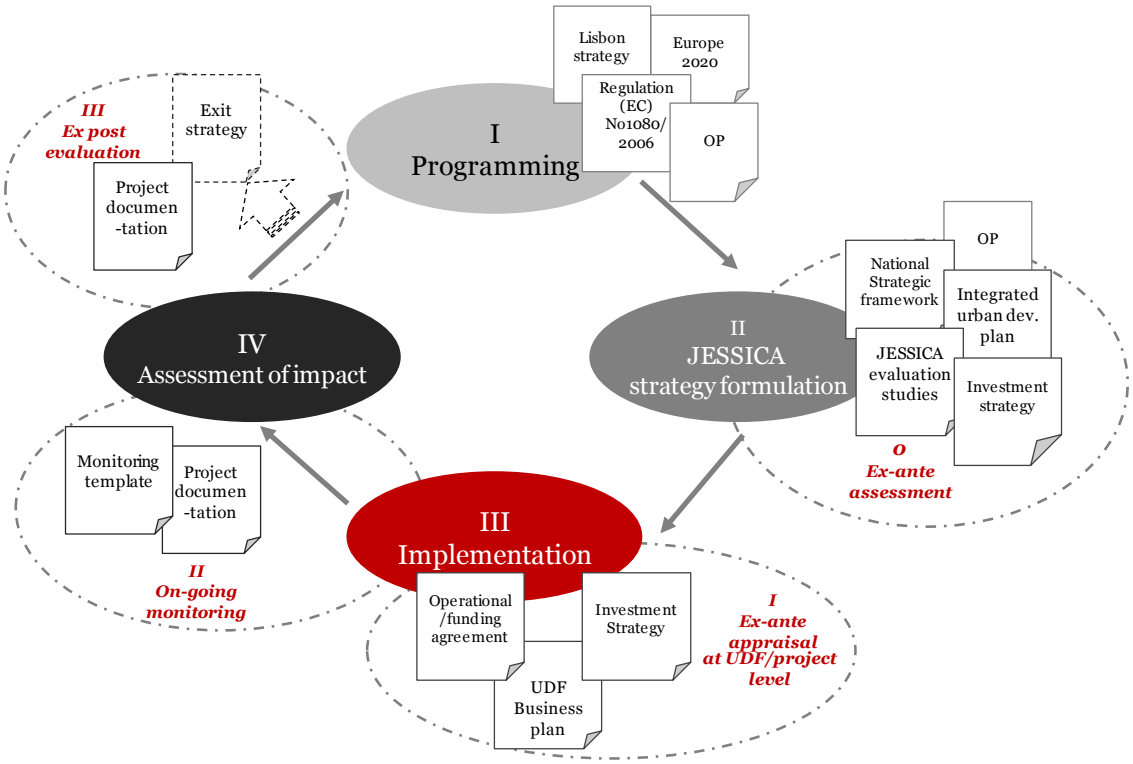


Figure 3. JESSICA Investment Cycle (based on 2007-2013 regulatory framework)

1. **(Policy) Programming** – This phase sets the broader policy framework and strategic objectives for the use of JESSICA Financial Instruments by the relevant MA, linking them to the Europe 2020 objectives and to those in the applicable OP. It is important that by this stage the MA has identified both if, and for which purpose, it intends to use Financial Instruments, such as those promoted by JESSICA. In the 2007-2013 programming cycle, ex-ante evaluations are compulsory for all OPs as a basis for Structural Funds intervention, and this requirement is maintained in 2014-2020. In the 2014-2020 cycle a further specific ex-ante assessment is required to justify the use of OP resources to support financial instruments.[15] In this context it is important to note that the general (policy) programming phase relates to upstream analysis to determine the global vision at the level of OP, possibly including the intended use of FIs to deliver the policy objectives, while the ex-ante assessment required in 2014-2020 is meant to determine the strategy formulation for each FI.

2. **JESSICA strategy formulation** – In order to facilitate the decision whether to establish Financial Instruments for urban development, in 2007-2013 MS have been entitled to request a JESSICA evaluation study to assist them to define an investment strategy in accordance with the MA objectives in the OP and the urban agenda of the EU. In case of a positive outcome of a JESSICA evaluation study or an equivalent decision-making procedure, the MA further defines a suitable JESSICA architecture and investment strategy for the specific regional or MS context. The investment strategy brings together the convergence or employment and competitiveness regional development objectives defined in the National Strategic Framework and the relevant OP and the applicable integrated plans for sustainable urban development. In the 2007-2013 cycle, one of the key requirements of the Financial Instruments for urban development promoted by the JESSICA initiative is that urban projects form part of an "Integrated Plan for Sustainable Urban Development". The integrated plan requirement should ensure that the impact of the Financial Instruments is enhanced

[15] As required by Art. 37.2 of the CPR Regulation.

as projects would be more coordinated, for example with mutually reinforcing effects on the target area, compared to implementing each project in isolation. As such, the relevant MA should ideally have a "JESSICA compliant" integrated plan in place, which is also likely to indicate the non-financial criteria that need to be fulfilled to achieve the desired impacts while taking into account the specific urban, administrative and legal context of each region. In this context, MAs should investigate how existing planning instruments can be employed to meet the integrated plan requirement to create clarity and reduce the need to develop ad hoc integrated plans. For completeness, it is also important to remember that the need for projects to be part of "integrated plan for sustainable urban development", which was required for Financial Instruments established in 2007-2013 under art 44(b) of Regulation 1080/2006, is no more an obligation in the next programming period. There is, however, a requirement that "sustainable urban development" can be supported only through strategies setting out integrated actions (Article 7 of the ERDF Regulation 2014-2020)

3. **(Operational) Implementation** – The operational implementation of a Financial Instrument for urban development requires that OP resources are allocated to a revolving mechanism, either a Holding Fund (HF)[16] – and through the HF to a UDF - or directly to the UDF, which then implements the investment strategy agreed with the MA or HF. If the option via a JESSICA Holding Fund is chosen, "Funding Agreements" and "Operational Agreements"[17] serve to regulate the financial relationships between respectively the MA and HF and the HF and UDF. Although it is not necessary to identify specific projects (with their individual cash-flows) before setting up a fund, as part of the selection procedure by the MA or the HF (the Fund of Funds in 2014-2020)[18] the UDF has to present a business plan, which might include a potential project pipeline, and an overview of financial products offered to final recipients, displaying a sustainable policy where predicted return flows match the required returns for providers of capital. Besides the financial equilibrium, the promoted urban development projects give rise to wider social or public benefits[19] – their impacts should be in line with the policy objectives set out in the OPs and underlying the Integrated Urban Development Plans.

4. **Assessment of impact** – Both MA and HF and UDF managers need to understand how JESSICA investments bring about impact. To do so, it is essential to devise an appropriate impact measurement framework covering as necessary social, economic and environmental objectives. It is essential to have clearly defined roles and responsibilities in terms of who measures the impact of projects financed by the UDF. Experience with JESSICA instruments shows that UDF managers generally focus on fulfilling the objectives of the investment strategy as contractually agreed and defined in the underlying OPs to screen for eligibility and then take a decision based on credit analysis of the project and possibly outputs that are more directly under their control. The task of impact assessment taking into account results and possibly the effect of external factors, as opposed to recording direct project outputs, is outside the remit of

16 The terminology in place in the 2014-2020 Programming Period uses the "Fund of Funds" rather than Holding Fund.

17 These are referred to respectively as "Level I" and "Level II" Funding Agreements in COCOF Guidance Note on Financial Engineering Instruments under Art. 44 of Council Regulation (EC) No 1083/2006 (COCOF 10-0014-04-EN).

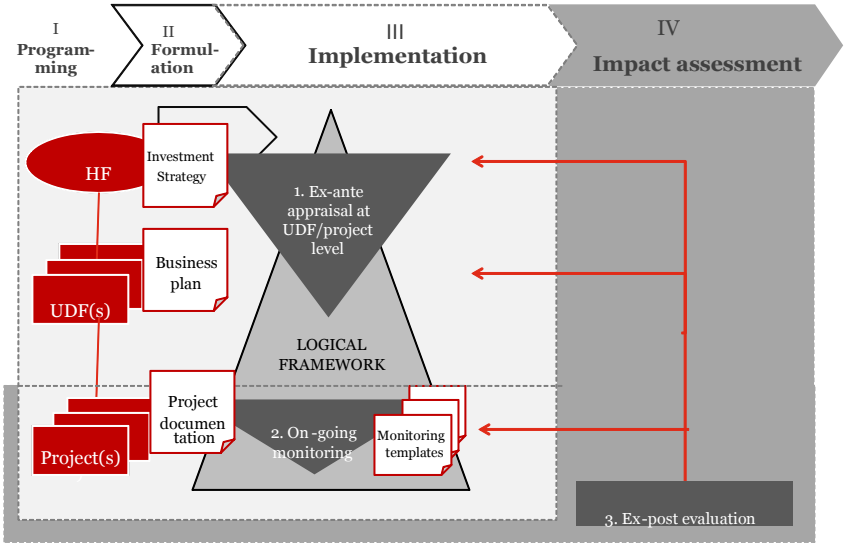
18 In 2014-2020, detailed rules on the selection of FIs are contained in the delegated act.

19 UDF Typologies and Governance Structures in the context of JESSICA Implementation, Handbook, 2010, EIB and EU Directorate General for Regional Policy.

UDF managers and is the responsibility of MAs and of the wider evaluation procedures implemented at the OP level.[20]

The JESSICA performance assessment cycle

Once there is a mandate and clear rationale for action with specific urban development objectives, a well-structured performance assessment cycle for Financial Instruments promoted by JESSICA involves the following stages:



Ex-ante appraisal is the process of assessing the opportunity (ideally the benefits and costs) of a policy, programme or project before it is implemented. In the case of Financial Instruments, it informs policy design and the decision on whether the policy should be implemented. In the context of the JESSICA implementation cycle in 2014-2020, it is reasonable to distinguish between the ex-ante assessment required in Art. 37 of the CPR supporting the decision to establish JESSICA instruments and the analysis needed to support the decisions on UDF selection and project investing.

Monitoring provides information on a policy, programme or project that is being implemented. Monitoring indicators can be compared with targets to provide an indication of performance during the implementation and if necessary inform action to improve implementation, for instance adjusting investment strategies if implementation is not satisfactory; and

Ex-post evaluation examines the actual outturn of a policy, programme or project against its projected outturn. Ideally, it should also assess the outturn against a "no policy" (no project) scenario, by establishing a counterfactual against which to measure impact. Evaluation findings provide valuable feedback for future policy design, and are a distinctive learning contribution to inform the policy cycle and, in the case of the instruments promoted by JESSICA, the wider implications on the design of investment strategies of Financial Instruments for urban development. Such ex-post evaluation is a good practice for all public interest initiatives and should be seen as a component of a robust performance assessment framework for financial instruments – however it should not be confused with the ex-post evaluation of the OP, which is mandatory and is carried out by the Commission.

The monitoring of changes in result indicators should not be confused with impact assessment. In the context of JESSICA, this implies that a UDF manager should not be

[20] On this, see the Guidance Document on Monitoring and Evalaution refreed to in previous footnotes.

made responsible for impacts that are evaluated after urban investments take place, as there may be external factors and cause and effect relationships that can never be fully disentangled.

4.2 Reporting requirements for JESSICA-type FIs

The design of a suitable JESSICA performance measurement framework needs to take into account the relationship between JESSICA operations and Operational Programme requirements (particularly in relation to financial and output monitoring). The UDF investment which is eligible for funding from the ERDF OP is subject to the ERDF reporting and monitoring arrangements.

In this respect, the financial, output and result indicators listed in the OP priority axes, providing ERDF funding to the UDFs, need to be reported for the programming period. This ensures that effective evaluation of the extent that the Operational Programme objectives were met and the extent to which Financial Instruments contributed towards the delivery of Structural and Cohesion Fund objectives.

4.3 Financial Instruments 2014-20

A key objective of the EC approach to Cohesion Policy for the 2014-20 period is to make it smarter and more results-focused. In this way Cohesion Policy is meant to become a central tool for maintaining and generating jobs and achieving smart, sustainable and inclusive growth – the objectives of the Europe 2020 Strategy.

The regulations[21] for the 2014-2020 programming period contain several innovative concepts such as Partnership Agreements as well as a stronger territorial and urban focus.

- Member States and MAs' may use Financial Instruments in relation to all 11 thematic objectives covered by Operational Programmes (OPs) and ESI Funds[22].

- The new framework also contains clear rules to enable better combination of financial instruments with other forms of support, in particular with grants, as this further stimulates the design of well-tailored assistance schemes that meet the specific needs of Member States or regions.

- Contributions from Programme resources to Financial Instruments are subject to an ex-ante assessment in line with the requirements of Art. 37.2 of the draft Common Provision Regulation.

Concerning reporting requirements, the Regulation states that the Managing Authority shall report on the operations comprising financial instruments (as an annex to the annual implementation report) and for each Financial Instrument, its achievement of the indicators of the priority or measure concerned[23].

21 See the CPR as quoted in previous footnotes.

22 ESI Funds are the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF)

23 See the CPR, Article 46

4.4 Commission recommendations on monitoring and evaluation

The need to establish a new system of monitoring and evaluation has been recognised by the EC since the late 2000s, in particular with regard to non-financial indicators used in OPs. With the implementation of OPs becoming more result oriented, i.e. focusing on ends rather than means, such as financial expenditures and absorbed resources, the system of monitoring and evaluating must evolve in parallel.

Learning from past experience

In late 2010 an expert group was established within DG REGIO to discuss how the focus on results in the forthcoming programming cycle could be put in practice. In their report, published in 2011, the experts criticised the *focus on absorption of funds* and indicated past challenges for MAs in their attempts to *allocate resources based on the achievement of targets*. According to the expert group, the focus in recent programming periods has been on policy actions, as opposed to performance. The inadequacies quoted by the expert group[24] included:

1. The **concepts of input, output, outcome/result and impact** are not always clearly distinguished – there is thus a need for comprehensive definition and application of terminology throughout OPs, including where Financial Instruments are employed;

2. Indicators are assigned a **marginal ("technical") role** in programming documents, their selection often postponed until after their approval;

3. **There are no precise standards or methodological principles** for indicators to be set and monitored by the MAs and the "external agency" (i.e. the Commission) in charge of allocating Cohesion Policy resources[25];

4. **Context indicators** such as dashboard/scoreboards of indicators aimed at describing the overall national or regional context and at detecting strengths and weaknesses are confused with *outcome indicators,* aimed at capturing the dimensions of well-being on which policy can reasonably claim to have an effect; and

5. The achievement (failure) of certain targets is confused with **policy achievement** (failure), as if no factors other than policy were at work.

Into the new programming period

The new approach proposed for the new programming period is a clarified and simplified version of the logical framework that is used in programming and implementing Cohesion Policy has been clarified and simplified. In the reformulated framework, *policy actions allocate (spend) financial resources (the inputs) aimed at producing planned outputs, through which intended policy outcomes are expected to be achieved*[26].

24 Outcome Indicators and Targets. Towards a New System of Monitoring and Evaluation in EU Cohesion Policy.
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/performance/outcome_indicators_en.pdf

25 In the 2014-2020 period there is a set of common indicators. The system is built on the idea that MA has a discretion in selecting indicators.

26 See previous footnotes.

The figure below illustrates the new key relationships within the Programming and the Monitoring and Evaluation phases (where impact assessment takes place) of Operational Programmes.

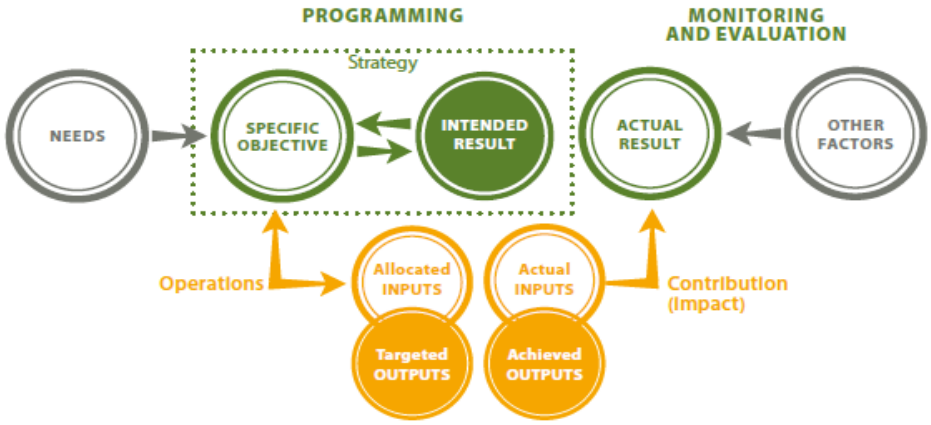


Figure 4. Outputs, results and impact in relation to programming, monitoring and evaluation, Source: European Commission's Guidance document on Monitoring and Evaluation, January 2014

The actual outcomes will depend both on policy effectiveness and on other factors (exogenous) affecting outcomes. Therefore, changes in outcomes must not be identified with the effect of policy action (denominated "impact", according to international usage). This implies that a verifiable measurement of cause and effect relationship is not always possible and measured outcomes should always be interpreted in this context

The Commission has followed up its 2011 paper 'Outcome Indicators and Targets' with a series of guidance documents in support of evaluating a more result-focused Cohesion Policy.[27] In its 'Concepts and Recommendations' paper,[28] the Commission calls for more methodological rigour in capturing the effects of interventions. It outlines the important changes in the understanding and organisation of monitoring and evaluation, including:

- the emphasis on a clearer articulation of the policy objectives as key to implement a results oriented policy and moving away from an excessive focus on the absorption of funding; and

- the better specification of differences in tasks between monitoring and evaluation.

The EC[29] have gathered evidence from pilot tests in 15 Member States which highlights that the systematic development of common output and result indicators must become a

[27] See "The Programming Period 2014-2020 Guidance Document on Monitoring and Evaluation. European Regional Development Fund and Cohesion Fund. Concepts and Recommendations." January 2014. http://ec.europa.eu/regional_policy/sources/docoffic/2014/working/wd_2014_en.pdf

[28] Outcome Indicators and Targets. Towards a New System of Monitoring and Evaluation in EU Cohesion Policy. European Commission, June 2011.

http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/performance/outcome_indicators_en.pdf

[29] Results Indicators 2014+: Report On Pilot Tests In 23 Regions/OPs across 15 MS of the EU, 2013, European Commission, http://ec.europa.eu/regional_policy/sources/docoffic/2014/working/result_indicator_pilot_report%20.pdf

more important part of the production of OPs. Crucially, the report highlights that *one cannot introduce a results focus after programmes have been designed and are being implemented. It needs to be part of the development of the programme with the authorities involved in managing the programme having a clear idea of their intervention logic.* It found that indicators tend to reflect weaknesses in other aspects of programming and it was noted that a stronger intervention logic and greater thematic (and investment) concentration in the priorities are success factors in ensuring that indicators capture change and policy motivation.

Considerations for JESSICA Financial Instruments

The design of a performance measurement framework for Financial Instruments such as those promoted by JESSICA should be seen against the backdrop of the recommendations by the Expert Group and the need to adopt new ways of improving the monitoring and evaluation of OPs. Work done by the EC in testing new monitoring and evaluation approaches highlights general and well known challenges associated with implementing performance measurement frameworks.

The framework should be capable of assisting evaluation efforts and provide a basis for reporting requirements for the new Operational Programmes 2014 – 2020[30].

The 'Concepts and Recommendations' paper and results of the EC's review and piloting exercise highlights that the success of a performance measurement framework for JESSICA-type schemes will depend on having a solid theory of change at the OP level. But it can also be considered that the ex-ante assessment should provide a good basis for the logical framework underpinning the investment strategy.

At the same time, ideally the performance measurement framework should be set up as an integral part of strategy design as well as the design of project performance indicators, rather than as an add-on at a later stage.

Concerning the separation of monitoring and evaluation tasks, where appropriate:

- The monitoring aspect of this obligation can be contractually delegated to a third body, such as the UDF manager although the ultimate responsibility rests with the MA; and

- The evaluation may prove more challenging however and will remain within the public sector remit[31] as the *effectiveness of policy making is tested* here.

[30] It should be noted that the case studies rely on 2007-13 indicators *and ERDF components*.

[31] It is worth noting however that for 2014-20, mid-term evaluations should be independent of MA, so usually they will be carried out by external experts.

4.5 JESSICA-type Investments as Impact Investments

As already anticipated, investments in Financial Instruments, including those promoted by JESSICA, have recently come to be considered more and more as a form of 'impact investing'. 'Impact investing' is a general and relatively new concept that extends well beyond EU Cohesion Policy and concerns investments which intend to create positive social and environmental impacts beyond (an acceptable) financial return[32].

Presenting JESSICA-type investments as impact investments, aiming to deliver acceptable financial returns and a range of measurable non-financial impacts, may deliver benefits in terms of:

- *Increasing co-investment opportunities* - presenting JESSICA operations as impact investments with measurable socio-economic outcomes may facilitate attracting other investors (private and public) who may share the same concern on bringing about durable impacts on sustainable urban development, such as investors with strong attachment to particular places or with ethical considerations.

- *Improving performance measurement practices* - MA and UDF managers in JESSICA can learn from best practices in the impact investment industry – and vice-versa.

As such, an integration of the Cohesion Policy guidelines and worldwide recognised impact investing reporting standards, such as IRIS, could be beneficial within the context of the development of a JESSICA socio-economic performance measurement framework.[33] Further information can be found in Annex Four - Impact investing.

32 JP Morgan, 2010, 'Impact Investments: An emerging asset class' accessed from http://www.rockefellerfoundation.org/uploads/files/2b053b2b-8feb-46ea-adbd-f89068d59785-impact.pdf

[33] On IRIS, see http://iris.thegiin.org/

5 A Critical Review and Assessment of Evaluation Paradigms

As indicated in the previous chapters, a practical and robust assessment of the performance of JESSICA operations needs to be underpinned by a measurement framework that can be used for appraisal, monitoring and evaluation in the sectors where JESSICA financial instruments operate, and through the implementation cycle. Chapter four described the rationale and objectives behind the JESSICA approach to sustainable urban development and showed how the approach can be seen as a particular form of impact investing. As such, the financial instruments promoted by JESSICA have some requirements that differentiate them from grant based instruments that are often used to support urban development.

Chapter five illustrates how existing evaluation paradigms can be used in the context of a performance measurement framework for JESSICA operations and how this can be embedded in practice in the JESSICA operational environment.

The chapter begins by considering a number of key issues that arise in developing a performance framework to assess the performance of JESSICA. It develops a 'shopping list' of requirements that the framework has to be capable of considering if it is to be fit-for-purpose. It then considers performance assessment paradigms that have found common use in recent years in the literature and assesses whether they are capable of meeting the JESSICA requirements.

This review of evaluation paradigms concludes by recommending how a practical performance assessment framework can combine, depending on the operational environment – sector, implementation phase - elements from the different paradigms.

5.1 Developing a conceptual framework for JESSICA operations

5.1.1 Key issues

The overarching objective of JESSICA initiative is to promote "sustainable urban development", and it is a feature of Urban Development Funds promoted through JESSICA that they invest in a variety of different projects to achieve this. Given the range of activities that contribute to the broad-based objective of sustainable urban development - for instance under the wide definition in Art. 8 of Regulation 1080/2006 for 2007-2013 and Art. 7 of the ERDF Regulation for 2014-20 and other EU documents - UDFs can be used to support projects in many different sectors. This inevitably limits to what extent evaluation metrics and impact indicators can be standardised. In order to systematise the information and provide also operational guidelines within the range of investment types we will focus on five investment areas although the general approach is applicable to other types of JESSICA investments:

- Redevelopment of brownfield sites, including site clearance and decontamination and creation of new mixed-use floorspace;
- Urban infrastructure (including transport, water/waste water, energy);
- Energy efficiency;
- Tourism and cultural heritage sites; and
- Urban knowledge base and innovation.

The Investment Strategy is at the core of the JESSICA implementation. Consequently it will be during the design and final definition of the investment strategy that the key sectors and the relevant indicators. consistent with the relevant OP will be identified. In 2014-2020 the investment strategy will be part of ex-ante assessment foreseen in Art 37 of the CPR, which should include options for implementation, financial products to be offered, final recipients targeted, envisaged combination with grants, etc.

The JESSICA initiative recognises that if cities are to be attractive places for businesses, residents and visitors, attention has to be given to a wide and diverse range of factors that relate to the economic, social, environmental and cultural aspects of city life. JESSICA thus recognises that cities are a focal point for a number of strategic objectives and themes that form the Europe 2020 Agenda.

When Financial Instruments promoted by JESSICA commit funds to any of the above areas the expectation is that it will generate both remuneration for investors - namely enough financial return to at least reconstitute the invested capital - and a stream of *benefits* that will enhance societal welfare. The assessment of non-financial performance is meant to capture and measure this gain in welfare and, ideally, assess how much of it is *additional*, that is how much of the welfare gain would not otherwise have been achieved in the absence of the intervention by the Urban Development Funds promoted by JESSICA.

The benefits that JESSICA operations can provide can be considered to arise through both *project* and *programme* or *portfolio* effects. What we refer to as "programme/portfolio" effects in this report relates to the fact that implementing investments through financial instruments also operates through synergies across multiple projects and the capacity of dedicated investment vehicles – JESSICA UDFs, and in 2014-2020 bodies implementing financial instruments – to act as catalysts for investments and projects. This has a specific relevance in assessing the performance of JESSICA operations, given the portfolio effects and capacity building associated to the establishment of innovative investment vehicles.

Capturing project and programme / portfolio benefits

Because Financial Instruments promoted by JESSICA can support a rich variety of *projects* a diverse range of outcomes / results are possible and they can enhance welfare in different ways. The beneficiaries may also vary considerably by type and location. Thus, a JESSICA project can remove contamination that prevents land use and the removal of the externality enables the resource to be used to generate financial return and economic value. Other possible benefits include improvements in the urban environment and increases in visual amenity amongst residents. Another example would be the reduction in carbon dioxide emissions associated with energy efficiency improvements in buildings to make a contribution to efforts to stem or reduce global warming, with a much wider range of beneficiaries and geographical scope.

In addition, project-related benefits can arise both *directly* and *indirectly*. Thus, a JESSICA financed investment in a transport infrastructure project could lead to direct benefit like time-savings. It can, however, also produce indirect effects, one example being that the enhanced accessibility provided by transport improvements might enable local businesses to benefit from agglomeration economies. Another example is provided by a project that reduces unemployment. All these are related to externalities or suboptimal investment situations.

Perhaps less well understood, but important in the context of JESSICA, are, as already mentioned, *programme/ portfolio* benefits[34], or what is sometimes referred to as the Portfolio Added Value of a programme, seen as a complex, multi-project action generally involving multiple players. Considering programme related benefits reflects the view that the achievements of JESSICA may be more than simply a summation of the benefits that arise in individual projects.

This section of the report explores which evaluation paradigms and methodologies are appropriate at different stages, including high level strategic planning for urban development plans, detailed *ex-ante* project appraisal and impact evaluation.

5.1.2 Issues around JESSICA project related benefits that the performance framework should consider

Considerable attention has been given in recent years to understanding how the benefits that projects generate can be quantified and how this should be reflected in a performance assessment framework. In the United Kingdom two significant sources of guidance have been provided – the HMT Green Book[35] and DCLG The Three Rs Guidance.[36] DG Regio has also provided guidance[37].

The general approach adopted in many policy performance frameworks has been to highlight the importance of understanding the *theory of change* as to how the activities that the project delivers are expected to lead to desired outcomes. The relation between project inputs and the activities generated has been considered through the use of a logical framework (summarised in diagrammatic form in a *logic chain*). Although the terminology used in the literature to describe the chain components is subject to variation, this has often involved a four-step analysis considering how "inputs" affect "activities", which generate "outputs" that affect "outcomes". A more recent example is proposed for the ERDF and Cohesion Fund 2014+ document[38] which discusses the use of result and

34 For clarity, the term "programme / portfolio" as used in this context is not to be confused with Operational "Programme".

35 HM Treasury 2003 (updated July 2011) The Green Book. Appraisal and Evaluation in Central Government. http://www.hm-treasury.gov.uk/d/green_book_complete.pdf

36 ODPM (2004) Assessing the impact of spatial interventions. Regeneration, renewal and regional development. 'The 3Rs guidance'. London: Office of the Deputy Prime Minister.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191509/Regeneration__renewal_and_regional_deveopment.pdf

37 http://ec.europa.eu/regional_policy/sources/docgener/guides/cost/guide2008_en.pdf
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/evaluation_sourcebook.pdf

38 Plus the already mentioned January 2014 Guidance document on monitoring and evaluation.

output indicators, the role of impact evaluation and the importance of theory-based impact evaluations (DG Regio, March 2011)[39].

Recent research has summarised the logical framework (logic chains) that tend to underpin the main focus of many recent urban policies adopted by Governments across Europe and which are relevant to JESSICA intervention, particularly relating to urban infrastructure, the redevelopment of brownfield sites, the creation of new floorspace, and innovation and knowledge activity (DCLG, 2010, Tyler et al, 2011).

For example, in projects focused on industrial and commercial property markets, where public and private resources are being devoted to overcoming market failure often occurring in these markets, a typical route through the logic chain will have involved funding for the development being committed to overcome the market failure through the clearance and making ready of land to creating a certain level of developed land which has direct employment effects (outputs) and leads to outcomes in the form of business activity and employment. It is this sort of project that could be supported by JESSICA Financial Instruments.

Another example could be an environmental improvement project that again might be typically funded by JESSICA Financial Instruments. Here the project outputs could be the provision of new green space and amenity areas, measures to improve air or water quality or improvements to the public realm, improved use of amenity sites and improved quality of residential and commercial areas. Outcomes might be increases in residential and commercial values or improvements in measures of well-being and quality of life.

Projects will differ considerably in the types of outputs and outcomes that are relevant to their activity and the characteristics of the people and businesses that might benefit. The JESSICA assessment framework has to ascertain who are the parties affected by the projects it supports and, if possible, value the benefits to them of the intervention.

In relation to 'who' benefits it is not often clear what are the relevant boundaries of economic jurisdiction. Thus, a JESSICA project might be designed to improve the physical and environmental quality of a specific place and in this case the beneficiaries concerned might be fairly readily identified because they live in the place and there is a fairly obvious and clear link. The spatial boundaries of policy effects have usually been considered through some form of *spatial impact analysis*.

It is also the case that the impact of JESSICA projects may emerge over a considerable period of time and also vary considerably in their durability. Many of the projects that are being considered for JESSICA funding have the potential to provide benefits over many years and this has to be considered in devising the performance assessment framework.

A further issue that the performance assessment framework has to consider is whether it is possible to aggregate the project outputs and outcome information. The most obvious way of doing this is to put a value on the benefits. If the benefits can be monetised then it may be possible to translate the non-financial related performance into a rate of return that has its counterpart in the assessment of the standard financial return associated with an investment. Recent research suggest that it may well be possible to place a value on the majority of the benefit types that are within the possible remit of JESSICA and it is thus important to assess what progress can be made in this respect in the JESSICA performance assessment framework (DCLG, 2010, Tyler et al, 2011). The literature review

39 European Commission, DG Regional Policy, 2011. "Concepts and Ideas Monitoring and Evaluation in the practice of European Cohesion Policy 2014+ - European Regional Development Fund and Cohesion Fund. Draft paper for discussion between DG Regional Policy and Member States. http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/14042011/2a_ks_section1.doc

is also examining how valuation considerations influence the choice of a performance assessment framework and this is reflected in our appreciation of the relative strength and weakness of performance assessment paradigms discussed later in this section.

Finally, in deriving the project based benefits that arise from JESSICA the assessment framework clearly has to be able of deriving additionality, i.e. the extent to which UDF investment has succeeded in bringing about more, better quality or faster urban transformation activities, outputs and outcomes than would otherwise have been the case. The conceptual basis of what is required is fairly straightforward to incorporate into a performance assessment framework, but there are challenging measurement problems that are discussed further in the final part of this section.

5.1.3 Programme/ portfolio benefits

Substantial emphasis is placed in JESSICA on the requirement that Urban Development Funds support projects included in an integrated plan for sustainable urban development. There are a number of programme related benefits that can arise from this. Examples include:

- Attention to attracting funding sources other than those available from Operational Programme funds and thus the ability of JESSICA to increase the overall resources available for investment, including from the private sector. JESSICA allows the returns from investments to be used in new investment in the urban area;

- The opportunity to achieve economies of scale in clustering projects/programmes within a local area and thereby securing economies of scale in project management, financial planning and control, recruitment, purchasing etc.;

- Benefits from synergy whereby partners modify their own activities to bring them more into line with objectives of the partnership as a whole and provide supporting activities to enhance partnership achievements;

- Benefits from co-ordination of endeavour that may encourage avoidance of duplication of activity, permit large scale indivisible projects to go ahead and allow partners to specialise in areas of expertise/projects in which they have comparative advantage;

- Benefits from adopting an integrated partnership approach can lead to a further clustering of regeneration activities that achieve a critical mass, improve the image of the area and attract new activity both to the immediate target area and surrounding areas.

In the case of JESSICA the ability to attract financial support from sources other than the OP has been identified as being of particular importance to stimulate higher levels of financial involvement from across the private, public and third sector in urban areas compared to traditional grant based instruments. The performance framework has to understand how JESSICA works to achieve this and in particular how it can continue to encourage revenue generation that will at least maintain the momentum of urban development. There may be different waves of impact over successive investment cycles.

Assessing the scale of the aforementioned programme / portfolio benefits poses challenges, both conceptually and in terms of measurement. The performance assessment framework has to ensure that there is clarity as to how they arise, which beneficiaries and stakeholders benefit and ensure that benefits are not double-counted. There are difficult problems when it comes to trying to quantify the size of some of these programme / portfolio benefits that are discussed in the methodology section.

5.1.4 Consideration of the ex-post stages – Impact Evaluation

To separate the effects of an intervention from the effects of external factors and to understand how impact is achieved (or not) is a matter for impact evaluation. Two approaches are interlinked in establishing impact of an intervention. The first is founded on the question *Did it work?* (Counterfactual approach) and the second on *Why did it work?* (Theory based approach). Both are interrelated in any assessment of impact and will typically feature as ex-post evaluation questions.

These are questions for both the implementation and the ex-post stage of investment. They will represent, in particular significant measurement challenges for territorially-oriented JESSICA projects.

Theory-based evaluations – Why did it work?

Theory-based approaches allow decision-makers decide on what course of action to implement through identifying why a set of effects has been produced. It is presented as a narrative and is largely based on qualitative methods and helps strengthen or reconstruct an intervention logic or logical framework. Aspects beyond measurable effects to identify why an intervention produces effects, how, for whom and under what conditions and intended/unintended effects.

In programming, the ex-ante evaluation serves as a theory–based evaluation in strengthening the logical framework of OPs. The logical framework and theory–based evaluation are closely related but should not be confused. Theory –based evaluations are not logical frameworks. But without a clear logical framework in place from the outset, a theory-based evaluation faces multiple risks as it tries to reconstruct a logical framework and draw lessons for the future.

How to deliver a theory-based evaluation is not explicitly dealt with in this report as it focused on the analysis of indicators. But the performance measurement framework, with its emphasis on logical frameworks at its core, ensures that successful theory-based evaluations will be possible.

Counterfactual Methods – Did it work?

The main question driving counterfactual assessments in evaluation are if an intervention has had an effect and if so, the extent of this. This question cannot be separated from why an intervention works as a theory of change approach is necessary to help decide which changes should be looked at/attributed to a cause.

The main methods recommended draw on medical and econometric approaches and involve the use of techniques such as difference-in-difference, discontinuity design, propensity score matching, instrumental variables and randomised controlled trials. To allow application of counterfactual methods, accurate baseline and follow up data is required both for the supported group (beneficiaries) and non-supported group.

This latter point typically represents the largest stumbling block to the successful implementation of counterfactual methods in integrated urban development or renewal projects. A typical approach to establishing the counterfactual for area based interventions like a UDF may include a basket of methods (delivered by different agents):

- Trend-based time series analysis
- Project-level evaluations
- Comparator group analysis: Selection of suitable comparator areas
- Statistical or econometric analysis:
- Triangulation of monitoring data infer the counterfactual;
- Bespoke modelling
- Qualitative analysis such as case studies, interviews;
- Bespoke survey based methods.

On top of this, accessing and tracking target groups – e.g. people or businesses - that benefited before and after can be challenging due to population movements.

It is possible to use counterfactual methods to assess non-financial impacts of JESSICA investments though this is easier to implement for interventions which are somewhat standard/homogenous in nature and cases where there is a high number of individuals or businesses benefitting. In some JESSICA investment areas which are thematically based – for instance energy-efficiency improvements targeted on residents of blocks of flats - this may be appropriate. But in most JESSICA cases given the heterogeneity of the intervention, for instance the multi-purpose re-use of brownfield land and buildings, cost-benefit analysis, spatial impact analysis, MCA or other modelling may be more appropriate.

5.2 Assessing the suitability of framework components in the JESSICA context

5.2.1 Logical framework as core

The theory-based, *"intervention logic"* paradigm has been an integral part of the European Commission's approach to the evaluation of Cohesion Policy, and the intention is to strengthen this element even further in the evaluation of Cohesion Policy from 2014 onwards. *"The new approach shifts the accent at all stages in the process to the policy objectives being targeted. This enhances evaluability, as clarity of intended changes and ex-ante identification of evaluation methods means that the results of the policy can be monitored and evaluated"*.[40] In practice, this means that the programming process starts with an identification of the intended result, with a corresponding indicator first with the scale of policy intervention and what resources should be applied to contribute to change second.

This can be illustrated graphically by the Logical Framework which reflects that an intervention can lead to several results and that several outputs can lead to these changes which may be differentiated by group or timescales. This Logical Framework is a structured approach used in the design, management monitoring and evaluation of projects and programmes. Figure 4 on page 23 shows the EC's updated Logical Framework which reflects the strengthening of the intervention logic paradigm.

[40] European Commission DG Regional Policy (2011) Concepts and Ideas Monitoring and Evaluation in the practice of European Cohesion Policy 2014+ - European Regional Development Fund and Cohesion Fund

Through a Logical Framework, the JESSICA investment logic can be described in terms of a set of cause and effect linkages that show which urban development policy objectives are expected to be achieved and through which steps. The elements of the Logical Framework are needs, objectives, intended and actual results, inputs and outputs and the relevant external influences. Thus, it should clearly specify the objectives, the results to be achieved, how these achievements are to be verified (indicators) and what the key assumptions are. The latter can include key contextual factors, external to the programme, which are not under its control and could influence its success either positively or negatively (e.g. changes in the economic, political situation, etc...). Examining these external conditions under which JESSICA operations are implemented and how those affect outcomes is important since this can better explain why performance differs in different contexts.

In principle a Logical Framework approach should be already embedded in the programming phase and the subsequent definition of indicators included in the Operational Programme Priority Axes and referred to as "core indicators relating to the objectives and the expected results" on the physical progress of the OP[41]. Ex-ante assessments for JESSICA FIs (and all FIs) should set out to interrogate and strengthen the logical framework and its theory of change.

According to good practice examples, all key stakeholders should be involved in the creation of a robust Logical Framework to derive a mutual understanding of what the financial and non-financial benefits are expected likely to be. This sets the basis for understanding the expected non-financial impact of JESSICA projects.

The central feature of the Logical Framework is that its pathway is underpinned by a series of working assumptions about how the intervention is expected to bring about change and contribute to the attainment of objectives. This then enables the specification of key indicators with which to measure change at each stage in the pathway. These indicators can in turn be assessed (e.g. within a MCA framework) and, ideally, measured (cost-effectiveness) and valued (CBA).

Annex Three shows how these pathways might be defined for different types of investments supported by JESSICA. A critical issue that then needs to be addressed is the extent to which each element of the pathway is capable of a) being measured and b) being valued in monetary terms.

5.2.2 Evaluation paradigms

A range of evaluation paradigms exists in the literature, have been applied in practice and could be deployed to assess the non-financial performance of JESSICA. The following discussion introduces each of the five evaluation paradigms identified and considers their strengths and weaknesses in relation to their application to the JESSICA context.

Cost Benefit Analysis

Cost Benefit Analysis (CBA) (also termed Social Cost Benefit Analysis) has its origins in welfare economics, whereby for projects or programmes to be worthwhile, their benefits - as measured through increases in social welfare - need to exceed the costs of achieving them[42]. The technique has been widely practiced across the world, with notable public sector applications in transport, healthcare and environmental interventions and urban

[41] For 2007-2013 see Reg. 1828/2006, Annex XVIII. For 2014-20 they are called "common indicators" and are listed in the Fund-specific regulations.

[42] OECD (2006) Cost Benefit Analysis and the Environment: Recent Developments.

development. In the European context, CBA has been used to appraise projects funded through regional policies and funding instruments since the 1990s and it has been a formal requirement for major projects since 2000. In its 2008 guide to CBA, the European Commission defines CBA as a *"conceptual framework applied to any systematic, quantitative appraisal of a public or private project to determine whether, or to what extent, that project is worthwhile from a social perspective. Cost-benefit analysis differs from a straightforward financial appraisal in that it considers all gains (benefits) and losses (costs) to social agents."* [43]

One of the key attractions of Cost Benefit Analysis for those taking investment decisions is that it provides a framework with which to deal with the diverse range of benefits generated by projects and programmes and express them as monetary values, thus using a common metric. Relating benefits to costs, through a single "Benefit Cost Ratio", in theory reduces the difficulty of comparing and choosing between different options with different types and levels of benefit. It also makes benchmarking of performance more straightforward.

Where benefits are traded in markets which give an indication of their worth, they can be readily translated into monetary values. Most common examples of outcomes in the context of sustainable urban development include jobs, CO2 emissions as well as land and property values. The utilisation of market prices is still a complex process, because of the need to take account of potential distortions in market prices (e.g. due to taxes and subsidies), but in these circumstances shadow pricing might be used[44].

However, within the sustainable urban development domain there remain some types of benefits where market valuation is not feasible. Examples include some types of environmental (such as green space or air quality) benefit and social benefits linked to housing and crime. In its July 2011 update to the Green Book, HM Treasury notes that *"the full value of goods such as health, educational success, family and community stability, and environmental assets cannot simply be inferred from market prices, but we should not neglect such important social impacts in policy making".*[45]

Much work has been done on the valuation of non-market benefits using techniques which seek to infer changes in utility *"by observing the choices that people make within related or hypothetical markets. More recently, economists have attempted to measure directly the impact of non-market goods on life satisfaction."* [46]

As will be clear from the discussion above, the unique feature of CBA is that it seeks to place a monetary value on the social benefits generated by an investment programmes. While this is clearly attractive to decision-makers and evaluators seeking to benchmark programme performance, reducing benefits to a single monetary value creates a number of difficulties for evaluators. There are risks that CBA will be unable to properly reflect the

[43] European Commission, DG Regional Policy 2008 Guide to Cost Benefit Analysis of Investment Projects, http://ec.europa.eu/regional_policy/sources/docgener/guides/cost/guide2008_en.pdf. See also the recently published guidelines on the economic appraisal of investment projects at the EIB: http://www.eib.org/attachments/thematic/economic_appraisal_of_investment_projects_en.pdf .

[44] Department for Communities and Local Government 2010 Valuing the Benefits of Regeneration, Economics Paper 7, Volume 1, Final Report

[45] HM Treasury 2003 (updated July 2011) The Green Book. Appraisal and Evaluation in Central Government

[46] Fujiwara D and Campbell R 2011 "Valuation Techniques for Social Cost Benefit Analysis: Stated Preference, Revealed Preference and Subjective Well-Being Approaches. A Discussion of the Current Issues." HM Treasury and Department for Work and Pensions, July 2011

interactions between different benefit streams, leading to risks of either over- or under-estimation and potentially double-counting.

These risks are not insurmountable.

Recent work by the Department for Communities and Local Government in England (2010, op.cit) found the CBA to be capable of application across labour, product and property markets, in particular through the use of market data relating to earnings, Gross Value Added (GVA) and property prices. In this way the study was able to value the benefits of a very wide range of sustainable urban development activity types of relevance to JESSICA, including commercial land and property interventions, housing improvements, business development activities and even a number of community-based interventions. It also demonstrated how non-market valuation could be approached through the use of stated preference and revealed preference techniques to a range of environmental improvement attributes.

However, it is likely that some of the benefits of JESSICA - for example some social benefits related to housing and health or the benefits of social integration - will remain difficult to value, perhaps because of the difficulties of assessing changes in utility which individuals find difficult to trade off against money.

Cost-Effectiveness Analysis

The challenges associated with CBA – particularly the costs and other difficulties associated with valuing non-market benefits – are one of the principal reasons why alternative evaluation paradigms are commonly used which seek to measure benefits, but stop short of valuing them.

One such technique is Cost-Effectiveness Analysis (CEA), which can be defined as *"analysis that compares the costs of alternative ways of producing the same or similar outputs."* (HM Treasury 2003, op.cit). OECD (2008, op. cit) defines Cost-Effectiveness Analysis as a technique *"used when benefits cannot be reasonably measured in money terms. It is usually carried out by calculating the cost per unit of 'non monetised' benefit and is required to quantify benefits but not to attach a monetary price or economic value to the benefits."*

Thus, a sustainable urban development programme which created remediated brownfield land, created new housing, refurbished existing housing and provided commercial floorspace leading to job creation, might have their performance (whether *ex-ante* or *ex-post*) assessed using cost-effectiveness metrics such "cost per job", "cost per dwelling improved" or "cost per hectare of brownfield land reclaimed".

This performance assessment paradigm overcomes one of the principal difficulties associated with CBA – it is easier (cheaper) to monitor and evaluate a programme's performance in generating results (outputs) and to relate these to the costs associated with their delivery than it is to systematically value the outputs.

Another advantage of this approach is that because it focuses on outputs it can provide a measure of efficiency with tangible links to programme performance. In the UK there has been a sufficient emphasis on cost-effectiveness to enable publication of benchmarking evidence, for example on cost per job.[47]

47 See for example Homes and Communities Agency (2011) "Calculating Cost Per Job – Best Practice" Note (2nd Edition).

However, the drawbacks of Cost-Effectiveness Analysis are numerous and in many ways these are a mirror image of the factors which make CBA so attractive. Multi-sector sustainable urban development investment strategies such as many of those supported by JESSICA will generate a wide range of outputs. At the appraisal stage, decision-makers might be confronted with options delivering different types or levels of outputs, prompting the questions about whether some outputs are "worth" more to society than others (a question explicitly addressed by valuation through CBA). The difficulty of measuring the quality of output is also one of the often mentioned drawbacks of this technique. Furthermore, at the evaluation stage, baskets of indicators present serious aggregation difficulties, making it impossible to benchmark performance across initiatives in a meaningful way.

Attempts have been made to overcome these issues through careful attribution of particular costs against particular outputs, but for projects that genuinely deliver multiple types of output costs can be very difficult to disentangle in this way.

Cost-Effectiveness Analysis is a paradigm which is well understood by the relevant policy and research communities and one where there is an extensive evidence base in relation to many types of benefit. The DCLG study on CBA referred to above applied Cost-Effectiveness Analysis as an essential building block. Two of the principal reasons for doing so were a) the fact that so much existing evaluation evidence already takes the form of cost-effectiveness analysis and b) the fact that many outputs readily lend themselves to valuation.

There is therefore merit in seeing CBA and Cost-Effectiveness Analysis as complementary techniques, capable of integration, rather than separate and competing evaluation paradigms. Examples of how Cost Effectiveness Analysis can be used in JESSICA are provided in Annex 2.

Multi-Criteria Analysis (MCA)

Cost Benefit Analysis and Cost-Effectiveness Analysis require valuation and quantitative measurement. As discussed earlier in this section, there are dimensions of JESSICA performance – particularly in relation with its impact on the principal agents of change and its institutional impact – which are difficult to quantify, but capable of being assessed qualitatively.

Multi-Criteria Analysis provides a single framework that allows decision-makers (at the ex-ante stage) or evaluators to bring together a range of performance-related information. The paradigm is sufficiently flexible to accommodate qualitative information alongside quantitative data[48].

DCLG's 2009 manual on Multi-Criteria Analysis refers to the experience of transport appraisal in the UK as a good example of the practical application of MCA in recent years. This provides a mechanism to present a combination of monetary values for some benefits, non-monetised but quantitative data and qualitative information within an overarching framework that provides decision-makers with a view on performance relating to the diverse set of objectives being pursued through transport investments.

The way in which MCA assesses the performance of initiatives using qualitative evidence can range from simple approaches that list a series of performance criteria and an indication of whether or not these have been achieved, through to more complex series of

48 Department for Communities and Local Government 2009 Multi-Criteria Analysis: A Manual

performance criteria, the weighting of those criteria followed by scoring of performance against each criterion. The paradigm requires careful design, with particular challenges in the selection of the criteria being scored and the potential interdependencies between them. Moreover, the application of weights involves a degree of subjectivity and results are often sensitive to the scoring regimes used.

Multi-Criteria Analysis is a tool that is primarily used to support ex-ante appraisal, at the decision-making stage. Its *formal* use in impact evaluation, while less widespread, is feasible and appropriate for programmes with multiple objectives if it is desirable to provide a more formal assessment of qualitative performance. This is a view echoed by DG REGIO's Sourcebook Method and Techniques[49] which notes that *"it probably has potential for wider use as a tool in intermediate and ex post evaluations as an aid for making a judgment. Within the framework of socio-economic development programmes, it concerns a judgment on the success of the different measures, for the purpose of drawing synthetic conclusions."*

So long as the issues above regarding criteria selection, weighting and scoring are handled carefully, there is no reason in principle why the paradigm cannot be deployed for JESSICA. However, best practice requires that key stakeholders are involved in the selection of criteria, the weighting of those criteria and the choice of scoring procedures. The conversion of a range of quantitative data and qualitative data into an acceptable scoring system is something that is therefore time consuming if done properly.

Few evaluations deploy MCA formally, and every evaluation is likely to be unique in its approach to criteria selection, weighting and scoring. These differences in both context and practical application mean that it is difficult to see how the paradigm offers much potential in relation to benchmarking.

Our view is that the formal structure offered by MCA may be useful in providing a clear organising framework for the presentation of all of the non-financial performance evidence relating to JESSICA, both quantitative and qualitative, set against a series of clear objectives for the Financial Instruments promoted by JESSICA. Its application is more appropriate when considering a relatively high level analysis of alternatives at an ex-ante stage, but is less suitable for the purposes of ex-post evaluation. However, we believe its formal application in the form of weighting and scoring of criteria would be a step too far and an unnecessary complication given the objectives of the evaluation.

Value for money

The concept of Value for Money (VfM) is not an evaluation paradigm in itself, but a series of related analyses which will enable a judgment to be made about whether there has been an *"optimal use of resources to achieve the intended outcomes",*[50] specifically with respect to the use of public sector financial resources. To the extent that dedicating resources to the establishment of JESSICA Financial Instruments involves an innovative use of public funds, alternative to the traditional grant-based approach, value for money considerations can be an important part of the performance evaluation framework. The broad issues involved in applying a Value for Money approach are described at length in HM Treasury Green Book.[51]

49 http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/evaluation_sourcebook.pdf

50 http://www.nao.org.uk/about_us/what_we_do/the_value_for_money_programme/what_is_a_vfm_study.aspx

51 http://www.hm-treasury.gov.uk/d/green_book_complete.pdf

There is a widespread view that Value for Money is an overarching concept which embraces three more tangible measures of performance: *economy*, *effectiveness* and *efficiency*, all of which can be applied to CBA, Cost-Effectiveness Analysis and even MCA. The UK's "3Rs guidance" [52] provides the following definitions for "the 3Es":

"Economy – the cost of the inputs being consumed – are the necessary inputs being secured at the minimum necessary cost?

Efficiency – The ratio of inputs to outputs – are outputs being produced efficiently?

Effectiveness – The link between outputs and outcomes – To what extent do outputs achieve the desired outcomes (sustainable economic development)?

In order to answer these questions, and determine overall value for money, it is necessary to have indicators to measure the different stages."

The formal consideration of VfM has been a particular feature of the ex-ante appraisal of projects procured through Public Private Partnership (PPP) mechanisms. In this context it is usually defined as *"the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user's requirement"*[53].

The assessment of costs the importance of being able to assess the relative performance of PPP projects and programmes and their traditional, grant-based counterparts is clearly a vital element of the VfM analysis In a PPP context, the identification, measurement and, ideally, valuation of non-financial benefits is also a critical issue.

Key VfM issues that require detailed consideration in relation to PPPs are:

- The suitability of the project to a PPP approach;
- The formal allocation of risks between the public and private sectors;
- The estimation of whole life costs and the costs associated with associated soft services over the duration of the contract;
- The contract duration itself;
- The ways in which outputs are specified to be delivered via the contract and the degree of flexibility around service specification; and
- The extent to which the PPP approach may enable innovation and delivery of non-financial benefits, sometimes known as "indirect VfM factors" (e.g. In the form of accelerated benefits, enhanced delivery or wider social benefits)[54] compared with traditional procurement routes.

It would seem highly desirable that the evaluation framework that underpins JESSICA should contain a Value for Money element since it has obvious benefits in enabling

52 ODPM (2004) Assessing the impact of spatial interventions. Regeneration, renewal and regional development. 'The 3Rs guidance'. London: Office of the Deputy Prime Minister.

53 HM Treasury (2006) Value for Money Assessment Guidance

54 European PPP Expertise Centre (2011) The Non-financial Benefits of PPPs: An Overview of Concepts and Methodology.

comparisons to be made between JESSICA approaches to investment and traditional, grant-based counterparts at both the project and programme level.

Spatial impact analysis

Whatever evaluation paradigm is adopted, a key performance measurement concern is the choice of the spatial area within which impacts should be assessed. This is of pivotal importance for JESSICA operations since UDFs have by definition a territorial focus and therefore the spatial dimension takes on a central relevance in judging their performance. The choice of area will normally relate to the stated objectives of the initiative in question. Some thematic initiatives may have objectives to tackle certain issues at the city-wide level; some might operate across a wider metropolitan sub-region, while other ones - as typically the case for "place-making" strategies or area-based regeneration measures - could be targeted at priority neighbourhoods within a city or local authority area.

The selection of the most appropriate spatial area for impact analysis has implications for all of the key components that are relevant in measuring impact, particularly the assessment of additionality (and individual components such as product market displacement (competition), leakage of benefits and multiplier effects) as well as the measurement of outcome change.

For example, a key component of the assessment of additionality is the need to consider product market displacement effects. Thus, a business that benefits from JESSICA support may sell goods or services that compete with existing businesses in the spatial areas being targeted and may displace activity away from them. The degree to which assisted and non-assisted businesses share common markets within a given spatial area is thus an important issue and depends strongly on the type, or sector, that the businesses trade in. Displacement effects are traditionally quite high in relation to retail activity for instance. The wider the spatial area, the larger the level of expected displacement effects, other things being equal.

The opposite applies to leakage, which is the proportion of outputs or outcomes that benefit those outside the target spatial area. Leakage will tend to decrease the wider the spatial area.

There are challenges associated with assessing additionality at the city level. These include data availability issues, both financial and non-financial, data quality and overall reliability and comparability. Those implementing this approach when assessing non-financial impacts will invariably have to design and deliver sample surveys to overcome data availability issues. These usually form the basis for assumptions concerning the level and extent of additionality and its components (deadweight, displacement/leakage and multiplier effects). Those seeking either to use additionality approaches as part of a spatial impact analysis approach should be aware of the strengths and weaknesses of the specific approach adopted.

The spatial area is also a key consideration when it comes to the assessments of the supply chain and income multiplier effects associated with initial rounds of employment impact. Here the wider the spatial area chosen, the larger the multiplier affects that would be expected, other things being equal.

Further discussion on the nature and level of these and other components of additionality, and how they can be expected to vary according to type of project and the spatial area of analysis can be found in BIS, 2009[55].

More flexible 'quick' participatory tools combining qualitative and quantitative approaches have been developed to deliver territorial impact assessments. The ESPON Programme has developed a short guidance with practical templates to deliver an ex-ante assessment of the territorial impacts of EU directives. This is a highly flexible and efficient participatory approach that could be adopted and implemented involving key stakeholders to strengthen the theory of change/logical framework at the ex-ante stage.

5.2.3 Evaluation and State aid issues

The objective of State Aid control is, as laid down in the Treaty on the Functioning of the European Union, to ensure that State interventions do not distort competition and trade inside the EU. According to article 107 of the EU Treaty "any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market". The EU Treaty prohibits state aid that is incompatible with the operation of the internal market. In order to control State aid within the context of financial instruments, projects must aim to promote urban development by remedying market failure and/or enhancing socio-economic equity, limiting aid to the minimum necessary to achieve the desired market outcome and minimising potential distortions of competition and trade. The criteria that UDFs must meet to comply with State Aid requirements include broadly:

- Common Interest - UDF must target projects that are in the public interest, which is integrated urban development and form part of an Integrated Plan for Sustainable Urban Development and pursue eligible investment activities

- Necessity - UDFs must target projects that would not otherwise be delivered by the market due to market failure to achieve the desired outcome and urban deprivation affecting projects' viability

- Minimum Necessary - UDF intervention limited to the minimum necessary to achieve the desired outcome limiting expected returns for promoters and private investors

- Limiting Potential Distortions - UDF activities should limit potential distortions of competition and effects on trade

For a Managing Authority the justification for implementing JESSICA instruments lies on the demonstration that using Financial Instruments is effective in achieving the sustainable urban development objectives of the OP. JESSICA evaluation studies supported by the EC are designed to provide this rationale. The Structural Fund regulatory framework further requires that JESSICA Financial Instruments operate in compliance with the EU state aid rules at different implementation levels. JESSICA instruments usually provide financial support either at market terms or at sub-commercial conditions.

55 UK Department for Business, Innovation and Skills (2009). Assessing the Additionality of Economic Regeneration Policy http://www.bis.gov.uk/assets/biscore/economics-and-statistics/docs/09-1302-bis-occasional-paper-01

Simply stating the rationale for intervention is unlikely to be sufficient justification for investment. Evidence will need to be assembled to set out the case in more detail, by quantifying the scale of the problem and the reasons why these issues constrain private sector investment. This should illustrate more clearly the size of the market failure involved, the groups in society affected, the extent to which there are inter-actions between land, labour, property and capital markets and the durability and persistence of the effects. Links need to be made between the problems used to justify the intervention and how the project will bring about a positive adjustment.

A good understanding of the rationale for intervention provides the essential platform to support the specification of objectives and thus the measurement of whether intervention through JESSICA has helped to overcome the problems which justified its implementation in the first place. A good example of how the rationale for intervention can be presented in a practical way can be found in the State aid Notification for JESSICA in the Northwest of England[56].

56 European Commission, Brussels, 13.7.2011, C(2011) 4942 final SA.32835 (2011/N) - United Kingdom Northwest Urban Investment Fund (JESSICA).

6 JESSICA Performance Measurement Framework

6.1 Insights from the different evaluation paradigms

In the previous chapters a number of key conceptual issues have been illustrated. They concern the design of an appropriate performance measurement framework, coping with the unique features of impact investment and being sufficiently flexible to enable its application at different stages of the JESSICA investment cycle.

First and foremost the assessment framework for JESSICA operations has to be capable of recognizing the diversity of benefits which JESSICA financial instruments may generate, the range of their spatial impacts and their additional contribution to the objectives of the operational programmes.

The discussion on evaluation paradigms demonstrated that CBA, Cost-Effectiveness Analysis and MCA each have a series of strengths and weaknesses. It also showed how the Logical Framework is the tool underpinning the result-based approach promoted in the new programming period, and its relevance for the definition of the Investment Strategy of each financial instrument and the links between the OP performance indicators and those of the specific JESSICA operations. Further it was argued that the spatial level relevant for impact assessment is likely to be linked to the specific objectives of the financial instrument.

If we consider the relative merits of CBA, Cost-Effectiveness Analysis and MCA, then our conclusions are threefold.

First, not all of the non-financial benefits of JESSICA operations can be measured in a quantitative manner. For instance, some of these benefits relate to institutional change and market behaviour which are not readily captured, or even scored. Thus, there is merit in ensuring that, as an overall organising framework, the evaluation presents and considers benefits in relation to objectives in ways that are similar to *Multi-Criteria Analysis*. However, in many instances the approach should stop short of attempting to undertake complex weighting and scoring of criteria and focus instead on a narrative which will help to develop the programme's design.

Although precise quantification may prove elusive in some cases, most of the non-financial project benefits of JESSICA can be credibly attributed and assessed. Many of the JESSICA operations – for example those involving land and commercial property, housing improvements, tourism and cultural initiatives as well as innovation - generate outputs in land, product and labour markets where market values are readily available or can be estimated with a satisfying degree of certainty. Other benefits might be captured through valuation techniques that use shadow prices (e.g. to value carbon reductions). Given the aggregation difficulties associated with Cost-Effectiveness Analysis, and the desirability of generating benchmark evidence to support decisions related impact investing, there is merit in pursuing a CBA approach where it is possible to do so and where the effort is proportionate to the investment being considered.

Third, the CBA approach requires measures of achievement to be specified in terms of output and result indicators so that these benefits can then be valued. The approach to CBA therefore builds on, and is entirely complementary with, the Cost-Effectiveness Analysis paradigm which in turn is reliant upon indicators developed on the basis of the Logical Framework approach. Moreover, as noted earlier, it is deemed neither possible nor reasonable to aim to measure all non-financial benefits of JESSICA in monetary terms.

As shown in the figure below, some of the evaluation paradigms lend themselves more readily to be employed at different stages of the JESSICA cycle. At the strategic planning stage, where it is unlikely that targets will be fully quantified, then Multi-Criteria Analysis has an important role to play in providing a clear organising framework to consider potential performance across a range of objectives or types of potential intervention. The Investment Strategy represents one of the key elements of this stage of the JESSICA cycle and the Logical Framework of the agreed strategy provides a clear vision of the causal chain leading from outputs expected results.

As the investment cycle moves towards a more tangible level of programme implementation, then it becomes more important to quantify potential non-financial benefits and, ideally, monetise them where possible.

During the implementation of the OP, there is a requirement on the Managing Authorities to ensure monitoring of the specified actions, for instance on the basis of ERDF output and result indicators. Here the techniques of cost-effectiveness analysis may have a vital role to play in articulating quantitative output/result performance. Multi-Criteria Analysis can also help to articulate change in qualitative terms and this may be particularly helpful for some of the programme or portfolio benefits discussed earlier.

		Logical Framework	Value for Money	Multi Criteria Analysis	Cost-effectiveness Analysis	Cost Benefit Analysis	Spatial Impact Analysis
Project phase	Strategic planning (e.g. preparation of urban development plans)	✓✓✓		✓✓✓		✓✓✓	
	Programme appraisal (e.g. UDF funding agreements and investment strategies)	✓✓✓	✓✓✓	✓✓✓			
	Project appraisal		✓✓✓	✓	✓✓✓	✓✓✓	✓✓✓
	Monitoring	✓✓✓					✓✓
	Impact evaluation			✓✓✓	✓✓✓	✓✓✓	✓✓
Sector		All sectors					
Project size		All sizes	All sizes	All sizes	Medium and large scale projects	Medium and large scale projects	Medium and large scale projects

✓= moderately useful for some types of JESSICA intervention; ✓✓ = useful for most types of JESSICA intervention;
✓✓✓ = very useful for most types of JESSICA intervention

Figure 5. Summary matrix: implementation phases and evaluation paradigms

As illustrated in Figure 6 above, Multi-Criteria, Cost-Effectiveness Analysis and CB Analysis are complementary paradigms for both programme, portfolio and project appraisal. The systematic approach to the construction of a set of indicators provided by the Logical Framework is essential in meeting the monitoring requirements of the OPs and in driving the formulation of the JESSICA investment strategy. The conclusion therefore is that the JESSICA monitoring and evaluation framework should blend contributions from different evaluation paradigms. Looking ahead, a JESSICA performance measurement framework should exploit the potential offered by the various evaluation paradigms where they are most appropriate with respect to the implementation phase, the sector and project size in order to inform decisions, including on later rounds of investment as well as impact evaluation.

6.2 A conceptual framework for the JESSICA operation assessment

When assessing the impact of JESSICA operations the practical use of the evaluation paradigms elaborated in the previous section needs to be customised and modulated according to the specific context of each operation.

A key consideration is that financial instruments for urban development can take a number of different forms and operate in a variety of investment areas - thus, JESSICA projects vary by geography, final recipient, sector and size.

Outputs produced by the resources or inputs employed in JESSICA operations are linked to physical, economic and social outcomes / results. The amount of additional outputs and outcomes / results that JESSICA operations create in the city or target geographical area depends on deadweight, leakage, displacement effects and the scale of supply and income multipliers (see Glossary of Terms in Annex One for explanations). The "impacts" are the contributions to outcomes / results attributable to the investments channelled into the local economy through the financial instruments – in the case of JESSICA operations changes in outcome/ result indicators taking place as a consequence of investments made by UDFs, as illustrated in the figure below:

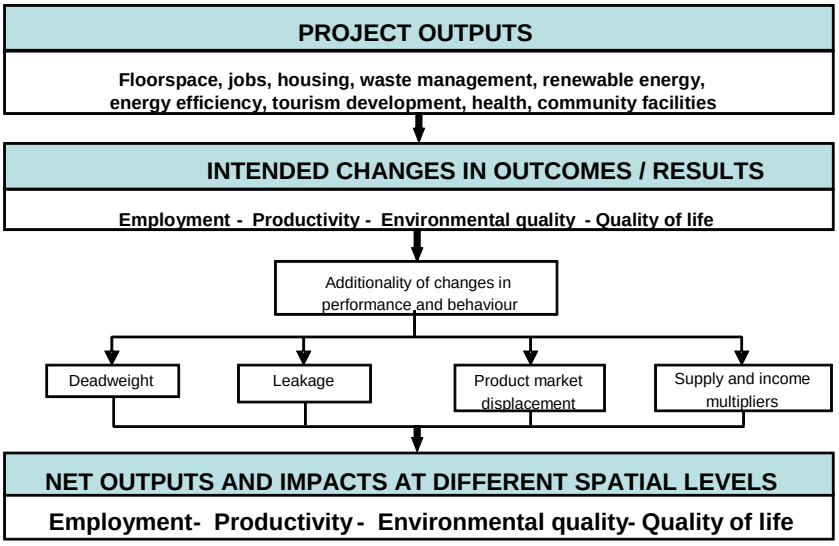


Figure 6. Establishing the additional impact of JESSICA operations

The subsequent step is to value as far as possible the additional non-financial impacts - economic, physical, environmental and social in nature – attributable to JESSICA operations. The end goal of a cost-benefit oriented approach is to compare the value of overall benefits – including the value of non-financial impacts - with the value of the resources committed to JESSICA instruments in the target geographical area.

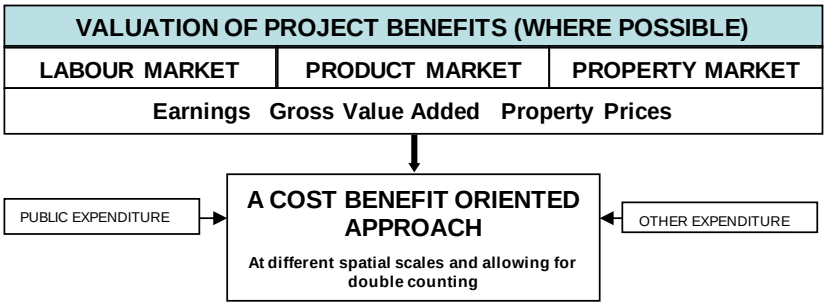


Figure 7. Valuing the JESSICA project benefits created in the urban area

As the figure illustrates, a CBA-oriented approach can in principle be applied across all areas of JESSICA activity, but as noted earlier, the level of quantification and monetisation of benefits will vary depending on specific circumstances.

As the discussion above shows and Chapter 5 has illustrated, even though JESSICA is being applied in a range of different thematic contexts, many of the same measurement issues apply. The extent to which a particular methodology can be applied to a specific operational context depends on a number of factors. Thus, in some cases there may be data readily available to derive indicators to track and monitor change. It may also be possible to estimate the additional contribution from JESSICA operations through the use of relatively sophisticated models because the available data allows this. It is more likely however, as illustrated in the case studies in Annex 2, that given practical data limitations and the complex environment in which UDFs operate it may be impossible to apply formal models and more qualitative approaches may be the only option.

The main focus in deciding how the performance measurement framework should be structured is to assess where a specific JESSICA operation stands in the overall cycle of implementation and, as the above discussion shows, ensure that the methodology is customised to the JESSICA theme and its specific features, e.g. investment strategy and typology of UDF.

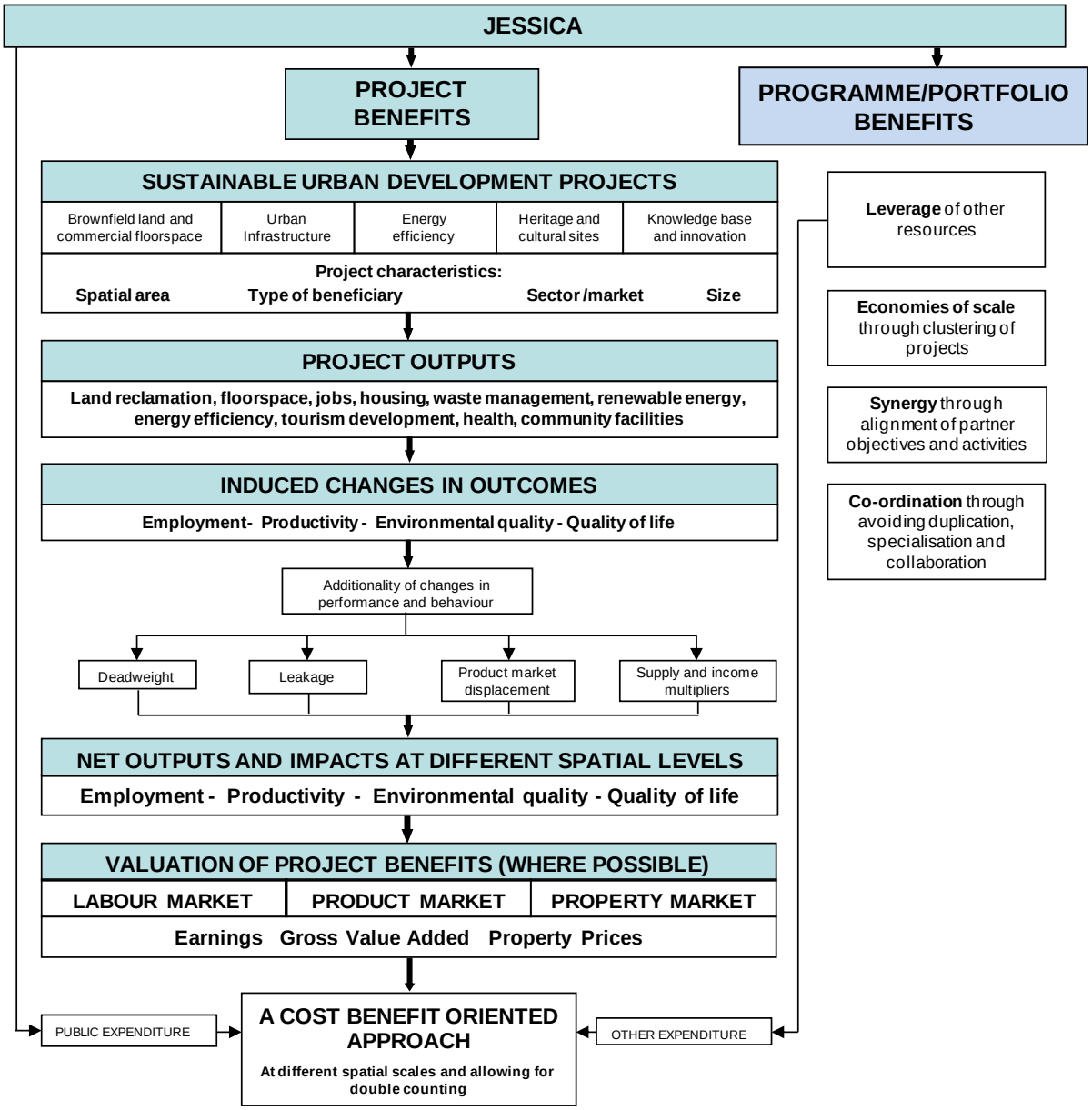


Figure 8. JESSICA performance assessment – a conceptual framework
Source: Cambridge Economic Associates

The measurement priorities for JESSICA operations relate to the identification of output and outcome / result indicators, linked to JESSICA investment strategies– and ultimately aligned with the OP objectives - followed by the development of quantitative baselines of the pre-operation position, in line with the requirements for monitoring and ex-post analysis of the applicable OP. Ultimately, the methods employed in the performance assessment framework should be closely aligned with OP objectives and indicators.

Selected output / result indicators should be consistent with the ERDF monitoring requirements of OPs and synergies be exploited to the extent possible. Assuming this does not unduly increase the cost and the administrative complexity of managing JESSICA instruments, output / result measurement might in certain cases go beyond what is required under ERDF. Financial Instruments have a particular focus, due to their revolving nature, therefore a system capturing impacts related to the use of revolving mechanisms may be of high value to MAs and UDFs in order to track change in the most appropriate way and pursue their strategic objectives, while ensuring compliance with ERDF output monitoring requirements.

In the forthcoming programming period the result-oriented approach will require specific performance assessment work for JESSICA-type operations, as well as operations involving the use of Financial Instruments, to be an on-going feature of the evaluation cycle. The specific ex-ante assessment requirement for Financial Instruments contained in the CPR Regulation is a clear indication of the relevance given to performance assessment in 2014-2020. It is also required that the OP ex-ante evaluation includes the rationale for the form of support proposed, including FIs. Also the MA may decide to have FI-specific evaluations during the OP implementation, as long as this is included in the Evaluation Plan.

An effective and practically implementable performance measurement framework for JESSICA operations is expected to address many of the measurement issues discussed above, particularly those concerned with assessing additionality and wider programme and portfolio benefits. In terms of programming the measurement effort, performance assessment work should dovetail into the wider OP evaluation process foreseen in the 2014-2020 regulatory framework. In this context, it is worth noting that MA can decide to have FI-specific evaluations during the implementation of the OP, so long as this is included in the OP evaluation plan foreseen in the regulatory framework.

6.3 Assessment framework: an operational approach

After having elaborated an overall conceptual basis for a performance assessment framework of JESSICA operations, this section will provide some operational indications on how it might be possible to proceed in practice, in the context of the wider programming procedures.

The methodological tools presented in this report can cover most of the requirements of a robust JESSICA performance assessment framework. Several points have to be considered in this respect:

- The new regulatory framework[57] reinforces the emphasis on monitoring and evaluation already present in the 2007-2013 programming period. The use of indicators for defining expected results and achievements is also reinforced;

- The utilisation of Financial Instruments, such as those developed through JESSICA to support urban development is also to be strengthened. A robust performance assessment framework would contribute to a more results-focused selection of investment projects based on their financial soundness but also their intended non-financial performance in support of OP objectives; and

- The performance assessment framework for JESSICA operations has to be calibrated according to the investment characteristics of the targeted UDF portfolio, the necessary information flow for decision making and reporting requirements.

Based on the considerations developed above, Figure 10 below illustrates the four-phase life-cycle of a JESSICA-type Financial Instrument for urban development in the context of the wider programming process. The proposed illustration can be applicable also to Financial Instruments in investment areas other than urban development. The rest of this chapter will elaborate on the practical implementation of such a framework.

[57] COM(2011) 615 final, 6.10.2011

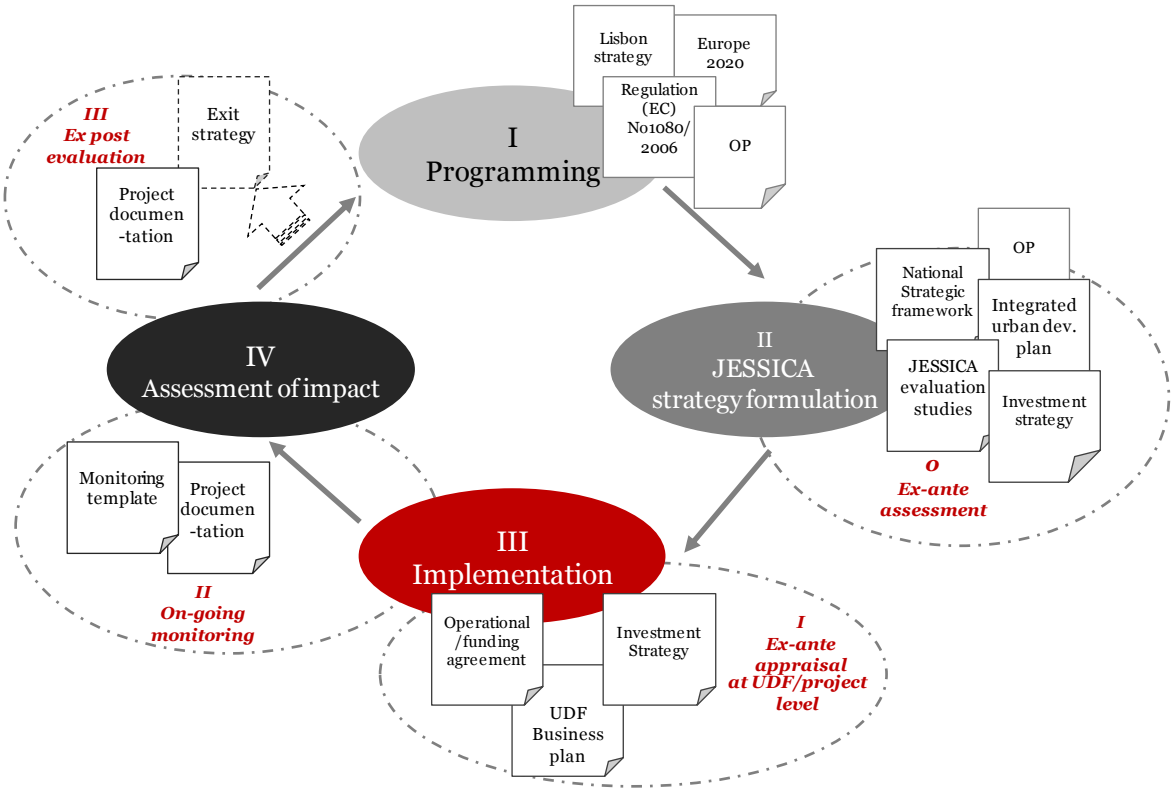


Figure 9. JESSICA cycle (based on 2007-2013 regulatory framework)

Programming

During the policy programming phase the prescriptions of the ESIF regulations have to be followed and applied. 2014 - 2020 regulations place a particular emphasis on the need for ex-ante evaluation of each Operational Programme. It should be noted that a specific 2014-2020 provision concerns the need for an ex-ante assessment – complementary or concurrent with the ex-ante OP evaluation - to justify intervention through Financial Instruments.[58]

Strategy formulation

The design of a performance assessment framework should ideally begin in parallel with the ex-ante assessment – a mandatory requirement in 2014-2020 - focused on identifying market failures or sub-optimal investment situations and estimating the level and scope of investment that may be delivered through Financial Instruments to address these failures. As part of this assessment, the investment strategy should be defined specifying implementation structure, the financial products, final recipients to be targeted and the geographical (spatial) parameters of intervention.

The analysis of the intervention logic through the logical framework can improve the strategic approach, refining and defining the investment activities and the terms of project / portfolio objectives and financial products, reinforcing the logical link with the expected results. In this phase of the implementation cycle the most appropriate indicators to monitor and assess the non-financial impacts of the JESSICA-type operation should be defined.

[58] The detailed treatment of the ex-ante assessment is outside of the scope of the present study.

Implementation

Depending of the set up (with or without HF / Funds of Funds) the analysis of specific projects may take place at this stage. When an Urban Development Fund is directly selected by the MA it is possible that the project portfolio or the specific projects have to be considered during strategy formulation in order to appreciate in detail the potential impacts proposed by the UDF before its selection. However the same principles can be applied to both configurations.

During the implementation phase the analysis can focus on the assessment of the UDF business plan and the assessment of specific projects. The methodologies to be applied in this case may include CBA or CEA in order to identify economic and social returns expected by the JESSICA operations and the associated projects. A multi-criteria approach can also be relevant.

The implementation of such analytical approaches is not a mandatory requirement of the regulations and has to be implemented considering:

- that efforts deployed and the associated costs have to be proportionate as part of the decision making cycle. For instance small investments with clearly identified beneficiaries and well defined results will probably not need additional assessment. On the other hand, in the case of a complex operation with a relatively high Financial Instrument contribution it could be desirable to proceed with a specific analysis; and that

- taking into account the revolving nature of the JESSICA instrument, the assessment of the social and economic return of the investment will need to be carried out in conjunction with the analysis of its financial viability. In this context there are ways to link the expected non-financial impact and the financial analysis of projects, such as the Social Index employed by the JESSICA UDF manager in Wielkopolska illustrated in Annex Two. This may lead to different ways to prioritise projects compared to assessing separately the financial and non-financial performance of projects.

Assessment of the impact

At the end of the JESSICA implementation cycle it would be good practice to proceed with an ex-post evaluation of the whole operation or of specific projects. For this phase all the paradigms discussed in the previous chapters are relevant and could be applied as appropriate and theory-based and counterfactual methods should be considered. The selection of the most appropriate approach will depend on several factors. Beyond the standard ex-post evaluation approaches we consider that the paradigms or methodologies to be used for the evaluation of the financial and non-financial impacts of JESSICA will depend upon the evaluation questions defined for the analysis. In addition whatever ex-post analysis approach is adopted in the context of the "JESSICA cycle", it should be compatible with the ex-post evaluation for the Operational Programme, which is mandatory and is carried out by the Commission.

The evaluation questions should link to indicators from the OP or those which may have been specifically defined for the monitoring and the assessment of the JESSICA operation or its specific projects. The indicators for FIs should be in any event aligned with those for the OP.

After considering and devising the evaluation questions and the related indicators it is possible to define the assessment paradigms to be used under the operational approach. At this stage if any calculation of the economic and social benefit has been implemented in

the preparation phase, revisiting the ex-ante assessment and compare the assumption with the achieved results is the main objective of the ex-post evaluation exercise. Ultimately, the intensity of the ex-post evaluation efforts will depend on:

- the scope and the parameters of the evaluation needed, established by the evaluation questions;
- the quality and the quantity of the data available from ex-ante analysis carried out during implementation; and
- the reliability of the monitoring system in place and resources to undertake the ex-post evaluation, commensurate with the scale of JESSICA investment.

Generally the nature of the ex-post evaluation does not consider the feasibility or eligibility of specific projects. Consequently this exercise presents a clear value added in evaluating JESSICA portfolio investments as whole and in relation with the objectives of the investment strategy than focusing on the analysis of specific investments or projects.

7 Recommendations

Towards better impact assessment and results focused management

Defining realistic expected results, monitoring progress towards the achievement of expected results, integrating lessons learned into management decisions and diligence monitoring and reporting on performance should be a cornerstone of the JESSICA investments.

To achieve that, the introduced JESSICA performance assessment framework concept should be followed which starts with ex-ante assessment at UDF project/portfolio level and definition of a sound intervention logic. The latter should be mutually defined and agreed upon by all major stakeholders in order to raise and guarantee their sense of ownership. Also to assure an alignment between different objectives and expectations they may have. Besides that it should dovetail into the wider Operational Programme design and evaluation process.

Ongoing monitoring progress towards results should follow with the use of appropriate indicators, identification and management of the emerged risks, verification of the objectives and targets, and reporting the results. Thus the maximum possible consideration and implementation of the Performance Framework elaborated in this report should form a solid basis for enhanced results based management.

The table below indicates by each thematic area and by general terms the main monitoring, evaluation and impact assessment actions that should be further considered and elaborated for implementing the sustainable financial instrument assessment framework introduced in this report.

	RECOMMENDATIONS				
	Thematic area				GENERAL
	Redevelopment of brownfield sites	Energy efficency	Heritage or cultural sites for tourism or other sustainable uses	Urban infrastructure	
Integrated plans for sustainable urban development	Aim for consistent application of plans that qualify as IPSUDs across different regions	Integrate national renovation strategy with other local development documents	Monitor that social and cultural growth are channeled to create real economic development for local communities		To maintain up to date and high quality integrated plans that learn and implement lessons from the existing investments and overall regional development objectives to achieve sustainable urban development
Logical framework	Identify whether there is scope for further integration of JHF and UDF investment strategies with OP priorities		Identify if there is scope for further integration of JESSICA investment strategies with OP priorities.		The EIB and DG Regio should consult with UDFs and MAs on the value of employing a logical framework to inform investment decisions and impact evaluation.
Value for Money	Monitor whether financial instruments achieve intended results (while relieving the fiscal situation of the MA due the revolving nature of JESSICA)		Monitor whether results are obtained and that alternative resources are still invested in local development.		Measure as part of the evaluation of impact of the UDFs across the EU. It is important to consider how the subsequent investments of the recycled revenues and impacts are reported.
Cost Benefit Analysis	Jobs, land and property values can be credibly valued (market prices, independent experts)	Compare cost of measure with actual cost savings achieved			Evaluation thresholds which are relevant for each UDF, Member State and JESSICA investment should be considered by the EC with clear guidelines issued that cover ERDF minimum requirements.
Cost-effectiveness Analysis	Develop relevant metrics such as cost per job, cost per dwelling improved, cost per ha of brownfield land reclaimed	Explre the potential to use existing reporting to derive futher measures on e.g. reduced energy poverty of affected people	Develop relevant metrics such as cost per job, cost per site renovated/valorised, cost per m_2 of exposition created	The EC and EIB have an opportuntiy to take a lead in establising new cost-effectivensses benchmarks for sustainable urban development by investmetn in the collection of reliable imapct data across JESSICA.	
Multi-Criteria Analysis		No need to do CEA for every single renovation measure – homogeneity of projects			
Spatial impact Analysis	Survey of/ interviews with project stakeholders, business occupiers of redeveloped sites (short-term)		Survey of/ interviews with visitors and stakeholders to guage the relative cultural value and attractiveness of other sites in the area.		DG Regio to provide clear guidance to UDFs and MAs across the EU on the depth of spatial impact analysis it requires for the final evaluations of JESSICA.

Towards better guidance to UDF managers on the performance assessment framework

The MA is ultimately responsible for the achievement of the OP objectives and for establishing appropriate procedures to allow monitoring and evaluation in line with the requirements of the applicable regulatory framework. But as illustrated in the previous chapters, depending on the implementation phase, it will be also the role of Funds of Funds and/or UDF to define and use the most appropriate monitoring and evaluation approach that is consistent with this need.

Therefore, UDF managers and, more generally, bodies implementing Financial Instruments would benefit from clearer guidance on what aspects of JESSICA-type operations require specific performance assessment evaluation. Private sector fund managers are not familiar with the technical language and jargon used in evaluation studies. It is thus recommended that a "layman's guide" to how a robust performance assessment framework for JESSICA-type Financial Instruments is structured should be made available, identifying the core components which must be reported on by UDFs working on JESSICA across the EU 28. It is recognised that the level of resources and approach to performance assessment will vary according to the type and scale of JESSICA investments. The cost is also an important consideration and it is recommended practical solutions are devised for JESSICA investments and other revolving Financial Instruments in order to meet good practice and regulatory requirements, in line with the competencies and responsibilities of Managing Authorities, UDFs and final recipients. With respect to the requirements of Operational Programmes, the CPR allows for different evaluations during the OP implementation period, including on FIs, as long as they are listed in the Evaluation Plan.

Improving portfolio management

The main aim of portfolio management is to collectively manage a group of projects based on pre-agreed key characteristics (i.e. common investment output/result/impact targets) to better achieve strategic goals. That said, in order to achieve high investment synergies portfolio of different projects should be managed as a single unit. The performance assessment framework should enable the UDF / FI manager to prioritise and optimise the investment portfolio in order to achieve the investment strategy agreed with the MA and consequently the desired policy objectives.

Promoting and attracting external investors to JESSICA investments

A successful involvement of new public and private co-investors into JESSICA operations becomes more and more a cornerstone of the success of the instrument. Therefore, a special focus should be paid, if not yet done to:

- identify and define the profile of users not reached yet;
- analyse how they can potentially access information; and
- identify gaps/curbs and define an action plan to fulfil them.

Annex One – Glossary of terms

Additionality: At a very general level additionality refers to the principle that EU funding for projects should be additional to, and not substitute, national funding. A more specific notion of investment additionality concerns the measurement of net benefits resulting from the intervention. . Robust appraisal of additionality involves a process evaluating the difference between the gross observed figure for an indicator following project activity and the figure after adjustment for deadweight, displacement, leakage and multiplier effects –see below in the Glossary.

Appraisal: The process of examining options and assessing their relative merits. In this guide, and usually in UK central government, it is used to describe analysis before implementation.

Assistance: Consultancy advice, guidance or information through: face-to-face support, telephone, web-based dialogue, conference, seminar, workshop, or networks.

Audit trail: In a non-accounting sense: evidence in the form of references, data or documents that enables an investigator to trace the path of past actions or decisions and inform evaluation. The meaning of audit trail in the context of Structural Funds is more specifically presented in Art. 15 of Reg. 1828/2006.

Beneficiary: Article 2(4) of the General Regulation (2007-2013) and Art. 2(10) of CPR (2014-2020) define the beneficiary as an operator, body or firm, whether public or private, responsible for initiating or initiating and implementing operations. More specifically, for operations falling within the scope of Article 44 of the General Regulation and Title IV of CPR, the "beneficiary" is any of the Financial Instruments, and where such operations are organised through a HF or Fund of Funds, to the extent that the HF is responsible for initiating or initiating and implementing the operation, the HF or Fund of Funds is the beneficiary.

Business Plan: In the context of Financial Instruments a Business Plan describes in detail how the instrument plans to achieve its goals, including marketing, financial, non-financial impact and operational viewpoints. Typically, it could illustrate the proposed organisational and legal structure, financing and financial projections along with a market analysis as well as proposed investment focus, marketing approaches, fees, payment structures and operating procedures. In the 2007-2013 period the content of the business plan is described in Article 43 of Reg. 1828/2006.

CEB: Council of Europe Development Bank.

Certifying Authority: As defined in Article 59 of the General Regulation and Article 123(2) of CPR for 2014-20, a Certifying Authority is a national, regional or local public authority or body designated by the Member State to certify statements of expenditure and applications for payment before they are sent to the Commission

Clawback: See "Recovery".

CO_2 equivalents (CO_2 e): Describe for a given concentration of a GHG the amount of CO_2 that would have the same global warming potential (GWP).

COCOF: Coordination Committee of the Funds as established under Article 103 of Regulation (EC) No 1083/2006.

COCOF Note No 3: Guidance Note on Financial Engineering Instruments under Article 44 of Council Regulation (EC) No 1083/2006 - FINAL VERSION 21/02/2011 - COCOF_10-0014-04-EN.

Co-financing Rates: Subject to specific EC rules, an OP will set the maximum percentage rate at which it will allow Structural Funds to be used to part finance expenditure on specific types of activity.

Cohesion Fund: An EU fund that contributes to interventions in the field of the environment and trans-European transport networks. It applies to Member States with a Gross National Income (GNI) of less than 90 per cent of the EU average.

Co-investment: Resources to be used for Co-Investment could be either public or private in origin, can be introduced at HF / Fund of Funds, UDF or Urban Project level and are neither National Co-financing nor OP resources. Although the resources may be used for same or similar ends, Co-Investment activity will not need to abide by the same conditions that govern the use of OP resources.

Compensatory MCA techniques: Methods for combining assessments on separate criteria into an overall assessment such that lesser scores for an option on some criteria can be offset by greater scores on other criteria, i.e., trade-offs are modelled. Simple weighted averaging models are compensatory. Lexicographic models are not.

Contingent valuation: A method used to imply valuations, most notably in the environmental field, by asking individuals about their willingness to pay to reduce adverse consequences, such as increased levels of noise or of air pollution, or their willingness to accept sums of money to put up with such consequences.

Convergence and Regional Competitiveness and Employment objectives: For the period 2007-2013, Structural Funds are devoted to three objectives: Convergence, Regional Competitiveness and Employment, and European Territorial Cooperation. The Convergence objective is focused on Member States and regions with Gross Domestic Product (GDP) per capita of less than 75% of the EC average. Financial engineering measures in Convergence objective areas and Regional Competitiveness and Employment objective areas can be financed by the ERDF and the ESF . In 2014-2020 there are just two goals - Investment for Growth and Jobs, supported by all the ESI Funds, and European Territorial Co-operation supported only by the ERDF. In 2014-2020 the regions are classified as less developed, transition and developed.

Cost-benefit analysis (CBA): A term used to describe analysis which examines options and assesses their relative merits by quantifying in monetary terms as many costs and benefits as possible, including items for which the market does not provide a satisfactory measure of value. The basis of the monetary quantification is usually willingness to accept or pay compensation for gains or losses.

Cost-effectiveness analysis (CEA): The term is used to describe analysis which examines options which provide the same, or similar, benefits, and which assesses their relative merits by quantifying and comparing the costs of providing them. These costs may include those for which the market does not supply a satisfactory measure of value.

CPR: Common Provisions Regulation applicable in the 2014-2020 programming period - REGULATION (EU) No 1303/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the

European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

Criterion: One of a number of measures against which options are assessed and compared in appraisal and evaluation for the degree to which they achieve objectives.

Deadweight: Measures the proportion of the final outcome of a project which would have occurred without government intervention. In some cases this is quite large, and is often the most important of the additionality assumptions due to its size and this informs the reference case – the do-nothing scenario.

Decision tree: A diagram that shows the outcomes that may occur for a series of interdependent decisions sequenced over time. The actual outcome of each of the individual decisions at each stage is not known with certainty. Appropriate analysis of the tree allows the decision maker to develop, from the outset of the decision process, a contingent decision strategy. This indicates what the best choice to make is at each stage in the decision sequence; this is contingent upon the pattern of earlier decisions and outcomes.

De Minimis aid Block Exemption: The De Minimis Regulation refers to small amounts of aid that the Commission considers will have no substantial effect on trade and competition between Member States. There is no requirement to notify De Minimis aid to the Commission. The maximum funding that any single recipient can receive is €200,000 (cash grant equivalent) over a 3 year fiscal period in order to be considered as being De Minimis aid.

De Minimis Regulation: Commission Regulation EC no 1998/2006 of 15 December 2006 on the application of Articles 87 and 88 of the Treaty to De Minimis aid - OJ L 379.28.12.2006.

DG Comp: EC Directorate General responsible for Competition Policy.

DG Employment: EC Directorate General responsible for Employment Policy, including use of ESF grant.

DG Regio: EC Directorate General responsible for Regional Policy, including use of ERDF and Cohesion Fund grant and the JESSICA initiative.

Disbursement: An action undertaken by the UDF Fund Manager to release investment resources from the UDF into an Urban Project.

Discounting: The process of comparing benefits and/or costs which are expected to accrue or be incurred at different points in time, by using a discount rate which reflects the decision maker's relative valuation of benefits at different points in time.

Displacement: Is the extent to which intervention in one area reduces economic activity in another. Appraisal and evaluation is concerned with displacement from other areas of a target region outside of the intended area of benefit.

District heating: a system for distributing heat generated in a centralized location for residential and commercial heating requirements such as space heating and water heating.

EC: European Commission.

Economy: Relates to the cost of inputs being consumed. Economy measures can used to indicate whether the right price was paid to acquire the necessary inputs.

Effectiveness: The extent to which outputs achieve the desired outcomes. Effectiveness measures are concerned with the strength of the relationship between a given intervention and outcomes.

Efficiency: Efficiency represents the relationship between outputs and inputs. Efficiency is the ratio of output to input.

Emissions Factors: Factors used to convert activity or consumption data into equivalent GHG emissions. Emissions factors are expressed in terms of emissions per energy used (e.g. tonnes of CO2/kWh or grams of CO2/vehicle-kilometre).

Energy Performance Contracting (EPC): A procurement model which supports demand-side energy conservation measures (ECMs) in buildings.

Energy Service Company (ESCo): A natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing.

Equity: In line with COCOF Note 3, equity is the (ordinary) share capital of a company. Typical features of equity capital include an entitlement to the profits of the enterprise, a proportionate share of the proceeds upon liquidation, subordination to creditors and a degree of control (through shareholder voting rights).

Equity investment: In line with COCOF Note 3, an Equity Investment refers to the Acquisition of an Equity participation (ownership) in an Urban Project or a UDF.

European Court of Auditors (ECA): The European Court of Auditors is the EU Institution established to carry out the audit of EU finances. As the external body having auditing rights over the Commission, it contributes to improving EU financial management and acts as the independent guardian of the financial interests of the citizens of the Union.

European Investment Bank (EIB): Based in Luxembourg and owned by the EU Member States. EIB's objectives include the provision of finance which contributes to the EU's economic and social development. The EIB and the EIF form the EIB Group. The EIB has taken the lead, with the EC and CEB, on the development of the 2007-2013 JESSICA initiative.

European Investment Fund (EIF): Majority owned by the EIB. Its other shareholders are the EC and a number of European-based financial institutions. EIF's objective is to support the SME sectors across the EU by providing targeted venture capital finance and portfolio guarantees. EIF has taken the lead, with the EC, on the development of the 2007-2013 JEREMIE initiative.

European Regional Development Fund (ERDF): The European Regional Development Fund (ERDF) is a fund financed by European Union budgetary resources, set up in 1975 to stimulate economic development in the least prosperous regions of the EU. As one of the EU's Structural Funds, ERDF seeks to correct imbalances between regions across the EU and enhance economic and social cohesion.

ERDF account: The bank account opened by a UDF Fund operator to hold the ERDF grant provide to capitalise part or all of a UDF Fund or Funds. The advance payment of ERDF capital is paid on terms that require the Fund operator to hold it on trust for making investments within the investment period in accordance with the grant terms and on a secondary trust to repay it if the primary trust fails for any reason. The account is a

designated account opened for these purposes into which no other monies whatsoever may be paid. The bank must be given written notice of these terms.

ERDF Regulation: In 2007-2013 Regulation (EC) No. 1080/2006 of the European Parliament and of the Council of 5 July 2006.

European Social Fund (ESF): The European Social Fund (ESF) sets out to improve employment and job opportunities in the European Union and so help raise standards of living. It aims to help people fulfil their potential by giving them better skills and better job prospects.

European Private Equity and Venture Capital Association (EVCA): Based in Brussels. Main representative body for the private equity sector within Europe.

Evaluation: The process of examining options and assessing their relative merits. Usually across the EU and government agencies, it is used to describe analysis after implementation. The terms 'policy evaluation' and 'ex-post project evaluation' are often used to describe evaluation in those two areas.

Ex-ante: Before the event.

Ex-post: After the fact.

Expected utility theory: The foundation of decision theory. Starting with several basic assumptions about what is meant by coherent (internally consistent) preferences; the theory shows that two elements are logically implied: probabilities expressing degree of belief, and utilities representing subjective value and risk attitude. The theory also shows how those elements should combine to provide a guide to decision making: weighting the utilities by the probabilities for all anticipated consequences of a course of action, then summing those products to give an expected (weighted average) utility. The course of action with the highest expected utility should be chosen.

Equity finance: external finance provided to a company in the form of share capital and therefore with no fixed repayment date. Returns to equity investors take the form of dividends (only payable if the investee company is profitable) and, more importantly, any capital gain on eventual disposal of the shareholding. Equity is defined in the 2006 SARC Guidelines as an "ownership interest in a company, represented by the shares issued to investors"

Final recipient: A legal or natural person that receives financial support from a financial instrument.

Financial model: A mathematical construct, using formulae, designed to illustrate the financial outcomes to be expected given relevant input assumptions. For a UDF, a Financial Model is a vital component of its Business Plan. All investors in or lenders to the Fund will want to be satisfied that the Financial Model shows that assumptions adopted (e.g. for the path of annual gross investment amounts, expected investment and lending failure rates, and sources of financing operating costs) are plausible, and that the resulting projections for final Fund surpluses are likely to be sufficient provide a return to investors, after repaying any debt capital, in the Funds envisaged timescale.

Financial Engineering Instruments (FEIs): In the 2007-2013 programming cycle under Art.44 Regulation (EC) No.1083/2006, revolving instruments such as venture capital funds, guarantee funds, loan funds and urban development funds, and the subsequent investment by that financial engineering instrument in urban projects though instruments such as loan, guarantees, equity, and equivalent instruments instead of non-

reimbursable grants, allowing to recycle the public funds and to leverage private capital, thus increasing the efficiency and the impact of public resources. In title IV of the CPR for 2014-2020 these revolving tools are called Financial Instruments as defined in the Financial Regulation.

Financial Instruments: In 2014-2020 the term refers to "Union measures of financial support provided on a complementary basis from the budget in order to address one or more specific policy objectives of the Union. Such instruments may take the form of equity or quasi-equity investments, loans or guarantees, or other risk-sharing instruments, and may, where appropriate, be combined with grants", as stated in Article 2 (p) of the Financial Regulation, Regulation No 966/2012 of the European Parliament and of the Council of 25 October 2012.

Financial Institution: An organisation that provides financial services for its clients or members. Broadly speaking financial institutions are deposit taking institutions that accept and manage deposits and make loans, including banks, building societies, credit unions, trust companies, and mortgage loan companies.

Financial support: Generally in this document - loans, equity investment, guarantees or grants.

Funding Agreement: When FEIs are organised through HFs (the corresponding 2014-2020 terminology is respectively "FI" and "Funds of Funds"), this is either a written agreement concluded between (i) the duly mandated representative of a Member State or Managing Authority and a HF, or (ii) between the HF and a UDF. When FEIs are not organised through HFs, then this is a written agreement concluded a duly mandated representative of a Member State or Managing Authority and a UDF. The Funding Agreement should include the terms and conditions governing contributions to be made from Operational Programmes to the UDF or HF. (See also "Level I Funding Agreement" and "Level II Funding Agreement")

Fund of Funds: In 2014-2020 according to the text in Article 2 (Definitions) of the Common Provisions Regulation (CPR) " 'fund of funds' means a fund set up with the objective to contribute support from programme(s) to several bodies implementing financial instruments".

Fund Manager: The individual(s) or entity(ies) responsible for implementing the Investment Strategy and managing the portfolio of investments related to the HF or UDF (being equity funds, loans funds, guarantee funds), as the case may be, referred to under Article 44 of the General Regulation in accordance with the stated goals and provisions as set out in the Level II Funding Agreement.

Gains: the returns on investment, including returns from final recipients (e.g. interests, interests subsidy fees, guarantee fees, etc.) as well as returns generated by payments from OP not yet paid to recipients resulting from prudent treasury management of idle resources.

Inputs: The resources that contribute to the production and delivery of an output. Inputs commonly include things such as labour, physical resources, and IT systems for example.

Gap funding/finance: For the purpose of this document, a regeneration initiative to attract private investment in potentially risky Urban Projects providing the minimum amount of public resources required to cover the difference between the cost of developing difficult projects and the market value of the project..

Grant: Typically a non-repayable sum of money given by an organisation (most often a public sector entity) for a particular purpose that is defined by a set of eligibility criteria. For the purposes of this document, we refer to the definition provided in COCOF Note 3 where it states that "in general a grant will have the following features:

- a contribution is made either to an action or project carried out by a grantee which falls primarily within the scope of the grantee's activities or direct to the grantee because its activities contribute to policy aims of the grantor, such action or project of the grantee normally being in the interest of the grantor;
- the application for financing originates with the grantee, who submits a proposal for support for activities it is carrying out or plans to carry out; its proposal sets out the specifications for the action to be performed, which may be within a pre-set legal or other framework laid down in advance by the grantor;
- ownership will normally remain with the grantee, although it is possible in some cases for the financial contribution to revert to the grantor at the end of an action;
- the grant does not necessarily finance the total cost of the action;
- the financial contribution of the grantor should not be in consideration of any product or service provided by the grantee to the grantor;
- conditions can be attached to the grant awarded, but there is no direct and specific link between individual obligations on either side (grantor and grantee), although the grantor has the right to monitor technical implementation of the action and the use made of the funds granted;
- the grant must not have the purpose or effect of producing a profit for the grantee;
- the outcome of a grant award procedure is a grant agreement or a grant decision.

GVA: Gross Value Added.

Hedonic price techniques: Techniques to infer valuations by using market prices which reflect a range of different criteria. Hedonic house price indices are used to assess valuations of environmental effects by a statistical analysis of all the different factors influencing property prices, so as to identify the impact of specific environmental effects, such as aircraft noise. Hedonic wage equations are used to assess the impact of risk of loss of life from all the other factors influencing wage levels in different occupations.

Holding Fund: In the 2007-2013 programming period, a fund set up to invest in more than one UDF according to Council Regulation (EC) No 1083/2006 of 11 July 2006, Art. 44, as successively amended. See also "Fund of Funds".

Income multiplier effect: Secondary effect resulting from increased income and consumption generated by the public intervention. Multiplier effects are cumulative and take into account the fact that part of the income generated is spent again and generates other income, and so on in several successive cycles. In each cycle, the multiplier effect diminishes due to purchases outside the territory. The effect decreases much faster when the territory is small and when its economy is open. Not to be confused with the "multiplier ratio" which in the context of FI is applicable to guarantees (ratio between the amounts set aside for guarantees to cover expected and unexpected losses and the amounts of new loans disbursed)

Indicator: A characteristic or attribute which can be measured to assess an intervention in terms of its outputs or results. Output indicators are normally straightforward. Result indicators may be more difficult to derive, and it is often appropriate to rely on indirect indicators as proxies. Indicators can be either quantitative or qualitative. Context indicators relate to the environment for the programme.

Institutional investor: A corporate provider of equity capital or other forms of venture finance. Institutional investors include insurance companies, pension funds and investment companies and have access to substantial assets and tend to employ experienced investment teams.

Integrated plan for sustainable urban development (IPSUD):
An IPSUD comprises a system of interlinked plans comprised of a set of projects which seek to achieve specific aims impacting upon an urban area (or a collection of urban areas) and which seek to bring about a lasting improvement in the economic, physical, social and environmental conditions of a city or an area within the city.

The Structural Funds regulations for the period 2007-2013 do not include a definition of, or specific requirements for, an "integrated plan for sustainable urban development". Consequently, these should be defined by Member States and managing authorities, taking account of Article 8 of Regulation (EC) No 1080/2006 and the specific urban, administrative and legal context of each region. Section 2.1 of the Community Strategic Guidelines on Cohesion 2007-2013 specifies that "the preparation of a medium- to long-term development plan for sustainable urban development is generally a precondition for success as it ensures the coherence of investments and of their environmental quality. This will also help to secure the commitment and participation of the private sector in urban renewal. In general, a multidisciplinary or integrated approach is needed. For area-based actions, for example, to promote social inclusion, this requires that actions seeking to improve the quality of life (including the environment and housing) or the level of services to citizens are combined with actions to promote the development of new activities and job creation in order to secure the long-term future of the areas concerned. The new JESSICA initiative is designed to promote and facilitate the development of financial engineering products to support projects included in integrated urban development plans. In general, integrated support services and programmes should have a focus on those groups which are most in need, such as immigrants, young people and women. All citizens should be encouraged to participate in both the planning and delivery of services."

Intermediate Body: "Any public or private body or service which acts under the responsibility of a managing or certifying authority, or which carries out duties on behalf of such an authority vis-à-vis beneficiaries implementing operations" . See Article 2(6) of EC Regulation 1083/2006.and Article 123(6) of CPR for 2014-2020.

Internal Rate of Return (IRR): The discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. Generally speaking, the higher a project's internal rate of return, the more desirable it is to undertake the project.

Interval scale: A scale whose zero-point and unit of measurement are arbitrary. Fahrenheit and Celsius temperature are examples. Any fixed difference on an interval scale represents the same difference in the quality being measured as any other fixed difference. The ratio statements about the quality being measured are inadmissible when measurements are made on interval scales, whereas ratios of differences in the numbers do represent ratios of differences in the measured quality.

Intervention: The act of intervening via public policy and EU programmes and funding to bring about a change in the socio-economic performance or environmental conditions in Member States.

Intervention rates: See "Co-financing rates".

Impacts: Are the actual effects on the ground and on-going consequences of implementing JESSICA. Impact evaluation assesses the changes that can be attributed to a particular intervention, such as a project, programme or policy, both the intended ones, as well as ideally the unintended ones. In contrast to outcome monitoring, which examines whether targets have been achieved, impact evaluation is structured to answer the question: how would outcomes such as participants' well-being have changed if the

intervention had not been undertaken? This involves counterfactual analysis, that is, "a comparison between what actually happened and what would have happened in the absence of the intervention." Impact evaluations seek to answer cause-and-effect questions. Impact evaluation helps to identify the changes in outcome that are directly attributable to a JESSICA investment.

Investment Period: For the purpose of this document, the duration of time for which UDF Investment Resources are placed with an Urban Project.

Investment Strategy: Referred to in the Implementing regulation and component of the terms and conditions of a Funding Agreement for contributions from Operational Programmes to Financial Engineering Instruments normally including criteria and priorities for the FEI to select investments.

'J' Curve: Description of the shape of the most likely path, shown graphically, of annual gross investment amounts during a FEIs investing or lending period, and the path of cumulating financial returns.

JESSICA Evaluation Study: A feasibility study for the establishment of Financial Instruments deploying EU Structural Funds in support of sustainable urban transformation. It should include providing the rationale for the establishment of such Financial Instruments from a policy, strategic and/or market context, and can highlight both the benefits they can deliver and possible challenges to be overcome.

JESSICA: Joint European Support for Sustainable Investment in City Areas, the "JESSICA Initiative". A technical assistance initiative developed by the European Commission and the European Investment Bank, in collaboration with the Council of Europe Development Bank, supporting sustainable urban development and regeneration through financial engineering mechanisms. The initiative was launched to assist Member States in considering the option of using some of their 2007-2013 Structural Fund allocations to establish financial instruments for urban development.

JESSICA Operation: In the present document, an operation implementing FEIs under Article 44(b) of the General Regulation within a particular Member State or region.

Leakage: Identifies the benefits which accrue to areas outside the target area of the intervention.

Legacy Requirement: For and UDFs, the monetary returns attributable to the Structural Funds capital contribution to a Fund generated by the investment of those contributions and that have to be re-employed in successive investment rounds according to specific criteria. Exactly when the returns are expected to become available, and how they are to be used in line with the regulatory requirements, should be part of the exit policy in the Funding Agreement and the agreed Business Plan should be aligned with these requirements.

Less Developed Regions: In the 2014-2020 cycle, regions whose GDP per capita is less than 75 % of the average GDP of the EU-27, one of the three categories of regions supported under the Investment for Growth and Jobs goal.

Level I Funding Agreement: Funding Agreement between a Member State or a Managing Authority and the Holding Fund of Fund of Funds, in cases where Financial Instruments are organised through Holding Funds / Funds of Funds.

Level II Funding Agreement: Funding Agreement between a Member State or a Managing Authority (or the Holding Fund / Fund of Funds where applicable) and a UDF.

Currently, the terminology for Level II Funding Agreements most widely used in the market is 'Operational Agreements'. This is particularly the case when the EIB acts as Holding Fund.

Leverage: In general financial terminology, the proportion of debt to equity in a company's capital structure. In relation to UDFs, it refers to the amount of private sector finance, additional to Structural Funds, made available to SMEs or to urban development initiatives because of the UDF project. That includes not only the immediate matching funding at point of investment, but also any other funding which is made available as the UDF participation allows a particular deal to proceed. Consequently, "leverage" is wider in scope than the funds secured to meet the ERDF match-funding requirement.

Lexicographic methods: A general approach to the ordering of preferences in which options are compared on the most important criterion and the best option is chosen unless other options tie for first place. In that case, evaluations on the second most important criterion are considered to break the tie. If that is not possible then the third most important criterion is consulted, and so on until one option can be chosen. There are several variations on this approach which require more than the minimal information of a strict lexicographic method.

Limited Partnership: The legal structure underpinning an investment fund which is most commonly used in the private equity industry. The investors who lend capital to the partnership to create the Fund enter into a Limited Partnership agreement between themselves and a General Partner. The General Partner manages the Partnership and contracts with the Fund Managers, who are generally responsible for running the partnership for the General Partner and for making investment decisions and managing the investments and the Fund. Any private sector bank loan secured to increase the size of the Fund is contractually provided to the Limited Partnership. Investors, as limited partners, have limited liability for the liabilities of the partnership, which are borne by the general partner, provided that they do not participate in the management of partnership business.

Loan: As defined within COCOF Note 3, a Loan is a type of debt. In a Loan, the borrower initially receives or borrows an amount of money, called the principal, from the lender, and is obligated to pay back or repay an equal amount of money to the lender at a later time. Typically, the money is paid back in regular instalments or partial repayments; in an annuity, each instalment is the same amount. A Loan is generally provided at a cost, referred to as interest on the debt.

Logical Framework: Is a structured approach and management tool used in the design, management, monitoring and evaluation of projects. The Logical Framework is a tool to help strengthen project design, implementation and evaluation throughout the project cycle. The Logical Framework is a simple tool to:

- Organise the approach to project management;
- Relate activities and investment to expected results;
- Set performance indicators;
- Allocate responsibilities and communicate information concisely.

Major Project: As defined within Article 39 of the General Regulation, and Article 100 of the CPR a Major Project is an "Operation (funded by ERDF or the Cohesion Fund) comprising a series of works, activities or services intended in itself to accomplish an indivisible task of a precise economic or technical nature, which has clearly identified goals and whose total cost exceeds EUR 50 million." For 2014-2020 there are two thresholds, with the higher one at 75 million in case of operations contributing to thematic

objective 7 (transport) under Article 9 of the CPR, and thresholds concerns the total eligible cost of a project.

Market failure: Occurs when the operation of the free market fails to deliver an efficient allocation of resources resulting in economic and social welfare loss. The quantity of a good or service is not delivered to consumers or citizens as factors are preventing equilibrium.

Managing Authority: In accordance with Art. 60 Regulation (EC) No. 1083/2006 and Article 123 of the CPR, a national, regional or local public authority or a public or private body designated by the Member State to manage the Operational Programme.

National Co-financing: Also referred to as "Match-funding". The European Structural Funds meet a proportion of the cost of any project. The remainder has to be found from national resources, which can be either public or private.

Mezzanine finance (or mezzanine debt): Type of loan funding which "fits" between standard bank lending and equity investment, generally in the form of repayable debt capital but with options to convert to equity. Particularly useful for growth businesses where the amount of finance required or its risk profile makes standard bank debt unsuitable, but where immediate equity investment, for whatever reason, is not the appropriate financing choice. It is typically used to finance the expansion of existing companies. Mezzanine financing is basically debt capital that gives the lender the rights to convert to an ownership or equity interest in the company if the loan is not paid back in time and in full. It is generally subordinated to debt provided by senior lenders such as banks and venture capital companies. See also Quasi-equity finance.

More Developed Regions: In the 2014-2020 cycle, regions whose GDP per capita is above 90% of the average GDP of the EU-27, one of the three categories of regions supported under the Investment for Growth and Jobs goal.

Multi-criteria analysis (MCA): Multi-criteria analysis can be used to describe any structured approach to determine overall preferences among alternative options, where the options accomplish several objectives. It is often used in government to describe those methods which do not rely predominantly on monetary valuations.

Multipliers: Measure the degree to which government intervention 'ripples' out into the economy, through the spending of employees associated with the project and the increase in orders received by suppliers to businesses benefiting from the project and how subsequent impacts contribute to wider outcomes. These are also known as the catalytic or second and third round impacts. The multipliers can be in the form of supply chain impacts which generate trade, transactions and indirect jobs or in the form of income effects where the spending on an employee (direct job) creates additional catalytic jobs.

National Co-Financing: National resources (sometimes referred to as "match funding" or "National Contribution") that can be either from the public or private sector, providing the share of OP resources required to complement the contribution from the Structural Funds.

National Strategic Reference Framework: The National Strategic Reference Framework (NSRF) 2007–2013 constitutes the reference document for the programming of European Union Funds at national level for the 2007–2013 programming period. It was elaborated within the framework of the new strategic approach to the Cohesion Policy of the European Union, according to which NSRF "…ensures that the assistance from the Funds is consistent with the Community strategic guidelines on cohesion and identifies

the link between Community priorities, on the one hand, and the national reform programme, on the other."

Net Present Value (NPV): The difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyse the profitability of an investment or project.

Normative decision models: These are based on fundamental assumptions (axioms) about rational human behaviour, and use mathematical logic to develop ways to rank options that are demonstrably consistent with the underlying axioms. Thus if the axioms are accepted as true, the model provides a potentially indisputable way to rank options.

Objectives: An objective is a succinct statement of the key goal(s) being pursed over the medium to long run. Objectives reflect the key components of the intended strategy. Broad overall objectives, or ultimate objectives, are broken into lower level or intermediate objectives which are more concrete, and these may be further detailed as sub-objectives, immediate objectives, or criteria which are more operational.

Operation: According to article 2(9) of the CPR "means a project, contract, action or group of projects selected by the managing authorities of the programmes concerned, or under their responsibility, that contributes to the objectives of a priority or priorities; in the context of financial instruments, an operation is constituted by the financial contributions from a programme to financial instruments and the subsequent financial support provided by those financial instruments". This is wider than the definition contained in Article 2 (3) of the General Regulation for 2007-2013.

Operational Agreements: See Level II Funding Agreement.

Operational Programme (OP): Operational Programmes are documents submitted by the Member States and adopted by the European Commission setting out development strategy with a coherent set of priorities to be carried out with the aid of Structural Funds,

OP resources: Structural Funds resources (ESIF resources for 2014-20) and National Contribution are together known as OP resources.

Optimism bias: Is a demonstrated, systematic, tendency for project appraisers to be overly optimistic. To redress this tendency appraisers should make explicit, empirically based adjustments to the estimates of a project's costs, benefits, and duration.

Options: Ways of achieving objectives. Options might be policies, programmes, projects, schemes, systems, or anything else about which a decision is needed.

Opportunity cost: Is the basic relationship between scarcity and choice. Opportunity cost is the cost of any activity measured in terms of the value of the next best alternative foregone (that is not chosen). The opportunity cost is also the cost of the foregone products after making a choice.

Outcomes: See "Results".

Outputs: Are the goods and services produced by the organisation. Outputs are delivered to an external party (usually to the public either individually or collectively) and comprise the majority of day-to-day interaction between people and government. Outputs include things such as issuing licenses, training hours provided, direct jobs created and so on.

Paradigm: Describes a distinct concept and area of research.

Performance management framework: Aligns the objectives of Financial Instruments promoted by JESSICA with the resources to focus on generating the greatest potential impact on sustainable urban development. It helps to define and communicate a strategic approach, measure and analyse performance to refine and achieve results.

Performance matrix: A matrix or table setting out the performance of each option according to each of the criteria by which options are to be judged. It is sometimes referred to as a consequence table.

Pipeline: The information collated by FEI Fund Managers to track the flow of investment or lending deals at each key stage from initial application through appraisal and detailed negotiation to approval, commitment and final completion. Such information, which Fund Managers will hold in varying degrees of detail down to the level of individual projects normally include statistics for deals not pursued or completed for whatever reason.

Primary research: The empirical collection of new data, facts, opinions and survey responses. Evidence can be gathered in numerous forms, including questionnaires, statistical analysis of demographic data and trends, direct observation, telephone interviews and focus groups for example.

Priority Axis: A Priority Axis is one of several areas of focus defined within an Operational Programme which serves to guide the direction of the programme. Examples of Priority Axes are 'Stimulating Innovation and Research,' 'Stimulating Enterprise Development,' and 'Achieving Sustainable Urban Development.'

Private equity: Medium to long term funding provided via an equity investment in companies which are not quoted on any formal stock exchange. Providers include Business Angels, but main suppliers are private equity firms, which invest on behalf of other investors. In the UK and elsewhere in Europe, "private equity" generally covers investment at all funding SME stages and is often also referred to as "venture capital". See also Risk capital and venture capital.

Public-Private Partnership (PPP): According to the EC Communication on PPPs (COM(2009)615, 19.11.2009), PPPs are forms of cooperation between public authorities and the private sector that aim to modernise the delivery of infrastructure and strategic public services. In some cases, PPPs involve the financing, design, construction, renovation, management or maintenance of an infrastructure asset; in others, they incorporate the provision of a service traditionally delivered by public institutions. Whilst the principal focus of PPPs should be on promoting efficiency in public services through risk sharing and harnessing private sector expertise, they can also relieve the immediate pressure on public finances by providing an additional source of capital. In turn, public sector participation in a project may offer important safeguards for private investors, in particular the stability of long term cash-flows from public finances, and can incorporate important social or environmental benefits into a project.

Quasi-equity finance: Defined by the 2006 SARC Guidelines as "instruments whose return for the holder (investor/lender) is predominantly based on profits of the underlying target company, [and] are unsecured in the event of default …" CESE defines quasi-equity as financing which combines the features of debt and equity, noting that the term covers a variety of instruments tailored to specific legislative and operating environments e.g. convertible shareholder loans, loan notes and preference shares which are unsecured and convertible on exit.

Recovery: Mandatory return of grant where some or all of a Structural Funds (ESIF) grant awarded is required to be repaid because grant terms and conditions have been

breached and are unable to be remedied, or because an event prescribed under such terms (particularly lack of progress towards investment targets) has occurred.

Reference rate: The interest rate, as calculated in accordance with the methodology contained within the Communication from the Commission on the revision of the method for setting the reference and discount rates (OJ C 14. 19.1.2008, p.6-9), to be applied as a proxy for the market rate in order to measure the grant equivalent of aid, including the case of interest subsidy schemes.

Results: Are the impacts on or consequences for the community of the activities of the government, in the specific case of cohesion policy related to objectives of the relevant Operational Programme. The relevance of results is specifically referred to in several articles in the CPR in order to strengthen the result-orientation of the programming. As stated in Art. 96 (2) (b) each OP should set out for each priority axis "the expected results for the specific objectives, and the corresponding result indicators, with a baseline value and a target value, where appropriate quantified, in accordance with the Fund-specific rules".

Risk capital and venture capital: In general "risk capital" and "venture capital" tend to be used interchangeably with "private equity". However, the 2006 SARC Guidelines define risk capital as equity and quasi-equity financing provided to companies during their early-growth stages – seed, start-up and expansion; and venture capital as "investment in unquoted companies by investment funds (venture capital funds) that, acting as principals, manage individual, institutional or in-house money and includes early-stage and expansion financing, but not replacement finance and buy-outs."

Selection bias: A statistical bias in which there is an error in choosing the individuals or groups to take part in a scientific study. The term 'selection bias' refers to the distortion of a statistical analysis, resulting from the method of collecting samples. If the selection bias is not taken into account within an accurate random sample frame then certain conclusions drawn may not be applicable.

Sensitivity analysis: The process of testing a project and range of options for its propensity to deliver better or worse outturns, often measured in net present value, depending on changes in key variables and input assumptions. It is a technique that is used to determine how different values of an independent variable will impact a particular dependent variable under a given set of assumptions. This technique is used within specific boundaries that will depend on one or more input variables, such as the effect that changes in the mix of ERDF grant and co-finance will have on the financial viability of a project.

Shadow prices: Estimates of the costs of resources which represent their true opportunity costs, in circumstances when observed market prices do not. In perfect markets, shadow prices will simply be equal to market prices, but distortions in the market, such as the presence of monopoly power or of taxes which do not correct externalities, lead to a divergence between market prices and shadow prices.

SMEs: Micro, small and medium sized enterprise in the meaning of Commission Recommendation 2003/361/EC, or subsequent amendments thereof.

Solar photo-voltaic (Solar PV): A method of generating electrical power by converting solar radiation into direct current electricity using semiconductors that exhibit the photovoltaic effect. Photovoltaic power generation employs solar panels composed of a number of solar cells containing a photovoltaic material.

Spatial impact: The impact on a specific place or urban area. Spatial impact analysis includes the use of demographic, topological, geometric, or geographic properties. The phrase refers to a variety of techniques, many still in their early development, using different analytic approaches and applied in diverse fields.

State Aid: Forms of assistance from a public body, or publicly-funded body, given to undertakings on a discretionary basis, with the potential to distort competition and affect trade between Member States of the European Union. Also see definition of Market Economy Investor Principle

Stated preference: A method to value benefits or costs for which market prices do not exist, which involves implying underlying valuations from individuals' answers to questions about the choices they would make between different hypothetical alternatives. The term stated preference is often used with regard to choices in the transport sector which imply valuations of different types of travel time.

Structural Funds: The European Regional Development Fund ("ERDF") and the European Social Fund ("ESF") referred to under the General Regulation and Regulations (EC) No. 1080/2006 and 1081/2006 (as amended). In 2014-2020 they are part of the ESI Funds, which also include the CF, EARDF and EMFF

Subordinated loan: A loan which ranks for repayment after other debt; the other debt may enjoy security (e.g. such as senior debt provided by a bank).

Subordination: In the context of UDFs the extent to which any co-investor accepts a lower priority vis-à-vis one or more of the other co-investors with respect to the repayment of capital or the distribution of financial returns.

Sustainable development: Can be defined as a development that satisfies present needs without compromising the ability of future generations to meet similar needs.

Substitution: Exists where there is a shift in economic activity to a similar alternative in order to take advantage of public sector intervention. This may result in losses arising from the change in behaviour of firms and individuals. For example a firm may hire a new employee to replace an existing one to take advantage of government funds.

Third Sector: All organisations that are not-for-profit and non-government, together with the activities of volunteering and giving which sustain them.

Transition Regions: In the 2014-2020 cycle, regions whose GDP per capita is between 75 % and 90% of the average GDP of the EU-27, one of the three categories of regions supported under the Investment for Growth and Jobs goal.

Urban Development Fund (UDF): In 2007-2013, a Financial Instrument established in accordance with Article 44b of the General Regulation as well as Articles 43 and 46 of the Implementing Regulation in order to invest by means of loans and guarantees, or equivalent instruments and by means of equity into Urban Projects. The terminology for 2014-2020 refers to bodies "implementing a financial instrument", and a UDF will be such a body, in cases where it is designed to support investment in cities.

Urban Project: A PPP or other project included in an Integrated Plan for Sustainable Urban Development. .

Venture capital: see Risk capital and venture capital and Private equity.

Waste to energy: Process of creating energy in the form of electricity or heat from the incineration of waste source. Most waste to energy processes produce electricity directly through combustion, or produce a combustible fuel commodity, such as methane, methanol, ethanol or synthetic fuels.

Annex Two - JESSICA Evaluation Examples

1.1 Introduction

The present Annex is structured around two topics: "case study examples" and "JESSICA case studies", for each of the five thematic areas described in the table below.

	Thematic area	*Case study example*	*JESSICA case studies*
1.2	**Redevelopment of brownfield sites**, incl. site clearance and decontamination and creation of new commercial floorspace for SMEs, IT and/or R&D sectors	Business park development on a former army base.	Wielkopolska (Poland)
1.3	**Urban infrastructure** (related to transport, water/waste water, energy)	Waste to energy plant	London Waste Fund (Foresight UK)
1.4	**Energy efficiency**	Renovation of a multi-apartment building	KredEx (Estonia)
1.5	**Heritage or cultural sites for tourism** or other sustainable uses	Creation of a museum	Ragusa "albergo diffuso" (Sicily, Italy)
1.6	**Knowledge base and innovation**	Science park and business incubator linked to a city university	R&D Financial Instruments

Case study example

The case study example at the beginning of each thematic area aims to provide an overview of the good practice based on a literature review and practitioners' experience across the EU. Some of the case study examples are anonymized due to data confidentiality reasons and some others are purely hypothetical. Additionally, the case study examples aim to give insights on how to monitor and evaluate JESSICA operations and ensure that the different types of investment can be incorporated into the performance measurement framework. Each case study example is structured as follows:

- The initial analysis sets out an overview of how the issues relate to (i) output indicators, (ii) outcome indicators, (iii) additionality, (iv) spatial impact, (v) project benefits, and (vi) programme benefits;

- Subsequently we develop in more detail a case study example (in some cases hypothetical), which is based on realistic assumptions and parameters, to illustrate how assessing the non-financial performance impacts in the thematic area can be applied in practice identifying a toolkit and best practice approach which can be used as the starting point; and then;

- The proposed approach is customised further to ensure alignment with the specific circumstances of JESSICA instruments operating on the ground, e.g. for each of the four thematic areas described above.

JESSICA case studies

Subsequently a JESSICA case study is presented in detail for each of the five thematic areas to exemplify the experience from the field, understand the relationship between JESSICA and the specific OP and its requirements as well as to identify current practices in performance assessment. We have structured the case studies according to the four phases of JESSICA cycle:

- Programming;
- JESSICA strategy formulation;
- Implementation; and
- Impact assessment.

The Annex closes with overall conclusions on the evaluation paradigms and their suitability under given circumstances, such as a thematic area or JESSICA cycle phase.

1.2 Redevelopment of brownfield sites

Context: rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

JESSICA investments encompass a wide range of land and property-related activity. These can include the remediation of brownfield land (e.g. disused industrial site in urban area such as former military bases) and other under-utilised parts of towns and cities with the objective of revitalisation. Very often the land reclamation is the first stage of the development process, leading on to the development or re-development activity (e.g. conversion of old or unused industrial buildings) as well as new build (e.g. science parks, business parks, incubation space and other commercial activity). Development schemes can be for productive use, but mixed use developments are not uncommon (e.g. involving a mix of commercial, residential and community space).

Considerable amounts of national and European regeneration funds have been used in this way and as a consequence there has been much interest in evaluating the effectiveness of the policies implemented (Bachtler and Wren (2006)[59], as well as a number of relevant national evaluations, such as the evaluations of the Enterprise Zones [60](DoE, 1995); Urban Development Corporations [61](DoE, 1998) and the evaluation of the Single Regeneration Budget in England[62].

59 The Evaluation of European Union Cohesion Policy edited by John Bachtler and Colin Wrren. Regional Studies April 2006 Volume 40, No2.

60 Department of the Environment. Final Evaluation of the Enterprise Zones. 1995.

61 Roger Tym and Partners. Urban Development Corporations: Performance and Good Practice. Commuities and Local Government (1998).

62 Department of Land Economy. The Single Regeneration Budget: Final Evaluation (2007)..

Tracking output and outcome changes

Common measures of land remediation activity include the volume of land being reclaimed and for industrial or commercial development and the number of units of building being developed.

Measuring the performance of these activities can be achieved through a limited set of **output** indicators, all of which are commonly used in regeneration schemes, including ERDF-supported schemes:

	Brownfield output indicators
1	Hectares of brownfield land reclaimed and/or redeveloped
2	Sq. m of new or refurbished employment floorspace (by type)
3	Sq. m of community floorspace provided
4	Number of new businesses created
5	Number of existing businesses attracted
6	Number of full-time equivalent jobs created
7	Number of full-time equivalent jobs safeguarded
8	Number of new homes provided
9	Hectares of public realm provided

Not all of these outputs will be relevant for every scheme, but they provide a useful menu of core indicators from which to choose.

The ultimate objectives of these kinds of projects are often concerned with generating lasting **outcomes**, such as:

	Brownfield outcome indicators
1	Increasing the stock of development land
2	Increasing employment
3	Increasing the employment rate among the working age population
4	Increasing economic output (Gross Value Added)
5	Increasing population
6	Improving environmental amenity, well-being and quality of life
7	Increasing commercial and residential land and property values

As discussed in Chapter 5, an important distinction needs to be made between outputs and outcomes which are generated **directly** by JESSICA-type investments and those which are stimulated **indirectly**. For example, a major JESSICA-type investment (generating direct benefits) may benefit the surrounding area in terms of rises in property values, acting as a catalyst to other redevelopment activity without any need for further public sector investment (an indirect benefit). Typically this is a longer term process, but one which is an important dimension of the JESSICA performance measurement framework.

Additionality

As discussed in Chapter 5, a key element of the JESSICA performance measurement framework is to quantify those outputs and outcomes which would not have occurred in the absence of JESSICA instruments ("JESSICA additionality"). In this regard, one issue to be considered is the identification of the most appropriate control groups to use since there are complex boundary interfaces and a number of potential beneficiaries[63] (DTZ, 2010). In any case, the assessment of additionality should consider deadweight, leakage, and product market displacement and multiplier effects.

In relation to land and property investments, where performance is critically dependent on occupancy and take-up of industrial or commercial floorspace or housing, it is appropriate to adopt primary research approaches which seek to establish deadweight at two levels: 1) what would have happened to the development scheme in the absence of JESSICA support; and 2) what outputs and outcomes might have been delivered anyway in the targeted spatial area in the absence of the development scheme. The definition of the spatial area of impact also enables assessments to be made of what proportion of benefits have been captured by those living in the target area (e.g. employment opportunities being taken up) and what proportion represent leakage out of the area.

For the employment outputs, the extent of product market displacement within the target area is also a relevant consideration. A precise assessment of these components of additionality would lend itself particularly well to primary research, although in practice this may be possible only in some cases. The final component, which combines supply chain multiplier effects and income multiplier effects, is likely to be estimated with reference to existing benchmarks from other impact evaluation evidence.

Valuing the benefits

There has been much interest in valuing the benefits that arise from land remediation and the development of industrial and commercial buildings. A comprehensive review of the available literature and a summary of the relevant research is provided by DCLG (2010). Two dissimilar approaches have been used. The first considers the production benefits associated with the end use accommodated in the industrial and commercial property and thus tend to be reflected in employment and GVA measures. The second approach builds directly on the valuation of the property asset itself.

In the first case the valuation starts by using the total employment accommodated in the industrial and commercial property and then assesses how much of this can be regarded as additional as a result of the policy in question. Valuation then involves applying ratios of GVA per employee.

The second case recognises that the development of land and property produces a commodity that can be assigned a monetary value by applying existing market based data. There may also be downstream effects, or externalities, and where appropriate these should be valued. There is an extensive literature on how to do this (see DCLG, 2010).

These approaches should be seen as alternatives, but they cannot be used together and the results combined. This is because the property valuation approach incorporates a future anticipated rental stream which is dependent upon the economic activities accommodated within the property. Thus, this already incorporates a different method of estimating the value associated with the end use.

For JESSICA land and property schemes, it is possible to value net additional outputs and outcomes in the following way:

- Property market effects: An uplift in land values from the pre-development stage to the post-development stage can be observed by monitoring rents and/or capital values for both industrial/commercial property and for residential developments; and

- Labour market effects: Net additional jobs can be translated into GVA, ideally through detailed analysis of the sectors and occupations accommodated in JESSICA-funded developments.

Some other common benefits from JESSICA land and property projects might relate to the removal of dereliction and the provision of public open space. As Chapter 4 noted, these sustainable urban development benefits are not traded in markets and are therefore less straightforward to value. However, the use of "stated preference" or "revealed preference" techniques can elicit monetary values for these kinds of "non-market" benefits which, if applied appropriately given the type, scale and location of the project, could generate a further monetary benefit which can be added to the market-related benefits identified above.

There will be JESSICA land and property projects where monetisation is simply not possible at all, either because some of the benefits do not lend themselves to quantification in the ways described above, or because the project is not of a sufficient scale to justify the research needed to quantify and/or monetise the benefits. It might also be the case that in the early stages of urban development planning, or outline project appraisals, insufficient information exists with which to quantify expected project performance.

In such cases it may be more appropriate to adopt the Multi-Criteria Analysis evaluation paradigm described in Chapter 5. This can bring together qualitative and quantitative evidence as well as some monetized benefits into a single organizing framework that demonstrates how JESSICA projects have, or are expected to, bring about sustainable urban development.

Assessing programme / portfolio benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

Much effort has been given to devising ways of assessing the wider programme benefits associated with urban initiatives and the approaches seem to be helpful in the context of JESSICA. One of the most extensive sources of evaluation on such aspects of urban development is to be found in the evaluation of the Single Regeneration Budget in England (Land Economy, 2007).

Applying the toolkit at different stages of the operation implementation cycle

In principle a performance measurement framework needs to be applied at all stages of the operation implementation cycle, namely from the initial strategic planning stage, detailed project appraisal, monitoring during the construction and operational phases and finally ex post evaluation.

The level of quantification – and the level of precision that can be applied to any estimates - will vary throughout the cycle. Clearly at the initial planning stage, estimates may be "broad brush", whereas project monitoring allows facts around performance to be gathered and evaluation provides a clear research opportunity for the benefits of the project to be quantified and even valued as the case study example below demonstrates.

1.2.1 Case study example: business park development on a former army base

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Proposals have been developed for the redevelopment of a 25 hectare former army base along a waterfront. The land is contaminated and the site has been derelict for many years due to the abnormal costs associated with clean-up and servicing. These negative externalities, combined with the scale of the site, presents a clear economic efficiency rationale for intervention. In addition, the surrounding neighbourhoods suffer severe socio-economic deprivation and this provides a clear equity rationale for intervention as well as helping to define the target area for spatial impact assessment. This rationale for intervention has formed the basis of a State aid clearance / notification.

The redevelopment proposals are for a major mixed use waterfront scheme, including: 1000 apartments, marina development and other leisure activities and a significant employment element, featuring 50,000 sq. m of office space and 2,000 sq. m of business incubation space. The design also includes a high quality public realm which seeks to integrate the site into the surrounding area.

Tracking output and outcome changes

At the appraisal stage, estimates made for the project suggest that it could generate the following direct outputs:

- 25 hectares of brownfield land reclaimed and redeveloped;
- 50,000 sq. m of office space;
- 2,000 sq. m of business incubation space;
- 2 hectares of public realm provided;
- 30 new business start-ups;
- 80 existing businesses attracted;
- 2,500 jobs created (no jobs safeguarded, because the site was completely derelict).

These outputs were expected to contribute directly to outcomes for the target area in the following way:

- Increasing the stock of development land by 20%
- Increasing workspace employment by 30%
- Increasing the employment rate among local residents from to 55% to 58%
- Increasing economic output (GVA) by approximately € 100 million
- Increasing commercial land values
- Increase local well-being through the provision of high quality public spaces

As part of the performance measurement arrangements for this project, the direct land and floorspace outputs from the scheme were monitored and a database of occupiers was assembled. A baseline of the stock of land, land values and local employment and employment rates was also assembled and changes in these statistics were monitored over the lifetime of the project.

Additionality

At the project appraisal stage, estimates had been made of additionality parameters, drawing on benchmark evidence from other evaluations of similar projects. One year after

the completion of the business park development, an evaluation of the JESSICA project was undertaken and as part of the research method two surveys were conducted.

1) A survey of project stakeholders, including those from the JESSICA team responsible for developing the project and the private sector developer, and a review of the financial appraisals for the project. This survey was used to establish the nature and severity of market failure, issues affecting the viability of the scheme, the role of JESSICA and what would have happened in the absence of JESSICA. These interviews concluded that in the absence of JESSICA funding, the site would have remained derelict due to the severe contamination and other abnormal costs (river wall) associated with the development scheme.

2) A survey of business occupiers helped to quantify the level of employment accommodated on site and the number of full-time equivalent jobs this represented. The survey also asked business occupiers a series of questions to quantify critical additionality parameters.

In relation to deadweight, it established whether they were already located within the target area prior to the scheme's implementation, or – if located elsewhere – whether they would have located within the target area anyway in the absence of the waterfront scheme. This survey also established the extent to which businesses compete with other firms within the target area (product market displacement) and the proportion of their employees who live within the target area (to inform leakage).

The survey found that, overall, for the office, innovation and retail space, 30% of employment would have existed within the target area in the absence of the scheme. These were either firms who were already located within the target area but relocated to the waterfront scheme, or firms who would have moved into other parts of the target area anyway without the waterfront scheme.

In relation to leakage, the survey, conducted one year after the final commercial unit was occupied, found that only 30% of employees lived within the target area. The other 70% (leakage) travelled in from areas further afield. Leakage was lower (40%) for the retail occupiers and highest for office occupiers (80%).

In relation to product market displacement, the survey found that of the turnover associated with the business occupiers, 20% overall would have been taken by other companies in that area. Displacement was lowest for the office occupiers (10%) and highest for retail activity (70%).

The evaluators brought the evidence on **outputs** together using the table below to establish the level of net additional outputs associated with the project.

	Hectares of land reclaimed	Hectares of public realm created	Floorspace (Sq m)	Jobs (FTEs)
Total ("gross") outputs	25	2	52,000	2,500
JESSICA deadweight (the proportion of outputs which would have occurred in the target area in the absence of JESSICA, e.g. if there were other funding mechanisms in existence)	0%	0%	0%	30% would have been located elsewhere in the target area anyway
Scheme deadweight (the proportion of the outputs which would have occurred in the target area in the absence of the development scheme)	0%	0%	0%	
Leakage of benefits outside of the area	Not applicable (N/A)	N/A	N/A	70% of jobs went to those outside the target area
Product market displacement of employment from other businesses in the target area	N/A	N/A	N/A	20% of jobs displaced from other firms in target area
Net direct physical benefits before multiplier effect	25	3	52,000	420
Combined supply (indirect) and income (induced) multiplier at target area level	N/A	N/A	N/A	1.10
Net additional benefits at the target area level	25	3	52,000	462

By applying the empirical evidence from the evaluation research, the conclusion was that the physical direct outputs from the project were entirely additional as a result of JESSICA, but that less than 20% of the employment outputs were net additional at the level of the target area.

In relation to **outcomes**, the evaluation used the net outputs above, putting these in the context of changes in key variables relating to the stock of development land, commercial land values, workspace employment and the employment rate. It concluded that the project had made a net additional contribution to:

- Increasing the stock of development land by 20%;

- Increasing workspace employment by 5%;
- Increasing the employment rate among local residents from to 55% to 56%;
- Increasing the value of the site (see section on valuing the benefits below).

The evaluation concluded that the project had made a valuable contribution in relation to its physical transformation, but that its contribution in terms of employment impact was lower than initially forecast, because so many of the jobs were taken by those living outside of the target area of impact.

Valuing the benefits

The performance measurement for this JESSICA project involved the application of market values related to the non-financial benefits of increasing land values on site (a direct benefit), and increasing net additional employment in the target area (a direct benefit).

For the uplift in land values directly enabled by JESSICA: expert property valuation at the outset demonstrated that the army base had a negative value (for any end use), due to the abnormal costs associated with redevelopment. For performance measurement purposes, the baseline value was assessed as zero. External advice, commissioned one year after the final unit was occupied, valued the entire business park at €150m. Taking into account the public and private sector financial costs associated with the entire development project (€ 120m), the increase in property value associated with the scheme was estimated at approximately € 30m. This is a one-off benefit associated with the JESSICA scheme.

From jobs (FTEs) to Gross Value Added: the 462 net additional jobs in the target area which are attributable to this JESSICA project will make a contribution to economic output (GVA). The evaluators who conducted the survey were able to establish the sectoral breakdown of employment. At the level of each business occupier, data on the ratio of GVA to employee was applied to the number of net additional jobs in the target area attributable to JESSICA. This generated an estimate of € 18m per annum. In a standard cost-benefit analysis the benefit from job creation would have been internalised by applying a conversion factor to labour cost. The resulting economic cost of labour would be smaller than real wages because of social considerations, multiplier effects, etc. The benefit of additional jobs has thus been calculated by the evaluator as the complement to one of the conversion factors found to be equal to 0.65[64]. Therefore 35% of the € 18m of annual GVA was taken into account. The stream of benefits on this basis was then translated into a Present Value using a discount rate of 3.5% (the "social time preference rate" in the UK), generating an estimated GVA benefit of over € 77m.

For the environmental benefits associated with the provision of high quality public realm. It was decided that the project evaluation budget was not sufficient to undertake a bespoke valuation of the non-market benefits associated with the removal of dereliction. However, evidence from a study undertaken elsewhere in the Member State was felt to offer some insight into the potential monetary value which might be ascribed to the amenity value placed on the public realm component of the development scheme by users and local residents in the target area. The study from which the evidence was imported

[64] For the shadow wage a formula proposed in Annex D of DG REGIO CBA guide (p.216) SWR=W(1-u)(1-t), was used. The average figures for the UK: Unemployment rate (u) = 8.3%, Tax wedge (t) = 29.6% (Eurostat, Oct 2011)

was based on a similar number of households (9,500) to the target area in question for this scheme. That study suggested a willingness to pay of € 21 per household for a 2 hectare public realm scheme. It suggested that these annual amenity value to the target area of € 200,000 might build up following completion, and then last for the whole time horizon. The future stream of benefits on this basis was then translated into a Present Value using a discount rate of 3.5%, generating an estimated value to society from this element of just over € 2.2m. This estimate was treated with particular caution in the final evaluation report, because it was based on imported evidence.

In summary, the discounted benefits from this project which were monetised were estimated at € 175. These were compared with the Net Present Value of JESSICA funding for the project € 32m to generate a Benefit Cost Ratio of 5.46 (i.e. almost € 5.5 of benefit per € 1 of JESSICA funding invested). The Benefit Cost Ratio for the whole financial resources (€ 120m) is 1.81.

The following table summarises the data of the case study example. This shows the socio-economic costs and benefits generated by project including some performance indicators such as the Economic Net Present Value (ENPV), the Economic Rate of Return (ERR) and the Benefit Cost Ratio (B/C Ratio). In the specific case over a time horizon of 20 years the ERR reaches 6.66% while the B/C Ratio is 1.30.

The economic costs included are the investment cost, the operational and management costs and the residual value (to be considered as a negative cost). The economic benefits are the operational revenues, the uplift in land value, the increased value added generated through new employment and the environmental benefits on the other. Where relevant, the benefits have been split to highlight the share of leakage outside the investment area. Indeed the ERR excluding leaked benefit is much lower: 0.87%.

The following table can be used as a template for further analysis and with minor corrections (e.g. adding some row) it can be used for on-going and ex-post evaluations.

Table 1. Illustrative example of Economic Analysis

Economic Analysis Results			discounted values	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Economic costs																							
Investment cost		*mEUR*	111.83	32.40	48.00	39.60																	
O&M costs		*mEUR*	18.25	-	-	0.28	0.43	0.44	1.56	1.59	1.63	1.66	1.69	1.73	1.76	1.80	1.83	1.87	1.91	1.94	1.98	2.02	2.06
Residual value		*mEUR*	- 31.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 61.76
Total costs		*mEUR*	*99.04*	*32.40*	*48.00*	*39.88*	*0.43*	*0.44*	*1.56*	*1.59*	*1.63*	*1.66*	*1.69*	*1.73*	*1.76*	*1.80*	*1.83*	*1.87*	*1.91*	*1.94*	*1.98*	*2.02*	*- 59.69*
Economic benefits																							
Revenues	Local 70%	*mEUR*	22.09	-	-	0.72	1.55	1.65	1.71	1.78	1.81	1.83	1.86	1.89	1.92	1.95	1.98	2.01	2.04	2.07	2.10	2.13	2.16
	Leaked 30%	*mEUR*				0.31	0.66	0.71	0.73	0.76	0.77	0.79	0.80	0.81	0.82	0.83	0.85	0.86	0.87	0.89	0.90	0.91	0.93
Land value		*mEUR*	27.06	-	-	30.00																	
Labour market effect	Local 30%	*mEUR*	21.57	-	-	-	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
	Leaked 70%	*mEUR*	55.79				4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41
Enviromental benefits		*mEUR*	2.28	-	-	-	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
Total benefits		*mEUR*	128.79	-	-	*31.03*	*8.71*	*8.85*	*8.95*	*9.04*	*9.08*	*9.12*	*9.16*	*9.20*	*9.24*	*9.28*	*9.32*	*9.37*	*9.41*	*9.45*	*9.50*	*9.54*	*9.59*
Net Benefits		***mEUR***	**29.74**	**- 32.40**	**-48.00**	**- 8.85**	**8.28**	**8.41**	**7.38**	**7.45**	**7.45**	**7.46**	**7.47**	**7.47**	**7.48**	**7.49**	**7.49**	**7.50**	**7.50**	**7.51**	**7.51**	**7.52**	**69.28**
				- 32.40	-48.00	- 9.16	3.21	3.30	2.24	2.28	2.27	2.26	2.26	2.25	2.25	2.24	2.23	2.23	2.22	2.21	2.21	2.20	63.95
ENPV (mEUR)	3.5%	**33.74**																					
ERR		**6.66%**																					
ERR (excluding leakeges)		0.87%																					
B/C ratio		**1.30**																					

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

As part of the ex post evaluation of this JESSICA project, the evaluators were asked to explore the contribution of this project to wider programme benefits for the UDF as a whole.

Key conclusions were that:

- In relation to Strategic Added Value, the project had shown clear **synergy** in relation to the way in which the project promoter had adapted their initial proposals to incorporate business incubation facilities. Initially it had been reluctant to do so, but following discussions with those responsible for the business support dimension of the Operational Programmes and project officers delivering business start-up support in the wider target area, the property developer was persuaded of the need for incubation space and the potential demand which could flow from a co-ordinated effort with these complementary projects;

- There was clear **co-ordination** between the army's estates division, the city planners and the developer. This not only enabled the project to proceed smoothly, but by reaching a mutually acceptable development proposal, expectations have now been clarified and as a result it is now expected that other such sites may come forward and be capable of being delivered faster;

- JESSICA funds were successful in **levering** a combination of public sector resources (army) and private sector investment. The project had won numerous awards for its physical design and, while less successful in meeting socio-economic objectives, the redevelopment process and the ultimate scheme had brought about demonstration benefits, attracting considerable interest from other property investors who previously had no interest in the area's development.

Applying the toolkit at different stages of the operation implementation cycle

At the **strategic planning stage** (project prioritisation): broad estimates were made of the potential order of magnitude of project benefits, based on the scale of expenditure and benchmarks on cost per unit of output (e.g. cost per hectare of land reclaimed, cost per job). The target area for spatial impacts was established based on a detailed baseline assessment of the social, economic and environmental needs of the area; and the anticipated outcomes, while difficult to quantify, were described qualitatively. A strategic rationale for intervention was developed for projects of this kind. Multi-Criteria Analysis was found to be particularly useful at this stage when this project was competing with a number of others for resources.

At the **ex-ante appraisal stage** (project-level decisions involving option analysis): this stage was concerned with a detailed analysis of the relative value for money of different options to deliver the project's objectives. A detailed assessment of the rationale for intervention was made, documenting the economic efficiency arguments (market failures) and equity grounds for public sector intervention. A series of SMART project objectives were defined, including target outputs and outcomes. A core element of the appraisal was an assessment of different options which included a variety of end uses as well as different mechanisms for deploying JESSICA funding. The appraisal involved making detailed estimates of the main parameters of performance, including the scale of land involved, the level of floorspace to be provided by type, the likely end use and target sectors of

occupiers. The appraisal set out how the project would benefit the target area for spatial impact analysis. The appraisals (in common with many others) had to supplement what was known about the project with evidence from elsewhere about employment densities (jobs per sq. m), additionality for similar types of project and what the appropriate range would be for monetary values for different types of net additional output. Cost Effectiveness Analysis and Cost Benefit Analysis (depending on size of project) were both used at this stage and a Benefit Cost Ratio was derived for each of the options to assist with option choice and to enable value for money benchmarking with projects of a similar nature and scale.

During and after the construction stage there should be ongoing **monitoring** to provide factual data on the scale of the project (land areas, floorspace by type, number of units available to let), record information on take-up and occupancy, including contact details for individual businesses.

Once the project was built, some level of **ex-post project evaluation** was considered appropriate. The evaluation included not only a quantitative component (focused on output and outcome measurement, valuation and value for money analysis) but also a qualitative element which explored the key lessons to be learned from the project and its contribution to wider programme benefits. The evaluation built upon all of the available information, including the original social, economic and environmental baseline for the target area, the rationale for intervention, the specification of SMART project objectives, the original output and outcome targets set for the project and the monitoring data on known outputs.

As noted earlier, the quantitative element included primary research (surveys) as well as analysis of monitoring information and of secondary and administrative data for the target area to enable the contribution of outputs to outcomes to be estimated. The evaluation made clear conclusions on how far the JESSICA project had met its objectives and captured valuable data which could be used to benchmark the performance of other similar JESSICA projects

1.2.2 Implications for the Wielkopolska Financial Instruments

The Wielkopolska region in Poland is situated on important trade routes between Eastern and Western Europe. However, it should be remembered that this is a peripheral location in comparison to main development centres of the European Union.[65]

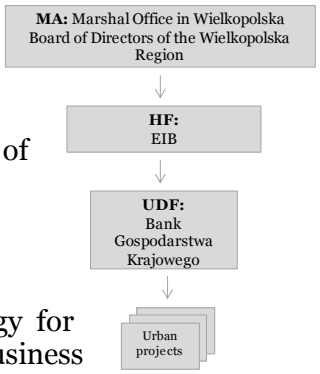
Wielkopolska region can be characterised as the second region in Poland in terms of area - 29 826 km² (9.53%) and the third region in Poland in terms of population - 3.4m (8.9%). The capital of the Wielkopolska region is Poznań. In total, there are 109 cities and 55.5% of the population lives in cities.

This region is characterised by a considerable demand for urban regeneration projects in both the largest cities as well as in small and medium towns. Areas which need regeneration include degraded parts of towns and cities, and post-military and post-industrial areas. Cities in the region are interested in the long-term development of urban

[65] Development Strategy of Wielkopolska region by 2020, December 2005

areas to stimulate growth. There is therefore a significant market potential for regeneration and business enhancement projects in Wielkopolska, which was recognised in measure 4.1 of Priority IV of the Wielkopolska Regional Operation Programme 2007-2013 ("WROP"): "Revitalization of urban area" as well as measure 1.4 of Priority I: "Support for the Investments linked to Regional Strategy for Innovation", Scheme III: "Investment in support of business environment institutions in urban areas"[66]

The Managing Authority of the Wielkopolska Regional Operational Programme (WROP), agreed with the EIB to establish a JESSICA Holding Fund in April 2009.



Investing funds aim at financing urban projects for the revitalisation of problem areas, as further described in two measures of the WROP:

- Measure 4.1 "Revitalisation of urban areas" of Priority IV; and
- Measure 1.4 "Support for the Investments linked to Regional Strategy for Innovation" of Priority I, scheme III „Investments in support of business environment institutions in urban areas".

These projects shall be articulated within the relevant Integrated Plans for Sustainable Urban Development and aim at:

- Revitalising urban areas;
- Revitalising post-military and post-industrial area;
- Strengthening business environment institutions; and
- Contributing to sustainable growth and increased competitiveness of urban areas in the Wielkopolska region

Revitalisation projects should aim at strengthening the local development potential in dysfunctional city areas with problems such as:

- Social exclusion;
- High level of crime; and
- Total decrease of living standard condition;
- Dysfunctional city areas.

OBJECTIVE

Revitalisation projects are expected to combine:

- Commercial components designed to yield return on investments; and

66 JESSICA Holding Fund Wielkopolska/Poland, Call for Expression of Interest, EIB, April 2010

- Social components leading to: improvements in quality of life, a reduction of adverse social factors and a favourable environmental impact.

The Wielkopolska HF investment strategy particularly focuses on:

- Supporting initiatives employing local potential and enhancing local entrepreneurship in those urban areas which lag behind in terms of development;
- Supporting regeneration of degraded town centres in smaller towns as well as selected deprived districts of larger cities;
- Regenerating large elements of degraded or de-capitalised urban infrastructure (with particular emphasis on houses with significant historic or architectural value);
- Improving the condition of housing stock within the framework of applicable EU regulations (including adaptation of buildings for inhabitants with low income);
- Reinforcing the pro-development potential of post-military and post-industrial areas; and
- Creating and developing existing business environment institutions and entrepreneurship incubators as well as industrial parks.

EX-ANTE APPRAISAL

The Urban Development Fund Manager in Wielkopolska developed a "social index" to assess the non-financial impact of projects which could be used as a negotiation tool at UDF level to make loans more preferential than commercial rate loans.

This index brings together information on the anticipated performance of projects and scores its anticipated contribution to economic, environmental and social objectives. Weights are attached to the objectives being pursued and the weighted scores are then used to assess the relative performance of project proposals and enable a justification regarding sub-market financial support through JESSICA (i.e. "scoring" higher or lower in social index leads to the reduction or raise in the JESSICA loan basis points).

	Environmental	**Social**	**Economic** (non-financial)
a) Impact:	e.g. brownfield land reclamation	e.g. community facilities	e.g. level of job creation
b) Weight for each criterion (adding to 10 across the three criteria)	5	2	3
c) Score (out of 10) for performance	5	8	7
d) Weighted score (b x c)	25	16	21
TOTAL		62	

INPUT

JESSICA was implemented with ERDF (75%) and State Budget (25%) resources for a total sum of €66M:

- 60% for large cities (over 50,000 inhabitants);
- 40% for smaller cities; and
- €10M for urban projects strengthening institutions that support the business environment.

The size of investment projects varies from PLN 1 million (€252,000) to PLN 220 million (€55.4m).

ACTIVITIES

JESSICA loans with preferential conditions were used for a wide range of projects, including a bowling centre, a shopping mall, business incubators, office spaces, hostels, hotels, underground car parks, a municipal market place and others.

New investment in fixed assets and intangible assets were connected with:

- Setting up a new enterprise;
- Extension of an existing enterprise;
- Diversification of production; and the
- Purchase of fixed assets directly connected with an enterprise which was closed or would be closed.

Conditions of financial products in revitalization programmes were based on:

- Regional investment aid in the framework of regional operational programmes;
- Aid is given for a new investment in a region; and
- Share of loans in investment costs: maximum 75% of the total eligible investment cost.

Preferential loans:

- Social indicator was taken into account;
- Loan maturity: maximum 20 years;
- Grace period: maximum 4 years (for capital); and
- Loan interest rate (currently 4%): set on the basis of the reference rate of the National Bank of Poland possibly reduced by the social indicator.

Examples of on-going projects are presented in the figures below.

Shopping mall

Three-level shopping mall with about 120 retail and service premises (total area about 28 000 m2)

The investment situated in the post-industrial facilities area in the city centre (near the old town market)

Social elements: improving the image of the old town, bike path, parking, the place for a city library and tourist information in the old tenement house to be bought by the Investor

Total investment value: PLN 219 M

Loan: PLN 50 M

Technological park

Public Investor - each building will include a separate technological part and typical offices

Institution supporting business environment – the three-stage investment including renovation of historic buildings

Social elements: business incubator

Loan: PLN 18,5 M

Total investment value: PLN 30,3 M

OUTPUTS and OUTCOMES

The objectives of the investment strategy are intended to be achieved by the Wielkopolska HF through an Urban Development Fund in line with the investment criteria and contribute to reaching the target outputs of the Wielkopolska Regional Operational Programme:

Key targets

Surface area of regenerated zones (ha)	1000
Number of jobs created in problem areas	340
Number of jobs created in problem areas – including jobs for women	189
Number of supported institutions of the business surrounding	1
Number of jobs created (gross, corresponding to full time jobs)	27
Number of jobs created (gross, corresponding to full time jobs) – including jobs for women	15
Number of jobs created in R&D – research jobs (within 5 years since the beginning of project execution)	1

Additional

Number of projects related to urban regeneration and renewal	20
Number of projects related to urban regeneration and renewal - including number of projects ensuring sustainable development and enhancement of the attractiveness of cities	10
Number of projects related to urban regeneration and renewal – including number of projects promoting entrepreneurship and the use of new technologies	5
Number of projects related to urban regeneration and renewal – including number of projects offering services fostering equal opportunities and preventing social exclusion of national minorities and young people	5

EX-POST EVALUATION

Ex-post evaluations examine the actual outturn of a policy against its projected outturn. Ideally, it should also assess the outturn against a "no intervention" scenario, by establishing a counterfactual against which to measure impact. The evaluation findings provide valuable feedback for future policy design, and are a distinctive learning contribution to the policy cycle and the JESSICA investment cycle.

CONCLUSIONS BY TYPE OF EVALUATION PARADIGMS

The following table summarises and rates at high level the existing approaches of evaluation paradigms for the JESSICA instrument in Wielkopolska.

Evaluation paradigms	Relevance	Existing approaches
Logical framework	High	The Wielkopolska Regional Operational Programme 2007-2013 (WROP) applies a logical framework where intervention logic, causal links and assumptions are established and objectives prioritised. For JESSICA, e.g. Measure 4.1 of Priority IV «Revitalisation of urban areas»
Cost Benefit Analysis	High	Approximated by social index, quasi-monetary value to non-financial impacts
Spatial impact Analysis	High	- Area-based revitalisation - Spatial impact considered in long-term local revitalisation plan
Value for Money	Medium	- Decision to use JESSICA for thematic area where reflows can be achieved - Each project should exhibit minimum financial viability
Multi-Criteria Analysis	Medium	- MCA used for non-financial criteria assessed in WROP and in defining thematic area for UDF investments

1.3 Urban infrastructure

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

JESSICA investments across urban infrastructure include urban transit, water, waste and energy projects. All of these forms of infrastructure play an important role in achieving sustainable urban development in city areas. A primary concern is how to drive environmental enhancements, e.g. through adequate incentives, while investing in projects which are also meant to create wider economic, financial and non-financial benefits.

The need to reduce waste and emissions in an environmentally and economically sustainable manner is paramount across urban areas in the EU. Important components of achieving this goal include investing in power plants where energy generation is based on renewable energy sources and industrial plants that recycle waste products (including organic materials, plastics and metals).

Tracking output and outcome changes

The three main types of urban infrastructure under investigation include: (i) transport infrastructure, (ii) waste infrastructure, and (iii) energy infrastructure.

(i) For *transport infrastructure*, output indicators typically focus on economic objectives such as journey time savings. For instance, the UK Department for Transport's WebTAG67, multimodal guidance on appraising transport projects and proposals was introduced in 2003 and has been applied widely for measuring the change, costs and benefits of schemes associated with a range of transport infrastructure projects. Under this framework, the economic **output** indicators seek to ascertain change against five key objectives:

- To get good value for money in relation to impacts on public accounts;
- To improve transport economic efficiency for business users and transport providers;
- To improve transport economic efficiency for consumer users;
- To improve reliability; and
- To provide wider economic benefits.

Appraising transport schemes involves cost-benefit analysis, where the benefits of a scheme are balanced against its costs; and the calculation of the costs includes an assessment of impacts of a scheme on pedestrians, cyclists and other road users; with a monetary value applied to these impacts.

More recently, there has been increasing emphasis on wider economic impacts associated with major infrastructure schemes, and in particular agglomeration benefits measured by the impact of transport connectivity improvements on productivity and GDP.

Economic output indicators and broader outcomes include VFM, transport economic efficiency across user groups and wider economic benefits (including agglomeration benefits).

On the environmental aspects, the UK Department for Transport's WebTAG guidance identifies ten indicators, which are:

Transport infrastructure output indicators

1 Noise
2 Local air quality
3 Greenhouse gases
4 Protection/enhancement of the landscape
5 Protection/enhancement of the townscape
6 Protection of the heritage of historic resources
7 Support of biodiversity
8 Protection of the water environment
9 Encouragement of physical fitness
10 Journey ambience (e.g. street cleanliness, provision of bins / benches, pavements with no cracks and vehicles not on the pavement,…).

Many of these indicators can only be assessed qualitatively however due to a lack of evidence to attribute impacts accurately, and to understand robustly the variability of impacts for different schemes in different cities.

Social impacts are typically captured in the appraisal of economic aspects of schemes. In particular, the impact of enhanced connectivity delivered by transport infrastructure. It is common practice to link infrastructure proposals to 'regeneration areas' and to measure the impact on accessibility to jobs for residents of areas of deprivation (for example, through the use of travel time analysis). Social aspects are also captured within the safety analysis of schemes – through reduced accidents and enhanced security, with clear health and productivity consequences too.

(ii) For *waste infrastructure*, direct **output** indicators typically focus on resource and environmental based indicators. These may include:

Waste infrastructure output indicators

1 The extent of diversion of waste from landfill
2 Emissions of methane or overall environmental impact
3 The degree of value in recovery of metals and recycling and reuse delivered by the reprocessing plant or through energy recovery (heat and power)
4 The utilisation of the system in responding to variances in the tonnage and composition of the waste to maintain efficiency within the industrial plant
5 Wider outcomes and impacts can also relate to the reduction of carbon emissions as well as the subsequent off-setting the wider harmful contribution of power stations to global emissions, or through the production of plastics or the production and use of chemical based fertilisers for example

(iii) For *energy infrastructure*, **output** indicators focus on economic employment and income based economic outputs and carbon savings. The Energy Saving Trust Economic Impacts Model[68] has been applied to estimate the direct, net and net additional economic effects of installing a range of different micro-generation technologies and domestic energy efficiency measures.

The model further estimates carbon emissions and energy consumption reductions and financial savings based on the housing stock. There are many different forms of energy based infrastructure, including electricity, gas, oil and potentially carbon dioxide transport networks to enable carbon capture and storage if the demonstration projects prove the

68 The Energy Savings Trust Economic Impacts Model, EST

viability of associated technology, and its environmental and commercial performance. Economic outputs and specific output indicators vary amongst energy infrastructure, examples include:

Energy infrastructure output indicators

Economic outputs

1 Job creation
2 GVA by sector
3 Carbon savings (CO2)
4 Energy savings (kWh)

Specific outputs

1 Green House Gas (GHG) emissions (total, per capita, per employee)
2 Percentage of waste products used for energy conversion (relative to % recycled and landfill)
3 Percentage of households on district heating
4 Installed capacity of solar (per unit area, per capita)
5 Percentage of rooftops covered by solar
6 Share of renewables in the energy mix
7 Energy self-sufficiency (measured as % of energy demand relative to total energy supply, adjusted for imports/exports, within the geographical area)
8 Percentage self-generation by industry
9 Net supply of renewably generated energy to urban area

Not all of these outputs will be relevant for every scheme, but they provide a useful menu of core indicators from which to consider the range of possible direct and indirect benefits.

The ultimate objective of waste to energy schemes is to generate lasting **outcomes**. These may include:

Waste and energy infrastructure outcome indicators

1 Increasing economic outputs measured in jobs and GVA (gross value added)
2 Supply chain benefits to firms reprocessing plastics, glass and paper and organic products – in terms of turnover, jobs and GVA
3 Delivering EU 2020 policy objectives including the renewable energy directive
4 Bringing about behavioural change for local authorities and businesses in respect of waste recycled and reused
5 Reducing landfill and emissions pertaining to waste (including methane); and reducing GHGs, including CO2

Across all forms of urban infrastructure, the returns on investment can take time to materialise. The implications for JESSICA and the EU programming period are clear, the time taken to recycle funds and reinvest income streams may well be longer than a seven year cycle, EU programmes therefore must be flexible and able to account for this over the medium term.

The more recent studies indicate that the long-term impact of infrastructure on the economy is positive, and that while an increase in investment in public capital may act as a substitute for private capital initially, in the long run the dominant effect is one of complementarity. However, it would appear that investment in infrastructure does not, on the whole, create (directly) long-term employment. The studies also suggest that patterns of underinvestment in infrastructure in some countries may have something to do with the difficulties governments experience in estimating the overall long-term effects of infrastructure on the economy. Making the 'right' decision regarding infrastructure development is often difficult because of the public good nature of the benefits (how much

is enough? who should benefit?). Moreover, the broader impact of infrastructure is clearly conditional on how efficiently it is used and for what purpose.

Spatial impacts

For *transport infrastructure* projects, the spatial aspect of impacts is often captured explicitly in formal modelling and transport and economic data. Geographical zones are established in order to enable such modelling to be undertaken. Most quantitative results are produced spatially, including journey time savings. Labour market impacts are also captured spatially, both through consideration of the impact of transport connectivity on economic activity rates in 'regeneration areas' and estimation of productivity impacts realised through agglomeration effects. Behavioural change such as shift among transport modes is also captured. In terms of the overall cost-benefit ratio however, impacts are often aggregated and reported at the national level to enable comparisons with other projects to establish priorities for investment.

In *waste and energy infrastructure* projects, spatial impacts are considered mostly in terms of employment and income opportunities created locally during the construction and operation of new facilities. For example, in the case of the construction of a new power station, the proportion of benefits in terms of employment and supply chain opportunities captured by the local community is a key performance metric. This is driven by the adverse impacts often experienced locally around the construction of projects, against the wider regional or national benefits that typically accrue. Higher level indicators, often the primary drivers of the investments, such as quantity of waste/power and carbon impact are reported at a higher spatial scale.

Additionality

The HM Treasury Green Book[69] and English Partnerships Guide to Additionality[70] provide the guidance frameworks that have been traditionally applied widely across project and programme performance measurement. The additionality of jobs and income is often considered at different spatial scales.

In many cases, environmental output indicators are assessed using both a 'reference case' and 'intervention' option to enable the additionality of the project under consideration to be assessed taking into account the counterfactual (to consider the likely impacts without the project). This necessitates projecting forward key parameters relating to output indicators over a suitable forward time horizon. Depending on the outputs, this could be either a short or long term time horizon. For example, in the case of CO_2 emissions the period being considered could be relatively long as the cumulative costs and benefits of the investment are expected to accrue over a long time period.

For a waste to energy plant there are three important considerations in relation to assessing additionality:

1. For each megawatt of electricity generated from the combustion of municipal waste there is an equivalent saving from the production of energy from the burning of fossil fuels in conventional power plants;

2. Waste to energy facilities separate ferrous and non-ferrous metals for recycling which is more energy efficient than mining virgin materials for the production of new metals such as steel, as a result there are further substantial energy savings, benefits in respect of less exploitation of the planets untapped resources which are not depleted further for

69 Green Book, HM Treasury, http://www.hm-treasury.gov.uk/data_greenbook_index.htm

70 Guide to Additionality, English Partnerships

future generations and the additional avoidance of GHG emissions the production of new metals would generate; and

3. When a tonne of solid waste is delivered to the waste to energy facility the methane which would have been generated in landfill is avoided. While some of the methane could be harnessed, the rest would be emitted into the atmosphere. Methane is considerably far more potent that CO_2 and this represents additionality in environmental benefits.

In respect of GHG emission reduction the spatial area of impact is global and the vulnerability to climate change can impact communities who are not particularly well equipped to cope, mitigate or adapt to impacts. For example, low-lying populations in the developing world living in coastal areas subject to increased incidences of flooding. The spatial impacts of climate change are not evenly distributed and this is rarely accounted for in the assessment of outcomes.

Valuing the benefits

The economic performance of transport investments is typically valued in terms of the value of quantifiable outputs such as operating cost and journey time savings, employment and wider economic benefits (such as agglomeration). Assessments monetise these outputs drawing on benchmarks for the value of time across user groups and applying average values for Gross Value Added (GVA) and productivity per job. Due to the nature of transport infrastructure investments – involving relatively large capital investment and having long lifetimes – most assessments value a stream of 'persistence' benefits over a 30 or 60 year time horizon and express the aggregate benefit as a Present Value. Environmental benefits can be monetised by applying a value to the volume of CO_2 emission impacts.

In the waste and energy sectors, the value of employment and income can be expressed in a similar manner (utilising average GVA per job figures for the appropriate industrial sector). These impacts typically occur over a shorter time period than in the transport sector (for example, the construction of a power station will realise additional employment quickly through both construction and operation effects). For waste, the tonnage of waste diverted can be valued (by comparing the costs). For both waste and energy, CO_2 savings can be valued using established benchmark values per tonne (as with transport). VFM metrics can be considered in terms of the cost of a unit of renewable energy generated or waste processed.

The valuation of environmental outcomes (other than reduced CO_2 emissions) across all forms of urban infrastructure is more variable. By their nature, some environmental impacts are less tangible and particularly challenging to value, largely because an observed and agreed evidence base does not exist in a codified form which can be applied according to the different context across countries and cities. Some studies attempt to put valuations on impacts such as visual amenity and landscape but there is a large degree of variation in values. Typically, these studies apply a 'stated preference' survey approach to establishing estimates of monetary values.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

Chapter 4 and 5 emphasised the unique nature of the JESSICA approach and the performance measurement framework highlighted the importance of considering programme as well as project benefits and explained what these are and methodologies that are appropriate for measuring them. In the concluding part of the case study example

below, we illustrate how these concepts can be brought to life through the lens of a hypothetical JESSICA project.

Applying the toolkit at different stages of the programme cycle

The methodologies are applied across the programme development to implementation and evaluation cycle, encapsulating for example the original idea and mandate which may well be formulated and documented in an outline business case which sets out the mandate for action. This is explored further and the options, costs and benefits are examined in the ex-ante economic appraisal, and if the business case stacks up throughout implementation and the on-going monitoring, review and refinement of the project activities and finally at the ex-post evaluation (depending on the scale of the investment and the resources available for technical advisory work and the in-house capabilities of the Managing Authority and UDF). The methodologies are applied according to the resources, priorities and context of JESSICA implementation that varies among Member State and city area in question.

In the initial phases broad estimates are employed which are based upon established benchmarks for key parameters. During ex-ante appraisal the value for money (VFM) of the range of options to deliver the objectives is estimated. During the ex-post evaluation, quantitative and qualitative evidence is collated from project monitoring and undertaken surveys to provide a robust evidence base from which analysis can determine actual outputs and outcomes.

1.3.1 Case Study example: Waste to energy plant

The case study example here, developed to help Managing Authorities, UDFs and stakeholders shape JESSICA investments that deliver returns greater than just the financial benefits is based upon waste infrastructure, specifically, a waste to energy plant.

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Converting waste to energy is an important component in the transition to a low carbon economy, including investments in both waste to energy/fuel facilities (excluding incineration) and value added re-use, recycling or reprocessing facilities.

For example, reprocessing used plastics into a form which can be refined, up-graded and sold has environmental, resource efficiency, financial and economic benefits. The wider non-financial benefits are an important element in a JESSICA investment, not least because they help to justify State aid exemption on the basis of a market failure and comply with the ERDF requirements. ERDF form an important source of grant funds, which are matched and co-financed, within the revolving urban development fund and hence the relevant regulations and reporting requirements are applicable.

The broad context for implementing waste to energy plants in large urban areas across the EU, considered in this example, includes the following parameters: a typical large city in the EU could produce 1 million tons of organic waste a year, which could generate revenues of around €60 million a year. A typical city can produce up to 100,000 tons of plastics, of which much has traditionally ended up in landfill. There are many forms of plastic which of commercial value which could be worth up to €50 million a year. This represents a potential sustainable investment opportunity, which can also help cities to become energy efficient and cut carbon emissions as well as methane and other harmful greenhouse gasses. This provides the rationale and an opportunity for JESSICA backed investments which deliver genuine environmental sustainable solutions. For example, a

waste to energy plant focused on integrating alternative waste technologies, such as anaerobic digestion and advanced thermal treatment technologies.

Tracking output and outcome changes

There are a range of direct outputs and outcomes relating to investment in waste to energy plants. The **direct outputs** include:

- 1 business created;
- 50 direct jobs created;
- Processing 400,000 tonnes of municipal waste (depending on the type of the waste to energy plant, outputs could include):
  - X tonnes of food waste diverted from landfill;
  - X tonnes commercial waste diverted from landfill;
  - X tonnes farm based products diverted from landfill.
- Average 30 MW of clean electricity generated
- Recycling/recovery - depending on the type of the waste to energy plant, outputs could include:
  - 50,000 tonnes of bottom ash recovered and recycled
  - 5,000 tonnes of ferrous metals recovered and recycled
  - 1,000 tonnes of non-ferrous metals recovered and recycled

These outputs will contribute to **outcomes**, including the following:

- Gross value added €2.5 million;
- Supply chain benefits to firms turnover in the reprocessing plastics, glass and paper and organic products;
- Indirect employment for 20 people in the supply chain and induced employment for 5 people through the multiple impact of spending of wages locally;
- Delivering EU 2020 policy objectives including the renewable energy directive;
- Reduce landfill and methane and emissions pertaining to waste; and
- Reducing GHGs and CO_2 emissions.

In respect of the impact on GHGs, municipal solid waste contains approximately the same mass fraction of carbon as CO_2 itself (27%), so treatment of 1 metric tonne produces approximately 1 metric tonnes of CO_2 and there are further benefits to preventing methane releases, which is more harmful to the atmosphere than carbon dioxide.

The exact carbon savings would need to be calculated, monitored and verified as part of the assessment of the technical performance, materials and outputs produced in the waste to energy plant. For example, a 550,000 tonnes per year waste to energy facility can avoid the emissions of 270,000 tonnes of carbon dioxide a year.

Additionality

There are several approaches that can be applied when assessing project additionality. Monitoring of job creation, average incomes, location of staff domicile can help to inform the area of impact and leakage. Cost-benefit analysis of the quantifiable impacts can be undertaken and willingness to pay surveys used to help draw out and monetise any non-quantifiable impacts.

Supply chain impacts can be calculated through interrogation of supplier databases including average annual expenditure to identify scale and followed up with industry interviews to identify the proportion of supplier turnover which is attributable to the waste to energy plant and associated employment / income.

On-going monitoring and verification of emissions is important as the technical specification and operational performance of waste to energy plants can differ according to a range of environmental and human factors.

The methodology and metrics to identify the probability and scale of impact of climate change from investment decisions made across the world in respect of waste and energy are not well defined. Pinpointing locations and attributing values is challenging due to the dispersed, future and unforeseen consequences of impacts of pollution. The literature in this area is vastly improving and internationally agreed approaches and metrics which are relevant to technologies and environmental externalities need to be developed. This will help to identify more accurate metrics of the 'additionality' of the use of renewable vis-à-vis finite fossil fuel resources in power plants.

Valuing the benefits

In monetising the benefits associated with a waste to energy plant, there is a lack of agreed evidence base around some important aspects. Converting direct jobs to GVA is relatively straightforward using average output and employment data from national data sources. However, the valuation of supply chain benefits, including the economic value of the material which is reprocessed and the jobs created is more complex and will depend on the methods of processing and prevailing market value of materials.

The wider consideration associated with investment in waste to energy plants is the carbon off-set and the verification of the levels of clean energy produced and strictly speaking the additionality is also determined by how the energy which has been created has been put to use.

The calculation methodology is also vital; the evidence base needs to be improved for example in off-setting the production of chemical fertilizer through the reprocessing of organic food to create compost. There is a moot point concerning how far you count the carbon you have off-set in the organic reprocessing versus the chemical production of fertilizer and its use.

The shadow price of carbon and the price of carbon provide a basis for valuing the cost of the intervention and monetising this against the value of carbon saved. The verification process needs to account for human and wider behavioural and performance factors (which may limit the operational effectiveness of technological solutions) and not simply adopt a maximum technical achievable approach.

The feedback loops are not always accurately understood in climate science and the causal path and consequence in the long term are not always clear, which creates inherent

uncertainty which can be applied to the true value of alleviating pollution or reducing emissions and the impact of global warming for future generations. Valuing the benefits for future generations in today's prices is not normally accounted for in investment decisions. In summary, the methods to value, verify and compare CO_2 savings needs to be more robust and accurate.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, coordination and tackling market failure)

There are a range of clear market failures to consider. Current methodologies do not have a clear basis or established range of metrics to value the future environmental conditions and externalities.

Waste to energy plant benefits are about addressing security of supply as well as resource efficiency and reducing depletion of finite resources. The investment portfolio is concerned with whole systems approaches and non-financial impacts, in particular environmental impacts as part of a balanced decisions making process.

The re-use of rare materials, rather than waste and the opportunity cost of new mining is an important consideration of wider economic benefits and value added across the supply chain and overall reductions in carbon emissions whilst maintaining productivity and dampening cost inflation in industries reliant upon metals.

There is some debate over the benefits of bio-mass at a strategic level (especially in relation to the production of food). This highlights the need to make careful and informed decisions about the ability of technology to deliver sustainable solutions which stack up environmentally as well as economically and financially.

Applying the toolkit at different stages of the programme cycle

It will be important to develop the evidence base, environmental and technical benchmarks and apply the applicable metrics across the stages of appraisal and evaluation. At the **strategic planning stage** to inform investment decisions and at the **ex-ante appraisal stage** to weigh up the options and understand the potential magnitude of impacts to make investment decisions.

Collecting evaluation evidence during **monitoring** is crucial to refine investment decisions. The final **ex post project evaluation** will help to identify the scale of final impacts, the timeframe for this can be considerable and lessons learnt can help to improve the evidence base for future programming periods.

1.3.2 Implications for the London Waste to Energy Fund

Background rationale and the socio-economic and policy drivers for JESSICA

The Foresight Environment Fund[71] (FEF LP) in London has been established to attract private investment/ funds and utilise public funds to demonstrate the effectiveness of

[71] http://www.foresightgroup.eu/page/320/Foresight-Environmental-Fund.htm

investment in new forms of waste management and use including anaerobic digestion, materials recovery facilities and other forms of thermal treatment and gasification set out in the table below.

Technology		Description
Fuel preparation	**Mechanical biological treatment/mechanical heat treatment**	Known as a pre-treatment technology because it combines a sorting process (for removing metals and plastics from waste product) with a biological treatment such as anaerobic digestion or composting. Able to process household, industrial and commercial wastes. Used primarily to produce a waste product with a higher calorific value which will be more efficient at producing energy. Also can produce biogas.
	Clean/Dirty MRF	Plant that separates recyclates and processes them into materials that can be sold to end users (paper mills, steel mills etc.) Benefits depend on how much energy is used in the recycling process. This in turn depends on the recyclate. For example recycling both aluminium and paper is less energy intensive than creating virgin materials. Dirty MRF also produces fuel.
	Reprocessing facilities	Plant that separates recyclates and reprocesses them into reusable materials
Biological treatment technologies	**Anaerobic digestion (AD)**	Breaks down organic waste including green garden waste, food waste and sewage sludge. Produces biogas. Solid residual can be used in agriculture.
Thermal treatment technologies	**Incineration**	Significantly reduces solid mass and volume of waste. Can be used to create heat and electricity.
	Gasification	Reacts solid waste at high temperatures to make a syngas (fuel) which is classed as a renewable energy.
	Pyrolysis	Used to reduce volumes of solid waste, particularly domestic waste. Can be integrated with mechanical biological treatment and anaerobic digestion. Creates syngas and solid char product that can be used as fertilizer.
	Plasma gasification	Significantly reduces volumes of solid waste. Produces syngas and solid waste product. Creates heat and electricity.

The market failure arguments are predicated on addressing externalities by diverting waste from landfill and generating wider environmental, social and economic benefits as well as demonstrating investment returns from the overall rationale.

The absence of bank debt to fund projects in the waste sector, as lending institutions become more conservative in their overall approach to lending is another important driver for JESSICA investments in the waste sector. This includes a range of perceived risk factors relating to new technologies, however, the situation has changed substantially since the impact of the credit crunch and financial crises.

Why is JESSICA needed in the local context?

JESSICA is needed to help to overcome the lack of capital dedicated to investing in new solutions that minimize the environmental impacts associated with landfill, incineration and the methane and carbon emissions associated with mass-burn or old approaches to waste management.

There is a significant potential for (demonstration) projects in urban waste to energy; however, demonstrating new solutions and acting as the catalyst to obtain additional equity and debt investment is important in itself. Here JESSICA can act as an impact fund by demonstrating the effectiveness of investment vehicles, providing structured solutions to achieve financial returns as well as wider socio-economic impacts.

A core objective within the London Operational Programme (OP) is to promote sustainable, environmentally efficient growth in London, capitalising on London's innovation and knowledge resources. Under Priority 3: Sustainable places for business a £100 million London Green Fund (LGF) is set up to invest in schemes that will cut London's carbon emissions. The fund was launched in October 2009 by the Mayor of London and the European Commissioner for Regional Policy - the first JESSICA Holding fund in the UK[72].

It is made up of £50 million from the London ERDF Programme, £32 million from the London Development Agency (LDA), and £18 million from the London Waste and Recycling Board (LWARB). The EIB manages the London Green Fund on behalf of the LDA and LWARB. The LGF will provide funding for two UDFs that will invest directly in waste and energy efficiency projects. The Foresight Environmental Fund UDF was established in March 2011 and £35 million was allocated to it from the LGF[73].

What is the main driver for JESSICA?

The overall driver for JESSICA funding within the PPP structure is to provide financial support to act as a catalyst to the market to overcome the lack of capital investment in new forms of waste treatment, recycling and energy generation.

The ability for an equity fund to provide capital for projects where traditional lenders are less likely to invest in high growth SMEs means that JESSICA funds are a vital component to ensure deal flow within the current constrained financial environment.

[72] http://www.london.gov.uk/erdf/programme-content

[73] http://www.london.gov.uk/erdf/jessica-london-green-fund

Set out below is an overview of the JESSICA governance arrangements for the LGF.

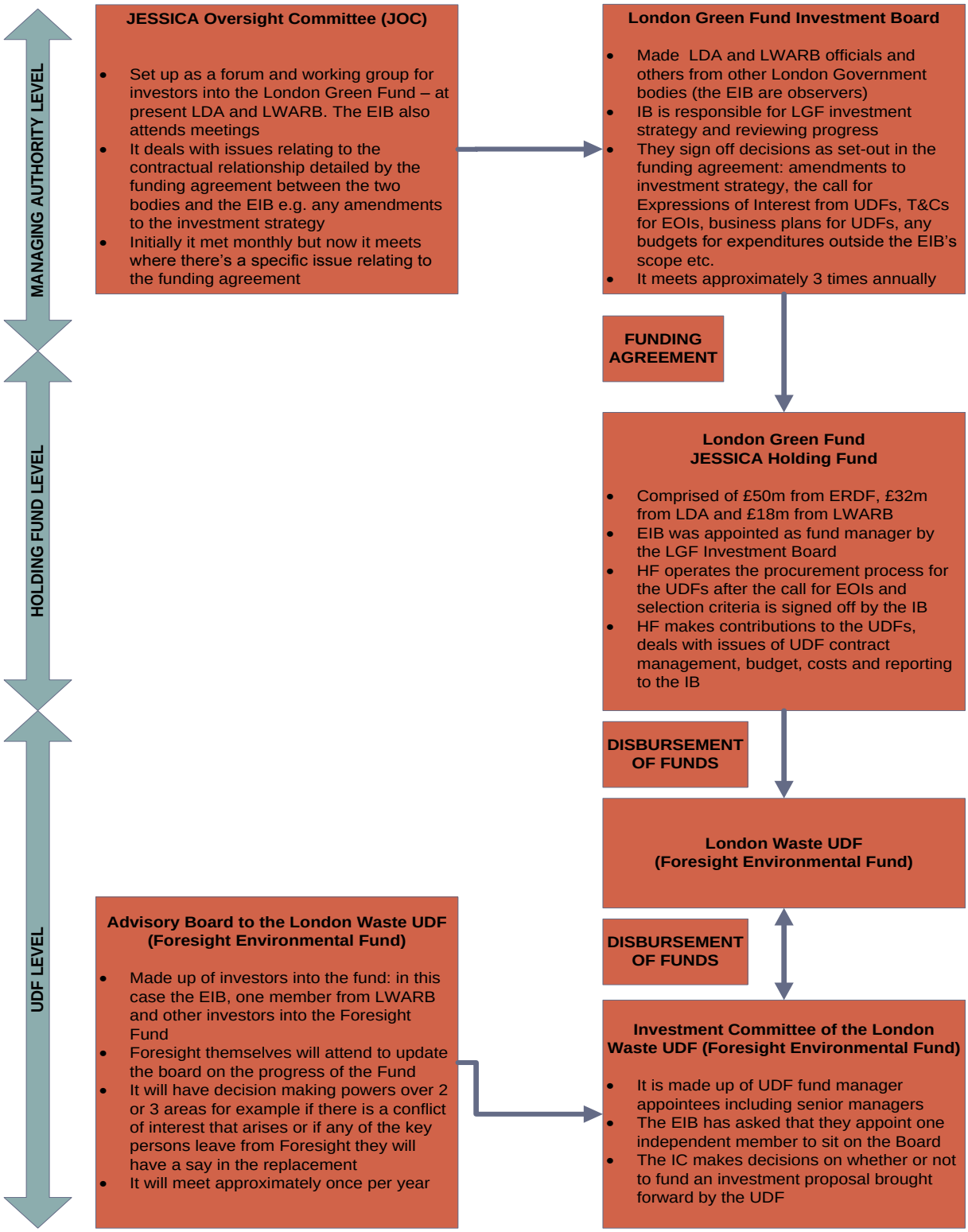


Figure 10. JESSICA Foresight Environmental Fund Case Study UDF

OBJECTIVE

The combination of JESSICA investment is aimed at delivering improved efficiencies by harnessing energy from waste, avoiding landfill and associated methane emissions and by demonstrating to the market how impact funds can work to attract additional private finance.

The Fund has to make a return and this enhances its overall effectiveness, certainly in the long term compared to the traditional use of one off grant payments and the cost of the bureaucracy to distribute, monitor and administer grant funds.

The wider benefits that are projected during the ex-ante appraisal include the fund level targets of tonnes diverted from landfill, CO_2 reductions and job creation in the new plant. In this respect, sustainability indicators are integral to the work of the Foresight Environment Fund.

EX-ANTE APPRAISAL

- The overall objectives are to generate financial and non-financial returns within the waste industry. This includes investments in new technologies and equity participations in private companies;

- The main costs and benefits include the project financing, interest repayment on the loan including quasi-equity terms and the overall level of returns to provide the on-going revenue for subsequent investments by the Holding Fund. The wider benefits that are projected during the ex-ante appraisal include the fund level targets of tonnes diverted from landfill, CO_2 reductions and job creation in the new plant;

- The main outcomes include the:

  - Wider environmental benefits;

  - Future revenue streams; and

  - Attraction of secondary finance to leverage additional institutional and private finance.

INPUTS

The financial inputs generate a range of project outcomes in itself. The rigour applied during the establishment of the Fund helps to improve the quality of investments. The fact that investments are geared towards projects on the edge of viability helps to overcome State aid rules. The process of ensuring that projects are suitable JESSICA investments means that each project is subject to in-depth analysis, both from a credit risk and socio-economic benefit point of view.

A key incentive to stimulate private sector participation is that every Euro of private investment is matched with one Euro of public funds. This means that the due diligence that has been undertaken by the EIB helps to provide assurance to new sources of private capital that the new waste fund is subject to sound banking principles and rules on probity and accountability.

Foresight seeks to act as the final funder; this helps to avoid crowding out commercial funds and to overcome State aid. However, there is a potential trade-off where commercial investments may be promoted quicker if the project can already demonstrate that it has attracted JESSICA funding, which enhances credibility in the eyes of private finance providers. Further, in the case of multi-party deals with a group of investors, including a technology provider, a land owner, a feedstock supplier and customer it is necessary for all parties to act in unison, the JESSICA UDF helps to provide a catalyst for the group to action.

Ensuring the right cost of capital is a crucial consideration too. This partly defines the deal flow and company size which is appropriate for JESSICA investment. Typically this is a medium sized company with a good balance sheet. Large companies can typically obtain capital at viable conditions through the market, unless their balance sheets are fragile, at which point they may not be a suitable recipient for a longer term revolving fund such as JESSICA.

The quality of the counterparty, as well as its financial position and ability to access capital are crucial considerations within the overall deal structure. The risk and return trade-off needs to be sufficiently attractive, while investing in projects that comply with European Commission regulations. International transactions in the solar sector can attract a yield in excess of 10% up to 14%, if these transactions are also index linked and backed up a Feed-in Tariff there needs to be a good reason to invest in projects that yield 7%.

The Fund manager takes on a corporate finance role and in this respect the up-front payment of management fees is helpful to enable the right team to be recruited to fulfil these functions, working closely with the investment company.

ACTIVITIES

The main activities of the Foresight Environment Fund during the initial lifecycle of the Fund is to act in a corporate finance role in order to shape promising investment propositions and ensure that the right mix of technology, deal structure and appropriate sharing of risk and reward is in place.

Details such as site selection, operator, technology, leases and contracts all have to be agreed to move from formulation into implementation. The overall investment selection process includes the considerations of multiple criteria, ranging from the financial returns, deliverability of the project, proven technology, feed stock contracts, appropriate site location, the quality of management, strength of relationships and consideration of wider strategic benefits.

The competitive process of bidding through a business planning submission also adds value during the formulation of the UDF. The extra levels of scrutiny and testing provide private investors with a degree of assurance that effective due diligence has been undertaken. While this necessarily takes time, it does also add value by ensuring that the preparation is thorough with clear objectives to guide implementation.

The main features of the Foresight Environment Fund are set out in the box below:

Foresight Environment Fund (LP)

Foresight is targeting up £70 million (£35 million from the London Green Fund and the balance of up to £35 million from Pension Funds, Venture Capital Trusts and private equities) and it targets municipalities as well as private companies and individual investors.

It operates in respect of priority 3 of the London OP: Sustainable places for business, where activities include:

- Waste to energy facilities;
- Value-added re-use, recycling or reprocessing facilities; or
- Other facilities displacing fossil fuel such as "waste to fuel."

The investment strategy focuses on:

- Creating a low or zero carbon employment sites and premises with high accompanying environmental specifications;
- Contributing to a low carbon economy through installing low or zero carbon energy; and
- Delivery of environmental systems, services and facilities and land remediation to support sustainable urban regeneration activity.

A set of output targets, integrated in Priority 3 of the regional OP, has been defined to benchmark the achievements of such objectives. The outputs are shared across a range of interventions. The OP targets are:

No. of demonstration projects show-casing latest co-generation or renewable energy technology systems
No. of jobs created
Additional capacity of renewable and co-generated energy production (mW)
No. of businesses supplied with low or zero carbon energy
CO2 Reduction
Waste diverted

ON-GOING MONITORING

Monitoring and implementation is carried out and information collected by UDFs is reported to the investment board on a periodic basis (usually three of four times a year). The Greater London Authority works in close partnership with the EIB in respect of governance and reporting. There is a formal monitoring strategy being developed to ensure compliance with EU Regulations. There is a JESSICA Oversight Committee, which is a working group for the two investors into the fund (GLA and LWARB), provides an integrated approach and manages the relationship with the EIB.

OUTPUTS

The Fund outline includes a target compound annual return of 20-30%, with a 2% annual management charge and 20% of the profits to be paid to the manager after investors have received all capital and profits equal to a compound annual return of 8%.

The current focus has been on securing the deal flow and achieving financial close on appropriate investments. The output monitoring data will reflect the Fund's financial and non-financial targets. The wider targets are principally the tonnes of waste diverted from landfill, CO_2 reductions and job creation in the new facilities that are in line with the London OP 2007-2013 Priority Axis 3 output indicators[74].

As part of its management role and to enhance accountability, the fund produces quarterly monitoring reports that are distributed to Foresight investors.

OUTCOMES

The wider outcomes that need to be captured will include how the impact fund has helped to demonstrate to secondary markets that investment returns and wider socio-economic and environmental benefits can be delivered through revolving funds. Results indicators (no. of businesses supplied with low or zero carbon energy and additional capacity of renewable and co-generated energy production (MW)) together with impact indicators (increase in GVA and increase in London's capacity to generate de-centralised co-generated and renewable energy) under Priority Axis 3 should be eventually assessed as well.

EX-POST EVALUATION

Ex-post evaluation examines the actual outturn of a policy against its projected outturn. Ideally, it should also assess the outturn against a "no intervention" scenario, by establishing a counterfactual against which to measure impact. Evaluation findings provide valuable feedback for future policy design, and are a distinctive learning contribution to the policy cycle and the JESSICA investment cycle. The agreement between Foresight and the investee company includes a requirement to comply with European Commission request from the European Union in respect of accountability, audit and evaluation

74
http://www.london.gov.uk/sites/default/files/London_ERDF_Operational_Programme_2007_to_2013.pdf (pg 63)

Specific timescales for an ex-post evaluation need to be agreed between the European institutions and MAs within the Member States; this includes the Greater London Authority, the London Waste and Recycling Board, Foresight and the actual investment projects too.

CONCLUSIONS BY EVALUATION PARADIGMS

The following table summarises the existing approaches of evaluation paradigms for Foresight Environment Fund.

Evaluation paradigms	Relevance	Existing approaches
Logical framework	High	The relevance of applying a logic chain and logical framework to the investment appraisal and impact evaluation of JESSICA needs to be considered by the UDFs in respect of how this will add value.
Cost-effectiveness Analysis	Medium	Cost-effectiveness analysis is not undertaken for Foresight.
Multi-Criteria Analysis	Medium	MCA is not undertaken for Foresight investment decisions.
Spatial impact Analysis	Medium	It is too early to comment on spatial impact analysis as none has been undertaken for Foresight

1.4 Energy efficiency

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Member States may use up to 4% of their total ERDF allocations on energy efficiency improvements and the use of renewable energy in existing housing. As a rough estimate, the 4% rule would permit Member States to allocate up to € 7.8 billion on housing[75].

The ERDF-funded projects may concern energy efficiency improvements in buildings, including existing social housing. The energy efficiency projects can focus on adapting or refurbishing existing public and private owned buildings to make them more sustainable and environmentally friendly, and to achieve energy efficiency improvements to existing social housing, i.e. in multi-family apartment buildings.

Across the EU and predominantly in Eastern European countries much of the housing stock is obsolete; inner-city housing, especially in the form of multi-apartment block buildings, is reaching the end of its useful life and consumes inadequately large amounts of energy. Even though it may not be directly threatened with collapse, the stock is in need of renovation. Delaying reconstruction will worsen the condition of the houses and lead to increased expenditures in future. Thus, a fall in housing quality due to the depreciation of the housing stock, the rise of residence costs and the obligations resulting from the European legal environment have led to the need to improve the energy efficiency of the housing stock.

Tracking output and outcome changes

There are important social and financial considerations concerning the roll out of energy efficiency measures too, not least with rising fuel costs and incidences of fuel poverty across the EU. This is equally applicable within affluent cities which have districts of severe deprivation such as Milan, London, Brussels, Manchester or Marseilles for example as well as in less competitive urban areas.

Improving the energy efficiency of public buildings, such as schools, libraries, social housing as well as administrative offices and cultural attractions helps to ease financial pressures and bestow a range of direct and intangible economic benefits for cities and its citizens.

The wider environmental benefits of reducing CO_2 emissions across European cities, where heating and cooling of buildings accounts for approximately 40% of emissions are also considerable.

In respect of energy efficiency the range of activities (with associated direct output indicators) are broadly focused upon the direct improvements to buildings, which include the following measures:

	Energy efficiency measures
Metering and controls	Automatic metering system
	BMS/controls upgrade
Lighting	Lighting - Energy efficient luminaries & controls
	External lighting control

75 Housing in JESSICA Operations, 2011, PwC, ARUP, Afi, Sinloc and LSE report

	Low energy external lighting
Small power	Small power management controls
	Low energy appliances & equipment
Heating, ventilation and air conditioning	Boiler upgrade (condensing boilers)
	Fans & pumps VSD
	AHU Heat recovery
	Chiller upgrade
	DHWS Point of use
Misc.	Vertical transportation control and management
	High efficiency motors on electric systems
	High efficiency measures on hydraulic lifts
Fabric	Air-tightness improvements
	Replacement glazing
	Roof Insulation upgrade
	Wall insulation - over cladding

Renewable resources and technologies which can provide alternative sources of energy to fossil fuels in cities are also important considerations for sustainable development and investments in urban areas. In this respect output indicators would relate to the deployment of air/ground source heat pumps; solar water heating; photo-voltaic (PV) solar power; combined heat and power (CHP)/bio-mass boilers; and wind turbines, micro generation etc.

Measuring the performance of these activities can be achieved through a limited set of **output** indicators, all of which are commonly used in regeneration schemes, including ERDF-supported schemes:

Energy efficiency output indicators	
1	Number of households with improved energy consumption classification
2	Number of multi-apartments building with improved energy consumption classification
3	Number of full-time equivalent jobs created
4	Number of full-time equivalent jobs safeguarded

As in previous sections, not all of these outputs will be relevant for every scheme, but they provide a useful menu of core indicators from which to choose.

The **outcome** indicators for energy efficiency are:

Energy efficiency outcome indicators	
1	Change in the heating consumption mWh
2	Saving on (change in) the energy and heating costs € (Cost €/sq. m/month)
3	Improving environmental amenity, well-being and quality of life
4	Increased property value
5	Worker hours and maintenance savings after renovation
6	Carbon dioxide emissions savings[76]
7	Social benefits (e.g. change in the way that we heat, light and ventilate commercial buildings and residential units)
8	Improvements in the employment rate

[76] In the UK the Energy Saving Trust have established a methodology by which the Cost-Benefit-Analysis (CBA) module is used to calculate the cost effectiveness in £/t CO_2, to measure the monetary value per tonne of carbon dioxide saved. This provides the cost-effectiveness measures.

Spatial impact

Spatial impacts are a key consideration for energy efficiency measures, where this is focused upon investments in new build and retro-fit measure the actual building is subject to monitoring and verification measures. This directly related to the spatial impact, although clearly the adverse consequences and externalities of CO_2 emissions and global warming are shared across the globe and not spatially constrained to one specific city or location. While large energy efficiency potentials often coincide with the location being a socially deprived areas or post-industrial, spatial impact considerations are usually not a primary driver of energy efficiency measures.

Additionality

The evidence base for assessing additionality is developing, in particularly the Environmental Valuation Reference Inventory[77] provides a useful resource for policy makers and practitioners to assess additionality[78].

Additionality is assessed by considering the carbon off-set from increasing energy efficiency. This includes the reprocessing materials for reuse and recycling and the subsequent carbon offset from the depletion of fossil fuels and burning of carbon.

The growing body of evidence also needs to consider what new technological developments and firms spin-out of low carbon environmental goods and services, which would not have been developed if the market had been left to its own devices. This represents additionality as well as economic added value.

In relation to energy-efficiency investments, where performance is critically dependent on energy cost savings, it is again appropriate to establish deadweight by primary research that may involve the use of questionnaires targeted on the Housing Association and local residents.

Valuing the benefits

Besides the actual financial savings in terms of reduced energy cost, the valuation of the socio-economic benefits relates to the price of carbon and is often monetised in € per metric tonnes of carbon saved. There is a wide range of resources and tools to calculate carbon savings. The key to the accuracy of these is being able to have an accurate future price of carbon, which relies upon accurate climate change projections and impacts on biodiversity and human health.

In addition to the aforementioned environmental impact, the benefits of taking people out of fuel poverty and the proportion of income which is spent on energy provides an objective measure to value benefits, the wider societal and economic impacts and benefits will affect consumption of health services and decrease mortality rates in winter or those associated with excess heat in the summer.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

77 https://www.evri.ca/Global/Splash

78 However, it is recognised that the body of evidence is still in its infancy and accurate data, including consistent baselines are required to enable an effective assessment of additionality to take place in cities.

There are a number of practical areas which also account for energy efficiency measures that deliver economic and environmental benefits. These include the direct job creation in the design, manufacture, instalment and maintenance of energy efficiency installations.

The scale of deployment is an important component in delivering a greater level of benefits across cities and also in reducing the unit costs of energy efficiency measures through economies of scale.

Applying the toolkit at different stages of the programme cycle

The JESSICA performance measurement framework needs to be applied at all stages of the programme cycle, from the initial planning stage, detailed project appraisal, monitoring during the construction and operational phases and finally ex post evaluation as described in previous examples.

To estimate the nature and scale of these impacts a number of approaches and indicators may be adopted. Recent research (Metroeconomica et al, 2011) finds that a conventional impact analysis is applied utilising scenarios with different climate and socio-economic parameters to estimate impacts. Within this framework, an assessment of vulnerability and associated risks is typically undertaken. The following observations can be made in respect of the approaches applied by most studies:

- **Formal cost-benefit analysis** (CBA): In the UK, none of the national studies of climate change have applied formal CBA frameworks. CBA has been applied to other UK non-climate change studies though; for example it was used by the Department for Environment, Food and Rural Affairs to assess the relative attractiveness of potential options for reducing impacts in relation to air quality;

- **Physical impacts**: The extent to which physical impacts are assessed varies by sector. It is often explored in further depth in the case of water (including flood events), health, and energy resources;

- **Quantification of impacts**: The assessment of the impacts of climate change is in its infancy relative to many other areas. Consequently and due to the complexity, the assessment methodologies used offered relatively little in the way of quantitative assessment. More recently, assessment methodologies have become significantly more sophisticated including a greater level of quantification and valuation of impacts over a longer future time horizon and given the relevance of the topic, this trend is expected to continue.

- **Probabilistic impact assessment**: Probabilistic impact assessment is rarely applied. Instead, studies usually utilise central predictions of impacts (although sometimes with a range). The exception is the UK Air Quality Strategy, which developed a probabilistic approach across the full impact chain using Monte Carlo analysis. This approach generates distributions for estimated economic costs and benefits;

- **Adaptation**: It is common for studies to consider 'impacts' and 'adaptation' as part of one assessment through deployment of integrated multidisciplinary teams; and

- **Sectoral analysis**: The analysis of the impacts and implications for specific sectors has been an aspect of many studies; however the assessment methods applied do not reflect the full level of complexity and trade-offs between different economic sectors that ultimately must be made in the context of adaptation measures. As a consequence, there is further work to be done to determine the appropriate priorities and interventions that should be applied.

In respect of good practice, previous studies indicate that future assessments could be improved with greater collective understanding of objectives, preparation of guidance materials (consistency) and training, and on-going assessment.

1.4.1 Case study example: Renovation of multi-apartment building

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

A multi-apartment building (50 apartments, each of approximately 50 m², built before 1995 with a home owners association in place) is supposed to be renovated in order to improve energy efficiency performance. These buildings are owner-occupied by private individuals.

Energy efficiency is undertaken by:

- Renovation and insulation of the roof
- Renovation of the ventilation and heating system
- Replacement of apartments and stairways windows and doors
- Building insulation with 150mm Styrofoam sheets
- Use of efficient light bulbs and smart metering systems

The energy related target is to improve energy efficiency by at least 20% in each apartment building. Before the project can start an energy audit must be carried out in order to gain approval. An energy consumption audit is performed after the renovation; both are carried out by independent consultants.

Support for the improvement of energy efficiency in the apartment buildings is through a supported loan scheme. The loan is made available to the Home Owners Association which is entitled to a JESSICA loan.

Tracking output and outcome changes

At the appraisal stage, estimates made for the project suggest that it could generate the following direct outputs:

- 50 households with improved energy consumption classification;
- 1 multi-apartment building with improved energy consumption classification.

These outputs were expected to contribute directly to outcomes for the target area in the following way:

- Increasing property values by 10%;
- Improved comfort levels for tenants;
- Reduction in the heating consumption to 125 mWh/year;
- 35% saving on energy and heating costs;
- Saved worker hours by a fall in complaints and reduced number of repairs (respectively) relating to the housing stock;
- Reduction in Emissions (1,005 t/ CO_2/yr).

The renovation work will also create/safeguard employment in the construction industry. Some of these may be taken by people who live in the target area but there will also be some leakage whereby jobs are provided for people who live outside the target area.

A baseline of residential values and energy consumption/saving was assembled and changes in these statistics were monitored over the lifetime of the project.

Additionality

At the project appraisal stage, estimates were made of additionality parameters, drawing on evidence from other evaluations of similar projects. The appraisal considered both the direct effects of the investment on energy saving but also indirect benefits that arise through extra construction activity in the local area.

Two years after the completion of the renovation, an evaluation of the JESSICA project was undertaken. As part of the research method, a survey was conducted with apartment owners from the renovated building as well as financial modelling to estimate the saving of energy and heating costs per year.

A survey of apartment owners helped to quantify the increase in level of individual's well-being as well as to establish the nature and severity of market failure, issues affecting the viability of the scheme, the role of JESSICA and what would have happened in the absence of JESSICA. The survey was designed to quantify critical additionality parameters.

In relation to deadweight, the survey established that approximately 35% of households would have made at least some improvements of their own (change of windows/doors, change of local radiators, local ventilation, etc.) in the absence of the scheme.

In relation to outcomes, the conclusion was that the project had made a net additional contribution to:

- Increased property values – The increased value could be calculated by estimating increased rents which the owners can reclaim as a result of investment;
- Worker hours and maintenance savings after renovation;
- Increase of awareness and readiness among inhabitants and their housing to take independent responsibility for shaping and developing the residential areas and implementing the activities necessary in respect to energy savings;
- Carbon dioxide emissions savings;
- An improved employment rate.

The evaluation concluded that the project had made a valuable contribution in relation to its physical transformation.

Valuing the benefits

It is possible to value the benefits from the scheme through property market data and saving on energy and heating costs. Thus, there will be some uplift in property values from the pre-construction stage to the post-construction stage which can be monitored by recording the capital values of the apartments. It is also possible to value impact through the use of willingness to accept or willingness to pay approaches.

The job creation effects of the initiative can be valued through wage and GVA data.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

There can be a number of programme benefits from encouraging projects of this kind. In many European countries local neighbourhood based housing associations are becoming increasingly involved in government schemes that seek to increase the energy efficiency of buildings and provide a range of improvements to local amenity. JESSICA funding may support such organisations to increase their capacity to undertake similar schemes in future and to better coordinate their actions with other urban neighbourhood stakeholders.

1.4.2 Implications for the KredEx financial instruments[79]

Housing accounts for approximately 40% of energy consumption in Estonia and therefore is a key component of Estonia's energy-reduction strategy. Approximately 75% of the Estonian population lives in multi-apartment buildings which are typically of low quality and low energy efficiency. Very few households are living in new residential buildings in present-day Estonia (ca. 5% live in residential buildings constructed after 1991), and the majority of dwellings is at least three decades old (see below).

Period	Number	%
Before 1919	60 030	9.41
1919-1945	90 850	14.24
1946-1960	65 700	10.29
1961-1970	125 880	19.72
1971-1980	136 880	21.45
1981-1990	125 110	19.6
1991-1995	17 960	2.81
From 1996	7 400	1.16
Unfinished	8 370	1.31
Total	**638 180**	**100**

Table 2 Distribution of dwellings by year of construction (Source: Estonian Statistics 2007)

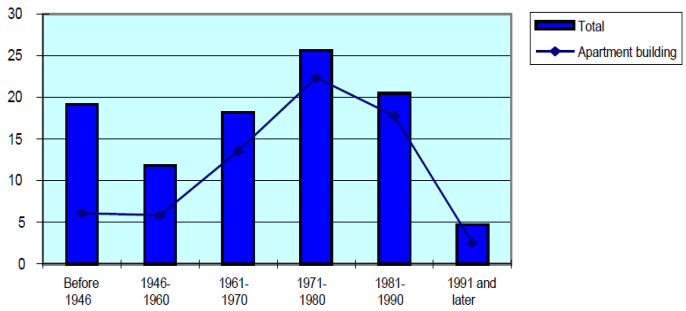


Figure 11. Distribution of households by age of dwellings (%), including the share of households living in apartment buildings (Source: Estonian Statistics 2005)

79 Mainly based on Housing in JESSICA Operations, 2011, PwC, ARUP, Afi, Sinloc and LSE report

The issue of energy conservation of the housing stock has become a policy priority and is transposed in the EU directive on the energy performance of buildings.

The average energy consumption per square meter is higher in Estonian residential buildings in comparison with other EU member states (in Estonia ca. 200 kWh/ m²; in Finland and Sweden below 150 kWh/ m²). The cost of district heating varies greatly in Estonia.

In order to improve the energy performance and comfort of apartment buildings several integrated measures have been agreed. Related activities have been planned under the Development of the Living Environment OP 2007-2013 Priority Axis "Development of energy sector" and at national level, in various strategies and development plans[80].

The Estonian JESSICA energy efficiency programme was established in 2008 and is led by KredEx, a promotional financial institution that acts as Holding Fund manager of the JESSICA funds. JESSICA is implemented for urban development under the Development of the Living Environment OP 2007-2013 Priority Axis 3 "Development of energy sector". A measure supporting the reconstruction of block houses has been developed at national level and is fully in line with the Estonian Housing Development Plan 2003–2008 and the Estonian Housing Development Plan 2007–2013. Namely, Measure II Housing Stock aims at improving the condition and energy balance of the housing stock.

The Housing Stock measure, supporting the reconstruction of block houses, has been developed at national level in line with local and regional strategic development documents, general plans and local authorities' development plans[81].

80 Estonian Environmental Strategy 2030; National Environmental Action Plan of Estonia for 2007-2013; Regional Development Strategy of Estonia 2005-2015; Long-term Public Fuel and Energy Sector Development Plan until 2015; Transport Development Plan 2006-2013; National Master Plan Estonia 2010; The implementation of the Guidelines of Estonian Security Policy 2015; Estonian Housing Development Plan 2008–2013

81 In Estonian case the integrated plan for sustainable urban development is defined as the local authorities' development plan. Every local authority must have a long-term development plan which contains an integrated approach for area based actions, this includes improvements in housing quality as one of the major priority.

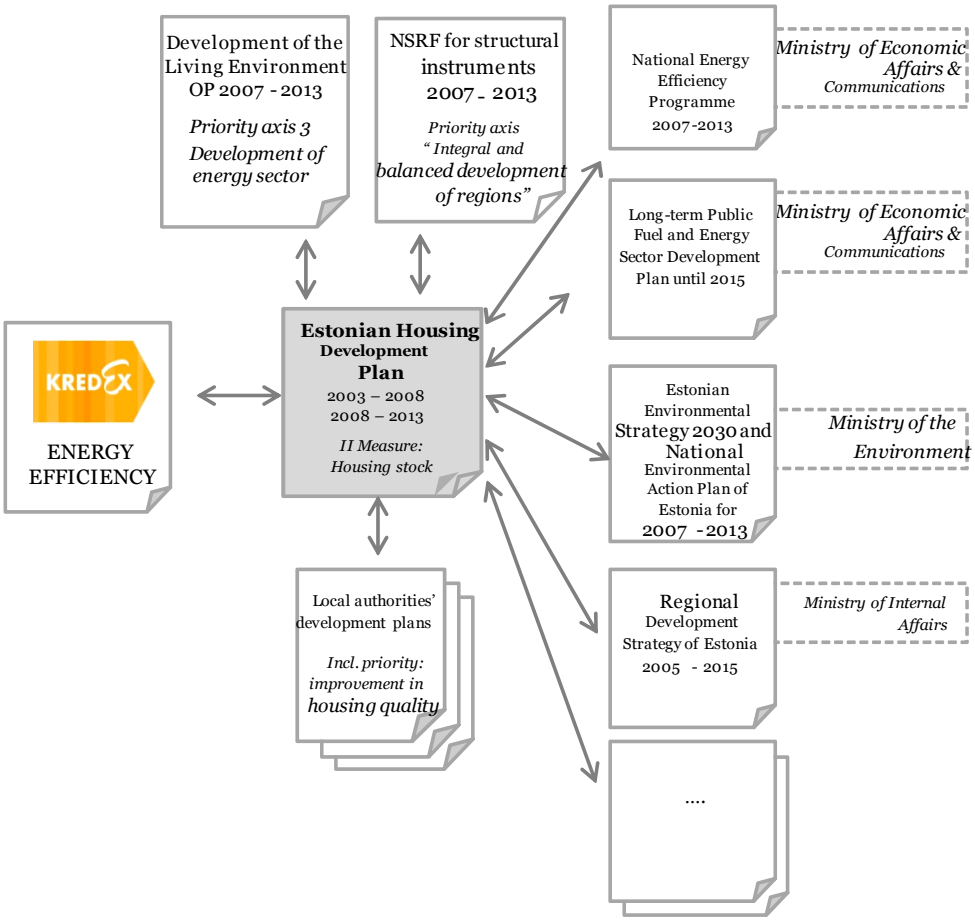


Figure 12. Kredex energy efficiency programme link to other national development plans

As illustrated the JESSICA energy-efficiency programme is connected with the priorities of the National Strategic Reference Framework for structural instruments 2007–13. The priority axis "Integral and balanced development of regions" was implemented under the National Strategic Reference Framework for structural instruments 2007–2013. In addition, a number of other national strategies, development plans and programmes are being prepared or implemented that also touch upon the field of housing[82].

Under II Measure Housing Stock Estonian Housing Development Plan 2008 – 2013, apartment and housing associations, apartment owners and communities can renovate their residential buildings and they are supported during the reconstruction works (measure 2.1). The Development Plan also includes measures to increase population awareness on the benefits of housing renovation(measure 2.2) and measures to map the condition of housing stock (measure 2.3). II Measure is implemented under the Estonian JESSICA energy efficiency programme lead by Kredex.

82 Background documents provided by Kredex

OBJECTIVE

The combination of support measures aimed at reconstruction with energy efficiency issues would serve the dual purpose of improving the quality of the housing stock and reducing the maintenance costs thereof. The intended social impact is to increase the perceived quality of life of the population resulting from the enhanced technical condition and increased energy efficiency of the dwelling.

The financial target is to finance *as many building renovations as possible*.

The energy-related target is to improve energy efficiency by at least 20% in apartment buildings of up to 2000m² and by at least 30% in apartment buildings of over 3000m² (according to KredEx). At the time of writing, there were no general sustainability indicators defined.

EX-ANTE APPRAISAL

- According to experts, proper reconstruction and renovation of apartment buildings could yield an average of 20-30% savings in energy, which translates into an annual savings potential of up to €32m[83] for the whole of Estonia;

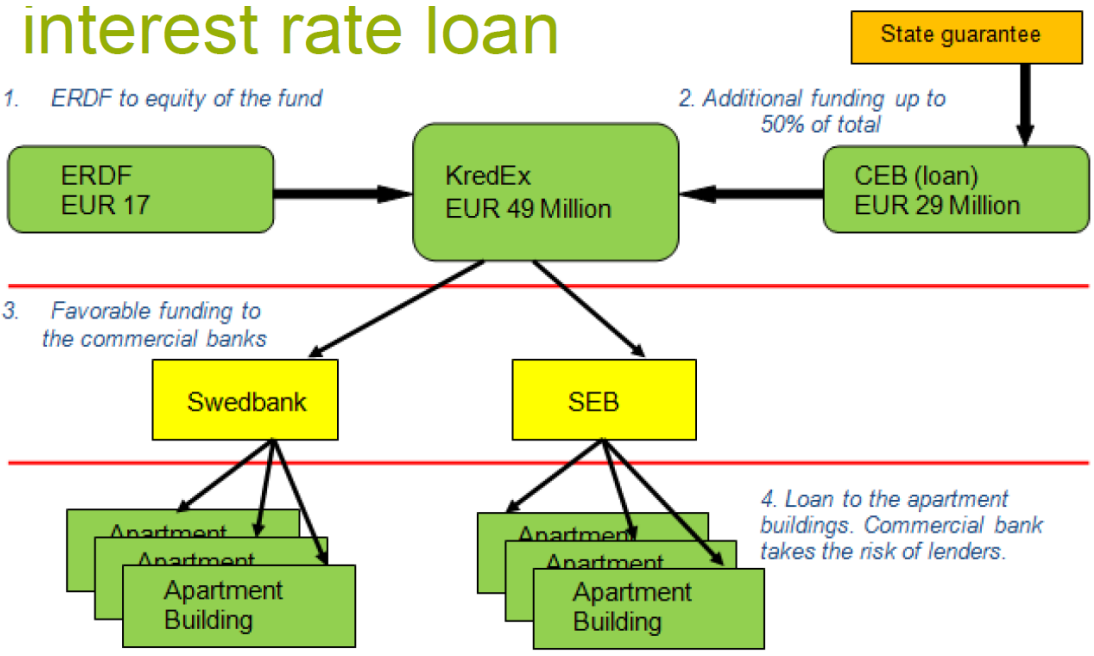
- Reconstruction or construction of only low energy consumption residential buildings with recommended heating energy demand indicators remaining below 15 kWh/m2 per year would enable a 90% cut in the heating energy demand of the buildings. This would lead to:

  - A reduction in imported fossil fuel volumes;
  - Increase energy independence of the Estonian housing sector;
  - Better resistance in case of emergencies; and
  - A cut in Estonia's CO_2 emissions.

INPUT

The Estonian JESSICA energy efficiency programme consists of a Holding Fund operated by KredEx. The KredEx Holding Fund is comprised of €17M from the ERDF and €29M from the Council of Europe Development Bank (CEB) (the latter covered by a State guarantee). The total allocation is € 46M (+15% self-financing, total € 57M). There are two UDFs, which are operated by Swedbank and SEB. Swedbank has the larger allocation of €33M[84].

83 Estonian Housing Development Plan 2008-2013.



ACTIVITIES

In order to obtain JESSICA support for apartment building renovation, an energy audit must be carried out where priority renovation works have been detailed, and only those renovation works identified in the energy audit can be financed. Borrowers must finance 15% of the project cost (85% is covered by JESSICA OP resources); this 15% can be covered by a parallel bank loan from the UDF (non-subsidised). Loan interest is fixed for 10 years at 3.9% to 4.4%. The loan maturity is maximum 20 years and an average of 14.5 years. There is no maximum loan amount.

Estonian National Housing Development Plan 2008-2013							
II. MEASURE: HOUSING STOCK ***VISION: THE HOUSING STOCK IS OF HIGH QUALITY AND SUSTAINABLE***							**IMPACT INDICATOR 2013:** - Satisfaction of the population with the technical condition and increased energy efficiency of the dwelling in their use grows **20%**
E2	**MAIN OBJECTIVE:TO ACHIEVE HIGH QUALITY AND SUSTAINABLE HOUSING STOCK**						
E2-M2.1	**Measure 2.1: Increasing the quality and energy efficiency of the housing stock**						**OUTCOME INDICATOR 2013:** - The average expected useful life of the housing stock (apartment buildings) has increased by 30% - The share of apartment buildings falling into the highest energy efficiency category is 10%
	Activity	*Target group*	*Beneficiary*	*Output target in 2010*	*Responsible*	*Actual output in 2010*	**OUTPUT INDICATOR 2013:** - The number of apartment buildings renovated with the help of renovation support **(8 000)** - The share of residential buildings that have undergone energy audits, implemented the recommended measures and reduced their energy consumption **- 20%** - Increase in renovations of restituted apartment buildings - **30% of such residential building** - The share of renovation loans with state guarantees of the total volume of renovation loans - **1.5%**
E2-M2.1-T1	Support to renovation of apartment buildings	apartment associations; housing associations; communities of apartment owners.	apartment associations; housing associations; communities of apartment owners.	At least 200 apartment buildings renovated through renovation loan and/or grant	KredEx	221 favourable bank loans given in total amount of €17.4 M.	
E2-M2.1-T2	State guarantees to renovation loans	apartment associations; housing associations; communities of apartment owners.	apartment associations; housing associations; communities of apartment owners.	1.5% State guranteed renovation loans out of total renovation loans	KredEx	93 Kredex loan guarantees in total amount of €2.1 M	
E2-M2.2	**Measure 2.2: Increasing awareness to improve the housing**						**OUTCOME INDICATOR 2013:** - The share of housing stock badly managed because of ignorance shall be reduced by **30%**
	Activity	*Target group*	*Beneficiary*	*Output target in 2010*	*Responsible*	*Actual output in 2010*	-
E2-M2.2-T1	Public awareness raising campaigns on energy efficiency issues	KredEx	Estonian population	At least 1 awareness campaign hold.	KredEx	1 national awareness campaing held	
E2-M2.3	**Measure 2.3: Mapping the condition of housing stock**						**OUTCOME INDICATOR 2013:** - The condition of the housing stock has been mapped
	Activity	*Target group*	*Beneficiary*	*Output target in 2010*	*Responsible*	*Actual output in 2010*	**OUTPUT INDICATOR 2013:** - The technical condition of the different types of apartment buildings has been mapped- **95%** - The percentage of expert analyses conducted in the apartment buildings of the target group- **50%** - The percentage of energy audits conducted in apartment buildings- **30%**
E2-M2.3-T1	Support to conducting expert analyses and energy audits of buildings	apartment associations; housing associations; ommunities of apartment owners.	apartment associations; housing associations; ommunities of apartment owners.	800 approved reconstruction and technical inspection applications	KredEx	590 reconstruction and techincal inspection applications approved and financed	
E2-M2.3-T2	Mapping the technical conditions of the housing stock	apartment associations; housing associations; communities of apartment owners.	State, owners, universities, investors, apartment associations; housing associations; communities of apartment owners.	III and IV phase of study has been launched and at least 120 apartment buildings have been mapped	Ministry of Economic Affairs and Communication KredEx	1 study iniciated 1 study completed	

ON-GOING MONITORING

Monitoring is carried out and collected by UDFs and reported to KredEx on a monthly basis. Output and outcome indicators are compared to their reference status and set targets to derive an indication of performance.

OUTPUTS

As illustrated above, the Estonian National Housing Development Plan 2008-2013 has defined three main output indicators for increasing the quality and the energy efficiency of the housing stock:

- Number of apartment buildings renovated through renovation loans and/or grants;
- The share of residential building that have undergone energy audits, implemented the recommended measures and reduced their energy consumption; and

As regards the two first output indicators, it is the UDFs responsibility to report those monitoring results to KredEx on a monthly basis. In particular the obligatory output indicators for UDF managers include:

  - Reporting on energy consumption (3 years before and during the loan period);
  - Presentation of all building contracts, design projects and reconstruction budget;
  - Kredex can carry out site visits;
  - Information about using ERDF fund at hallways need to be presented.

- The share of state guaranteed renovation loans out of total renovation loans;
- Information about building;
- Description of investments;
- Number of dwellings concerned;
- Date of energy audit, savings;
- Total investment costs;
- Loan amount;
- Supplementary Bank loan;
- Loan maturity;
- Loan interest rate/margin.

Tools/Methods: Quarterly reporting from apartment associations, direct and indirect measurements.

OUTCOMES

Monitoring of the Estonian National Housing Development Plan 2008-2013 outcome indicators, is either a responsibility of KredEx or the Ministry of Economic Affairs, as also illustrated in the table above.

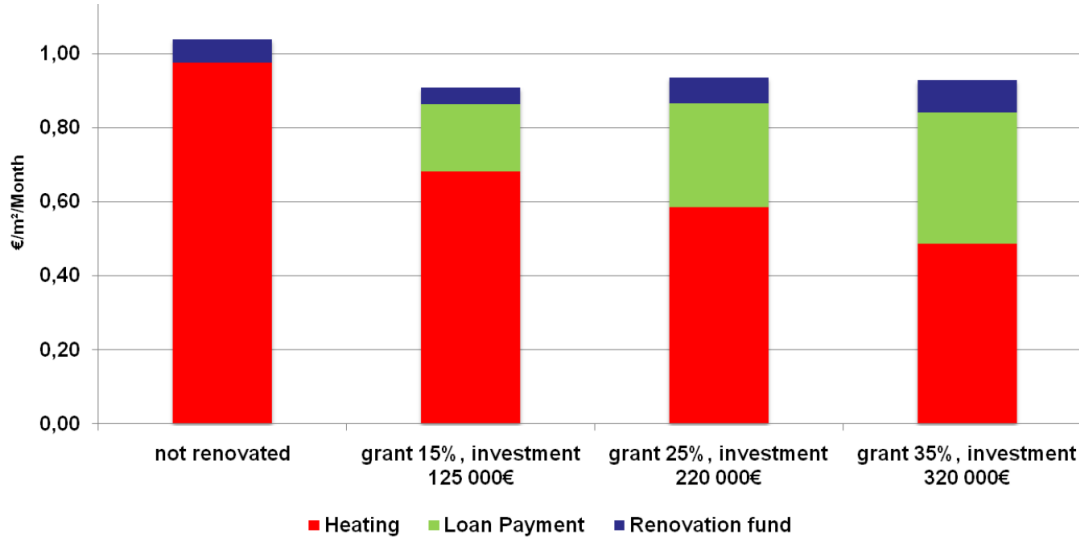


Figure 13: Example: Burden of payments – building 2000 m², interest 3,8%, loan 20 years ; (Source: KredEx)

No.	Objective XY	Objective YZ
UDF (Bank)		
Date of signature of leasing contract		
City		
County		
Total m²		
Total no. of apartments		
Year of the built		
Date of works started		
Date of works planned to finish		
Energy audit		
Energy consumption before (mWh)		
Energy consumption after (mWh)		
Total investment (€)		
Investment with credit (€)		
Credit sum (€)		
Self-financing %		
Self-financing sum (€)		
Part of CEB (%)		
Part of SF (%)		
Part of KredEx (%)		
Parallel loan (€)		
Credit payment (€)		
Maturity		
Interest		
Type of works		
Planned savings in € according to		

the energy audit		
Planned savings in mWh according to the energy audit		
Planned savings in % according to the energy audit		
Investment per m2		

Table 3 UDFs monitoring template reported to Kredex on the quarterly basis.

EX-POST EVALUTION

At the time of writing, there had not been any ex-post evaluation of the JESSICA renovation loan scheme managed by KredEx, but one was planned after the completion of the current study.

Nevertheless, the exact savings and impact indicators set at the beginning of policy formulation would need to be calculated, monitored and verified as part of the impact assessment of the energy outcomes after defined years of the start of renovations. Having identified the total outputs and outcomes throughout the years, it will be possible to quantify impacts in relation to:

- A reduction in imported fossil fuel volumes;
- Increased energy independence of the Estonian housing sector; and
- A cut in Estonia's CO_2 emissions.

The ex-post evaluation would be a responsibility of KredEx and MA as it is to test the effectiveness of policies.

CONCLUSIONS

The following table summarises the existing evaluation paradigms of KredEx financial instrument.

Evaluation paradigms	Relevance	Existing approaches
Logical framework	High	Intervention logic established at national level (OP). OP is directly linked to Estonian Housing Development Plan.
Value for Money	High	Decision to use JESSICA as opposed to grant, other public or private funding sources.
Cost-effectiveness Analysis	High	Energy audits establish baseline and can be used to verify actual energy savings achieved (build on existing reporting scheme from UDF to KredEx).
Spatial impact Analysis	Medium/ Low	Measure focused on improvement of living conditions for citizens already living in multi-apartment block buildings.

1.5 Heritage or cultural sites for tourism

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Cultural heritage and attractions are a collective legacy that, while not (always) producing direct profit, it can be a cornerstone of region's sustainable development. Through the establishment and strengthening of industries associated with the local cultural heritage, conditions for social and cultural growth alongside local economic development are enhanced. However, the special needs of heritage and their status as a public good usually cause substantial financial needs for their maintenance and imply significant market failures. Among the industries related to them, tourism is certainly one of the main sectors that can determine the economic development of territories. Here, local authorities are challenged to balance the exploitation of the sites, with the unconditional requirement of preservation and protection of heritage as a valuable entity to preserve, transmit and pass on to future generations.

In many EU regions, the objective to increase economic development through tourism is an important component to achieve smart, sustainable and inclusive growth and the Europe 2020 strategy.

Tracking output and outcome changes

Evaluation research has identified a number of output and outcome indicators in the field of cultural heritage and tourism. The most frequent measures of heritage and cultural sites schemes are the amount of tickets sold and the surface equipped for cultural uses. A more exhaustive list of indicators measuring the performance of these activities can be found below:

	Heritage and cultural sites output indicators
1	Number of visitors (including locals inhabitants)
2	Number of tourists
3	Number of renovated/protected/enhanced heritage and cultural sites
4	showroom areas (m2) for museums and historical monuments or buildings, total area of parks or archaeological areas (m2), number of seats, usable area (m2) for theatres
5	Direct and indirect employment created
6	Number of jobs safeguarded
7	Franchised operations dependent on the heritage and cultural site
8	Visitor expenditure
9	Tourist expenditure (including accommodation)

This list of outputs is not relevant for every scheme and it is not exhaustive but it provides a good overview of the core indicators and the connected range of possible direct and indirect benefits.

The ultimate objective of heritage and cultural site schemes is to generate lasting **outcomes**. These may include:

	Museum and cultural sites outcome indicators
1	Increasing employment
2	Increasing the employment rate among the working age population
3	Increasing economic output (Gross Value Added)
4	Increase in residential and commercial values
5	Improvement in measures of well-being and quality of life
6	Improvement of local image and identity

Some of these outcomes, especially the more intangible ones, such as the intellectual benefits, present the largest challenges in terms of measurement and valuation.
Again, in addition to the outputs and outcomes directly generated by JESSICA investment, also those indirectly stimulated should be taken into account. It might be the case that a major JESSICA-supported heritage investment may positively impact the neighbouring areas, acting as a catalyst for economic development through the tourist industry and triggering further cultural sites investments without need of further public support.

Spatial impacts

In heritage and cultural site projects, spatial impacts are usually considered by accounting the employment and income opportunities created during the construction but mainly during the operation of the project (e.g. housing, catering and refreshment services close to the site, souvenir industry, etc.). These benefits are mainly local but they can reach a wider community at regional or national level.

A special link exists between spatial impacts and heritage and cultural sites: the higher the relevance of the sites the larger the tourism flows and revenues. The latter not only positively influences the economic dynamism in the hosting area but the social benefit of consuming cultural services (e.g. personal development from the visit of a museum) can be spread over a larger area and in some cases even across national borders.

Moreover, there is a spill-over effect between tourist attractions as tourist circuits incentivise tourists to visit similar heritage and cultural sites in the same area. One new main site could draw additional visitors to other existing local sites.

Additionality

As part of the measurement of the overall performance the outputs and outcomes of the project should be compared with what would have occurred without JESSICA instruments. Such JESSICA additionality needs also to consider multiplier effects on other sectors but remove the deadweight of investment that would have taken place without the scheme (e.g. they were already planned). Leakage effect may occur if some of the outputs and outcome actually benefits to other regions while market displacement should be taken into account to measure only the net additional level of output and outcomes and exclude, for example, changes of employment from the amount of new jobs.

Valuing the benefits

Numerous attempts have been made to assess the impact and value of museums and cultural heritage sites. Normally both the economic and social impacts are considered through separate evaluations. However, a single measure of the net benefits is usually produced under the form of a combined indicator[85].

The most relevant economic effects are the Gross Value Added (GVA) impacts on the local and wider economy. Such impacts would include both direct effects, including the employment of staff, and indirect effects, including people employed by businesses which supply the museum and the consumption expenditure of those employed by or through the museum. Such multiplier effects are valuable when illustrating the 'trickle down'

85 Jura consultants. 2008. Economic Impact Methodologies for the Museums, Libraries and Archives Sector: What works and what doesn't. Museums, Libraries and Archives

effects of a museum's economy yet choosing the correct multiplier values and visitor expenditure remains subjective and difficult.

Some quantitative assessment of the social value of a museum can be gathered using stated preferences and the related Willingness to Pay (WTP) of users and non-users. The monetisation of a range of social benefits such the enhancement of local visibility and the reinforcement of the local identity could in theory rely on the same approach but the difficulty to produce reliable outcomes is extremely high and evaluators should avoid giving excessive importance to such conclusions.

For example, to date the number of quality studies on the impact of museums on learning outcomes is limited as are associated conclusions and recommendations for action. The most common framework for assessing the education and learning impact of museums is the Inspiring Learning for All frameworks (IlfA)[86]. Developed in 2004 it defines five Generic Learning Outcomes: "Knowledge and understanding", "Skills", "Attitudes and values", "Activity, behaviour and progression" and "Enjoyment, inspiration and creativity". This has been used by many organisations including English Heritage, National Museums Liverpool and the Tate Gallery in London.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

Methodologies for assessing the wider programme benefits associated with heritage and cultural sites urban initiatives and the approaches seem to be helpful in the context of JESSICA.

In the case study example below, we illustrate how these concepts can be described in the setting of a hypothetical JESSICA project.

Applying the toolkit at different stages of the programme cycle

Throughout the programme development different methodologies characterise the implementation and evaluation cycle. In the preparatory and initial phases the approach relies on broad estimates based on recognised benchmarks for the main parameters. During ex-ante appraisal, the value for money (VFM) of the range of options to deliver the objectives would be enquired. During ex-post evaluation, the approach would be to gather quantitative and qualitative facts to determine actual outputs and outcomes.

1.5.1 Case study example: Creation of a museum

The hypothetical case study example has been developed to highlight features of JESSICA investments upon cultural sites, specifically, a museum in an historical building that can deliver benefits beyond the financial return.

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Proposals have been developed to create a museum in a municipal site in the central district of the City. The museum will host some new important archaeological discovery of the 9th Century Royal family belongings and gather other material on related topics

86 Museums, Libraries and Archives Council. 'Inspiring learning: an improvement framework for museums, libraries and archives': http://www.inspiringlearningforall.gov.uk

currently spread among different exhibitions. The site was originally build in the 16th Century and has been lengthily used as a Benedictine cloister and then as a private school. This was finally abandoned for security reasons in the 1950s but the renovation works never started due to the absence of a dedicated strategy on the usage of the site.

The cultural interest for the architectural and historical feature of the building requires careful restoration and renewal of the original decorations in addition to the structural adjustments - such expenses proved to be too heavy for the private sector.

The original city core is regarded as an area in urgent need of support as the lack of work opportunities and the insufficient dynamism is affecting the quality of life.

The preservation and restoration project covers four buildings on the property: the cloister, the main building and a chapel. The gross area of the buildings in question is some 2,900 sq. m and 1 hectare of public realm.

Tracking output and outcome changes

During the appraisal stage it emerged that the following outputs could be achieved by the creation of the museum over a period of 10 years:

- 2,900 sq. m redeveloped;
- 1,800 sq. m of exposition area created;
- 4 major frescoes renovated;
- 1 hectare of public realm;
- 750,000 visitors;
- €3,900,000 in tickets and audio guides renting;
- 85 sq. m. of museum shop;
- 2 merchandising agreements;
- € 2,400,000 in merchandising revenues;
- 16 direct jobs created.

These outputs were expected to contribute directly to outcomes for the target area by assisting in the generation of increased economic output (GVA) – e.g. the creation of merchandising agreement with a local firm producing gadgets and souvenirs. The total gross value added impact was valued at €1.2 million over the 10 years. Further, a slight increase in land and property values in the target old centre City area is expected.

A baseline of land values, local employment and employment rates, increased GVA, number of visitors and cooperation with universities and cultural associations, was assembled and changes in these statistics were monitored over the lifetime of the project as part of the performance measurement arrangements.

Additionality

The additionality parameters have been estimated during the project appraisal stage, estimates, employing benchmark evidence from the evaluation of analogous projects. Two main surveys were conducted.

1) A survey of project stakeholders, including those from the JESSICA team responsible for developing the project, the Museum Director and those involved in heritage and cultural studies in the area, representatives from the financial sector (e.g. banks and venture capitalists) and officers from the ERDF OP. The goal of this survey was to ascertain the nature and severity of market failure and any other issue regarding the viability of the project and the role of JESSICA.

These interviews concluded that in the absence of JESSICA funding, the museum would not have been developed, and that all physical output were additional. It identified that some of the study and conservation activity of archaeological findings would probably still have occurred in the absence of JESSICA but with a much more limited effectiveness. The survey helped to quantify the level of employment created and their occupations in order to assess the Gross Value Added associated with the employment.

2) A survey of the museum visitors asked a series of questions to quantify critical additionality parameters.

In relation to deadweight, the survey established whether the tourists would otherwise have visited the target area anyway in the absence of the Museum. The survey also established the extent to which the new exhibition competes with other museums in their local area (product market displacement). The main parameters which emerged from the survey are set out in the table below. Leakage of benefits was particularly low, because most of the jobs were taken by those living in the city and displacement from other companies was also limited.

	Exposition floorspace (Sq mSq m) / New visitors	Jobs (FTEs)
Total ("gross") outputs	1,800 sq. m / 75,000 visitors	16
JESSICA deadweight (the proportion of outputs which would have occurred in the target area in the absence of JESSICA, e.g. if there were other funding mechanisms in existence)	N/A	12.5% would have been located elsewhere in the target area anyway
Scheme deadweight (the proportion of the outputs which would have occurred in the target area in the absence of the development scheme)		
Leakage of benefits outside the area	N/A	10%
Product market displacement of employment from other businesses in the target area	10% of visitors displaced from other cultural sites	20% of jobs displaced from other firms in target area
Net direct physical benefits before multiplier effect	67,500	10
Combined supply (indirect) and income (induced) multiplier at target area level	1.20	1.10
Net additional benefits at the target area level	1,800 sq. m / 81,000 visitors	11

From the empirical evidence of the evaluation research, the main findings were that 69% of the employment outputs (and their associated GVA) were net additional at the level of the target area. The net number of visitors to the area after the creation of the new museum (which was included as part of a circuit) was larger (108%) than its impact as a single attraction, as the tourists visited other heritages in the area. The synergies of the strengthened pool of cultural attractions can be an important lever for the tourism industry.

These are the direct effects arising from the development. Further benefits may arise from indirect effects as discussed further below.

Valuing the benefits

The performance measurement for this JESSICA project involved measures of the local and wider economic impact as well as the social value of cultural and educational benefits.

Local and wider economy

This multiplier effect demonstrates the Gross Value Added (GVA) impacts on the local and wider economy. 11 expected net additional jobs in the target area which are attributable to this JESSICA project could contribute to an economic output (GVA) of € 1.7m over 10 years. The indirect impact on suppliers accounts for another €0.2m over the 10 years while the impact of the tourist expenditures reaches €9.6m on the same time horizon.

Social, cultural and educational benefits

The value of the cultural services was estimated through the use of contingent valuation. This approach is particularly useful in producing monetary indicators for values which are not in themselves economic.

This methodology uses a 'stated preference' model to ask users (and non-users) to place a value on the service offered. Users are asked to indicate value through (a) their Willingness to Pay (WTP) for a service which is in fact free, or (b) their Willingness to Accept (WTA) the loss of a service in the form of compensation. The survey produced a €2.2m valuation of the museum services.

The two approaches were combined to indicate both impact and value, and including a range of financial, economic and social indicators. The aggregate undiscounted benefit resulted in €13.7m.

Assessing programme benefits (e.g. leverage, economies of scale, synergy, co-ordination and tackling market failure)

The specific initiative of the creation of a museum contributed to wider programme benefits for the UDF as a whole. The project provided clear synergy benefits to the progress of the local tourism by enhancing the pool of cultural destinations and their interactions. Indeed, the number of cultural offerings is crucial to attract tourists to the target area and make them stay longer. The JESSICA funding was also found helpful in increasing the capacity of the City cultural system to undertake similar schemes in future and to improve coordination with other stakeholders.

1.5.2 Implications for the Sicily Financial Instruments[87]

87 Mainly based on JESSICA Evaluation Study for Sicily.

The rich heritage of Sicilian cities of all sizes is a legacy of the ancient and important history of the island. The architectural, natural and landscape value of Sicily represents an almost unpaired historic and artistic legacy (for quality and density) including, among others, four UNESCO World Heritage sites.

Overall, the most authoritative Italian rankings often place Sicilian cities among the worst performers in terms of quality of life and services[88].

Despite the often widespread neglect of cultural sites, the heritage constructions market and related authorities are showing a growing interest in restoring historical buildings and revamping them for future touristic usage, especially when placed in the centre of head cities or in charming locations.

In order to improve the quality of heritage and cultural sites for tourism numerous integrated actions have been planned to foster economic development in the region building on the extensive experience with previous urban EC (URBAN and URBAN II) and the national (PRUSST) programmes.

The JESSICA programme in Sicily is directly linked to the ROP ERDF 2007-2013 where the general objective of Priority Axis VI –Urban Sustainable Development is to "*promote economic development, the capacity for attraction and innovation of the city with a view towards sustainable development and social integration*". This specific axis was assigned only 11% of the total financial resources of the ROP but it is important to highlight the complementary relationship and the tendency towards the integration of this priority with the other Priority Axes of the ROP such as Priority III - Enhancement of the cultural identities and the environmental and landscape resources for tourist attractiveness and development, which can contribute significantly to regional urban development. Indeed urban development is a multi-axis approach in the ROP.

This strategy is consistent with the National Strategic Framework 2007-2013 where Priority 5 "*Enhancement of natural and cultural resources for the attractiveness and the development*" focuses on transforming the cultural and natural resources as a competitive advantage to increase the attractiveness of a place to improve the quality of life of local inhabitants through sustainable economic development.

The Funding Agreement creating a Regional JESSICA Holding Fund, to be managed and administered by the EIB was signed in Sicily on 19 November 2009 by the EIB and the Sicilian Regional Government. The Regional Holding Fund, as most JESSICA Holding Funds, takes the form of a "separate block of finance" and its effective constitution was achieved by the contribution of financial resources from 12 Actions of the ERDF ROP (4 referring to Priority Axis VI, and the rest to Priority Axis I, II and III).

Under the multi-sectorial UDF, Sicilian municipalities and private entrepreneurs or companies can contribute to the protection and fruition of heritage and cultural sites and

88 JESSICA Evaluation Study for Sicily

provide support to the restoration of culturally and historically valuable buildings and sites.

According to the established roadmap the disbursement of the financial resources were expected to start at the end of February 2011 for the multi-sectoral UDF and at the end of May 2011 for the Energy-UDF.

OBJECTIVE

The goal of restoring and reconverting historical buildings, especially in the heart of the major cities and the most fascinating locations is to increase tourism, revitalize the historic city centres, create employment opportunities and enhance the quality of life.

EX-ANTE APPRAISAL

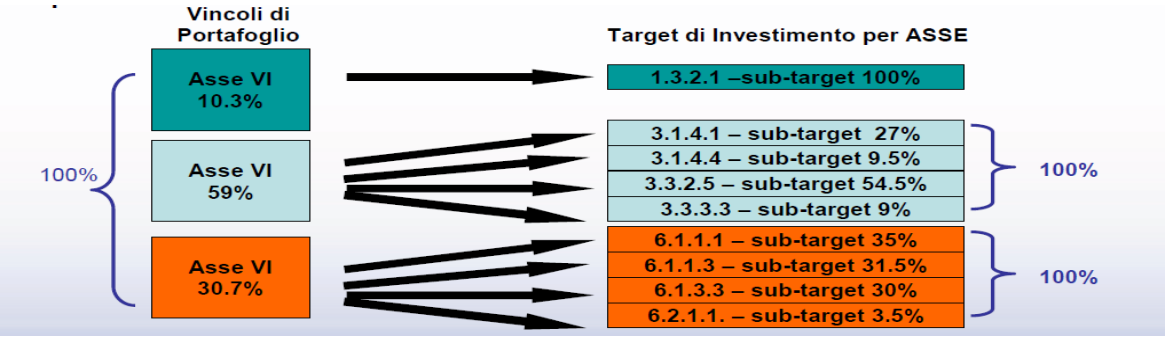
Some target indicators have been defined during the ex-ante appraisal phase. These are mainly related to the growth of tourist flows in the area and the increase in their average expenditure. The main intended impacts are the number of jobs created or maintained and the improvement of the perceived quality of life for local residents, both of which shall be clearly attributable to the JESSICA intervention.

INPUT

The Sicilian JESSICA urban development programme consists of a Holding Fund that is managed by the EIB with a total allocation of €148M. There are two UDFs, one multi-sectorial with an allocation of €89.5M committed to urban development initiative and second UDF of € 52.7M focused on energy efficiency and renewable energies. The multi-sectorial UDF is funded by €27.5M from Priority Axis VI and Priority axes I (€9.2M) and III (€52.8M) which are earmarked for projects included in Integrated Urban Development Plans (P.I.S.U.) or Integrated Regional Development Plans (P.I.S.T.).

ACTIVITIES

Almost two thirds of the resources of the multi-sectorial UDF are ring fenced for investment fostering the touristic attractiveness of the region through the valorisation of the cultural heritage. A detailed breakdown of the portfolio constraints and targets by sub-action is described below.



Source: call for expressions of interest (informational event material)

The activities eligible to support shall fall within these sub measures.

Sub axis	Objective
1.3.2.1	Construction of parking lots for modal interchange

3.1.4.1	Creation of cultural infrastructures to improve the quality of life of the residents and the cultivation of local identities
3.1.4.4	Regeneration projects for rural contexts with historical and cultural value
3.3.2.5	Structural and infrastructural interventions for the implementation of the regional strategic plan for tourist ports, giving priority to the construction of safe havens with flexible reception capacity in the smaller islands and in the major tourist locations.
3.3.3.3	Interventions in the centres with greatest tourist attraction and in sites of interest for better fruition by visitors, such as the installation of proper street signage and detailed information panels or the construction of new parking areas, possibly with the participation of private financial resources, to be implemented with the procedures set on in L.109/94.
6.1.1.1	Projects for integrated regeneration, with criteria of architectural quality and sustainable building, for the establishment, incubation and reinforcement of urban and metropolitan functions and services, possibly by means of the adaptive reuse of existing structures or forms of bailment of abandoned public real-estate assets.
6.1.1.3	Projects for the renovation and/or completion of buildings for pre-school education, school or university-level education with the purpose of offering regional services (social, health, cultural, sports, etc.) and helping to reconcile work and family life.
6.2.1.1	Integrated urban regeneration project to establish and/or enhance service centres (for business, social, cultural, sports, health, infancy, etc.) as magnets beyond the local level.

CASE STUDY: Urban renewal of Via Velardo to establish hospitality structures, catering and handcrafting workshops

The Municipality of Ragusa sets up a STU (Urban Regeneration company) for the rehabilitation of derelict Via Velardo in the city's historic centre. The development operation entails the revamp in stock of all the buildings of the eastern end of the street, currently all abandoned, and their transformation into a hotel (Albergo diffuso – literally "scattered hotel"), a few high quality residential units, artist/craftsman workshops and commercial spaces and restaurants/bars. The transformation also includes construction of a public inclined lift linking Via Velardo (perched on a steep hillside and inaccessible by car) with a large public parking area below.

The Municipality transfers to the STU the property of 10 buildings of Via Velardo that it owns in exchange for an equivalent amount of shares. The STU buys the remaining 40 units involved in the transformation from the respective owners at market prices. At the end of the project all the real estate is still owned by the STU and sold at market value.

What are the main terms and conditions for the pilot project?

Project characteristics

70 rooms and holiday apartments that will result from the renovation of the buildings, all of which are currently uninhabited, establishment of spaces for retail stores (and craft shops) on the ground floor of some sections along the street, as well as restaurant spaces accessible directly from the street level.

Project component	Cost in EUR
Regeneration of buildings in Via Velardo	**9.819.200**
Extended hotel (70 double rooms or efficiency apartments with direct access to Via Velardo, common and service spaces): the value established includes initial furnishing costs	6.160.800
Catering facilities (restaurants, bars and wine bars)	542.300
Retail and craft shops	1.137.300
Buildings for residential use	1.978.800
Upgrade and new street furnishings for Via Velardo	**37.500**
Renovation of the paving and construction of a circulation route for electric service vehicles (250m x 3m)	37.500
Mechanical system for connection to the parking garage – Via Velardo	**1.300.000**
Sloped elevator such as Leitner	1.300.000
Acquisition of buildings	**2.394.700**
TOTAL COST	**13.551.400**

Financial conditions

The financial structure is 40% equity 60% debt and the loan period is 10 years. Credit rating is good/satisfactory and quality of the collateral normal. The estimated cost of commercial debt is 6.34%. 70% of the investment costs are eligible and the investment period will last 3 years.

IRR will reach 7.37% and the payback will be achieved in 15 years (over a 30 year time horizon)

JESSICA scenario:

JESSICA is expected to provide 41% of the required equity and provide 50% of the required debt.

The outcome of the intervention is an increase in the IRR of private partners from 10.99% to 17.19% and the loan repayment can be achieved in 6 years instead of 10.

JESSICA Sicily can intervene in the form of debt or a blend of debt and equity, according to the particular features of the project, is crucial for the feasibility of the development projects: debt interventions at attractive rates increase the potential return of private

investors, while important equity contributions reassure other financial operators o involved in the deal.

ON-GOING MONITORING

The UDF manager is expected to perform monitoring and control of operations and provide information on the programme implementation in compliance with the conditions applicable to the OA. To provide an indication of performance the output and outcome indicators are compared with reference status and set targets.

OUTPUTS

Specific objectives	Indicators	Target
3.1 Valuing cultural heritage and activities to increase the attractiveness of the territories, to strengthen social cohesion and improve the quality of life of residents	Restoration and reconversion interventions	100
	Entrepreneurial activities, also undertaken in a network, in the field of cultural heritage	50
	Technological applications for the conservation and management of cultural heritage and the centers of restoration, management and maintenance of cultural heritage	5
	Operations in support of artistic production and contemporary architecture	5
	Requalification of architectural contexts and urban landscapes of historical value	10
3.3 Strengthening the competitiveness of the Sicilian tourist through the expansion, improvement and diversification of tourism and enhancement of productive investment of tourism industry	Interventions on tourism infrastructure	25
	Interventions on accommodation facilities	150
	Interventions on infrastructure designed to promote diversification and seasonal diversification	35
	Initiatives to promote tourism diversification seasonal diversification	30
	Services promoted	25

OUTCOMES

Specific objectives	Indicators	Current value	Expected value by 2015
3.1 Valuing cultural heritage and activities to increase the attractiveness of the territories, to strengthen social cohesion and improve the quality of life of residents	Cultural heritages included in cultural circuits	10	30
	Jobs created in the cultural heritage industry (number)	0	220
	Tourist flows dedicated to artistic production and contemporary architecture	N/A	+10%
	Visitors in the circuits of valorisation of local cultural heritage (number)	N/A	15.000 annual basis
3.3 Strengthening the	Overnight stays sold by providers of	0	100.000

competitiveness of the Sicilian tourist through the expansion, improvement and diversification of tourism and enhancement of productive investment of tourism industry	common services centers (number)		
	Number of tourists per capita in the 8 months, outside summer (Days of presence (both Italian and foreign) in the whole of the accommodation in the non-summer months per capita)	1.09	2
	Tourists served by innovative services (%)	N/A	Positive increase

EX-POST EVALUATION

Given the early stages of the instrument as of 2011 there has not been an ex-post evaluation on JESSICA Sicily. However, the increase of labour opportunities, quality of life and impact indicators set should be calculated, monitored and verified as part of the impact assessment of the investments outcomes.

CONCLUSIONS

The following table summarises the existing evaluation paradigms of Ragusa financial instrument.

Planning and evaluation paradigms	Relevance	Existing approaches
Logical framework	High	Sicilian ROP applies an intervention logic consistent National Strategic Framework (Priority 5).
Cost Benefit Analysis	High	Monetisation of cultural benefits is gathered using stated preferences and the related WTP.
Multi-Criteria Analysis	High	The net economic and social impacts are considered under the form of a combined indicator.
Spatial impact Analysis	High	Spill-over effects among touristic attractions due to touristic circuits.
Value for Money	Medium	Decision to use JESSICA as opposed to grant, other public or private funding sources.

1.6 Knowledge base and innovation

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Many ERDF OPs have emphasised the importance of promoting knowledge-based and innovation-oriented developments. One of the three priorities in the Regional Competitiveness and Employment objective[89] has been on innovation and the knowledge economy, which focuses investment on interventions that enhance research and technological development (RTD), stimulate innovation and entrepreneurship and create Financial Instruments and incubation facilities that support the RTD capacity of SMEs and the formation of new businesses, especially knowledge-intensive SMEs.

In the JESSICA context, knowledge based institutions (KBI) that undertake teaching and research are often located in urban areas, but within premises that are relatively old and in need of updating. Besides seeking to upgrade their premises, many urban KBIs aim to extend their collaborative research activities and also commercialise their intellectual property, often by encouraging new business formation through academic spin-outs or the licensing of technology. This commercialisation activity has generated new sources of income for KBIs while enabling them to continue with their main teaching and research functions. The encouragement of SME activity that exploits intellectual property also contributes directly to the development of wider innovation system.

Larger KBIs in urban areas have also been collaborating with commercial developers to build residential accommodation for their workers and students near to the central city campus and the rental income from such development has provided a further source of longer term sustainable funding that may have a good fit with JESSICA.

JESSICA investments encompass a wide range of land and property-related activity and there will be opportunities such as research centres, business incubation facilities and science parks which are linked to technology transfer objectives and/or clear business development objectives. Investment in broadband technology – and particularly SME access to broadband – has been another area pursued by many ERDF O Ps and this is another area relevant to JESSICA.

Evaluation methodologies in this area have tended to focus on business benefits as well as identifying critical success factors linked to the size and type of property and the range of innovation and knowledge transfer services provided. Angle Technology's evaluation of science parks in the UK is one example[90], and DG Regio's EVALSED portal[91] identifies a range of other evaluations, including interventions targeted specifically at SMEs.

Tracking output and outcome changes

Evaluation research in this area uses a number of activity, output and outcome indicators that are compliant with ERDF guidance. Measuring the performance of these activities can be achieved through a limited set of **output** indicators, all of which are commonly used in economic development schemes of this kind, including ERDF-supported schemes:

89 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:210:0001:0011:EN:PDF

90 Angle Technology, 2003 Evaluation of the past and future economic contribution of the UK Science Park movement. UK Science Park Association, Cambridge. www.ukspa.org.uk/ContentFiles/UKSPAEvaluation-ExecutiveSummary.pdf

91 http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evalsed/evaluations/index_en.htm

Relevant output indicators
Hectares of brownfield land reclaimed and/or redeveloped
Sq mSq m of new or refurbished employment floor space (by type)
Number of research facilities supported
Number of Research and Technology Development (RTD) projects supported
Number of research and innovation centres supplied
Number of businesses involved in collaborations with the knowledge base (e.g. business/cluster networks)
Number of new businesses created, of which those which are university-derived
Number of new patents and trademarks taken out as a result of assistance
Increase in sales from new products, processes and services developed through collaboration with the knowledge base
Number of existing businesses attracted
Number of full-time equivalent jobs created
Number of full-time equivalent jobs safeguarded
Number of new homes provided
Hectares of public realm provided

Not all of these outputs will be relevant for every scheme, but they provide a useful menu of core indicators from which to choose.

The ultimate objectives of these kinds of projects are often concerned with generating lasting **outcomes**, such as:

Increasing the stock of development land
Increasing employment
Increasing economic output (Gross Value Added)
Increasing population
Improving environmental amenity, well-being and quality of life
Increasing commercial and residential land and property values
Increase in private sector investment in RTD
Increase in incidence of new or improved products and services by business
Increase in GVA amongst new business start-ups
Increase in GVA in existing companies

A distinction should be made between outputs and outcomes which are generated directly by JESSICA investments and those which are stimulated indirectly. These are of particular importance when it comes to assessing the impact of knowledge based activities and in particular its commercialisation.

The measurement of direct effects depends very much on the nature of the project. In the case of a science park or business incubation project, the direct effects will be the increased employment that occurs as beneficiary businesses either start up or are able to grow through their enterprise being located in premises of this kind, as they develop products and processes that are based on the knowledge developed in the university and elsewhere in the knowledge network. However, there is also an extensive body of research that shows that there are also many indirect or "spillover" effects that may arise through the contribution that such projects can make to enhance the capacity of the wider innovation network of which it forms a part. Increased collaboration between companies and researchers will assist in the exploitation and development of knowledge based activity more generally.

Additionality

As with other types of JESSICA activity it is important to identify the level of additional benefits which arise because of JESSICA-supported interventions and account for benefits

which would have occurred anyway. Previous sections of this Report have described the methodologies that have been used to gauge the additional benefits associated with business development activity, and these apply equally to the area of knowledge based economic development (see for example the business park case study example). The methods frequently involve the use of carefully designed questionnaires and control groups to assess what potential beneficiaries believe to be the additional impact of the JESSICA-supported interventions and other forms of support where this may be of relevance. Elsewhere, the Report has noted that the assessment of additionality will include deadweight, leakage, product market displacement and multiplier effects. Surveys designed to assess these and other important evaluation parameters are usually focused on the companies assisted, but may also include a number of other significant stakeholders.

Valuing the benefits

As reported earlier in this section the benefits from the development of the Park can be valued by looking at the production benefits of the end use (i.e. the GVA benefits associated with net additional job creation) or through the valuation of the property asset itself.

In general, the pursuit of innovation and knowledge based activities lends itself to valuation through production benefits, and for interventions such as science parks and innovation centres, through the application of GVA to net additional job creation. A key reason why this approach is preferred over property valuation is because of the rate of churn associated with incubation premises and the opportunities for business growth – linked to the original intervention – once companies have moved on, e.g. to grow-on space elsewhere.

1.6.1 Case study example: Science park and business incubator linked to a city university

Context: Rationale for intervention, addressing market failure and delivering equity and efficiency objectives through JESSICA

Proposals have been developed to create a Science and Technology Park on a 15 hectare (37.05 acre) site of a disused factory in the old industrial district of the City. The site has been derelict for a number of years due to the costs of demolition and site remediation. The site requires new access infrastructure, but is located near to the Central City University which as an institution has been experiencing rapid growth in recent years and needs new premises as the demand for its courses has expanded. The university authorities also have a growing demand for floor space near its central city site to accommodate research projects being undertaken by research staff in collaboration with local companies. There is also an emerging need for business incubation units from individuals who wish to form start-up businesses to develop new products and services linked to doctoral programme research that they have undertaken at Central City University. Much of this activity has a medical application and the City Hospital Research Department is engaged in a number of collaborative ventures with Faculty and students of Central City University.

The central city core is regarded as an area in urgent need of economic stimulation and if this could be achieved it would contribute to an improved economic performance of the City which has been suffering from the decline of its traditional industrial base for a number of years. The City is in a region that is eligible for ERDF. The proposed development will secure benefits that are relevant to Priority Axis One “promotion of business competiveness and start-up”, Priority Axis Two “innovation and the knowledge-

based economy" and Priority Axis Three "Integrated urban development" of the relevant OP. It is anticipated that if the central city area site can be developed in the way suggested, it will help as a catalyst for further economic development in the older parts of the city and there will be downstream benefits to workers in service, construction and related industries. Negative externalities, combined with the scale of the site, present a clear economic efficiency rationale for intervention. This rationale for intervention has formed the basis of a State aid clearance / notification.

The redevelopment proposals for a Science Park facility are based on 80% of the site being developed and releasing 7 ha for 13,250 sq. m of office and research and development space and 5ha for 300 apartments for research staff and students. The design will encourage a high quality public realm which seeks to integrate the site into the surrounding area.

Tracking output and outcome changes

At the appraisal stage, estimates made for the project suggest that it could generate the following direct outputs over a 7-10 year period:

- 15 hectares of brownfield land reclaimed and redeveloped;
- 10,000 sq. m of office and R&D space;
- 3,250 sq. m of business incubation space;
- 300 housing units (apartments);
- 3 hectares of public realm;
- 50 new business start-ups (of which 25 are new spin-out companies involved in RTD activities);
- 20 existing businesses attracted;
- 100 new business collaborations ;
- 10 new industrial licensing agreements;
- 630 jobs created.

These outputs were expected to contribute directly to outcomes for the target area by assisting in the generation of increased economic output (GVA) valued at €55 million per annum. There will also be increased land values in the target Central City area.

As part of the performance measurement arrangements for this project, innovation, knowledge transfer, business development and property related outputs from the scheme were monitored and a database of business support activities, beneficiaries, and science park and incubator occupiers was assembled.

A baseline of the stock of land, land values, local employment and employment rates, academic spin-outs and new firm formation, increased GVA, patents recorded and commercial collaboration opportunities was also assembled and changes in these statistics were monitored over the lifetime of the project.

Additionality

At the project appraisal stage, estimates were made of additionality parameters, drawing on benchmark evidence from other evaluations of similar projects. During project evaluation, two main surveys were conducted.

1) A survey of project stakeholders, including those from the JESSICA team responsible for developing the project which included key staff in Central City University (including directors of key research centres), the Science Park Director, the Incubation

Centre manager, those involved in delivering supporting innovation and knowledge transfer programmes, representatives from the financial community (e.g. banks and venture capitalists) and officers from the ERDF OP. This survey was used to establish the nature and severity of market failure, issues affecting the viability of the scheme, the role of JESSICA and what would have happened in the absence of JESSICA. It also considered the different ways in which the Science Park had contributed to the dissemination and commercialisation of the local knowledge base. These interviews concluded that in the absence of JESSICA funding, the Science Park, Incubator and residential accommodation would not have been developed, and that the physical provision was entirely additional. It identified that some of the knowledge transfer activity would probably still have occurred in the absence of JESSICA, but that this would not have been co-ordinated and its effectiveness would have been much more limited.

2) A survey of existing business occupiers at the science park and in the incubator (as well as a survey of previous science park and incubator tenants) helped to quantify the level of employment that had been accommodated at the science park and in the incubator over time and thus the number of full-time equivalent jobs created. It established the sectors and occupations of the jobs created in order to inform an assessment of the Gross Value Added associated with the employment. The survey asked business occupiers a series of questions to quantify critical additionality parameters. The businesses were also asked to identify the process by which they have been able to commercialise the intellectual property involved and the part played by their location on the science park and in the incubator, and other forms of support provided by key stakeholders.

In relation to deadweight, the survey established whether the companies would otherwise have started their business and located within the target area anyway in the absence of the Science Park. The survey also established the extent to which these businesses compete with other firms in their local area (product market displacement) and the proportion of their employees who lived within the local target area. The main parameters which emerged from the survey are set out in the table below.

Leakage of benefits was low, because many of the jobs were taken by those living in the city (which was further supported by the provision of research and student accommodation) and displacement from other companies was also found to be very low because the activities engaged in by these businesses were cutting-edge and they were competing globally, rather than locally, for business.

	Hectares of land reclaimed	**Hectares of public realm created**	**Commercial floorspace (Sq mSq m) / New apartments**	**Jobs (FTEs)**
Total ("gross") outputs	15	3	13,250 sq. m / 300 apartments	630
JESSICA deadweight (the proportion of outputs which would have occurred in the target area in the absence of JESSICA, e.g. if there were other funding mechanisms in existence)	0%	0%	0%	20% would have been located elsewhere in the target area anyway
Scheme deadweight (the proportion of the outputs which would have occurred in the target area in the absence of the development scheme)	0%	0%	0%	
Leakage of benefits outside the area	N/A	N/A	N/A	30%
Product market displacement of employment from other businesses in the target area	N/A	N/A	N/A	10% of jobs displaced from other firms in target area
Net direct physical benefits before multiplier effect	15	3		318
Combined supply (indirect) and income (induced) multiplier at target area level	N/A	N/A	N/A	1.10
Net additional benefits at the target area level	25	3	13,250 sq. m / 300 apartments	350

By applying the empirical evidence from the evaluation research, the conclusion was that the physical direct outputs from the project were entirely additional as a result of JESSICA, and that 56% of the employment outputs (and their associated GVA) were net additional at the level of the target area. These are the direct effects arising from the development but there will also be further benefits in future that may arise from indirect effects that are discussed further below. The evaluation also found that the Science Park development was making a valuable contribution to the physical transformation of the Central City area by removing the dereliction associated with the decline of former industries and that this had brought about positive benefits to local property prices.

Valuing the benefits

The performance measurement for this JESSICA project involved the application of market values in order to show the monetary value from the non-financial benefits of increasing land values on site (a direct benefit), and increasing net additional employment in the target area (a direct benefit).

From jobs (FTEs) to Gross Value Added: the 350 net additional jobs in the target area which are attributable to this JESSICA project will make a contribution to economic output (GVA). At the level of each business occupier, data on the ratio of GVA to employee was applied to the number of net additional jobs in the target area attributable to JESSICA. This generated an estimate of € 55m per annum. In a standard cost-benefit analysis the benefit from job creation would have been internalised by applying a conversion factor to labour cost. The resulting economic cost of labour would be smaller than real wages because of social considerations, multipliers effects, etc. The benefit of additional employment has thus been calculated by the evaluator as the complement to one of the conversion factor found to be equal to 0.65[92]. Therefore 35% of the €55m of annual GVA was taken into account. The stream of benefits on this basis was then taken over a 20 year period and translated into a present value using a discount rate of 3.5% (the "social time preference rate" in the UK), generating an estimated GVA benefit of over €270m.

These were compared with the Net Present Value of JESSICA funding for the project €25m to generate a Benefit Cost Ratio of 4.97 (i.e. almost €5 of benefit per €1 of JESSICA funding invested).

1.6.2 Implications for the R&D Financial Instruments[93]

The Region and the National Ministry for Economic Development, Department of Communication and Territorial Inspections, are driving the stand-alone project of developing the broadband offer. A particular application of this initiative would be the development of e-health and e-government. However, the high-speed broadband network needs to be improved to reach all residents.

The strengthening of the broadband network is indeed consistent with the Europe 2020 Flagship Initiative "A Digital Agenda for Europe", in particular Action 43 "*Funding for high-speed broadband*", which aims to reinforce and rationalise funding of high-speed broadband by 2014 through EU instruments (e.g. ERDF, ERDP, EAFRD, TEN, CIP) and through credit enhancement. Moreover the proposed project will also help reach the objectives of the "Innovation Union" Flagship Initiative, as the broadband network will offer an improved infrastructure for stimulating and sharing innovation.

The JESSICA programme is associated with the Regional OP ERDF 2007-2013, particularly with the general objectives of Priority Axis V Information society, Axis II Competitiveness of the region's productive economy and Axis VI Urban development and quality of life.

The initiative has been conceived in the framework of the national e-government 2015 plan to reduce the digital divide and promote digital governance at local level. The project

92 For the shadow wage a formula proposed in Annex D of DG REGIO CBA guide (p.216) SWR=W(1-u)(1-t), was used. The average figures for the UK: Unemployment rate (u) = 8.3%, Tax wedge (t) = 29.6% (Eurostat, Oct 2011)

93 So far there are no JESSICA instruments for R&D. A fictional example is proposed in this paragraph.

is presented as a contribution to the implementation of the EU Digital Agenda and of the economic development plan for the region. It aims to facilitate the applicability of the national e-government 2015 initiative, enable the development of e-health, and promote the development of the e-economy and of teleworking to relieve urban transportation from commuters.

The Regional JESSICA Holding Fund, according to the Funding Agreement will be managed and administered by the EIB. Under the telecommunication UDF, municipalities and private entrepreneurs or companies can contribute to the deployment of technological infrastructures necessary to provide next generation telecom services.

OBJECTIVE

The scope of strengthening the broadband network is to achieve the Europe 2020 digital agenda objectives of making broadband connection available to all citizens targeting low income and socially aggrieved groups. The goal includes establishing e-health, e-government and teleworking within urban areas to increase equal opportunities and reduce urban commuting.

EX-ANTE APPRAISAL

The expected impact of the initiative include fully eradicating the urban digital divide, achieve public savings from the delivery of e-health and e-government services (-4% after a first increase in costs to actually produce such services and manage the change), decrease the urban transport consumption (-2.5% of traffic) and increasing the productivity of local firms (+4.3%).

INPUT

The total availability of JESSICA Holding Fund comprises of €173.3m from the ERDF sourced by €84.3m from Priority Axis V Information society and €19.1m for Priority Axis II Competitiveness of the region's productive economy. The remaining 69.9 are drawn from Priority Axis VI Urban development and quality of life.

ACTIVITIES

Almost 75% of the resources of the UDF are ring fenced for investment developing the urban fibre network. The remaining activities can involve alternative modes of ultra-fast telecommunications (e.g. WiMAX or HSPA-LTE) and to investments necessary to develop the urban e-health and e-government services.

CASE STUDY:

The initiative covers the whole regional territory and will deploy 1,114 km of optical fibre reaching about 38,000 housing units in "passed" modality, 60 government offices and three major industrial areas. The reference architecture for the network is 'Fibre to the Home' (FTTH), which allows ultra-fast broadband and next generation networking (NGN) delivery. For its realisation, the widest possible use of "no-dig" methodologies has been planned to minimize costs and inconvenience for citizens and businesses. "No dig" technologies make it possible to develop a trenchless broadband network through site survey and use of existing canalisations. The use of such techniques can reduce environmental impact, social costs and at the same time provide economic alternatives to traditional open cut methods of installation.

What are the main terms and conditions for the project?

Project characteristics

The initiative covers the whole regional territory and will deploy 1,114 km of optical fibre reaching about 38,000 housing units in "passed" modality, 60 government offices and three major industrial areas. The investment programme reaches € 79.4 million. The whole infrastructure is expected to remain the property of the Regional Authority.

Financial conditions

The financial structure is 60% of EU grant, 30% national grant and 10% of private investors' capital. 80% of the investment costs are eligible for EU funding and the investment period is 4 years.

IRR will reach 10.68% and the payback will be achieved in 12 years (over a 30 year time horizon).

JESSICA is expected to provide one third of the EU funding (€ 15.8 million, which is 20% of the total investment cost) under the form of debt which will be repaid in 15 years. The outcome of this grant saving intervention is a decrease of IRR of the project from 10.68% to 5.51%. The payback will be achieved in 20 years instead of 12 years but the project will be able to save almost € 16 m that will be returned to the revolving fund.

According to the specificities of the project the Regional JESSICA fund can intervene in the form of debt or a blend of debt and equity. Debt interventions, given sufficiently attractive rates, can to some extent replace a share of the EU grants also in projects that have very limited positive return.

ON-GOING MONITORING

On-going monitoring is carried out by the UDF and the information gathered is reported to the investment board periodically (twice a year). In accordance with the Operational Agreement, UDF management works in close partnership with the EIB in respect of governance and reporting and ensure compliance with EU Regulations.

OUTPUTS and OUTCOMES

The UDF management will be monitoring and regularly reporting on the status of the output indicators.

The Managing Authority will be responsible for monitoring and controlling the outcome indicators and it will assess the performance based on the target indicators defined in the Regional OP and listed below:

Key targets	
Km of optical fibre placed	6,000

Number of housing units reached	250,000
Number of public administration offices connected	3,000
Number of projects related to urban broadband improvement	10
Number of jobs created (gross, corresponding to full time jobs)	340
Number of e-health services developed	3
Number of e-health services users	250,000
Number of e-government services developed	3
Number of e-government services users	300,000
Number of jobs created in R&D – research jobs (within 5 years since the beginning of project execution)	5
Additional population covered by broadband access	450,000
Reduction of the digital divide	To 0%

EX-POST EVALUTION

Ex-post evaluation examines the actual outturn against its anticipated outturn and ideally needs a "business as usual" scenario to measure the incremental impact. The detailed approach has been developed locally among the JESSICA stakeholders but no ex-post evaluation has been carried out so far.

Annex Three - Examples of pathways to impact for JESSICA Operations

Examples of JESSICA operations	Inputs	Example activities	Example outputs	Example impacts
Urban infrastructure, including transport, water/ waste water and energy	€ JESSICA € other public € private	Measures introduced to reduce air pollution (traffic calming, congestion reduction measures)	Measured reductions in tonnes of air pollutant (nitrogen dioxide, particulates (PM10), sulphur dioxide, benzene)	Increase in quality of life/wellbeing % of residents satisfied or very satisfied with their local area as a place to live % of people who feel that local air quality has improved
Energy efficiency improvements (e.g. housing retrofit schemes)	€ JESSICA € other public € private	No. of dwellings improved	No. of new dwellings constructed achieving energy efficiency over Standard Assessment Procedure X (where X could be, e.g., 75, 95 etc.)	Reduction in CO2 (tonnes)
Heritage or cultural sites for tourism and other sustainable uses	€ JESSICA € other public € private	No. of new or improved (management) local nature reserves (e.g. woodland, grasslands/meadows, wetland and rivers/lakes)	No. of (additional) visits or visitors No. of households within immediate vicinity/close proximity (environmental amenity improvement)	No. of interventions that deliver biodiversity targets Change in adjacent residential housing and commercial property values % of residents satisfied or very satisfied with their local area as a place to live Change in visitor expenditure in target area
Redevelopment of brownfield sites, including site clearance and decontamination	€ JESSICA € other public € private	Hectares of brownfield land cleared by demolition and levelling Hectares of contaminated land remediated	Hectares of land serviced for residential development Hectares of land serviced for commercial development Hectares of public open space No. of housing completions Sq. M of commercial floorspace No. of jobs (FTEs)	Change in stock of development land (residential, commercial) Change in residential and commercial land values

Examples of JESSICA operations	Inputs	Example activities	Example outputs	Example impacts
			accommodated	
Creation of new commercial floorspace for SMEs, IT and/or R&D sectors	€ JESSICA € other public € private	Hectares of land serviced for industrial or commercial development Sq m. of space constructed (by type and grade)	Sq metre of buildings occupied Occupancy level for different use (by SIC) Occupancy level (proportion of floorspace) Number of jobs accommodated (FT/PT > FTEs) No of businesses accommodated (by SIC)	Change in stock of commercial floorspace Change in commercial land values and rents Change in workplace employment in target area Change in Gross Value Added (GVA / Economic Output) in target area
University buildings – medical, biotech and other specialised facilities	€ JESSICA € other public € private	Sq m. of space constructed (by type and grade)	As for commercial floorspace, plus No. of businesses engaged in collaborations with the European knowledge base Value of increased R&D in those businesses engaged with the knowledge base R&D expenditure as % of turnover in beneficiary firms No. of patents filed Increase in GVA/employee (productivity) due to R&D investment	Business R&D as a proportion of GVA Gross Value Added Productivity (GVA/employee)

Annex Four - Impact investing

Investors in a number of sectors are increasingly investing in projects with a direct, measurable, and sustainable social and/or environmental impact in addition to an acceptable rate of return. In these sectors, the traditional frontier between profit-seeking investment and "give-it-away" philanthropy is blurring and what some observers have called a "Third Sphere" is emerging.[94] The global objective of Third Sphere investments is to lever new sources of capital, often combining public and private resources and suitably structured risk sharing arrangements to tackle social and environmental concerns. Impact investing is seen as a new asset class requiring specific investment skills, organisational structures, new metrics and benchmarks.

According to the Rockefeller Foundation[95] impact investing policies can be grouped into three broad categories depending on the role a government chooses to play in capital markets - increasing the supply of capital, directing existing capital, or increasing demand for capital (Figure). Governments can thus have influence in shaping and stimulating the growth of the market for impact investing.

Figure 15. Government policy framework. Source: Rockefeller Foundation

94 The Third Sphere: How impact investing could become the next big opportunity for the Luxembourg financial industry, PwC 2010.

95 Impact Investing A Framework for policy design and analysis, Insight at Pacific Community Ventures & The Initiative for Responsible Investment at Harvard University, Supported by Rockefeller Foundation.

Supply development policies raise the supply of capital from investors including governments, individuals, foundations, banks, and investment and retirements funds.

Policies dealing with investment rules or requirements and policies that provide co-investment increase the supply of impact investing capital by mandating such investment or by alluring investors through risk-sharing with government.[96] Examples under this category include Priority Sector Lending requirements in India[97] and US Small Business Administration's New Markets Venture Capital Fund programme[98]. As explained in the next section, the development of JESSICA Financial Instruments can also be seen in this light, as a way to increase the supply of "impact" capital for sustainable urban development in the EU.

Policies directing capital aim at shifting the way existing investments are made in the capital markets by directing capital toward impact investment. These policies also aim at improving transaction efficiency and market information. Examples under this category include the Green Funds Scheme in the Netherlands that provides a tax credit for investors in certified investment funds targeting environmental projects99 as well as Climate Awareness Bonds issued by EIB dedicated to support projects in renewable energy and energy efficiency.

Demand development policies increase demand for "impact capital" from companies, cooperatives, projects, and other vehicles in need of funding. These policies aim at building institutional capacity, creating enabling structures, and contributing generally to the development of impact investment oriented projects and capital recipients. For example, Community Interest Companies in the UK is a new corporate legal form to facilitate the development social enterprise investing. It enables financial returns to be reinvested in community enterprises favouring wider non-financial benefits and social capital to grow.

As indicated by JP Morgan Counter(Imp)action Austerity report,[100] governments in Europe, Australia and the US are likely to increasingly turn to the impact investment sector by establishing outcome-based finance mechanisms and striving to attract private investment capital, to face the challenges arising from high debt-to-GDP ratios, the need to cut public spending, austerity measures and lagging economic growth. The increasing role of impact investing in investment portfolios can be illustrated by the fact that according to JP Morgan report, over the past three years, the governments have made over

96 Impact Investing- A Framework for Policy Design and Analysis, The Rockefeller Foundation.

97 For more than four decades, the Reserve Bank of India (RBI) has required all public and private banks to direct a fixed percentage of lending to "priority sectors," which it defines as underserved or priority areas for economic growth. http://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/73748.pdf

98 New Markets Venture Capital (NMVC) Program was created in 2001 by US Congress to create incentives for private investors to encourage venture capital investment in low income communities of the United States in order to create jobs and entrepreneurial capacity in places where traditional venture capital funds typically do not invest. This program will provide market-rate returns to private sector investors, repayment with interest to the federal government, and lasting economic benefits to America's underinvested communities. (http://www.community-wealth.org/_pdfs/articles-publications/cdfis/paper-cdvca.pdf)

99 In March 2010, the Dutch government implemeted a renewed Green Fund Scheme. The government issues green certificates (maximum duration 10 years) for projects in the fields of nature conservation, forestry, landscape, sustainable aquaculture, renewable energy, sustainable barge, spatial restructuring and sustainable construction of utility buildings can apply for green funding. Investments in renewable energy are total approximately 300 million per year, implying reduced tax revenues of 7.5 million per year (http://www.iea.org/textbase/pm/?mode=re&id=1160&action=detail)

100 Counter(Imp)acting Austerity, JP Morgan, Social Finance Research, November 2011

€ 3.8bn available exclusively for impact investment, and according to the latest JP Morgan survey[101] investors expect impact investing to account for 5-10% of portfolios in next 10 years.

According to another report "Insight into the Impact Investment Market", socially-oriented impact business in the UK already contributes an estimated 1.5% of GDP annually to the UK economy and employs over 800,000 people, introducing also innovative outcomes-based financing solutions like payment-by-results contracts[102], investment readiness support[103] and Social Impact Bond[104]. In Germany, KfW recently established an impact investment funding instrument aimed at fostering the growth of social enterprises that is to begin on 1 January 2012 - "With innovative ideas, social enterprises contribute to solving social problems. The new funding facility will enable them to obtain the necessary capital to disseminate effective approaches."

The results of the survey "Insight into the Impact Investment Market"[105] indicate that the impact investment industry is still perceived as "in its infancy and growing". "Lack of track record of successful investments", "shortage of quality investment opportunities" and "inadequate impact measurement practice" were seen as the three most critical challenges to the growth of the impact investment industry. The biggest risks that investors perceived are "illiquidity or long tenors of investments", "uncertainty regarding achievement of stated financial returns" and "uncertainty regarding achievement of stated impact objectives".

The respondents believe that the number of institutional and high net worth individual investors who "know what impact investing is" has doubled from two years ago.

JESSICA UDFs as Impact Investors

Stakeholders engaged in the development of Financial Instruments in Cohesion Policy and operators in impact investing share a common interest in the development of robust performance assessment frameworks to assist them in structuring and selecting investments on the basis of their "impact", namely their non-financial performance. In addition, operators of JESSICA Financial Instruments should give special attention to presenting UDFs looking for external co-investors as impact investment tools aimed at objectives shared by the co-investors. For instance UDFs generally focus on a target local

101 Insight into the Impact Investment Market, JP Morgan, Social Finance Research, December 2011

102 Payment by results contracts is essential to the reform of public services in the UK. These contracts allow to only pay for the services once pre-agreed outcomes are delivered. However, investors currently regard the payment by results model as an untested market with a series of risks and uncertainties. The impact delivery risk is transferred from the government to the service provider.

103 Investment readiness support was set up in 2003 with the aim of getting projects or promising enterprises to a stage where traditional investors can make investments. This can include, for example, providing interim finance directors or accelerating product or service testing, in order to allow loan and equity providers to come in.(http://socialinnovator.info/ways-supporting-social-innovation/market-economy/social-finance/investment-readiness-support)

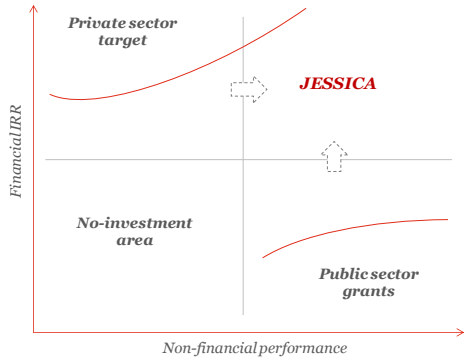
104 The Social Impact Bonds are a form of outcomes-based contract in which public sector commit to pay for significant improvement in social outcomes (such as a reduction in offending rates, or in the number of people being admitted to hospital) normally for a defined population or target area.

The impact delivery risk and the risk of financial return is transferred from the government to third party investors who provide capital to the service providers and take the risk that outcomes may not be achieved. Growing the Social Investment Market: A Vision and Strategy, HM Government, February 2011

105 Insight into the Impact Investment Market, JP Morgan, Social Finance Research, December 2011

area, city or region, where intended outcomes concern socio-economic objectives such as unemployment, energy poverty, mobility, quality of life and other components of urban social welfare. This could particularly appeal to investors with a special interest or special bond to that target area. Similar arguments could apply to "green" investors focused on achieving environmental impacts.

It is useful to remember that the key focus of JESSICA investing is on those segments in the urban investment market where revolving instruments can achieve greater value and impacts on social and environmental objectives, compared to the unassisted operation of private markets or the traditional application of grant funding.



This upper right quadrant highlights the area where JESSICA intervenes. It is characterised by the fact that investment projects can generate some financial returns, but not enough to attract private investors at market rates, although they may generate significant socio-economic returns that are difficult to capture as financial returns to the investor. For instance these projects can be in sectors, such as alternative energy production or energy efficiency investment with limited previous track record, or conversely in traditional public sector investment areas such as social housing. In these cases the return-seeking investor may be less attracted because of high perceived financial risks, despite the potential for significant social and environmental benefits.

Difficulties in attracting investors and developers to integrated urban regeneration investments may highlight the presence of a market failure and justify public intervention - or, as specifically relevant in the case of JESSICA operations, the possibility that sub-commercial terms in the provision of financial support to projects are deemed compatible with EU State aid rules.

Market failures can reflect a number of issues, such as property undersupply due to a misperceived shortage of demand, low returns yielded by regeneration projects (compared to the level accepted by markets), and both negative and positive externalities.[106]

Market failure can occur on the demand-side and the supply-side. On the demand-side market failures can arise either because of information asymmetries or externalities whereas on the supply-side market failure emerges due to insufficient funding of projects associated with medium/long term return.

Information asymmetries in urban regeneration impact the risk appetite of urban developers and investors, so that development projects will suffer increased funding costs. Information gaps thus result in an increased risk aversion and perceived lack of economic viability. Incomplete information exists where it is difficult or expensive to gain detailed

[106] SA.32835 (2011/N) - United Kingdom, Northwest Urban Investment Fund (JESSICA), European Commission

information on demand, either because markets are not mature enough or because information is expensive (or in some cases impossible) to collect, thereby exacerbating information asymmetries. Markets can fail in the presence of externalities, i.e. socio-economic effects whose value has not been paid or taken into account by the party who produced it or communities which suffer or benefit from the intervention. Noise or noxious emissions by surrounding plants or land contamination issues are examples of externalities that could prevent regeneration projects.

On the supply side, the evidence seems to point to the lack of affordable financial resources (loan/equity) to deliver regeneration projects. Commercial banks currently face capital and liquidity constraints and it has become more difficult to obtain bank loans with maturities sufficiently long to sustain urban projects. Debt providers also tend to be influenced by the perceived higher risk, with negative implications on the amount and pricing of loans. As a result, regeneration projects have more difficulties in raising money on the debt market and when they do they may have unfavourable conditions, thereby increasing financing costs and compromising the financial viability of projects.

Insufficient debt funding is also likely to affect the perception of risk and level of return that equity investors require and the risk/return balance they are willing to accept. Higher returns required by equity providers increase the cost of finance and cause a negative impact on the overall financial viability of an urban investment.

As part of the background information for the establishment of an evaluation framework - and where applicable - the key failures in the urban investment market where JESSICA instruments operate should be identified, so that it is better understood how JESSICA instruments can make an effective and State-aid compliant intervention to alleviate such market failures.

There are several commonalities bringing together the general philosophy of impact investing and JESSICA Financial Instruments operating within the EU Cohesion Policy context. Within the limits of their common interest in urban and sustainable development issues and the geographic EU dimension, the performance measurement framework used by MA and UDF managers in JESSICA can learn from best practices in the impact investment industry – and vice-versa.

A leading example form the impact investing industry is the Impact Reporting & Investment Standards (IRIS) initiative which is led by the Global Impact Investing Network (GIIN) to standardise performance management for impact investors and suppliers of impact investing funds. It consists of guidelines for performance measurement and a “matching platform” for impact investors and investment seekers, usually for profit and non-profit organisations with social concerns on fair wages, employment conditions, and diversity elements. The IRIS strive to enhance transparency as to what defines impact investing and focus on defining a system of financial, social and environmental criteria used to assess the underlying investment opportunities and companies. These criteria include the entire range of performance metrics from performance indicators with associated targets to monitoring indicators to qualitative assessment surveys and checklists.

The figure below illustrates the set-up of the IRIS framework. It includes common report elements, sector-specific metrics and good practice solutions on how to measure impact.

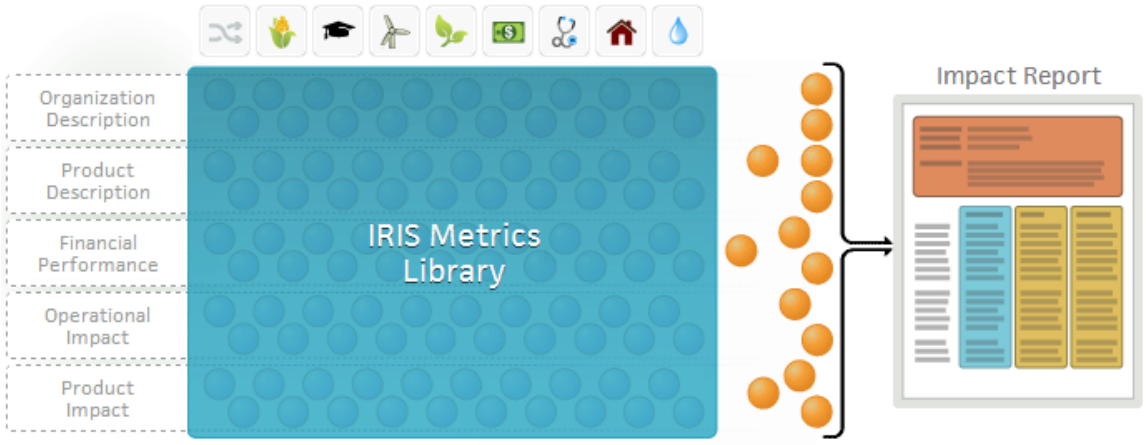


Figure 16. IRIS framework components and sectors, taken from http://iris.thegiin.org/

An integration of the Cohesion Policy guidelines and worldwide recognised reporting standards in impact investing could thus be usefully pursued within the context of the development of a JESSICA performance measurement framework.