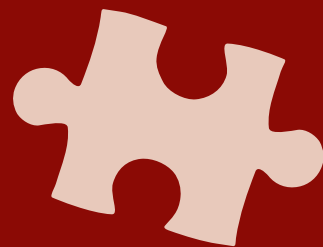


# Innovating Regions in Europe



## Regional Innovation Policy Impact Assessment & Benchmarking Guidebook





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*Based on the results and practical experiences of eight projects of the pilot action 'Regional innovation policy impact assessment and benchmarking'*

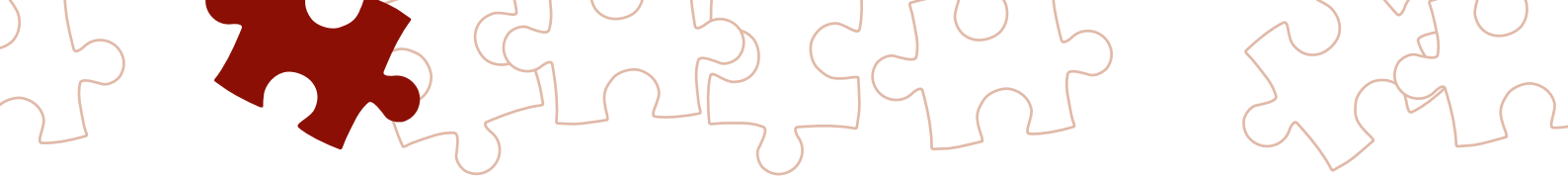


**ARISE  
EMERIPA  
EURO-COOP  
IASMINE  
IMPACTSCAN  
INNOWATCH  
MERIPA  
OMEN**



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# 1. The Innovating Regions in Europe (IRE)

The Innovating Regions in Europe (IRE) network was created by the European Commission (EC) in the mid-1990s. Its aim is to facilitate exchange of experience and good practice among European regions that are enhancing their capacity to support innovation and competitiveness among regional firms through the development and implementation of regional innovation strategies and schemes. In 2008 over 230 member regions belong to the IRE network. The majority of the IRE regions have undertaken Regional Innovation Strategy (RIS) projects with support from the EC, which among other measures, aims to increase regional innovation. The RIS projects help regions to optimise their innovation capacity and strengthen the regional innovation system. Many regions are interested in having a better overview of the results of their innovation strategies. Eight

**'Regional Innovation Policy Impact Assessment and Benchmarking'** projects were undertaken to help assess the impact of regional innovation policies and strategies, and to create instruments for inter-regional benchmarking. An introduction to the results obtained by these projects is contained in this guideline.

The IRE Secretariat is a central service, which organises network activities and provides technical support to IRE network members. The main aim is to support the efforts of IRE members to design and implement regional innovation strategies. The IRE Secretariat prepared this document in cooperation with the eight regional innovation policy impact assessment and benchmarking projects (IA&B).

## 2. Purpose of this Guideline

The focus of this guideline is to introduce innovation policy impact assessment and benchmarking at the regional level. This document is targeted at two audiences: on the one hand it is aimed at the large community of professionals who have different roles in regional innovation policy who may not have been much involved in evaluations yet, but who would like to have an overview on concepts, approaches and practical implementation of impact assessment and benchmarking. This refers both to people who are involved in the preparation of strategies and the design of programmes and their implementation, as well as to those who are involved in specific innovation activities and support operations.

On the other hand, this document targets the innovation policy professionals, particularly those responsible for regional strategy, who are seeking to increase their know-how on impact assessment and benchmarking in Europe. This includes people responsible for the set-up, implementation, follow-up, and the evaluation of regional innovation policies. A number of important documents on these themes precede this one. The publication 'SMART Innovation: A practical Guide to Evaluating Innovation Programmes', (2006), comprehensively explains how to plan and conduct impact assessment; and 'Mutual Learning Platform: Regional Benchmarking Report. Blueprint for Regional Innovation Benchmarking' (2006), explains how to perform benchmarking. This guideline does not seek to duplicate them, and should therefore be read in conjunction with these earlier publications.

This guideline is based on the results and experiences of the first systematic attempt in Europe to develop tools and methodologies for Impact assessment and benchmarking of innovation policy at a regional level. This has been done through the eight projects of the pilot action of Regional Innovation Policy

Impact Assessment and Benchmarking, undertaken within the framework of the Innovation Regions in Europe Network. These projects were pioneering in Europe in creating evaluation systems based on the needs of actual regions while at the same time putting the systems in practice and ensuring that they can be universal to any regional setting. The findings presented here are thus based on the practical, concrete feedback obtained from testing the tools and systems in participating regions.

This paper presents the common attributes of these projects and the different approaches adopted, and the reason for adopting different approaches. Practical experiences are highlighted, including the difficulties faced by the pilot-projects undertaking impact assessment and benchmarking at a regional level. A synthesis of recommendations emerging from the experience of the eight projects is provided. In addition, the high-level EU policy initiatives on competitiveness in Europe as well as other current relevant innovation for monitoring initiatives are mentioned, so as to provide a context for the IA&B.

This guideline brings together information on impact assessment and benchmarking as applied to regional innovation policy. It is not a training manual. However, it provides entry points to wider sources of information on conducting both impact assessment and benchmarking, including: the eight pilot-actions, a number of web-sites, and reference to key-publications available for download from the Web. It seeks to give practical insight on the experiences of and results from the pilot projects. The paper aims to guide the reader to the different approaches and methodologies the eight projects of the pilot action; consulting the project reports and deliverables is recommended if more detailed information is needed.



### 3. Introduction: Regional Innovation Policy Assessment

#### Impact assessment and benchmarking applied to regional innovation policy

Innovation is considered as an important competitiveness factor for companies and a source of wealth for economies. Therefore it is an important subject of policy intervention. The understanding of what innovation is has evolved in the past decades away from a purely technological definition – of new products and processes introduced on the market, to a wider one including organisational and marketing aspects or incremental innovation in low tech production companies and more recently, innovation in services. A wider definition is expected also to cover not only the business but also the public sector and include for example innovation in the education or healthcare services.

Innovation policy seeks to create framework conditions for supporting innovation, and regional policy seeks to support actors locally in an international context. Innovation programmes are the mechanisms by which innovation policies are implemented. They can be described as: strategies, measures, initiatives, and projects. These innovation programmes may be funded by public or private actors, or a combination of both. Innovation programmes can be direct: for example funding a project to achieve an outcome, or indirect: for example reducing taxes on innovation products or outcomes to stimulate investment.

Monitoring programme outcomes can mean monitoring the operation and management of an innovation work programme itself. It can also be about measuring long term outcomes from that programme, which takes more time and may be less directly under the control of the programme. Within innovation precise vocabulary has been developed to describe exactly what is being evaluated. Evaluation of **outputs** and **outcomes** relates to examining the internal and external results of innovation initiatives, where an initiative can be strategies, measures, initiatives, and projects. In addition, the innovation **processes** can also be evaluated.

Evaluation of **effectiveness** explores the management of programmes. This includes management communication, problem resolution, etc. Whereas, the evaluation of **efficiency**, determines if the objectives of an initiative have been met. Finally the examination of **efficacy** examines the relevance of an initiative in relation to broad policy goals. Some of the more common terms used to describe IA&B are explained in a glossary at the end of this guidebook.

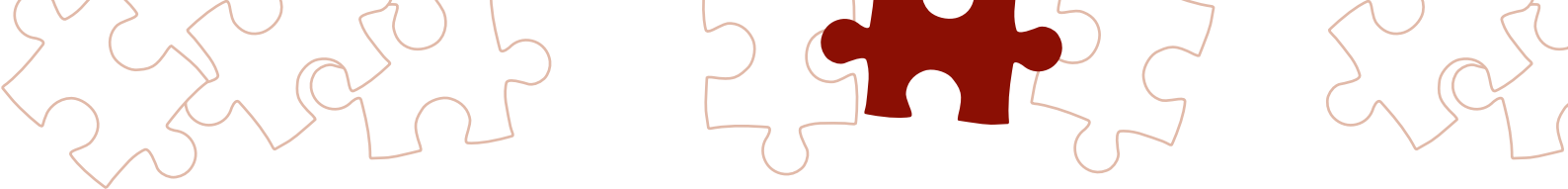
#### Impact assessment

Impact assessment follows logical steps to formalise policy analysis and results measurement. It develops practices that test and improve policy development. Sometimes impact assessment is implemented by external evaluators. The outcomes of assessment can be recorded in formal reports allowing comparison over time.

If IA&B are repeated or undertaken on a continuous basis this allows a structured improvement in policy.

Impact Assessment is not about publishing success stories, nor auditing expenditure on activities. It examines more than activities and inputs, a process described as monitoring. Monitoring and auditing can be used as inputs to impact assessment, and publishing success stories can form part of publishing impact assessment results. Impact assessment is concerned with measuring processes, outcomes and outputs in a variety of ways. According to the Communication from the Commission on Impact Assessment: “Impact Assessment identifies the likely positive and negative impacts of proposed policy actions, enabling informed political judgments to be made about the proposal and identify trade-offs in achieving competing objectives”. This assumes an advanced policy environment where impact assessment is integrated into policy making from the outset. In fact impact assessment can be undertaken during a programme or after its completion. Monitoring of policy can be described according to the time-frame in which it is conducted. Ex-ante (before) and post-ante (after) evaluation, are commonly applied in the planning (ex-ante) and monitoring (ex-post evaluation) stages. The experience of most of the eight projects is that the combination of the two perspectives gives best results, the ex ante assessment helps to identify which phenomena are expected and so which should be monitored in order to capture the most important impacts. And thanks to systematic collection of the information in the ex-ante impact assessment, it is also possible to confirm or refute the assumed impacts.

Some well-known approaches to impact assessment are outlined later in this guideline. Public information and guidance on how to undertake impact assessment is available at: [http://ec.europa.eu/governance/impact/index\\_en.htm](http://ec.europa.eu/governance/impact/index_en.htm) . This website provides for example guidelines for Commission staff in charge of preparing policy proposals, thus focuses mainly on *ex ante* impact assessment.



## Benchmarking

Benchmarking is a process by which an organisation or, more commonly a group of organisations, carries out a comparative process in order to seek improvements. First the organisation compares its performance against the best-in-class systems. Next it determines how these systems have achieved their superior performance. Then organisations use this information to improve their own performance. This process can be repeated in order to adjust policy and improve outcomes. Benchmarking can be applied to a programme, an organisation, a process, or a system.

In Europe, significant differences in policy cultures allow for the identification of those organisations that have mature policies, and for the comparison with those that are only starting to develop relevant policies. Benchmarking benefits from differences in development: it seeks to help those that lag behind, and speed up improvements by comparison with the best. However, benchmarking is not about identifying ‘winners’ and ‘losers’. It is usually not a one-off exercise, but rather a repeated one and so it can be determined if the lessons learned from others have been incorporated into own processes.

Benchmarking allows regions to learn from and be inspired by other regions. Where the knowledge sharing is widespread, as for example through the IRE network, this creates a knowledge bank of good practice. Moreover, the IA&B can make use of the experiences and tools of the regions that have been involved in such exercises before. Thus the cost of undertaking IA&B is lowered, if these pre-developed tools are used. Therefore the eight pilot projects on IA&B allowed a mutual learning environment to develop. The benefits from and difficulties of IA&B are outlined below. The diversity of appropriate approaches, as demonstrated by the eight pilot actions, are presented later in this guideline.

It is beneficial to conduct impact assessment and benchmarking in an integrated way. On one hand, the benchmarking can be made by comparing the results of impact assessment, and with use of the same methodology the different regional results can be compared more easily when the information is obtained. On the other hand, comparisons between regions can help to better define the impacts of policy interventions.

## 4. Benefits of Impact Assessment and Benchmarking

### Helping decision making and development of the strategies and programmes

Impact assessment and benchmarking can be very helpful in preparing the strategies and programmes before they are put in place. The analysis of the regional context, that is the current performance of the whole region, the strengths and weaknesses of the regional innovation systems as well as needs of companies helps to identify the need for policy intervention. For example, the policies can seek to enhance the strengths and counteract the weaknesses. Comparing different contexts through benchmarking can help identify areas where policy intervention are required and can also help provide insight as to what policies and actions are conducted in other regions. Of course, it is neither possible nor useful to simply transfer policies to a different context but ideas can be gained as to what kinds of programmes, what support mechanisms or even fields of intervention would fit a specific context.

Moreover, *ex-ante* impact assessment of the expected direct (short to medium term) results as well as indirect (long term) effects and impacts of the policy measures on regional innovation

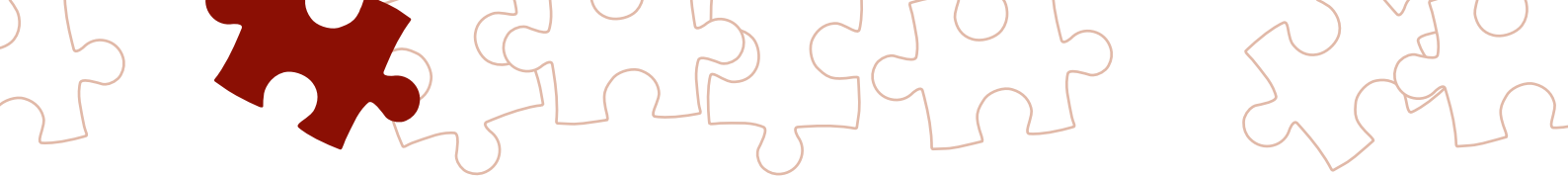
should be included in the programme design. The information on the expected results helps to take the decisions for the policy makers and justify the allocation of public money to the specific programmes. The clear targets of the future policies help different actors to better understand their roles in the overall policy agenda and also achieve their commitments.

At the same time, it also helps to plan the collection of information during the implementation phase thereby making it possible to follow the progress of achievement of the planned goals. If such plans are not made before the programme implementation, then later evaluations may be faced with the problem of missing data. Furthermore, information on the context will be necessary later in order to see whether the policies in place have progressed as planned.

### Monitoring the progress

Impact assessment and benchmarking provide a number of benefits during the policy implementation. First of all, it is necessary to see if the policies are actually being implemented as planned. The innovation policy-making process is so





complicated with different actors playing a role at different stages and in different fields, and with some regions often having different budgets as well using both national and European programmes to implement their strategies, that without an integrated review of the implementation, it would not be easy to monitor progress.

IA&B also provides important feedback during project implementation.

First of all, the measurements of the outcomes and comparisons of the plans can help to better understand what works, and what does not, especially if this is done with the participation of the responsible stakeholders. This may highlight the need for strengthening successful activities, taking corrective actions if there are problems on the way or, if needed, to re-allocate programme budgets. Similarly, benchmarking across regions reveals differences in results. Analysing these results brings an understanding of why these differences occur. IA&B also allows decision-makers **to measure the extent** of outcomes. A region can discover that although its espoused policy is to strongly support one innovation area, for example supporting the spin out of new companies, IA can reveal that limited resources are in fact assigned to that, and that new company formation is lagging behind expectations. This measurement of the proportional outcomes of support **allows a refocusing of policy support**.

Reviewing policy is increasingly important in a competitive world, where actions undertaken are expected **to prove their benefits**. Some approaches to IA&B look at the economic implications of incurring the innovation support costs, the benefits of the actions undertaken for the region, and comparisons between different outcomes. Innovation policy is coming under enormous scrutiny in the economic and demographic context of the European Union. Now that larger public sector budgets are to be allocated to innovation actions, great attention will be paid to outcomes. IA&B provides the necessary support to stakeholders planning and implementing innovation policy. The hard measures resulting from policy analysis allow policy makers to discuss the investments in an objective manner.

## Improving policy design and implementation

Conducting IA&B implies a choice: the choice to commit resources to reviewing a policy area and to examine the extent of the outcomes. Working towards a better understanding of what makes a policy a success implies a willingness to re-design and improve on previous policy. IA&B allows the detection of inconsistencies, gaps, and overlaps in innovation support activities. The **inefficiencies can be removed** as the

policy reviews move forward, thereby improving policy actions. Therefore IA&B brings an improvement in policy implementation, and potentially **improvements in policy design**.

Few organisations have limitless resources, therefore when selecting between policy actions, they must keep in mind that more effective policies will yield optimum results. Making a **policy choice implies an opportunity cost**: the cost of choosing between alternative regional policies, and the cost of acting inefficiently or not at all. Policy implementers must choose between these alternatives, and pick the policy **actions that add the greatest value**. A better choice of policies that suit the needs of the regions result in optimised allocation and spending of public money.

## Continuous improvement of the policy making process

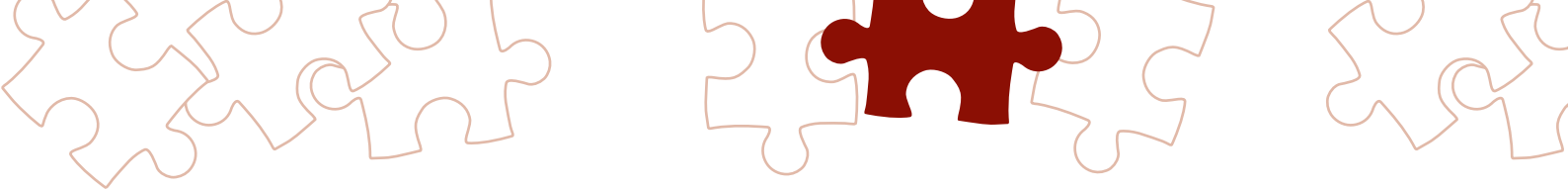
Reviewing the impact of innovation policy in a region allows for **policy learning** and improves the capacity of the policymakers to understand the policy mechanism and get new and better ideas for the future.

Impact assessment and benchmarking can be integrated in policy making from the start. If impact assessment is repeated or undertaken on a continuous basis it allows an incremental and structured improvement in policy. IA&B usually takes place more than once: it measures change over time. When repeated on a continuous basis a **structured improvement in policy** is allowed. Over time and across regions the collection of results on IA&B improves insight on the innovation system, which should help to improve processes overall.

Everybody loves to be associated with a success. Logical incremental steps, which provide results and which give tangible and improved outcomes over time, will result in continued and greater **commitment from stakeholders**. Moreover the fact that IA&B is about reviewing outcomes and results, applying scientific methods in doing so, and that the results are usually published improves **transparency of the policy making process**. By incorporating IA&B into regional innovation policy a **culture of evaluation** emerges, suggesting self-assessment, responsibility and openness to improvement.

## Legitimising policies & raising awareness

IA is normally conducted in a scientific manner and is sometimes undertaken by external experts. Benchmarking is a comparison between organisations that are usually independent of



one another. Therefore this give a certain **scientific legitimacy** to the results emerging from IA&B exercises. So IA&B provides objective, measurable, and often independent proof of the results from policy actions. This **external proof** is reassuring for those planning and implementing policy, and facilitate a policy dialogue with the stakeholders based on hard-measures.

When IA&B results are available, policy makers can present expected results as well as outcomes, which hopefully are positive. **Communicating results** is more tangible and easier for the public to understand, compared to policy planning which can be somewhat abstract. Communication helps to **raise public awareness** of what public policy has achieved.

Even in the situation where analysis reveals uncomfortable truths, for example when a benchmarking exercise places one region behind others, presenting revised action plans, with targets and objectives linked to better performing regions, can be communicated to the public. This provides proof that policy actors are aware of the problems being experienced locally, that they **take responsibility for seeking change**, and that they have a plan to improve the situation.

Communication on IA&B, and the implication of civil-society in public decision making is **good for public-private sector**

**dialogue**. Moreover, it allows policy makers to communicate with the public to reinforce the message that **public actors are accountable**. The involvement of 'the man in the street' in a knowledge-based society is generally considered a good thing. All of this **legitimises** policy decisions and reinforces democratic processes.

## Impact assessment & benchmarking: one part of a wider process

Impact assessment is part of a policy making process. In some cases it is incorporated from the start in a programme. Increasingly, programmes that hitherto did not have feedback loops are engaging in impact assessment. They are incorporating either change suggested from IA in their programmes, or actual IA into programme design. Benchmarking whilst obviously a tool for comparison of results and outcomes across regions, is increasingly being seen as a policy learning tool. The value of IA&B is that it allows innovation stakeholders to learn from the results and outcomes of policy, and also to learn how to incorporate improvements in policy design. Continuous learning is key to the added value of IA&B.





## 5. Difficulties with Conducting Impact Assessment & Benchmarking

### The nature of innovation

**Innovation is complex.** Just agreeing on a definition of what innovation is, and deciding what encourages innovation is a challenge. However, this complexity does not prevent meaningful measures being applied to aspects of innovation. The fact that innovation can be stimulated in numerous ways and can be tracked based on very diverse outcomes in fact increases the opportunity for IA&B.

Few innovations emerge from nowhere. They are commonly incremental improvements on past developments, or integrations of existing technologies or processes. Measuring innovation policy may also be approached incrementally. All policy emerges in a context and it is extremely **difficult to determine the cause and effect** of innovation inputs and outputs. Impact assessment is about attributing results, and measuring policy outcomes seeks **to attribute additionality**. This is rarely easy and attribution of results to one actor rather than another may be contested. More than one approach can be applied to address this: see for example the approach used by the pilot project EURO-COOP.

### Innovation scope of action

An extension of this problem is measuring impacts when one has to attribute outcomes to **different actors** when many and different actors are involved in the process. For example policies of: past and current governments, institutions including regional agencies and universities, companies, and individuals all interact on innovation support. In some countries the competence to support innovation is held by either national or regional governments. This can lead to **difficulties attributing outcomes** to innovation policies of one or the other.

This too comes into play when policy changes have to be decided on. An IA at a regional level may identify that changes are required in one particular area, but this area may be beyond its scope of action. Or changes required in policy may depend on budgets which are under the control of other organisations, and who operate on different timeframes. Quite simply imposing policy changes may be beyond the scope of regional innovation analysers. Sometimes it is national governments who decide on major policy areas that significantly impact on innovation: employment, educational, taxation policy, etc. A region may consider that it needs changes in one or other area but it has no power to impose in practice.

Universities are extremely important in the stimulation of innovation, but their legal basis (charters, constitutions, etc) may give them independence and autonomy from government.

Therefore regional governments soliciting information to incorporate in IA&B may not receive responses. In some countries parallel systems that manage innovation exist; they could be public or private initiatives that supported incubators and innovation parks. Their legal status and profit making intentions may be completely different, but they impact almost equally in the innovation support infrastructure. They may however act in competition and therefore extracting information from them as part of an IA process can be quite difficult. For legal reasons, management of private organisations may be legally constrained to not reveal information that may be valuable and necessary for IA&B. The **complexity of implementing IA associated with different actors** is not negligible.

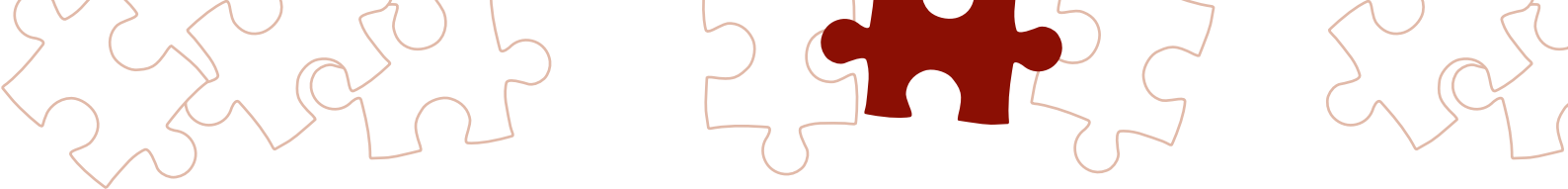
Innovation has taken on a special lustre: the panacea for ills in a modern knowledge based society. Benchmarking, where organisations seek to learn and improve their own actions compared to the best in the market, brings with it the risk of imitation or importing foreign policies. But foreign policies may have alien results: **one size does not fit all**. Regions are very different and innovation policy is not about inserting a fix-all miracle application that gives a plug-and-play solution.

### Time as a factor in policy outcome measures

An important difficulty with impact assessment is the **time-lag between implementing a policy and the impact** following that action. The time-lag between innovation policy and its outcomes clearly impacts on what can be measured and proofs of results. Innovation policy is complex and changes to environmental conditions take time to filter through and to influence innovation actors such as companies, investors, researchers etc.

The **use of IA&B to gather credit or praise from policy actions** is a powerful motivating force for policy actors. However this can work in favour of actions that give short-term and easily measured returns. There is evidence to support the idea that innovation is incremental, benefiting from a multiplicity of complex effects that interact, and build over time. Much policy has **long-term objectives**. For example stimulating science education for young children, and promoting the excitement of technology to teenagers are long term investments. They are expressions of hope for upcoming generations, which will eventually influence the innovation environment in a region. It is understood that this yields results: but capturing the results and credit from such an investment is a multi-generational exercise.

To facilitate the process of measurements, it is tempting to choose **short term and easily measured elements**. However



this gives smaller, more discreet, results and loses the lustre of success. Thus the meaningfulness of what is being measured should be considered in the long term.

## Difficulties with conducting impact assessment

Impact assessment is demanding in terms of resources. Not only does it require time, but to succeed it requires excellent understanding of what is being measured, and this requires the policy implementers to engage in dialogue with policy designers. Given that impact assessment can reveal inconvenient truths, honesty and openness to change, and the avoidance of bias in reporting are required.

To avoid bias one solution proposed is to involve independent assessors to conduct impact assessment. However this can cause details to be lost. Those who best understand a system are better placed to suggest improvements. Unfortunately they are also the ones to suffer most if IA measuring is too complex and time consuming.

Finally, there is the often heard complaint: “We spend more time reporting and measuring than acting”. This could be fatal to any measurement exercise. This particularly poisonous problem must be avoided through: efficient (effective) design of IA, ideally incorporating measurement into policy design, and strong advocacy of the long-term added value of IA.

## Difficulties of benchmarking

Benchmarking too is a challenging task. Benchmarking between regions presents the challenge of comparison between regions that are unequal. There are historic and economic differences between regions. Regions differ on the basis of their: economic and innovation starting points; research and innovation potential; and technology and industrial maturity. In some respects regions could seek to catch up with each other: and in others this would be impossible, or the timeframes would be too long. It is inappropriate for one region to seek to imitate another. Policies that yield success have to be adapted to local environments.

Another difficulty with benchmarking is that catching up takes time. Or even worse, a region's outputs can regress over time relative to a group of cohorts being compared. These factors place enormous pressure on a region that is undertaking benchmarking and it may be discouraged from the process or decide to stop benchmarking results. But the

lost opportunity of not benchmarking may be enormous: staying in the dark and hoping for the best is not a long-term strategy that allows expansion.

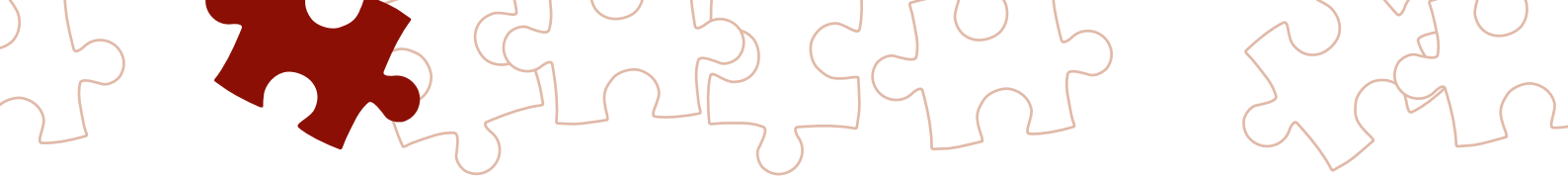
Differences in policy choices across regions are exacerbated by natural and historic differences between regions. Benchmarking glaringly highlights these differences and can be a crushing exercise for those that lag behind, but only at the outset. This is because innovation, due to its very nature, allows some regions to by-pass old and outworn industries and processes. For instance, regions previously affected by pollution from the industrial-revolution can make a policy decision to work only with clean technologies. Countries poor in natural resources can develop indirect innovation support policies, such as offering fiscal stimulus to innovative companies. Therefore by selecting optimum innovation policies, regions can overcome a heritage of non-industrialised societies, or other disadvantages from the past. Benchmarking that highlights poorness or disadvantages at the outset can be turned around to reveal greater rates of improvement. If a region can use IA&B to show that its innovation policy has avoided errors of the past, and that rates of change and growth are equal to, if not better than more advanced regions, then benchmarking can be a rewarding exercise.

## The problem with measurement

The world is full of people who blithely tell you that they don't understand figures, and even worse there are those who use them, thinking that they do. In a subject as complex as innovation, combined with benchmarking, the possibility for **mischance, gaps and error**, linked to numeric manipulations, and poor mathematical and logical reasoning, is endless. This includes: errors in choosing what to measure; errors in combining elements to measure; errors in what is measured; errors in interpreting figures, both known and deduced; and so forth. This is a seemingly obvious but surmountable problem that should not be overlooked in any way.

Absolute figures can easily be misinterpreted. Measuring innovation is complex. To **manage this complexity**, the elements selected for measurement are often small and discreet. They are commonly recombined to give composite results. However the combination of composite indicators can also be problematic. As a result, if composite figures are poorly recombined, they may yield doubtful results.

Moreover all of this can be compounded by the associated issues of **lack of data**. Sometimes elements that prove out-comes or results from innovation policy in a region are simply



not available. Sometimes data is out of date, or different time frames or data sets are available in different regions. Filling data gaps is possible but not always easy. Lack of available data can also result from **problems regarding access to data**, or data that is biased being supplied. Interlocutors may fail to understand the overall objectives of IA&B and choose, or inadvertently supply, **biased information**. Success can be amplified and problems hidden. The quality or robustness of interpretations made from the data may be open to question.

**When combining all the above**, the potential for error or misinterpretation is amplified. If it seems that the combined issues of measurement, access to data and mathematical error are meaningless, or if they seem to be an easily surmountable problem, then in practice there is an elephant in the room, meaning that this obvious problem is not being addressed. Like an elephant, this is a huge subject and should not to be ignored. One important lesson to be learned from the eight projects that undertook IA&B, is that great **care must be taken as to what is measured**.

## 6. How to Organise Impact Assessment & Benchmarking

### A road map to organising the process

Before selecting indicators to measure, overall organisation of IA&B must take place. Of course the will to undertake this type of exercise must first be present. The process of organisation is as follows: Firstly, policy-makers, stakeholders and experts are brought together. Then they identify what is intended to be measured, select an appropriate methodology and indicators, choose the team to undertake the exercise, implement analysis, review the results, and finally benchmark, either over time, between programmes or across regions.

This apparently simple road-map requires serious reflection. The budgetary requirements and who is to be involved needs to be decided on. Will this be a continuous process or a one-off action? When these questions have been answered, the next step is to identify what data is available. Before the policy was implemented was there any planning on what data to collect? Who will design the method and collect the data: external or internal experts? Furthermore, only if political support, and associated resources are lent to the IA&B exercise, can it succeed.

### Who to involve

The organisations interested in impact assessment and benchmarking include: politicians seeking information on results, policy deciders, strategy implementers, academic partners (providing objective methodologies informed by academic rigour), external organisations (independent of the process), external benchmark partners, regional agencies or institutes responsible for the setup of regional innovation support measures, intermediaries organising the region innovation support activities, and the community acted on by the policy – frequently SMEs, entrepreneurs, and researchers. That is a long list of

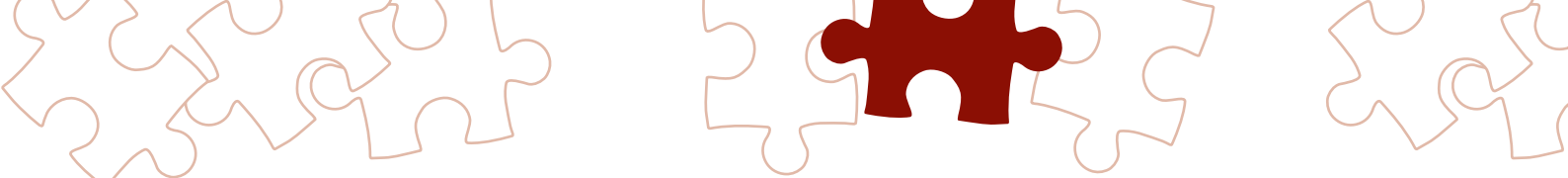
stakeholders. So it is necessary to focus on involving interested and motivated participants. Moreover, the participants must be representative of the region and the policy to be analysed.

Some participants may be called on to participate sporadically: for example the organisation acted on by the policy, or those implementing services. Management of communication flows to these stakeholders is very important, so that they know that the process is actually moving forward during phases when they are not actively involved. The involvement of external consultants or academics can result in a break in continuity of personnel involved in IA&B. This is important since the intention is to repeat the IA&B. Therefore the choices of how to communicate about and record each step in the process are crucial so as to have a well informed group of stakeholders engaged in the process.

### Different analysis methods & tools

The data gathered for IA&B commonly combines primary and secondary information sources. Primary data can be gathered through questionnaire responses, interviews, and new data sources. Secondary data may be gathered through published material, statistics, reports, websites, etc. Techniques used to gather data include: desk-research, web-crawling, statistical analysis, questionnaires, and interviews. Data is usually a mixture of quantitative and qualitative data.

A large number of national initiatives have been engaged in gathering and publishing innovation indicators. These projects are referred to below, as are the projects that adopted IA&B methods using this type of data. The experience of the pilot projects suggests that the availability of necessary data will greatly impact on the ability to implement the IA&B. So important is this issue that it may be wise to determine the extent of



the availability of the necessary data in parallel with choosing the IA&B method.

## What data are available

One of the first questions is “What is to be measured”? This means more than data: it seeks to answer what the innovation policy sought to achieve, and how this can be measured. If the necessary data elements are not available, can the gaps be filled?

Is there a direct link between what is to be measured and the policy influence? How far into the future will the policy impacts occur and how does time affect what can be measured? It may be convenient to focus on indicators that can be measured in the short or medium term, but this should not be to the detriment of long-term objectives. It may be possible to use existing indicators or it may be necessary to select/create new ones to measure. Qualitative and quantitative measures are both possible, as are combinations. Many difficulties associated with data collection methods are explained in Section 5 below.

## What to measure – indicators

In modern knowledge-based economies innovation can be thought of as being ubiquitous. How, therefore, do we measure the ubiquitous and identify its impact, and seek to increase this in the environment? Innovation is measured with **indicators**, a large array of which can indicate innovation.

Objectively verifiable indicators are quantitative and qualitative ways of measuring progress and whether project outputs, purpose, goals and outcomes have been achieved exist. Indicators of innovation performance can include, for new products, processes and services: qualitative evaluation of quality of design; qualitative evaluation of quality of branding; qualitative evaluation of revenue generation by firm-level innovation; qualitative evaluation of capacity for obtaining new technologies; share of firms introducing new products or processes; number of patents in “triadic” patent families per million population. For technology diffusion, they may include: qualitative evaluation of firm-level technology absorption; qualitative evaluation of production process sophistication; and technology payments to foreign countries.

For example, a policy that seeks to support the creation of jobs for highly qualified graduates in indigenous companies will look at indicators for new company setup, and the numbers of graduates employed, etc. This seeks to measure outputs and

results. Much of the data on this type of indicator will come from incubators, science-parks, and start-up programmes. Answers on these indicators could be supplied by organisations and individuals: delivering the services; receiving the services, or being potentially capable of receiving support services. The outputs and results however may accrue at a time later than the policy input.

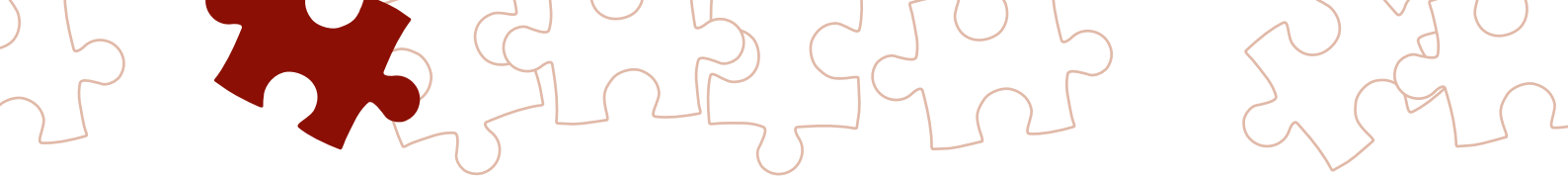
Whereas examining an SME and entrepreneur support policy to see if it has attained its expectations in a region on improving access to finance, delivering technical-support, and training entrepreneurs, could reveal that one area of support was being favoured over another, contrary to an espoused policy. For instance the policy might plan to support innovation finances more than SME training, but indicators could reveal that only a small proportion of service expenditure has addressed this. This type of measure looks at indicators for both outputs (the services delivered to SMEs) and at inputs (the proportion of time and or budget expended on alternative services). The time lag between the policy input and what is measured is shorter than in the previous example.

Another approach is to analyse the actual innovation process, through process flows. For instance, exchanges between cluster members in a region, or a science park. Here the indicators are selected to reveal the interaction between innovation stakeholders, and the relative strengths of these exchanges.

So the indicators chosen to measure innovation depend on: the intention of the original innovation policy; what is available to study; who is involved, and what is to be measured. The **indicators chosen for measurement are central to the success** of IA&B. The eight pilot projects revealed one barrier to IA&B: the choice of what to measure should not be taken without knowing that relevant data is available. This issue is further developed in the section 5 of this brochure on difficulties of IA&B.

One source of data is the **European Innovation Scoreboard (EIS)**. It attempts to benchmark, on a yearly basis, the innovation performance of Member States, drawing on statistics from a variety of sources, primarily the Community Innovation Survey (CIS). The EIS summarises data on 17 indicators of performance in the areas of human resources, knowledge creation, transmission and application of knowledge, and the supply of innovation finance and the value of innovation outputs.

Since the 2002 European Innovation Scoreboard (EIS) the European Commission started to prepare a relevant set of data on innovation at the regional level, to create a Regional Innovation Scoreboard. Two issues of the regional scoreboard



in 2002 and 2003 covered the regions of 15 EU Member States. Since 2006 a new version, with an updated methodology and larger geographical coverage, has been prepared, and the intention is to publish a **Regional Innovation Scoreboard** within the EIS report every second year. The current Regional Innovation Scoreboard applies a methodology similar to the EIS but with reduced data availability - at present only seven indicators are covered:

- Human Resources in Science and Technology – Core (% of population)
- Participation in life-long learning (per 100 population aged 25-64)
- Public R&D expenditures (% of GDP)
- Business R&D expenditures (% of GDP)
- Employment in medium-high and high-tech manufacturing (% of total workforce)
- Employment in high-tech services (% of total workforce)
- EPO patents per million population

The regional scoreboard faces the difficulty of the non-availability of regional Community Innovation Survey (CIS) data and regional data for many of the other indicators. Data is not available as it is either not collected by the national statistical offices (NSO) or is considered to be unreliable due to sampling methods. For the next Community Innovation Survey it is planned to increase the availability of data and to improve the scoreboard methodology.

## Timing of analysis

One consideration when conducting impact assessment is the timing. It is common practice to speak of **ex ante** and **ex post evaluation**, which respectively mean to evaluate the objectives of a programme before it is implemented, and to evaluate the results of a programme when it is completed. In

addition, intermediate evaluations are conducted during programmes, and real-time evaluations follow programmes during their execution.

Questions can be raised as to whether ex ante evaluation is really evaluation, but since this term is in common use it is retained in this guideline. Two ex ante evaluation approaches are: **modelling**, which seeks to show the magnitude of impacts, and to quantify them, particularly in terms of economic benefits; and **scenario analysis**, where the results of not implementing the programme, or implanting the programme under different conditions, are examined. These approaches seek to forecast results: thus mistakes or miscalculations can be made. Their value lies in the arguments they provide to support the additionality resulting from a programme.

In addition IA&B can be undertaken on a long-term, medium-term, and short-term basis. The advantage of short-term analysis is that results can be gathered early: positive results can comfort policy makers, and negative results can be rectified. Long-term results will reveal trends over time and indeed may be necessary to show real outputs.

## Different levels of analysis

IA&B can occur at different levels: strategic, tactical and operational, and it can examine: inputs and outputs, and outcomes, or combinations of these. The approach adopted for IA&B will depend on its regional context (level of sole competency of a region for innovation programmes, track-record of experience in pursuing policies, region size and data availability, resources available for IA&B, etc.). Combining all these elements a discreet group of approaches to IA&B has emerged and they are outlined below. For further information on these approaches see the references, most of which are available for downloading online.



## 7. Different Approaches & Tools

### Innovation analysis – a complex issue

The first thing to understand is that there is **not one correct approach** to impact assessment and benchmarking. This is because innovation is a complex concept, influenced by numerous external global factors including the business environment. Depending on the economy, and policy adopted, different indicators can be selected to measure innovation.

Innovation policy differs between regions, and even where similar policies are implemented the differing environments between regions will change the base line. The organisation conducting the assessment, and the focus and the scope for conducting the assessment are all interdependent and determine what can be analysed. Benchmarking depends on comparisons, often between unequal actors. Over time all the programmes being benchmarked can change, some radically. Clearly one simple formula is not possible for IA&B.

### General approaches to impact assessment and benchmarking

Approaches for measuring innovation policy are varied. In addition different approaches can be combined to build up a complex representation of policy processes, outcomes and impacts. A number of these broad approaches to IA&B were developed outside the innovation policy context. These approaches are incorporated in regional innovation IA&B, combined in fresh ways, and augmented with entirely new approaches. The more commonly used approaches are outlined here, and the specific approaches adopted by the pilot projects are outlined in the following sections.

A **regional profile** provides a broad overview of the social, economic, and environmental characteristics of a region. It provides a context for strategies and benchmarking. For innovation purposes, regional profiles may include: GDP output, numbers of companies, clusters, population, numbers of technically qualified persons, innovation systems (support organisations and services), framework conditions, etc.

Regional profiles often incorporate **Strengths, Weaknesses, Opportunities, and Threats (SWOT)** in their approach. This is because regions differ greatly and it is necessary to take into account the local context, especially the local economic base-line. SWOT is an approach to analysing an initiative (programme, project, service, etc.). It involves specifying the objective of an initiative and identifying the internal and external factors that will impact on achieving the objectives. SWOTs are

commonly represented as a two-by-two grid, where strengths and weaknesses are internal, and opportunities and threats are external. Strengths and opportunities assist the initiative, whereas weaknesses and threats hinder the initiative. They can be developed into SWOT-landscape analyses, three dimensional visualisations of the dynamic performance of comparable objects. Many of the pilot projects included some elements of SWOT analysis, and the pilot projects **ARISE** and **EMERIPA** used SWOT to support benchmark analysis.

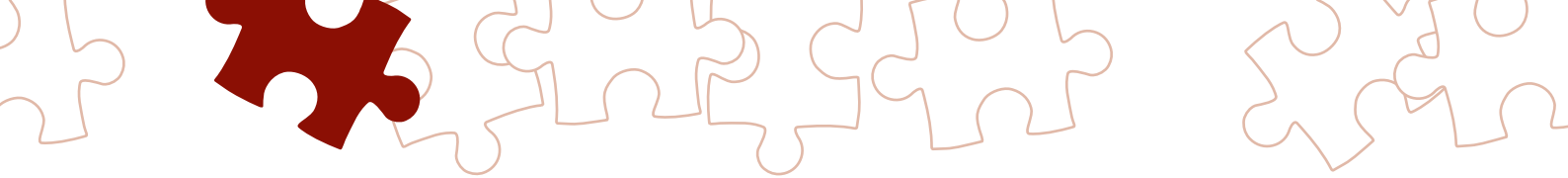
The United Kingdom's Department of Trade and Industry (DTI) developed an approach to programme management, described as **Rationale, Objectives, Appraisal, Monitoring, Evaluation (ROAME)**. From the outset of a programme this approach assumes evaluation against agreed objectives, including quantitative and qualitative indicators. A handbook presenting the **SMART** approach: **Specific, Measurable, Aggressive yet achievable, Relevant, and Time bound**<sup>1</sup> was published in 2002 by the European Commission. SMART incorporates data elements (time, measures) in the approach that allow for outcomes to be measured. Some impact assessment and benchmarking examines **budget allocations** with respect to policy objectives. Both the ROAME and SMART approaches allow budget allocation to be incorporated in IA. The intention is not to replicate financial audits but to determine the **effectiveness and efficiency** of alternative policies. The **IMPACTSCAN**, **EMERIPA** and **IASMINE** pilot projects extensively used budget distribution analysis for impact assessment.

Developed first by business to measure more than financial outputs, the **Balanced Scorecard approach** allows for development of holistic measures of performance, from three (additional) perspectives: customers, internal business processes, and learning and growth. Applied to public policy the approach examined: performance, relationships between beneficiaries and intermediaries of the programmes, individuals providing support and the processes used. The **IMPACTSCAN** and the **EMERIPA** projects used the Balance Score Board approach.

The **European Innovation Scoreboard (EIS)** uses an array of indicators to annually evaluate Member States' innovation performance, regarding: efficiency, effectiveness, and impact. It is based on statistics data, primarily the Community Innovation Survey (CIS). The EIS summarises data on 17 indicators of performance in the areas of human resources, knowledge creation, transmission and application of knowledge, and the supply of innovation finance and the value of innovation outputs. The Community Innovation Survey and EIS data allows benchmarking between the Member States. A few projects integrated the EIS approach in their overall methodologies – for

<sup>1</sup> European Commission (2002), A handbook for impact assessment in the Commission: How to do impact assessment.





example **IMPACTSCAN** used it for development of context analysis and **INNOWATCH**, to compare strong and weak point of the regions.

**Cluster analysis.** Cluster analysis may refer to analysing groups of companies that form a cluster, or group of indicators brought together in a cluster. Michael Porter first presented integrated frameworks for cluster analysis. In **the European Innovation Scoreboard (EIS) cluster analysis**, which is using **composite indices** for five key innovation dimensions, is a tool for identifying countries with similar performance which allows ranking based on the Global Summary Innovation Index (GSII). The pilot project **MERIPA**, among other aspects, focused on cluster analysis.

The Commission of the European Communities (EC) assesses Member States' reforms and policies addressing the innovation system. The European Competitiveness Council regularly assesses the impact of national innovation policies on competitiveness. The results are published in the **Competitiveness Report of EU sectors**. The organisations participating in these international initiatives commonly collect and publish data to facilitate comparisons between countries. This information, and the approach used for comparisons, is relevant to regions seeking to undertake similar exercises. In the European Union some regions and countries can be compared due to equivalence in their size or economic output, or policy planning. The **INNOWATCH** project applied economic intelligence techniques to define innovation impact indicators.

**Logical Frameworks Analyses (LFA, Log Frame)** also called project framework, and Objectives Oriented Project Planning (OOPP), is a tool for planning and managing development projects. It is commonly used by the agencies of the United Nations and by the European Commission for development projects. It involves four steps: situational analysis, strategy analysis, developing a project planning matrix, and implementation. The project planning matrix has a first column on Narrative Summary, and rows on: goals, purpose, outputs, and activities. Subsequent columns are: measurable indicators, means of verification, and important assumptions. The advantage of log frames is that they allow integration of sub-projects into larger frameworks using the same approach and graphic representation. This allows for consistency in planning and report on outcomes. The **EURO-COOP** pilot project used Log Frame analysis as part of its approach to IA&B.

Significant investment has been made by experts and practitioners in developing techniques, methods and tools for IA&B within corporate, national and international projects. The methods, outcomes and results are of interest to regional actors. Much of this material is in the public domain and may be used by regions. The eight pilot projects used some elements of the above approaches. Interestingly by combining the approaches in unique ways they developed new IA&B approaches and methods.

## 8. Introducing the Eight Pilot Projects

The pilot projects emerged from a response to a call from the European Commission published in 2004, under the Specific Programme for Innovation of the Sixth Framework Programme for Research and Development (FP6). The types of organisations involved were: regional administrative and political authorities; development agencies; regional innovation support organisations; and organisations charged with innovation or economic or structural development. In fact they were required to play an important role in their region as regards local or regional economic/structural development and innovation processes. These factors ensured that there was strong political support for the pilot-actions. In addition the strategies to be assessed manifested many attributes of innovation: complexity, specific(ity) to different local environments, and different stages of implementation.

A table introducing the project acronyms and their website.

Pilot-action Name	URL
<b>ARISE</b> – Accelerating Regional Innovation Strategy Exchanges. (5 regions)	<a href="http://www.arise-project.com">http://www.arise-project.com</a>
<b>EMERIPA</b> - European Methodology for Regional Innovation Policy Impact Assessment and Benchmarking. (8 regions)	<a href="http://www.emeripa.net">http://www.emeripa.net</a>
<b>EUROCOOP</b> – Regional Innovation Policy Impact Assessment and Benchmarking Process: Cooperation for Sustainable Regional Innovation. (8 regions)	<a href="http://www.iccr-international.org/eurocoop">http://www.iccr-international.org/eurocoop</a>
<b>IASMINE</b> – Impact Assessment Systems & Methodology for Innovation Excellence. (5 regions)	<a href="http://www.iasmine.net">http://www.iasmine.net</a>
<b>IMPACTSCAN</b> – Innovation policy impact assessment at regional level: benchmarking for dissemination of differing performances to raise awareness of policy makers, to stimulate successful measures and good practice. (7 regions)	<a href="http://www.impactscan.net">http://www.impactscan.net</a>
<b>INNOWATCH</b> – Application of Technology Watch Methodology for Assessment of Regional-Innovation Policy Impact on SMEs. (4 regions)	<a href="http://www.idetra.com/innowatch">http://www.idetra.com/innowatch</a>
<b>MERIPA</b> - Methodology for European Regional Innovation Policy Assessment. (5 regions)	<a href="http://www.meripa.org">http://www.meripa.org</a>
<b>OMEN</b> – Optimal Practices, Development Policies and Predictive Models for Regions in an Enlarged EU. (6 regions)	<a href="http://www.omen-project.org">http://www.omen-project.org</a>

To systematically assess the impact of their innovation policies and strategies, and to stimulate the development of benchmarking processes, eight pilot actions started in June 2005, and 36 regions across Europe participated in this initiative. The series of projects was conceived as a pilot action: the aim was to elaborate the methodologies and tools for IA&B, and to subsequently disseminate the analytical instruments throughout the European regions once the projects came to an end at the start of 2008. Each pilot project adopted its own methodology, gathered supporting regional data, and began the impact analysis. Impact assessment implemented in several regions allowed for benchmarking of the policies, benchmarking of the effects of policies and a deeper analysis of policy efficiency.

Each pilot-project involved regions from at least four countries, at least two regions from the European Economic Area (EEA), and at least one region from an associated state (region) not having benefited from former Framework Programme funding. Therefore each pilot-project has a significant trans-national element, and has brought together regions at very different stages of economic development. These combined factors facilitated the comparison of assessments in very different environments, and allowed the development of meaningful benchmarks across European regions.

One problem identified with innovation planning, was that after an innovation strategy had been agreed on, the implementation could come to a standstill. These pilot-projects ensured that the actual implementation of strategies was assessed. The high level political support combined with this outcome oriented objective is a good guarantee that innovation strategies will not be paper exercises, but rather will be long-term and action oriented. Moreover the impact of the innovation strategies innovation was measured and assessed in terms of the EU Strategy for Sustainable Development, i.e. environmental, economic and social impacts. This too contributed to the long-term value and impact of this initiative.

## 9. The Approach of the Pilot Projects

The eight pilot projects adopted different methodologies for IA&B. This freedom of approach had been anticipated by the original call for proposals. All projects produced equivalent deliverables: a methodology, a tool to implement the approach, and reports of results published on their website, etc. A very brief overview of the general approach of each project is given here. A table of results in the section 10 plus the short project presentations at the end of this guide, combined with diagrams illustrating the project tools and approaches, serves to give a broad overview of what each project sought to achieve.

**ARISE project: Accelerating Regional Innovation Strategy Exchanges.** ARISE analysed both regional profiles (context indicators) and specific innovation actions (policy indicators) based on a broad group of indicators. It **focused on the innovation support** offered in regions to identify gaps and success, based on efficiency and effectiveness analysis. The impact timeframe was in the mid to long term. The ARISE tool, for which a demo is published on the project website, is based on MS Excel™.

**EMERIPA project: European Methodology for Regional Innovation Policy Impact Assessment and Benchmarking.** EMERIPA used the **innovation policy scoreboard** to study the before and after effect of policy. The methodology supports the region's performance understanding of **the impact of innovation support** by analysing the regional innovation priorities and their translation into actions and measures (input), the regional innovation performance (output) and the results over time. The approach to analyse both the innovation actions and measures and the innovation performance was modular (ten modules). Moreover, five impact areas are used to analyse the regional innovation actions and measures: financial, physical infrastructure, institutional, employment and socioeconomic. This modular approach allows an analysis on those areas which are relevant to the regional innovation strategy. The analysis timeframe can also be varied. The project concentrated on one-to-one comparisons between regions rather than broad benchmarking. The project combined elements of other IA&B approaches, including 19 scoreboards, but overall it is new, particularly the modular aspects of this approach. It can be applied in other regions by means of the EMERIPA benchmarking tool.

**EURO-COOP project: Regional Innovation Policy Impact Assessment and Benchmarking Process: Cooperation for Sustainable Regional Innovation.** EURO-COOP starts its approach by developing **a logical framework** of innovation policies, programmes and projects for a region. The timeframes varied as the log-frame can be constructed before or after programmes are designed, and benchmarking can be applied based on overall programme intentions. Subsequent

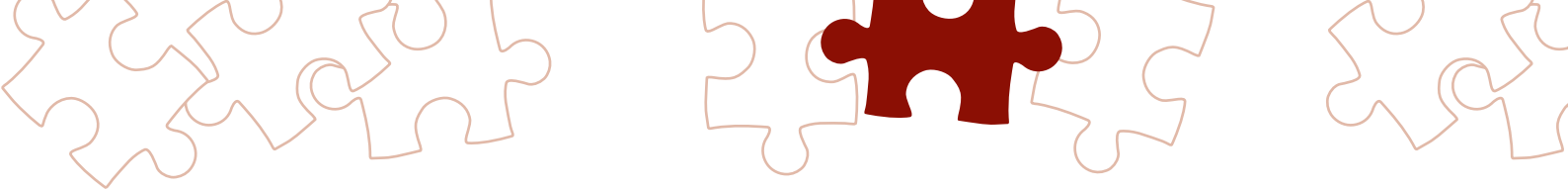
policy areas that impact on innovation are also examined using networks analysis and path analysis. The more important policy areas impacting on innovation are incorporated in an extended log-frame. So **the focus is on policies and programmes**. The EURO-COOP tool reveals differences in performance between and across programmes.

**IASMINE project: Impact Assessment Systems & Methodology for Innovation Excellence.** The approach of IASMINE incorporated elements of budget distribution analysis, and innovation indicators. Elements being analysed were combined into **composite indicators represented as matrices**, and therefore both the approach and the indicators being examined were immediately accessible and easy to understand. The tools allowed high-level benchmarking, ex-ante and ex-post evaluation of regional policy mixes, and for highly-similar regions low level benchmarking on specific policies.

**IMPACTSCAN project: Impact Assessment and benchmarking of regional innovation policy.** The special focus in IMPACTSCAN was on the impact of the services delivered by regional **innovation intermediaries on the innovation capability of the firms**. A numerical approach was taken to present an overview of the policy objectives, intermediaries and services. With this numerical approach large transparency was created regarding regional budget spent on innovation support measures. Benchmarking of regional innovation support measures as well as benchmarking of efficiency of these measures was carried out.

**INNOWATCH project: Application of Technology Watch Methodology for Assessment of Regional-Innovation Policy Impact on SMEs.** INNOWATCH based its approach on the use of Economic Intelligence to define innovation indicators. Indicator data for a region are input to the on-line web based INNOWATCH tool. Then the examination of trends over time and the comparisons across regions is possible. The advantage of using the Economic Intelligence data is that outcomes for a region may be evaluated against national and European innovation policies.

**MERIPA project: Methodology for European Regional Innovation Policy Assessment.** The MERIPA approach incorporated different elements of help to overall policy making process including cluster analysis and network mapping, benchmarking indicators, and the extensive use of surveys. One of the important **focuses of MERIPA was clusters**, where the cluster was the innovation system being examined. The definitions of clusters depended heavily on employment data. The Network analysis examines the valued chain within the clusters and is an indicator of cluster dynamics. Indicators



used are composite indices for regional innovation system performance measurement. The approach allows for incremental development and measurement of policy impacts. MERIPA developed a toolbox, where different elements of the approach, are separated into logical steps, corresponding with different stages in the innovation policy development and implementation process. Therefore other regions can select those part of the MERIPA toolbox corresponding with their own innovation policy development process. This incremental aspect of the tool is presented in an easy to understand table, which incorporates policy learning loops.

**OMEN project: Optimal Practices, Development Policies and Predictive Models for Regions in an Enlarged EU.**

The approach adopted by **OMEN** developed 22 original indicators regarding inputs, processes, outcomes and impacts, to assess the impact of innovation policies. **OMEN focuses on examining efficiency, effectiveness and efficacy of programmes that are designed to support innovation.** This approach can be applied to both individual programmes and entire innovation policies. OMEN undertook ex post assessments, however the indicators were chosen with the intention of developing a complete assessment framework, and incorporating of these indicators into ex ante planning. The evaluation

and benchmarking tool can be used to evaluate performance in the short, medium and long term.

The eight pilot projects on regional IA&B sought to compare innovation policy over time and across regions. Some projects took high-level views across countries and programmes: others burrowed down to find detailed figures relevant to local activities. Most projects sought to make comparisons across regions and others examined changes over time. It was difficult however to achieve both, whilst looking at detailed policy.

Some approaches focused on inputs, others on outputs, and yet others on outcomes: where an output is considered the result of an internal process, and an outcome the result of an external process. Others focused on the innovation process itself: the internal elements, the external element, or the entire process. Many of the pilot projects were highly numerate, grinding figures and basing their conclusions on statistics and composite indicators. Others looked at social-flows and the intensity of interaction across networks. All of these approaches did not give equal results, nor were they meant to. The next sections outline the pilot project results, synthesise conclusions and potential next steps.



## 10. Impact Assessment and Benchmarking Pilot Project Results

### Results from eight pilot projects

These projects belonged to a pilot initiative and were the standard bearers developing new tools and techniques for regional impact assessment and benchmarking.

To support transparency and to help pinpoint gaps the results gathered from the eight pilot projects are presented in a table. Regarding the method and approach the results are presented according to: the method used; the core of what was assessed; and the methodology. To show uptake or extension of the approach each project indicated if the monitoring will be continued beyond the life-time of the project, and if the approach was taken up by other organisations.

As evidence of outputs and outcomes, each project indicated whether its results were available for download, if a benchmarking tool was available, and if policy changes had resulted from the pilot. The main documents developed by the eight projects have been brought together on the IRE site, and sites of the individual projects give greater context and details.

Finally the projects were asked to make policy recommendations, which are re-grouped under section 11. Further information on each project and details of its methods are provided in the annexes to this guideline.

### Results on policy impact assessment and benchmarking

The table of results above highlights the approaches adopted, and the impact of the results on innovation policy implementation. But, in addition, each pilot project yielded a wealth of information on the innovation policy being implemented in and across regions and over time. Some of these results are immediately influencing the ongoing innovation programmes. The eight pilot projects focused on their regions, but in an international context. The results have in some instances been taken up internationally and are influencing new regions, or even international policy (or strategies).

The coordination of impact assessment on innovation policies outcomes across regions brings additional benefits including knowledge spillover and the stimulation of policy reforms. Clear benefits accrue from policy complementarities on innovation. Regional innovation policy (strategy) IA&B contributes to a cycle of policy implementation and improvement.

# Table of Pilot Project Results

Pilot Project Results	ARISE	EMERIPA	EUROCOOP	IASIMINE	IMPACTSCAN	INNOWATCH	MERIPA	OMEN
Methodology model followed	A broad, long term, data-based assessment of policies. Post ante analysis of policies. Examined regional features (weaknesses, & strengths) to detect appropriate corrective actions through benchmarking.	A modular approach focusing on ten innovation policy measures. Based on a broad analysis of 19 Scoreboards & indexes. Uses innovation profile indicators & innovation policy design & implementation indicators.	Log framework analysis on innovation policy, extended to other policy areas through network and path analysis. Uses both quantitative & qualitative indicators.	Used matrices of composite indicators. Budget distribution analysis, qualitative ex-ante IA, innovation indicators monitoring, direct interviews of beneficiaries.	Balanced Score Board for comparative innovation support analysis, original assessment system of direct impact of innovation policies / support intermediaries & services.	Based on the application of Economic Intelligence techniques to define indicators, data sources & data analysis processes.	Different I&B models in Modules - Comparative cluster analysis - Indicators (quantitative, qualitative, composite indices) - Data envelopment analysis (DEA) model.	European Innovation Scoreboard. Used 22 original indicators aiming at evaluating efficiency, effectiveness & impact of single program as well as innovation policies.
The core of what was assessed.	The relevance, appropriateness, consistency, efficiency, effectiveness & impact of RIS policies such as: incubation, cluster policy inwards investments, etc.	Assessing the regional performance in a timeframe. The user can select the years for the exercise. It permits ex post ante analyzing of regional strategy & builds linkages on measures- & action-levels.	Examines the impacts of strategies/ regional systems of innovation from the 'bottom-up' urban-region perspective.	Characterises policies. Ex ante analysis of policy influence on the innovation system, monitoring policy implementation & evaluating impacts.	Created transparency of budget distribution & funding on: policy objectives, intermediaries & services. Revealed a link between the support input (€) & results at companies. Examined the impact of intermediaries on enterprises. The focus on small companies.	Creation of a common methodology for the assessment of policy impact. Subsequently integrated the methodology in regional policy making mechanisms, through the benchmarking analysis foreseen.	The focus was on clusters as the innovation systems. Assessed network interactions between companies in clusters, & regional innovation performance & capacity through that system.	Examined qualitative indicators on innovation policy, PIA Impact Evaluation of: - Efficiency - Effectiveness - Cost-effectiveness - Coverage - Success rates - Quality of Delivery.
The method	Analysis of the context and the support measures/policies, identification of gaps in the innovation system Benchmarking, on areas for improvement through comparison of indicators & in-depth interviews with key actors in selected regions.	Collecting of indicators for ten modules: e.g. cluster, entrepreneurship, education, IP, development, innovation financing, regional intelligence, technology transfer, etc.	Regional Innovation Policy/IA (RPIA) method. Developed logical framework for policies, programmes, & projects: extended this to network and path analysis to policy areas that influence innovation; review implications of the assessment, feedback to actors/sectors & benchmarking for policy developments.	Regional policy mix characterization & analysis (Policy matrix tool); analysis of the expected impact of specific policies on the actors of the system (RIS Matrix tool); statistical & qualitative data collection & analysis at policy action/project level.	Numerical approach on budget distribution. Indicators collected in matrices. Results given in spider diagrams or bar charts revealing impact.	Creation of a common methodology for the assessment of regional innovation-policy impact. Subsequently integrate the Method in the regional policy making mechanisms.	Integration of statistical data & calculation of composite indices. Surveys & interviews & network analysis. Case studies analysis. DEA model analysis. The different modules can be implemented differently / separately.	Used questionnaire to gather qualitative indicators from innovation actors (development agencies, research institutes, & enterprise). Developed procedures to be implemented by innovation managers to evaluate results, effects & impact of policies. Counterfactual data used for modelling /simulation.
Ongoing monitoring (beyond end of project)	The methodology & conceptual framework are used as a reference for the Regional Innovation Strategy & Observatory under creation process in the PACA region.	<b>Stuttgart Region:</b> Benchmarking experiences will be implemented in a new medical technology cluster.		Possible extension of the methodology & tools to new projects. Application of the tools & approach in the Regional Innovation Observatory.	Enlargement of CIS survey. Change I&B focus to include larger companies. Use methodology on sector in order to optimise services for this sector.	Possible extension of the methodology & tools to new projects. Consortium defining new steps to follow.	Will continue & make the toolbox an internet tool for continuous update & adaptation.	<b>Saxony Anhalt:</b> the methodology will be implemented on a new fund for innovative projects in the waste disposal sector. In <b>Andalusia, Cyprus &amp; Lazio</b> results & indicators are being examined by the Regional Innovation Observatory.

Pilot Project Results		ARISE	EMERIPA	EUROCOOP	IASIMINE	IMPACTSCAN	INNOWATCH	MERIPA	OMEN
Wider Implementation of approach	Application within the partnership. Possible to enlarge the approach utilization thanks to the benchmarking ongoing exercise with other regions.	<b>West Midlands region:</b> The regional economic strategy in AWM was reviewed using the method. <b>South Bohemia:</b> Contribution to the regional innovation policy through the updating of the South Bohemian regional innovation strategy 2007-13. <b>Alytus:</b> EMERIPA helped to pay attention to innovation policy measures & to increase their number in the general list of the economical development measures; Actively seeking to involve new regions to use its on-line tool.	This has been used by the Mazovia regional authority in drafting its regional innovation strategy.	Other Austrian Bundeslander interested in approach due to national benchmarking in 2008. In Flanders the methodology will be used on sector basis in order to optimise services for this sector.	The Toolbox has been presented in the regions, & the future internet tool will be more flexible for exploitation by other regions.	OMEN has developed a software tool freely available on the project website that allows any regions to evaluating their own performance in the short & medium, long term.			
Online resources	User guide & tool demo on the project website. <a href="http://www.arise-project.com">http://www.arise-project.com</a>	The methodology and other relevant information about the project at the projects website. <a href="http://www.emeripa.net">http://www.emeripa.net</a>	Presentation of methodology on project website. <a href="http://www.fccr-international.org/eurocoop">http://www.fccr-international.org/eurocoop</a>	Online user guide, downloadable tools & application examples on projects website. <a href="http://www.iasimine.net">http://www.iasimine.net</a>	User Guide & IA& B Tool on project website. <a href="http://www.impactscan.net">http://www.impactscan.net</a>	Tool & brochure published on project website. <a href="http://www.idetra.com/innowatch">http://www.idetra.com/innowatch</a>	A toolbox booklet for policy implementers & academics published on project website. <a href="http://www.meripa.org">http://www.meripa.org</a>	Presentation of methodology for IA & benchmarking. A white book with suggestions & recommendation form OMEN experience. The software tool in support of evaluation of innovation policies published on website. <a href="http://www.omen-project.org">http://www.omen-project.org</a>	
Benchmarking Tool available.	A benchmarking tool is available on the project website. The tool can be modified to adapt to regional priorities, specificities & specific policy (MS Excel™ file).	A benchmarking tool was implemented in the involved regions. All the collected data was uploaded in the tool. With new regions implementing the methodology, the database will be enlarged and the benchmarking possibilities enhanced.	The guideline is a document. The tool is more a learning tool & tries to highlight the reasons for differences in performance & less an attempt to rank regions.	High level benchmarking among different regional policy mixes (ex-ante, ex-post). Low level benchmarking concerning specific policy actions that show a high degree of similarity.	IA Tool (MS Excel™ based) published with user guide & demonstration presentation. Tool benchmarks to the mean of 7 regions that participated in the project.	The tool (MS Excel™ based) in the project website.	The guidelines & experiences of the consortium regions in the project reports (pdf). The tool is a learning tool & tries to highlight the reasons for differences in performance & less an attempt to rank regions.	The guidelines & experiences of the consortium regions in the project reports (pdf) are available on the project website.	
Policy changes resulting from the project	A higher awareness of the importance & role of RIS assessment & data-driven decision making in redesigning innovation policies to improve regional performance in respect of a sustainable development.	Stuttgart Region: Contribution to regional foresight process within the economic development strategy 2020 focusing on innovation policy.	Not yet.	Qualitative policy impact analysis applied for monitoring specific regional policies & evaluating their impact on the beneficiaries.	Recommendations regarding policy objectives. Identify services which can impact on how policy objectives are realised. Optimize service portfolio based on good practices from project partners. More closely aligned services to enterprise needs (in Austria). Set up services in NMS based on good practices from project partners.	Not yet.	Not yet.	Open & permanent dialogue with innovation stakeholders & policy makers on best practises of compared regions & possibility of further improvements.	



## 11. Conclusions on Impact Assessment and Benchmarking for Innovation Policy

### Conclusions for regional policy actors implementing impact assessment and benchmarking

Implementing IA&B requires commitment, planning, and resources but the outcomes are worthwhile. IA can reveal the unexpected. IA&B can act as a wake-up call or an eye-opener for a region. Benchmarking can reveal better or alternative paths to follow on innovation policy. The relationships built with market leaders can foster mentoring type relationships that illuminate paths to success.

The approach selected for the IA&B is extremely important. It is helpful to engage in exchanges with other regions which have previously implemented the approach being considered. This will help to identify potential pitfalls and problem areas. Moreover using tools previously developed will save time and resources. However regions can not copy IA&B approaches that are not appropriate to their policy environment. The approach selected to evaluate the impact of innovation policy measures need to be adjusted to suit the regional context, including institutional factors, industry specialisation and size.

The application of results can not be frozen in time. As environments change and policies evolve, new innovation policies will be required. The results from IA&B are most useful if they are incorporated into ongoing policy planning. In particular identification of weaknesses in the regional innovation approaches can be corrected based on the outcomes from benchmarking. Therefore, the greatest added value of IA&B comes from its integration into continuous policy improvement, and so the continuous incorporation of policy changes resulting from IA&B is extremely important.

The outcome of the eight pilot actions is a starting point for continuous improvement, and the overview of all Pilot action outcomes is one starting point for innovation policy review. More long term innovation benchmarking projects, to review continuous improvement, are needed.

Impact assessment is not an end in itself. Rather it is a starting point to compare outcomes with expectations. Potentially the original innovation plan will be revised once the results from the impact assessment emerge. Impact assessment is one of the first steps in a process of continuous improvement.

Benchmarking is a process of comparison using equal measures between different actors. The objective is to bring those who lag behind up to the level of those who lead, by comparing either processes or outcomes. Benchmarking compares tide marks: where one hopes for the water to rise, bringing all boats safely with it.

### Recommendations on implementing impact assessment and benchmarking

A number of recommendations emerge from the eight pilot actions, and they have been organised to address regions about to start a new innovation programme, or about to embark on an IA&B exercise. Other recommendations relevant to policy coordinators at a European Union level have also been highlighted.

These recommendations are as follows.

For regions starting a new innovation strategy or programme:

- Have a full “intervention logic model” from the start of the strategy.
- Incorporate the assessment criteria into the innovation strategy design.
- Establish pre-defined clear targets, outputs, and outcomes.

For regions about to undertake IA&B:

- Regional diversity must be respected, not all regions are the same.
- An appropriate methodology for the region should be selected.
- Necessary data may not be available, therefore the research method should be based on data that is actually available.
- Suitable assessment indicators should be selected, and stakeholders and policy makers should be involved in the definition of the methodology.
- The nature of the programme should be taken into account when designing the assessment.
- The evaluation process should be institutionalised and considered as a continuous learning process.
- The process of impact assessment will evolve, and in the future will require changes in variables or indicators to be measured as well as new target outcomes.

For policy planners at a European and regional level:

- Promoting awareness among regional actors on incorporating IA into policy design should be undertaken at a European level as it supports continuous improvements in innovation policy.
- Access to good data is essential for effective implementation of the IA&B. Any action the European Commission can take to support measures on the collection and publishing of data on innovation indicators is desirable.



- Initiatives that encourage regional actors to gather and publish fine-grained regional indicators relevant to innovation are desirable.
- Support should be provided to make missing, but necessary, data available.
- Further exchanges and dialogue at a European level on different approaches would greatly assist regions embarking on IA&B exercises
- Support mechanisms to help regions in selection appropriate tools and methods would be useful.
- IA&B may result in change implementation. Subsequent measurement gives rise to a continuing process of improvement (virtuous cycle). Therefore support for transnational cooperation of a longitudinal nature on IA&B is desirable.
- International indicators on innovation should go beyond economic and technology issues. Sustainable economy and environmental issues should be included, for instance resource depletion and impact on climate change, should be considered.

## 12. Expectations of Innovation Policy and Impact Assessment and Benchmarking

In 2000, the European Union (EU) launched the 'Lisbon agenda'. Its aim was to make Europe 'the most dynamic and competitive knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs, greater social cohesion and respect for the environment'. The Aho report on "Creating an Innovative Europe" identified the main reasons why European innovation potential had not been exploited. The Lisbon Strategy for Growth and Jobs (Lisbon+) was re-launched in 2005, and included the 'Barcelona target', which includes the objective of increasing research and development spending to 3% of EU GDP by 2010.

Each EU Member State follows its own national reform programme. Member States decided that the cohesion policy programmes (2007-2013) should designate a large proportion of the total allocation of €08 billion for investment in knowledge and innovation. Innovative actions are also co-financed by the European Agricultural Fund for Rural Development, to develop new high quality and value added products and to promote the sustainable use of natural resources. Community Strategic Guidelines for Cohesion Policy (2007-2013) called on the Member States and regions to make explicit provisions for

experimentation and investment in innovation based on national and regional innovation strategies.

All these factors combined mean that: EU Member States and policy makers anticipate that growth will be based on the knowledge economy, and therefore highly dependent on innovation; Member States have significant discretion, control and public-sector budgets to achieve this; and regional actors are considered key-contributors. The outcomes from public policy on the knowledge economy will be measured, both at national and regional levels. Before the process starts we know that the outcomes will differ: there will be apparent winners and losers in this process. Therefore it is important for each region to know what outcomes it anticipated from its innovation policy, and to be able to justify different innovation policies and outcomes.

Just as the knowledge economy and innovation policy give rise to significant expectations and enhanced budgets, IA&B is often used with an expectation that it will help to justify expenditure on innovation and enhance and prove results. The economic and societal stakes are high for Europe: it is assumed that IA&B will improve the odds, and overall improve returns.

## 13. Further Information

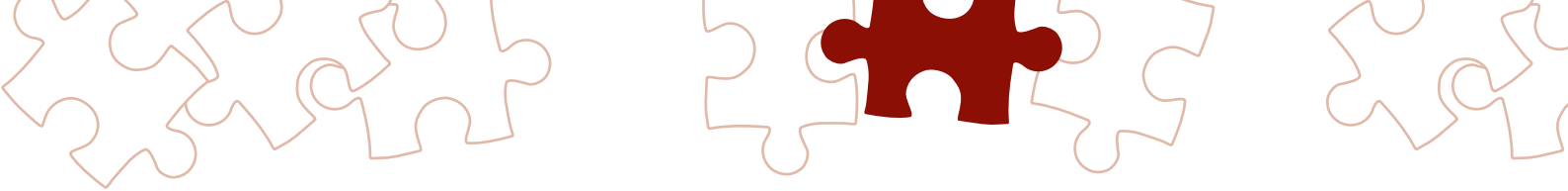
Further information and publications on the IRE initiative, regional innovation strategies, and impact assessment and benchmarking, is available from:

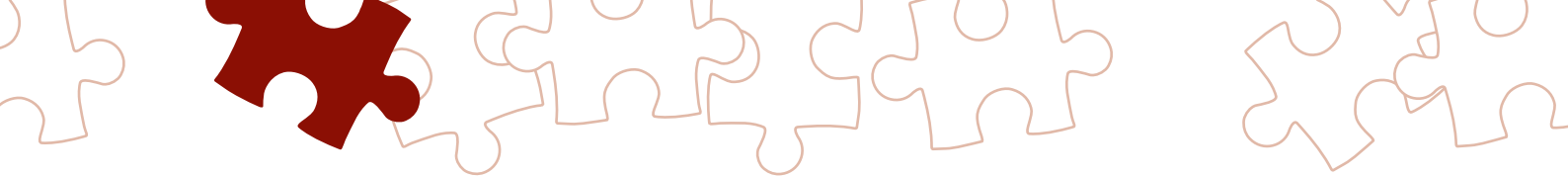
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### The IRE Secretariat

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## Annex 1. Overview of the methodologies and tools developed by the eight pilot projects

### **ARISE**

Accelerating Regional Innovation Strategy Exchanges

### **EMERIPA**

European Methodology for Regional Innovation Policy Impact Assessment and Benchmarking

### **EUROCOOP**

Regional Innovation Policy Impact Assessment and Benchmarking Process: Cooperation for Sustainable Regional Innovation

### **IASMINE**

Impact Assessment Systems & Methodology for Innovation Excellence

### **IMPACTSCAN**

Innovation policy impact assessment at regional level: benchmarking for dissemination of differing performances to raise awareness of policy makers, to stimulate successful measures and good practice

### **INNOWATCH**

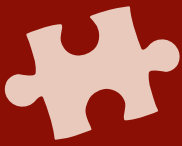
Application of Technology Watch Methodology for Assessment of Regional-Innovation Policy Impact on SMEs

### **MERIPA**

Methodology for European Regional Innovation Policy Assessment

### **OMEN**

Optimal Practices, Development Policies and Predictive Models for Regions in an Enlarged EU



# A SHORT PRESENTATION OF METHODOLOGY IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

*The aim of ARISE is to provide policy makers with a dynamic instrument that will allow assessment, benchmarking and improvement of regional innovation support policies, based on regional priorities.*

ARISE aims to: 1) draw up a regional profile (how does our regional innovation system work?), 2) benchmark the region against itself over time (are we improving?), 3) assess the innovation strategy itself based on different assessment criteria such as relevance, consistency, efficiency, effectiveness appropriateness (how are we spending our money? Were the allocated resources sufficient? Were the actions/policies implemented the most appropriate for this regional situation? etc) and, 4) measure the regional performances against those of other regions and identify possible corrective actions adapted to the regional context.

## Expected results and benefits

ARISEN, the tool developed by ARISE, is used for data collection and to provide innovation performance indicators as well as methodological guides.

Information on the regional macroeconomic background, based on context indicators, as well as a more in-depth, data driven analysis of chosen specific innovation policies, will be provided. Diagrams comparing the region's performances over time or against a chosen "buddy" region can be drawn up based on the indicators of interest (reliability index so that users can know how their data is being compared). A guide illustrates the process to be followed, practical examples of questionnaires for benchmarking, and basic "pitfalls" to avoid when interpreting data.

The seemingly complex approach has the merit of combining the advantages of benchmarking, regional profiling and surveying methodologies, and overcoming their intrinsic limits:

- **Benchmarking** allows for a good comparison across regions, but neglects qualitative analyses and relies on quantitative data that is often not updated;
- **Regional profiling and institution surveys** focus mostly on regional policies and the role of the different institutions in the innovation process. A good regional profile will provide very good insight on the different players and the rules they operate under, as well as the implications of different policies on the region. However, very little in the profile is actually measurable, which means that comparison over time or across regions is almost impossible.
- Finally, **firm surveys** include both input/output and processes. This allows for a high comparability over time with much insight into policy implications. The main drawback of this approach is that implementation is very costly and almost impossible to use for inter-region comparisons.

The value of the above-mentioned approaches strongly depends on the kind of answers policy makers are seeking. If they need a better understanding of internal processes, regional profiling and firm survey are probably the first assessment analyses to conduct. If they are looking for new solutions to fill in the gaps in the innovation system, a benchmarking approach could be the most appropriate.

Using and harmonising these different approaches, the ARISE consortium developed a flexible approach enabling policy makers to: 1) gain thorough insight into innovation features in the region, 2) assist them in evaluating the appropriateness of measures implemented in response to internal needs, and 3) identify the possible corrective actions to be undertaken.

In the Provence-Alpes-Côte d'Azur region, the methodology is used to assess the start-up support and incubation policy. The first step was to gather context elements in terms of start-ups creation, survival rate, and weaknesses of the support system. To have a snapshot of the incubator service supply, quantitative data was collected and integrated with an on-site survey conducted through interviews with incubators and start-up services suppliers. These interviews were based on questionnaires designed to allow comparison with data available at European level and from the other ARISE partners. A current survey focuses on the needs of innovative firms in the region which are to be compared with the supply available. The gathered elements have allowed a preliminary gap analysis. Benchmarking activities will help identify the potential corrective actions.

## Implementation requirements

In the preliminary stage of implementation of the methodology regional priorities, objectives and targets as stated in the policy documents as well as the specific actions put in place to achieve them are identified. Then, both desk and on-site data collection are needed :

- Desk data search** is normally sufficient to fill in the tool context section and draw up the regional innovation profile. Since impact indicators are given by the mid/long term evolution of some of the macro indicators included in the regional context profile, ideally a statistical series starting from the launch of the regional innovation strategy should be provided in order to track the evolution of these indicators. However, data used should be reliable, robust and "fresh".
- On-site surveys** are necessary to evaluate specific innovation support actions. Standardised questionnaires are completed through face-to-face interviews with policy 'movers and shakers' in order to add more qualitative inputs to the analysis. In particular, on-site data collection activities encompass firm, institution and innovation support organisation surveys.

If the tool is to be used for inter-regional benchmarking, preliminary work should identify the most appropriate "buddy" region, set up collaborations and define the process to compare and what data to gather.

No specific skills are required to implement the tool as far as the desk collection and entering of data are concerned. However, strong professionalism is required in the on-site data gathering and the overall data analysis and interpretation.

Furthermore, there is a condition sine qua non to be respected: an assessment and data based decision making process cannot be launched if there is not a strong commitment from the policy makers and the involvement of all the actors who are expected to contribute.

## Approach and methodology

The ARISE approach aims to offer a flexible methodology covering some of the more commonly used innovation support policies and instruments but at the same time allows a "mix and match" approach on indicators to be used. The tool is quite easy to use and can be modified according to the analysis needs of each region.

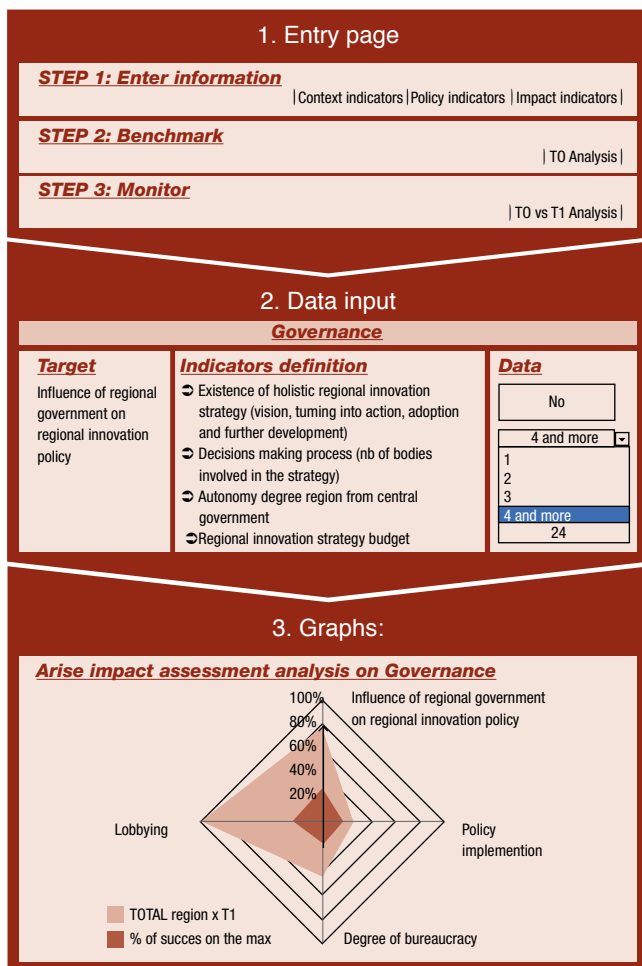
The ARISE methodology is structured according to the following main steps: entering information, benchmarking and monitoring.

The first step, **entering information**, covers three sections: 1) *Context*, which is aimed at drafting the regional innovation profile, 2) *Innovation policy*, which gathers a grid of innovation policy specific indicators such as support to technology/ knowledge transfer, clusters policy, science parks, incubators and start-up support, inwards investment and market intelligence, and 3) *Impact*, which gathers long term impact indicators.

The process includes a thorough data collection phase using desk and on-site research methods. In particular, on-site data collection activities encompass firm, institution and innovation support organisation surveys.

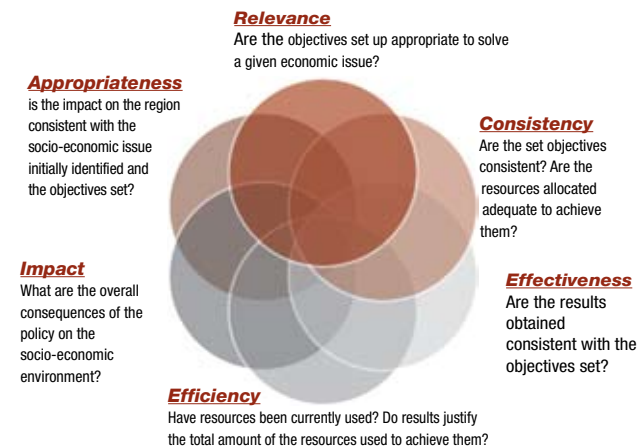
The second step, **benchmarking** allows comparison and the drawing up of diagrams while the last one, c) **monitoring**, focuses on monitoring activities over time.

The overall process can be described by the following scheme:



## Methodology implementation

The implementation of the tool requires close collaboration with all the actors involved in the process, which, in turn, implies a thorough dissemination effort as part of the impact assessment: improving the regional competitive performances and making the innovation support provided more efficient and effective. The analysis perspective should take into account the following criteria:



The following potential risks, which can undermine a data-based decision-making process, exist:

- **Data gaps:** In many areas, available quantitative data may be lacking. This is especially the case for intangibles.
- **Misleading Data:** Data that are not of high quality can result in errors or mistaken judgments due to a lack of homogeneity, oversimplified analyses, data manipulation to show only positive results, biased reporting of data to show favourable results, or straightforward errors.
- **Biased data:** High-profile and pressure performance evaluation based on quantitative data can bias data.
- **Lack of fresh data:** The availability of updated information is critical to prompt response to emerging problems and phenomena.
- **Difficulties in assessing policy impact:** Planned impact and unplanned impact are difficult to discriminate.
- **Misuse of data:** Perhaps the greatest risk is the possibility that data generated for decision-making will be misused. Where policymakers extrapolate from limited data or make judgments based on uncertain data, wrong answers may emerge.

### Participating regions:

Provence Alpes Cote d'Azur (FR), Stockholm (SE), Lower Austria (AU), Kent (UK) Tuscany (IT), Lithuania (IT)

### Website:

<http://www.arise-project.com>  
ARISE (Accelerating Regional Innovation Strategy Exchanges)

### Contact person:

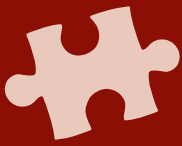
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# A SHORT PRESENTATION OF METHODOLOGY FOR IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

*The EMERIPA Methodology for Regional Innovation Policy Impact Assessment and Benchmarking provides a tool for European regions to assess their regional innovation policies in a systematic way and to measure how successful the policies have been by identifying the changes carried out within a region as a result of the innovation strategy/policy implementation.*

Thus, the EMERIPA methodology links **regional innovation performance** with the **innovation policy measures** designed and implemented in the region. A software tool also allows benchmarking of different EU regions in terms of performance and measures followed. This helps regions to learn from each other's experiences, so innovation policies that worked well can then be implemented in future strategies.

The EMERIPA methodology has been tested widely and has proved to be flexible enough to be used efficiently in many innovating regions.

## Expected results and benefits

The EMERIPA methodology allows regions to get a complete understanding of:

- changes in the regional innovation performance over time;
- the adequacy of a certain innovation strategy (whether it was aligned to the regional needs, if the number of measures implemented corresponded to those suggested, results achieved, etc.);
- the impact of the innovation strategy in a region;
- innovation policy measures adopted in different EU regions through the benchmarking exercise.

The EMERIPA methodology enables knowledge and evidence based decision making for the next round of regional innovation policies/strategies, which is the major benefit of integrating the EMERIPA methodology in the regional innovation policy processes.

The benchmarking software tool allows regional data to be clearly displayed to support the understanding of how regional innovation is developing based on correlations between different measurement levels (see the next page), and benchmarking among regions. The user can select region(s), indicator(s) and year(s) for the benchmarking exercise and the tool produces different type of graphs (also chosen by the user).

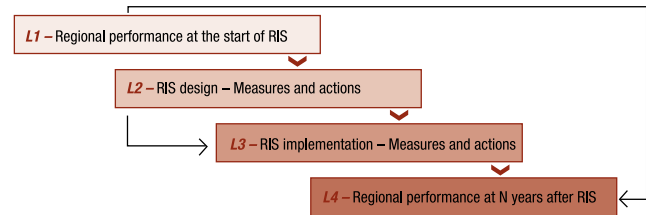
## Implementation requirements

In general, the implementation of the EMERIPA methodology requires:

- close cooperation with regional policy makers if the exercise is not carried out directly by them;
- access to analytical secondary data;
- the capacity for collecting and analysing information about the regional innovation system and policy;
- the capacity for involving other innovation stakeholders in the analysis to complete the secondary data;
- interregional cooperation for the benchmarking phase;
- commitment and dedication.

## Approach and methodology

The relationship between regional innovation performance and regional innovation strategy is realised through an analysis on four levels dealing with (1) regional innovation performance before the regional innovation strategy was launched, (2) design of the regional innovation strategy, (3) implementation of the strategy, and (4) regional innovation performance on year N after the innovation strategy was launched. The diagram below shows the four levels:



### 1) Assessment of the innovation performance evolution (Levels 1 and 4)

For every module a list of indicators is provided in order to help understand the regional innovation profile in this module. The indicators are based on analytical secondary data, which should be available from regional statistics. The definition of the indicator is clear, in order to allow benchmarks, and clear information about the unit of each indicator is offered.

### 2) Selection of the instruments used/activities realised (Level 2)

Since the aim is to allow a systematic review of any kind of regional research and innovation support policy, the EMERIPA methodology attempts to cover all fields of innovation support through the following modules:

Education and skills	Innovation financing
R&D	Company innovation
Regional intelligence	New company creation
Technology transfer	Innovation centres, incubators, and technology parks
Intellectual property	Clusters and sectors

However, a particular innovation strategy usually focuses on a limited number of priorities (modules), according to the regional environment. The application of the methodology in a region will only take into account the priorities set in the innovation strategy. Each priority is analysed in instruments or actions, which are specially designed for it.

### 2) Design and implementation of instruments used/activities undertaken (Level 3)

For each instrument/action five impact areas are calculated, which illustrate its potential impact. The table illustrates the use of the five impact indicators per action/ instrument:

Impact areas	Level 2: strategy design	Level 3: strategy Implementation
1) <b>Financial</b>	Estimated spending for a specific action (overall spending foreseen – public, private)	Realised spending for a specific action (overall actual spending – public, private)
2) <b>Physical Infrastructure</b>	Infrastructure foreseen to be constructed and equipment to be installed to serve a specific action	Infrastructure constructed and equipment installed serving a specific action
3) <b>Institutional</b>	Institutions designed in a specific instrument/ action	Institutions created in a specific action
4) <b>Employment</b>	Estimated employment creation to serve a specific action	Employment created due to a specific action
5) <b>Socioeconomic</b>	Estimated major effect on the social and economic features of the region (education, income, R&D, innovation)	Realised major effect on the social and economic features of the region (education, income, R&D, innovation)

The five impact areas are quantitatively measured in order to help the benchmarking procedure. Most of the indicators may derive from the regional innovation strategy policy documents. If not, field research may be required, especially for areas 4 and 5 (employment and socio-economic impact). Not all five areas of indicators are relevant to all instruments/actions. For example, spending applies to all instruments/actions, while the relevance of the other areas of indicators depends on the nature and focus of the specific instrument/action.

conclusions of the impact assessment exercise, in terms of policy recommendations for the next round of regional innovation policies.

The **EMERIPA methodology for benchmarking** enables actors to measure the innovation policy performance of a region, organisation or company based on specific statistics and to compare it with that of other entities or regions. The selection of the comparison group/counterpart depends on the scope of the benchmarking exercise and this can be decided freely. Two methods could be followed:

- one-to-one: comparison of your policy with another one showing best practice, thus illustrating the deviation;
- one-to-many: comparison of your policy with the statistics of many other policies, better or worse, thus positioning your policy in focus in the range between the best and the worst performance.

## Methodology implementation

In each region, the application of the EMERIPA methodology starts with the selection of the modules in which the regional innovation strategy has focused. These are the innovation areas for which the innovation policy impact assessment and benchmarking will be executed. The timeframe covered has to be decided as well, depending on when the regional innovation strategy that is going to be assessed took place.

Data collected for the modules and the timeframe selected are the basis for both the impact assessment and the benchmarking. Research to collect secondary data has to be completed with field research (mainly interviews for levels 2-3). Uploading data on the EMERIPA software tool supports the collection and codification of the data and permits further benchmarking exercises with other European regions.

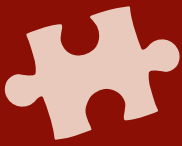
The **EMERIPA method for impact assessment** is based on the combination of data collected and analyses correlations between the four different levels described above. The correlation between levels 1 and 2 shows the relevance of the innovation strategy to the regional needs, and thus the appropriateness of the suggested strategy. The extent to which regions have built upon their particular needs is measured. How and who develops the strategy also has a bearing on the relevance. The correlation between levels 2 and 3 indicates the success or failure in the implementation of the strategy. The correlation between levels 1 and 4 reflects the changes to the regional innovation profile. The correlation between levels 3 and 4, finally, reflects the impact of the innovation strategy on the regional performance. The adequacy of resources employed to the regional needs and strategy objectives may result in the improvement of the regional innovation performance. A report has to be produced with the

**EMERIPA**  
(European methodology for regional innovation policy impact assessment and benchmarking)

**Participating regions:**  
Basque Country (ES), Central Macedonia (GR), Lithuania / Sub-region Alytus (LT), South Bohemia (CZ), Stuttgart (DE), Tuscany (IT), Western Switzerland (CH), West Midlands (UK)

**Website:**  
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## Scope

*Increasing globalisation and rapid changes in the economic and social fabric pose new challenges for policy makers. These can be for example that 'innovation' does not strictly keep to regional boundaries; and firms do not always do what policy says they should do. A further challenge is how to predict the impact of a strategy, policy, programme or project, which may be conducted over a period of 20 years.*

The Regional Innovation Policy Impact Assessment ('RIPIA') method developed by EUROCOOP aims to respond to these challenges. It does not aim at a simple fixed answer to the question of 'impact assessment', but rather at a more realistic approach to complexity and uncertainty in the form of a route map and working tools for investigation. With the use of these tools, RIPIA explores the regional innovation agenda, the critical paths of cause and effect, the relationships between stakeholders, the qualities of governance, and the organisation/regional 'learning capacity' as a foundation for the innovation process.

The RIPIA toolkit assesses the impacts of regional innovation strategies from the 'bottom-up' urban-regional perspective. The method provides practical guidance for assessment in complex and uncertain situations, and promotes critical thinking and feedback for policy improvement amongst regional policy makers and stakeholders.

## Expected results and benefits

What can be gained from carrying out an assessment? The knowledge gained will help policy makers understand whether and to what extent the innovation policy in a given region is tailored to its specific needs and assets (from a 'sustainable innovation' perspective). This entails assessing how, at the crossroads of technology policy and regional development policy (in the broad sense), innovation support policy impacts the whole economic, political, social or ecological environment (including its indirect or unexpected effects). This relates, for example, to the impact of regional innovation policies on employment, quality of life, democracy (social acceptance and social appropriation of technology) and ecosystems. The use of this tool in a variety of regions will over time build up a library of evidence and analysis, which may be used for benchmarking or future learning platforms.

## Implementation requirements

The RIPIA method can be used at several stages of policy-making, namely:

- after a policy / programme is implemented (ex-post assessment);
- before a policy is implemented (ex-ante assessment);
- during the implementation of the strategic programme (mid-term review).

In order to use the RIPIA method, the following documents are required:

- national and regional innovation policy and programme documents;
- regional economic strategy;
- spatial development plan;
- sustainable development plan for the region;

- cross-border strategy (if any);
- data on the scoreboard indicators.

A range of inputs will also be needed, depending on the regional situation, the type of policies to be assessed, and the resources available, such as:

- policy documents and a context review;
- fieldwork – semi-structured interviews and regional panels;
- questionnaire survey, where a larger sample is possible;
- statistical data, where this is available and relevant;
- desk analysis, using the suggested templates.

The method is designed to be run by experts (social scientists as well as regional economic policy experts) in close consultation with regional stakeholders. It is designed as a flexible set of steps including a series of templates and graphic aids. Approximately 10 to 100 person days would be needed to carry out an effective assessment.

## Approach and methodology

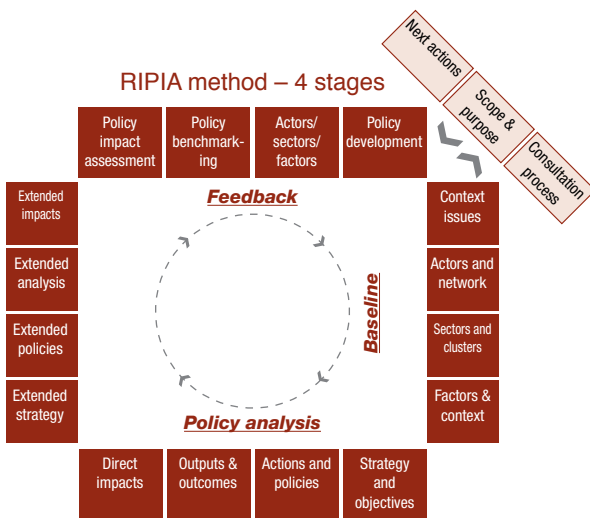
The RIPIA toolkit consists of a series of templates and guidelines for undertaking interviews, as well as analysis to aid the assessor. These also provide a framework for indicators and benchmarks. The impact assessment toolkit works in four stages.

**Stage 1** starts with scoping boundaries and context, identifying the regional profile and innovation agenda, and defining the relevant parts of the 'regional system innovation'. In **Stage 2** it attempts to form a 'logical framework' across relevant policies, programmes and projects). **Stage 3** extends this analysis to other policy areas that might influence innovation and its agenda, with a network analysis and a path analysis. This 'extended analysis' is at the core of the RIPIA method. It permits the investigation of a wider range of causes and effects which are often more complex, fuzzy, intangible and indirect. This stage has three main features:

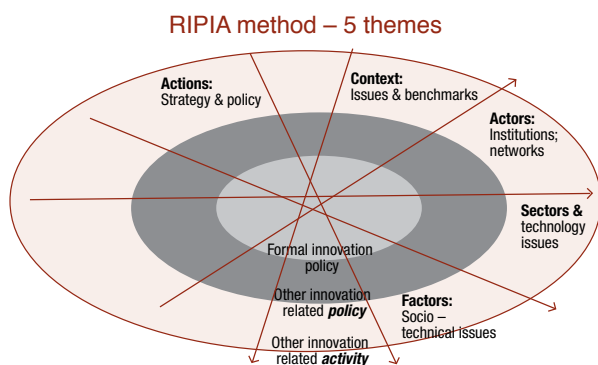
- Policy causal analysis: this sets out a wide range of possible cause-effect chains, and then prioritizes the most significant effects / impacts, or risks / opportunities.
- Emergent system investigation: this looks for 'emergent' behaviour across a wider system, such as collective learning and cooperation.
- Policy opportunity benchmarking: this compares the cause-effect chains with 'opportunities', from best practices, scenario studies, creative initiatives and policy innovation work.

Finally, in **Stage 4** the implications of the assessment are reviewed and feedback to actors/sectors and benchmarking for policy development is provided.





RIPIA assesses five main themes or perspectives on the regional innovation system, namely **context**: the economic, political, technological profile of the region; **actions**: strategy and policy; **actors**: institutions, networks, governance structures, and their relationships and interactions; **sectors**: the particular issues in the structure of the industry, cluster or technology; **factors**: other socio-technical issues such as intellectual property, legal and financial issues.



## Methodology implementation

The method is adaptable to different regions and different types of applications, as a way of investigation and analysis which is likely to be useful:

- If there is a single formal 'regional innovation strategy' with a clear policy boundary and a clear definition of the region, the method and templates can be used more or less directly.
- If there are many types of policies and programmes, a large and complex regional economic / political structure, and/or wider questions on what the regional innovation system is, the method can help as a guide for expert judgement.

The RIPIA method can be implemented in the following way:

### Stage 1: Preparation

- Step 1:** Set up a regional committee / network / forum.
- Step 2:** Establish the scope of the assessment.
- Step 3:** Undertake a desk study and then interview key stakeholders to explore regional actors and institutions; processes and interactions among them; and existing innovation policies and programmes. This includes both statistical and qualitative data.
- Step 4:** Explore the background of the 'sector' or 'cluster' under investigation, particularly factors such as intellectual property, finance, supply chains and institutional barriers.

### Stage 2: Policy Analysis

- Step 1:** Undertake semi-structured interviews with key stakeholders and/or a policy forum or workshop to bring all key stakeholders together.
- Step 2:** Do an analysis of the discourse on the stated strategy with reference to its context as well as to actors and their interactions.
- Step 3:** Undertake a logical framework ('log-frame') analysis of the visible objectives and inputs to policies and programmes.
- Step 4:** In the same log-frame approach, investigate the visible and direct outputs / outcomes / impacts (expected or measurable) for each policy / programme.

### Stage 3: Extended Analysis

- Step 1:** Draft reports for circulation for discussion for external review and benchmarking discussion by either similar regions or experts.
- Step 2:** Undertake a second stage analysis of underlying context / actors / interactions in the region innovation system. An extended log-frame approach has to be applied to identify indirect and underlying factors that influence policies and programmes, as well as indirect and extended impacts.
- Step 3:** This needs causal path analysis of the inputs and objectives of the policies and programmes.
- Step 4:** Explore with stakeholders and a desk study the more indirect, intangible and system-level outputs / outcomes / impacts of the policies and programmes.

### Stage 4: Feedback

- Step 1:** Come to a conclusion on the direct and extended impact assessment of the policies and programmes.
- Step 2:** Carry out a benchmarking exercise to compare the inputs / outputs / outcomes / impacts of policies and programmes with similar regions.
- Step 3:** Interpret the results in non-technical language and disseminate the results in a wider audience via seminary and workshops etc.
- Step 4:** Gather feedback on the summary of direct/indirect impacts of the policies and programmes; their implications for policy development; and important implications for information systems development within the regional innovation system.

#### EURO-COOP

(European cooperation for sustainable regional innovation)

#### Participating regions:

Berlin (DE), Bratislava (SK), England's Northwest (UK), Lublin (PL), Mazovia (PL), Paris (FR), Tartu region and South Estonia (EE), Vienna (AT), West Pannonia (HU)

#### Website:

<http://www.iccr-international.org/eurocoop>

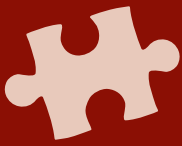
#### Contact person:

**Dr Ronald J. POHORYLES**

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# A SHORT PRESENTATION OF METHODOLOGY FOR IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

*IASMINE's methodology enables policy makers to assess regional innovation strategies as a whole and to characterise these strategies in terms of policy objectives, policy actions, allocated budget, impacts and results. IASMINE analyses to what extent these strategies are compliant with the Lisbon innovation goals in the domains of competitiveness, sustainable development, welfare and governance. Furthermore, it evaluates the strategy's likely impact on the regional innovation system (RIS). By analysing the medium to long term impact on the regional innovation scoreboard variations, an ex-post evaluation can be made.*

Further to assessing the regional innovation strategy as a whole, specific policy measures or actions are also assessed. RIS performance indicators are individualised in order to assess the impact of a given policy action. Data concerning result and RIS performance indicators are collected and the final assessment of the policy action is arrived at through an informed discussion about the data collected.

## Expected results and benefits

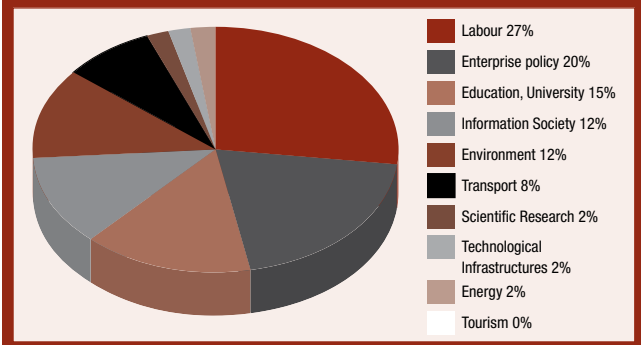
The IASMINE methodology provides **decision makers and evaluators** with full knowledge of the socio-economic context in which to apply the policies and of the variables that influence their impact on this regional context, thus allowing more informed choices and an increased understanding of the regional innovation dynamics.

In addition, it can provide **RIS actors and policy makers** with a common language for describing policy objectives and expected/measured results and impacts. Thus, consensus building and knowledge sharing is facilitated and any gaps between the regional policy programming levels and innovation actors are closed.

IASMINE allows policy makers and evaluators to:

- discover a structural bias in policy planning by analysing the budget allocation in different policy areas/objectives and its congruence with the EU innovation strategy objectives;
- identify strengths and weaknesses of the regional policy plans, in terms of the expected impacts on the innovation performance of regional actors;
- understand which the most relevant indicators to be monitored for a specific region are by analysing how a single policy spreads its effects on each RIS actor;
- identify some good practices in policy design and implementation by confronting the performance of different regions that share the same policy goals;
- identify areas of improvement in the regional monitoring procedures (e.g. data collection, evaluation, auditing, etc.).

Relative distribution of EU compliant budget over the 10 policy areas



Example graphs produced by the Policy Matrix

## Implementation requirements

Applying IASMINE's methodology and using its tools does not require the involvement of 'experts'. Any policy maker who is well acquainted with innovation policy design and implementation can easily deal with it.

The main source for **characterising** the regional policies is usually regional innovation programmes/plans and related detailed descriptions of adopted measures. In principle, the characterisation can be carried out by an external body. Assessment of whether the policy complies with the EU Lisbon goals may require the involvement of concerned regional policy-makers.

In general, the **ex-ante assessment** of specific policy actions requires an in-depth analysis of the policies under consideration and should at least involve the concerned policy makers/managers. As this phase could be part of a consensus building and policy tuning process, it could be usefully enriched by the participation of the target beneficiaries (universities, research centres, firms).

The **assessment of a finalised or on-going policy action** is the most demanding task in terms of access to indicator-related data. Data collection is carried out by looking at different sources and/or by conducting ad-hoc surveys, and represents the major share of the impact assessment cost. This cost can be minimised if data collection is integrated into the usual project control procedures (for instance by asking the beneficiaries to periodically fill in a questionnaire).

Impact assessment requires data confrontation and interpretation thus generating an informed assessment of the impact of the analysed regional policy. This is performed through a focus group discussion among policy makers, beneficiary representatives and innovation economics experts. The same applies when benchmarking a policy among different regions.

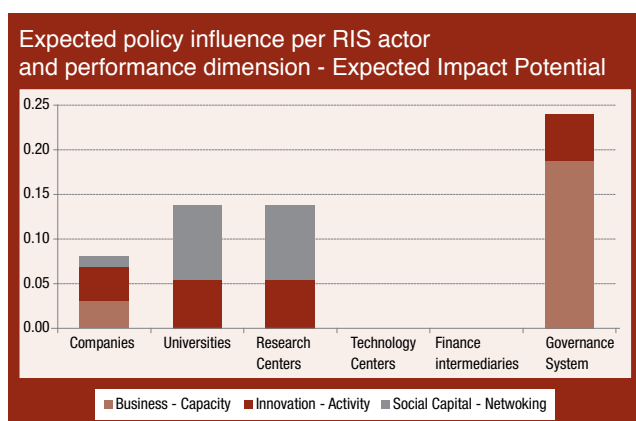
## Approach and methodology

The IASMINE methodology proposes a set of tools and procedures that can be used and applied in a flexible way, according to the specific assessment task of interest. The tools proposed by the project, are available on the IASMINE website, and include the policy matrix, the RIS matrix and forms and spreadsheet guidelines.

The **policy matrix** is an electronic spreadsheet that allows a broad analysis of the regional policy actions. Its application is very simple: the user needs only to classify each policy action according to its budget and to the corresponding policy area and EU innovation strategy objective(s). From this, all computations are done automatically and several graphs are generated, allowing the user to better understand the relative relevance of the regional policies and their compliance to the EU strategies.

This tool can be used ex-ante, for performing a general assessment of the planned regional innovation strategy, or dynamically, for monitoring the regional yearly expenditure in the different policy areas and objectives, thus providing a base for impact assessment.

The **RIS matrix** is an electronic spreadsheet that allows estimation of the expected impact of a given policy on the actors of the Regional Innovation System (RIS). The use of the matrix is quite simple: for each RIS performance indicator listed in the matrix the user must assign a qualitative 'influence degree' (i.e. null, low, medium, fair, high), thus qualifying the potential impact of the policy under assessment. From this, average influence values are computed and some graphs are automatically produced.



Example graphs produced by the RIS Matrix (Ex-ante impact analysis and Ex-post policy efficiency analysis)

If used extensively on all the policies that make up the regional innovation strategy, this tool can integrate the information provided by the Policy Matrix with a view of what can be expected in terms of impacts on the specific innovation dynamics of the different regional actors, giving the policy maker a useful tool for ex-ante policy evaluation. The tool is also used for setting up the monitoring activity of specific policy actions, providing a base for impact assessment.

## Methodology implementation

### First phase: characterisation of the regional innovation policy (Policy Matrix)

The characterisation of regional innovation policies implies the identification of:

- 1) regional policy areas covered;
- 2) the regional policy objectives under each policy area, specifying the total budget allocated to each, planned timing of execution, target group, expected impact and associated policy impact indicators;
- 3) the regional policy actions that implement each regional policy objective, specifying allocated budget, planned timing of execution, expected results, target group, eligible (implementing) actors and associated action result indicators;
- 4) each impact and result indicator, specifying its source, availability, frequency of updating etc.

After that, an analysis of the compliance of these policies with the innovation goals established at European level, particularly in the Lisbon Agenda, is performed. This first phase allows policy makers to gain a clear view of the regional policy programming in different areas and is therefore particularly useful for ex-ante evaluation and policy implementation monitoring.

### Second phase: the RIS analysis (RIS Matrix)

The final target of any innovation policy is the regional innovation system (RIS), that is the system made up by the various regional actors interacting and exchanging knowledge among them. In order to allow policy makers to monitor the innovation performance of this system, a set of 'RIS performance indicators' has been defined and a tool that helps with analysing the influence of a given policy on the RIS actors, has been developed.

### Third phase: monitoring, impact assessment and benchmarking

The monitoring phase includes collecting data concerning the deployment of the regional innovation policies and the innovation performance of the policy beneficiaries and provides the base for those analyses that allow the evaluation of policy impacts. For this critical phase, IASMINE offers a set of good practices and approaches that guide policy makers in their assessment of the impact of regional policies. The same tools and methods can be applied in order to benchmark the effectiveness of regional innovation policies in different regions and thus gather insights on better practices in policy design and implementation.

#### IASMINE

(Impact assessment and methodologies for innovation excellence)

#### Participating regions:

Lodz (PL), Navarra (ES), Puglia (IT), Tirol (AT), Weser-Ems (DE)

#### Website:

<http://www.iasmine.net>

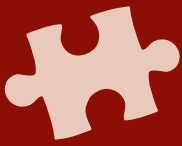
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# A SHORT PRESENTATION OF METHODOLOGY FOR IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

**IMPACTSCAN provides a monitoring and impact assessment system that allows regional authorities to get a clearer picture of public support for innovation in their region, and to take decisions to improve the effectiveness of this support system. IMPACTSCAN focuses on the role of intermediaries in charge of innovation.**

The IMPACTSCAN project provides a method and tool for regional policy makers to analyse and evaluate the impact of the regional innovation policy. It has been developed and tested by seven agencies dealing with innovation policy and is co-funded by the European Commission. Its focus is on the impact of the regional innovation intermediaries - as for example science and technology parks, technology transfer centres, research institutions or public administration - on the innovation performance of the firms. Results can be used on a regional level or for comparisons between regions.

## Expected results and benefits

IMPACTSCAN delivers a structured and simplified view of the regional innovation support system and the allocation of budgets, their major components and their strengths and weaknesses. Some qualitative information on the match between supply and demand of innovation support measures will be forwarded to companies. All this information can be used to optimise regional innovation support system, the mix of services and elaborate a regional recommendation plan for policy makers.

For inter-regional comparison regions with similar or different innovation support system can be identified to open discussions and analyse in depth advantages and disadvantages of different innovation support systems. For regions with limited experience in innovation support, elements from IMPACTSCAN can be used to help the design of a regional innovation support system.

Based on the results of IMPACTSCAN partners have improved the evaluation of their regional innovation support systems or gathered elements for design of regional consulting and monitoring tool for intermediaries.

## Implementation requirements

To get started with the IMPACTSCAN monitoring and impact assessment tool two sets of data are required. For the first set of data the user needs to have a good insight in the regional budget spent on innovation and the distribution of this budget over different innovation policies, intermediaries and services. For the second set of data it is necessary to obtain information from the companies, which use the innovation services, how they evaluate the impact of these services on the innovation capabilities in their company.

For explanatory reasons the regional context is very important. Inside the IMPACTSCAN methodology set of 31 indicators was chosen to describe the context.

**Regional innovation budget:** The total amount of money spent on regional innovation is needed as well as a thorough knowledge of the distribution of this money through the policy objectives, intermediaries and services is required. It is therefore necessary to have insight in the regional roll-out of policy objectives towards direct and indirect innovation support measures. The regional budget is shown in two matrices (M1 and M2 below).

In a first matrix the distribution of the regional innovation budget is presented according policy objectives and intermediaries. Each cell in this matrix represents the budget a given intermediary type is spending on one of the five innovation policies.

In the second matrix the distribution of the regional innovation budget is presented according intermediaries and services. Each cell in this matrix represents the budget a given intermediary type is spending on one of the service types defined for the project.

Information on the selected policy objectives, intermediary types and service types can be found in the IMPACTSCAN users-guide on [www.impactscan.net](http://www.impactscan.net).

**Impact measurements:** To measure the impact of the innovation services over innovation enablers, that is the factors enabling innovation in companies – such as for example the ability to define strategy for the future, to obtain money for their innovation activities or to hire the right employees and to enhance their competencies (M3), surveys of companies are needed (face to face interviews complemented with written inquiries show to be most efficient). It is important also to have a good view on the demand side, the need of companies in terms of improvement of innovation enablers translated into need for services.



**Indicators:** To describe the innovation context, 31 indicators are used (in 5 sets: size and density, policy context, regional innovation policy governance, innovation support supply side, demand side). 17 indicators are available from EUROSTAT, CIS, EU Regional Innovation Scoreboard, Global Entrepreneurship Monitor. 4 indicators are related to the regional innovation budget. The remaining 10 indicators are qualitative indicators to describe the region.

## Approach and methodology

For the IMPACTSCAN tool the data of three matrices (M1, M2, M3) is encoded in a standard Microsoft Excel™ application to generate visual presentations. Graphical presentations of M1, M2 and M3 in absolute numbers (€) as well as % of regional innovation budget are included in the standard IMPACTSCAN tool. As the application is standard MS Excel™, the user of the IMPACTSCAN tool can easily modify the features of graphs (axis, regions to visualise, variables to visualise).



**Data for Matrix 1, 2 & 3**

Regional Data  
M1, M2, M3

BR  
FL  
LA  
...

**Comparison between the regions for Matrix 1,2 & 3**

➤ Microsoft  
Excel™

➤ With large  
flexibility to  
select graph  
features

**Data for each region**

INDICATORS	Region 1	Region 2	Region 3	Region 4	Region 5
0 Size and density					
0.1 inhab	4	10	1	0	4
0.2 inhab/sqkm	0	6	0	7	1
0.3 GDP/RN	0	6	1	0	3
1 Policy context					
1.01 GDP/inhab	8	10	8	10	0
1.02 Gr. GDP/inhab	9	4	5	0	10
1.03 RRSII	7	10	2	7	0
1.04 1-unempl	8	9	10	9	0
1.05 R&D/GDP	7	10	3	9	0
1.06 R&D/RN	0	6	0	0	0
1.07 PublicR&D/GDP	9	8	0	6	3
1.08 EPO pat / m inhab	8	8	8	10	0
1.09 %pop 3rd ed	4	6	0	4	0
1.10 %seed Sc&Tech	5	9	0	5	4
1.11 %					
1.12 B					
2					
2.1 A					
2.2 R					
2.3 Rinno/Rbudget	4	0	10	4	0
2.4 Rinno/GDP	1	3	3	2	0
2.5 Rinno/Tinno	2	10	8	5	0
2.6 Coord mgmt. Platform	5	7	10	7	1
2.7 RIS holistic	5	8	10	7	5
2.8 Monitoring innopol	3	6	7	7	1
2.9 Reinf.innopol	8	7	7	5	1
3 Support inf.					
3.1 Support inf.	8	8	9	9	0
3.2 Comm platf. firms	5	10	7	7	1
3.3 Network culture	6	8	6	7	5
4 Described R&D					
4.1 Firms RD exp	6	10	5	10	0
4.2 Empl.HTech mtgt.	2	9	6	4	5
4.3 Empl.HTech serv.	8	9	3	10	0
4.4 Innov. Culture	6	6	5	7	3

Context setting indicators

**Comparison between different regions**

Context setting: The 31 indicators used to describe the regional context are inspired by the EU-project “STRINNOP” and are processed according to the STRINNOP project results into a spider diagram. The regional spider diagram indicates very quickly the strengths and weaknesses of your region compared to a mean value. The multi-regional spider diagram shows similarities and differences between regions at a glance.

## Methodology implementation

The IMPACTSCAN-tool has been used by seven partner regions. Other regions interested in using the IMPACTSCAN-tool can have free access to the tool, a detailed user guide will be provided together with a demo of the most important functionalities of the tool.

The IMPACTSCAN-tool, as well as a users-guide, and a ‘get-started’ explanatory presentation, can be downloaded from the project website: <http://www.impactscan.net>. The excel tool includes already the minimum/maximum and mean value of all data from the seven regions involved in the development of the tool.

For inter-regional comparison, more regions should follow the same procedure of data gathering.

The regions interested in comparisons with the seven regions participating in IMPACTSCAN are invited to contact the project coordinator or project partners (the contact data is available at the project website).

**IMPACTSCAN**  
(Innovation Policy Impact Assessment at Regional Level:  
Benchmarking for Dissemination of Differing Performances  
to Raise Awareness of Policy Makers  
to Stimulate Successful Measures and Good Practice)

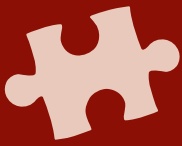
**Participating regions:**  
Brittany (FR), Flanders (BE), Limburg (NL), Lower Austria (AT),  
Lower Silesia (PL), Madrid (ES), Slovenia (SI)

**Website:**  
<http://www.impactscan.net>

**Contact person:**  
**Ms Annie RENDERS**  
IWT

Tel: + 32 2 20 90 952  
E-mail: [ar@iwt.be](mailto:ar@iwt.be)





## Scope

***Innovation is a key determinant of competitiveness in both fast growing high-tech sectors and more traditional sectors. The ability of most SMEs to survive, grow and generate quality jobs increasingly depends on their capacity to put innovation at the core of their business strategy in order to harness benefits from technological change and the globalisation of markets for products and resources. In turn, small innovative firms, especially young ones, play a vital role in ensuring the vitality of regional (and national) innovation systems. With these factors in mind, methodologies for promoting innovation activities and procedures must thus appropriately fit SMEs' interests.***

The role of INNOWATCH is to assess the methodology of innovation policies and their impact in different regions, providing statistical and textual data analysis and graphical representation of results. The objective of this tool is to make conclusions on innovation policy efficiency, thus helping the regions in the effective allocation of resources on innovation promotion actions and strategies. Regional authorities and innovation oriented organisations will therefore be the main beneficiaries when the INNOWATCH tool is incorporated into the mainstream of policy-making processes.

## Expected results and benefits

As an effect of the benchmarking analysis, the INNOWATCH tool provides a continuous mechanism for redefinition, focus and adjustment of regional policies, thereby providing increased efficiency in public resource allocation. The INNOWATCH tool can be helpful in clearly identifying the best actions to promote innovation in the region through benchmarking crucial indicators that will determine the success or failure of regional innovation policies. Using an inter-regional comparison can help weaknesses and strengths of innovation policies be recognised and this is fundamental for the decision-making of future policies.

### Regional use

- Comparison of a particular region to the national and European level with recommendation for policy makers.
- Innovation policy trends in a particular region over a period of years.

### Inter-regional comparison

- Comparison of the success of particular innovation policies to the ones in different regions/countries.
- Finding the best strategies and actions to promote innovation by taking into account the idiosyncrasies of the region/country and regional sustainable development.
- Taking into account that benchmarking exercise results can be very helpful for the design and implementation of future regional innovation policies by working towards a more innovation-friendly policy and regulatory environment.

The regions participating in the project have already performed a comparison between them leading to the identification of best practices and innovation policies that can be applied with high rates of success in other regions.

## Requirements for the implementation

Statistical data is needed to evaluate a region using the INNOWATCH tool. This includes such indicators as the number of people employed in R&D activities in the company sector, the number of patents applied for at the European Patent Office (EPO), or the number of innovating enterprises in manufacturing and service sectors. This data can be found in many studies such as the European Innovation Scoreboard, Eurostat's Science and Technology in Europe, web pages (<http://www.proinno-europe.eu>) or different institutions such as the National Institute of Statistics. The data is needed per year at regional level (for the region you want to assess) and national and/or European level.

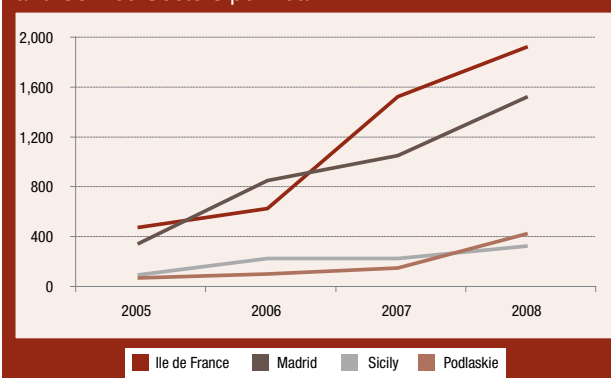
One of the main factors for success when making use of the results of the tool is the involvement of regional innovation players in the assessment, ranging from policy-making organisations to the region's SMEs. This awareness of the importance of regional innovation policies will further encourage interaction between R&D&I players and companies, ameliorating the frequent mismatch between the conceptual approach of researchers and the highly pragmatic nature of SME managers.

## Approach and methodology

The INNOWATCH tool makes use of the data requested to calculate a number of indicators, which will be shown graphically through a number of years. This way the trend through these years will show the success of the different policies used in the region. The tool also displays a comparison with any chosen indicator (whose data has been previously introduced) within different regions in the same year.

Any chosen indicator can be seen throughout the years (if the data has been previously introduced), so the trend is easily seen for any given region or between more regions (Figure 2). Also, the same indicator can be displayed for a specific year for different regions in order to compare them.

Number of Innovating Enterprises in Manufacturing and Service Sectors per Year



The innovation policies for a given region are evaluated with the entered data with reference to national and European innovation policies. The tool gives easy and straightforward recommendations about the regional innovation policies, marking the level of innovation as bad, low, good, very good and excellent (Figure 3). To do this, the tool divides policies into five types, so it is easy to distinguish bad/good actions and strategies to promote innovation. The types are:



- innovation in human resources;
- innovation in funding;
- innovation in macroeconomics;
- innovation in knowledge creation;
- innovation in knowledge diffusion;

Identification of these types leads to an easy understanding of the status of each of the different innovation policies in the region. From here arises the need to use reliable and contrasting data, so the results are adjusted to reality and the involvement of key innovation players that get to know the project analysis and conclusions so decisions for further policies are taken knowing the impact of older innovation policies and strategies.

## Methodology implementation

Any region/organisation interested in innovation can make use of the INNOWATCH tool. The innovation policy data for using with it is available in many studies published at national and European level together with the innovation policies performed. The impact and success of the regional innovation policies will be reflected in the trend shown by the indicators through the years or by comparison to European ones. Once the strengths and weaknesses of a region/country are identified it is possible to search for the innovation policies carried out during that year and get a clear view of the impact and the best practices/strategies that have been performed.

<b>INPUT</b>	<b>European level</b>	<b>Value</b>	<b>National level</b>	<b>Value</b>
<b>Innovation Human Resources</b>	The innovation policies developed in this Region has become it in one of the best European Regions in Innovation.	<b>Excellent</b>	The innovation policies developed in this Region has become it in one of the best European Regions in Innovation.	<b>Excellent</b>
<b>Innovation Funding</b>	The innovation policies have been developed in the region allowing it to reach the average level of innovation reached in Europe.	<b>Good</b>	The Innovation level reached in the Region is a result of a fine innovation policies design.	<b>Very Good</b>
<b>OUTPUT</b>	<b>European level</b>	<b>Value</b>	<b>National level</b>	<b>Value</b>
<b>Innovation Macroeconomics</b>	The innovation policies developed in this Region has become it in one of the best European Regions in Innovation.	<b>Excellent</b>	The innovation policies developed in this Region has become it in one of the best European Regions in Innovation.	<b>Excellent</b>
<b>Innovation Knowledge Creation</b>	The innovation policies have been developed in the region allowing it to reach the average level of innovation reached in Europe.	<b>Good</b>	The Innovation level reached in the Region is a result of a fine innovation policies design.	<b>Very Good</b>
<b>Innovation Knowledge Diffusion</b>	The innovation policies have developed an Innovation system with results below the levels of development reached in the average Regions of Europe.	Low	The innovation policies have developed an Innovation system with results below the levels of development reached in the average Regions of Europe.	Low

Assessment of the regional innovation policies with reference to the innovation policies of the country and Europe

### **INNOWATCH**

(Application of technology watch methodology for assessment of regional innovation policy impact on SMEs)

### **Participating regions:**

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# A SHORT PRESENTATION OF METHODOLOGY FOR IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

**MERIPA aims to support policy makers in different stages of policy development and implementation by developing a comprehensive methodology for assessing research and innovation regional policies. It has designed a toolbox which integrates diverse elements such as cluster analysis and network mapping, benchmarking indicators, and surveys which provide an extensive package to guide regional policymakers in their policy work**

Meripa's toolbox emphasises regional innovation policy work as an ongoing process with an in-built aspect of learning strongly present. It is designed to provide regions with the means to incrementally build their innovative capabilities as well as the ability to evaluate the effects of their policies and the process of creating, implementing and refining them. It provides a roadmap approach geared towards a synthesis of reactive and proactive viewpoints. This means that it allows users of different levels to make use of the tool according to their individual starting points; it serves newcomers to innovation policy work as well as seasoned veterans.

## Expected results and benefits

MERIPA's various tools are designed to provide knowledge related to the regional situation and to assist different decisions along the policy making process. The toolbox as a whole helps to conduct the innovation policy shaping and implementation as a continuing process with a deeply embedded aspect of reflective learning.

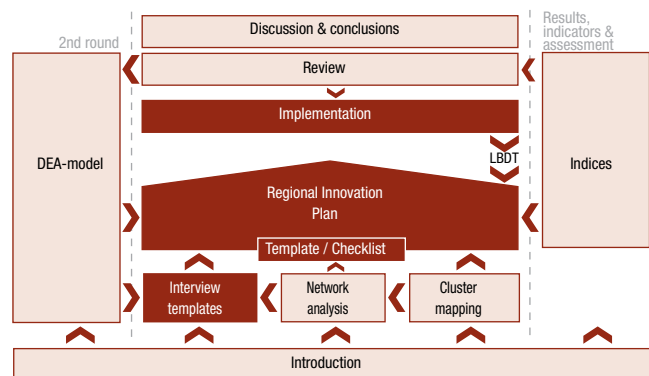
The toolbox is structured in accordance with the four main phases of the policy-making process: Start-up, Design, Implementation and Review. For each phase there might be different tools. Each tool will bring different results and benefits:

- The Cluster Mapping Tool will help to identify clusters in a specific region based on Michael Porter's cluster concept, i.e. the sectors of industrial activity the region is specialised in when compared to other regions in the home country. This will form the basis for further policy development in the cluster area.
- The Network Analysis will help to see whether the clusters discovered through the Cluster Mapping Tool are working or not. It identifies the value chain in the business sector and provides insight into the cluster dynamic, which enables politicians to make more specifically targeted cluster policies.
- The Interview Template will help to gather region-specific information and lay the foundation for the roadmap that will constitute the basis for the region's innovation policy. It provides better understanding of the needs and underlying issues in the regional innovation environment.
- The Checklist is a simple tool, which will verify if the policy making process includes all elements needed for the design phase of the policy process.
- The Indicator Plan helps to prepare the evaluation and assessment of the policy as an integrated part of the policy design. It will show the various ways in which the innovation performance of the region can be measured and helps to plan what data needs to be collected along future implementation of the innovation programmes.

- The Regional Innovation Plan helps to develop a detailed and realistic strategy for innovation activities that is tailored to the specific needs and conditions in the specific region (following RIS/RITTS methodology).
- The Implementation provides the user with guidelines formulated from the experiences of the partner regions to support the implementation of the regional innovation strategy/plan. For example it provides information about the most common difficulties of implementation and in this way helps the user be prepared to deal with them.
- The **Indicator Tool** provides five composite indices for measuring the performance of the regional innovation system. They give objective, solid evidence, making the subsequent review of the policy both easier and more reliable.
- The **Data Envelopment Analysis (DEA) Model** is a tool that enables the transnational ranking and benchmarking of a large set of regional innovation policies on the basis of impact and relative efficiency.
- The **Review** helps to identify the magnitude of the programme/project achievements and sheds light on the reasons behind it. It will provide convincing and comprehensive review of the policy process along with a detailed estimate of the influence the policy has had.

## Implementation requirements

The tools, which can be chosen by a user depending on the specific needs, have different requirements. For instance, they might require involvement of actors and relevant experts. As for data collection, some tools rely on statistical data. Some data are not available from the national or European statistical offices and might need to be collected by the region. This needs to be planned in advance with use of the 'Indicator Plan'. Some other tools will require surveys based on questionnaires or structured interviews with the key stakeholders.



*The conceptual model of the toolbox (red colour indicates the most necessary modules)*





## Approach and methodology

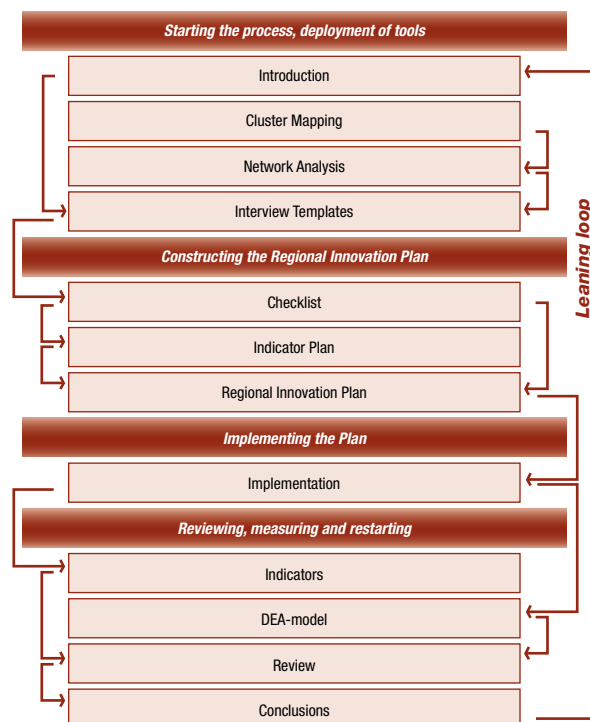
The MERIPA toolbox is meant to address the needs of regions at different stages in the innovation policy process and has a modular structure, which allows the choice of particular modules depending on the specific needs.

The starting point of the policy development will be to gain a more profound understanding of the regional specifics for the policy makers. This is accomplished with cluster mapping techniques, network analyses and the help of interview templates designed to uncover both current issues hindering the innovation development and possible upcoming events. The interviews provide insight on what actors expect of the future and what they are willing to commit to, and also a general mapping of the current and future regional landscape in relation to business development and the innovation system. Data gathering for the performance measurement via indicators is carried out from the very beginning and measurements are taken at certain intervals allowing for iterative adjustments to the policy.

## Methodology implementation

The toolbox is structured in a modular fashion, thereby allowing users to pick the tools according to their individual needs. Going through the whole process from start to finish with the help of the tools presented, it is possible for the user to customise his own process by picking only the modules he needs. Implementing the Indicator Plan would provide a wealth of statistical data that could be exploited for various research and communication purposes. The Indicators provide the means to examine how different aspects of innovation systems relate to policy performance. The DEA-model completes the package, providing a measure for objectively comparing the performance of a great number of diverse regions in one common analytical setting. The modularity of the structure also provides the opportunity to add to the toolbox by complementing it with new tools, from further MERIPA developments or elsewhere, and fitting them into the existing structure.

The implementation process can be illustrated in the following way:

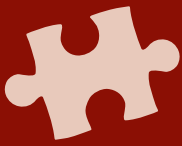


**MERIPA**  
(Methodology for European regional innovation policy assessment)

**Participating regions:**  
Blekinge (SE), Emilia-Romagna (IT), Kouvola & South Karelia (FI),  
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# A SHORT PRESENTATION OF METHODOLOGY FOR IMPACT ASSESSMENT AND BENCHMARKING OF REGIONAL INNOVATION POLICY

## Scope

**The methodological tool developed by OMEN aims to provide a common framework for analysing the impact of regional innovation policies and to assess to what extent they achieve their objectives. Together with the development of the policy impact analysis (PIA) methodological tool, a set of 22 innovative indicators has been developed.**

OMEN targets the policymaking process from a new perspective: the focus is not placed on the steps taken for a coordinated policy action, but rather on the different dimensions of the policy mechanism. In this perspective, the tool focuses on a few basic issues, including:

- What is the regional range of action in innovation policy-making?
- How much effort is devoted to innovation?
- How coherent are the policies of the Regional Innovation Programme/Strategy?
- Which access and delivery issues arise?
- Are policies cost-effective? What is their impact on enterprises?

### OMEN provides three levels of assessment:

- 1) *Basic*: each policy is considered *per se* and only a few indicators are analysed. Evaluation is possible, but not very far-reaching.
- 2) *Intermediate*: policy makers can compare a) different policies within the same region and/or at the national level; b) analyse the same indicators with respect to different policies.
- 3) *Benchmarking*: different regions agree upon similar policy-lines and indicators.

The criteria of individual preferences and opportunities for comparison should be, wherever possible, followed jointly. The suggestion is to select, where possible, at least two policy packages, so as to allow comparisons, at least to some extent.

## Expected results and benefits

The OMEN methodology has been designed to evaluate how well innovation policies or programmes have achieved their objectives. In this perspective, three aspects have been taken into consideration: efficiency, effectiveness and efficacy.

- **Cost efficiency** indicators allow the examination of programme management in terms of clear communication of objectives and progress, actual expenditure, time lapsed from decision to actual implementation of actions and the bureaucratic obstacles that participants may encounter. All of these indicators help with the understanding of problems present in the implementation of innovation programmes and to avoid any redundancy.
- **Cost effectiveness** indicators aim to evaluate the extent to which the objectives have been met, taking into particular account the perception of regional innovation stakeholders that are permanently involved in the process. As all the indicators are quantitative, objectives have to be set in quantitative or verifiable terms.
- **Efficacy** indicators analyse impact indicators. Evaluation can also

involve comparison with similar regions. It can cast light on how and why the programme achieved a certain degree of effectiveness.

The OMEN methodology can also be used to examine unintended consequences of the programme intervention: benefits and costs of the activities that were not expected by the programme designers, or not explicitly spelled out as being among the programme objectives.

## Implementation requirements

The analysis of data availability in regions using the OMEN methodology must be carried out at five different levels: input, process, administration, output and impact. A set of quantitative and qualitative indicators have been developed, which requires various kinds of data including:

- an overview of regional innovation strategies and programmes, including indications about priorities, objective and budget allocation;
- statistical data, such as public and private R&D expenditure, for example;
- quantitative information about innovation policy measures carried out in the region analysed, related to e.g. participation, costs and results.

In order to obtain the necessary data, it is therefore necessary to use both assessments by beneficiaries, which requires interviews, as well as 'hard data' from financial or administrative sources.

Good evaluation practice requires institutionalisation and embedding of the evaluation into innovation policies and programmes during their preparation, design, implementation and administration. It is essential to determine the parameters to be measured during and at the end of the policy implementation process even as early as the policy design and definition phase. Ex-post evaluations carried out without ex-ante evaluations run the risk of data unavailability and loss of data traceability. While designing a programme, a suitable evaluation framework should be set up based on the programme-specific objectives. Particular attention should be devoted to the preparation of programme applications, which should collect all details that are directly or indirectly (through calculation) linked with indexes or indicators that will be used later on for evaluation.

The implementation of an adequate evaluation system requires the building of evaluation capacities in the region. Statistical data need to be collected on a permanent basis to allow an on-going evaluation process. The establishment of a regional evaluation agency or a central evaluation unit can be very helpful, the technical and human infrastructure necessary to carry out the evaluation also needs to be developed, and evaluations and the use of their results in the policy-making cycle should also be included. Every region requires a new and unique approach to capacity building, depending on its context, experience, expectations and motivation.

Policy recommendations made by researchers are scientific based and in a way appropriate for politicians and decision makers. But it is important also to involve innovation actors directly in the governance and evaluation process. The assessment of the innovation impact of a programme should be done from a 'systemic perspective' taking into consideration its context in the overall programme portfolio.

## Approach and methodology

The OMEN methodology uses 22 indicators to assess the impact of innovation policies, which can be classified according to the different stages of the policy-making process:

- **Input indicators** provide information about the effective importance of innovation policies and the weight of Public Expenditure on Innovation (PEI) in the region.
- **Process and administration indicators** show how to transparently define policy priorities and objectives as well as the relationship between financed instruments and plans.
- **Outcome indicators** provide the results obtained by the policy/instrument which are analysed in comparison with objectives expressed in the regional innovation strategy/programme.
- **Impact indicators** illustrate the long term effects of the policies/instruments on the regions.

The 22 indicators are the following:

### Input

- 1) **Policy Effort Index:** describes the relative weight of public expenditure on innovation (PEI)
- 2) **Regional Innovation Policies-Power Index:** describes to which extent innovation policies are a national matter, and to which extent they are local

### Process & administration

- 3) **Policy Transparency index:** describes the transparency of policy priorities and objectives, and whether they allow confronting results to expectations
- 4) **Overall Coherence Index:** describes whether financing priorities are in line with regional innovation strategy/programme priorities
- 5) **Tools-Objectives Coherence Index:** describes whether the financing for each item is consistent with objectives fixed in the regional innovation strategy/programme
- 6) **Policy Coverage Index:** describes who the potential beneficiaries are compared to the reference population
- 7) **Territorial Access Balance Index:** describes the sub-regional eligibility spread of the measure
- 8) **Access Discrimination Index:** describes business association reporting access restrictions or heavy conditionality which may hinder benefiting from the measure
- 9) **Clarity/Viability Index:** describes whether the explanations for admission and selection to participate in the measure were clear and whether the selection criteria used were viable
- 10) **Participation Index:** describes whether the actions were duly advertised
- 11) **Netting Allocations Index:** describes how much it costs to implement a policy, taking into account both implementation and participation costs
- 12) **Ability to Deliver Index:** describes how much of the funds set aside for innovation policies were really spent
- 13) **Rapidity of Delivery Index:** describes how quickly delivery of policy actions are carried out
- 14) **Delays in Delivery Index:** describes how much time lags in delivery of policy actions

- 15) **Red Tape Index:** describes the bureaucratic obstacles that have been encountered by participants in fulfilling the programme requirements

### Outcome

- 16) **Incidence on Employment:** describes the employment of beneficiaries compared to total employment
- 17) **Monetary Incidence per Employment:** describes the expenditure (PPS) per person employed in beneficiary institutions
- 18) **Incidence on Beneficiary Institutions:** describes the share of beneficiary institutions compared to the reference (eligible) population
- 19) **Monetary Incidence per Beneficiary Institutions:** describes PPS (euros) per beneficiary institution

### Impact

- 20) **Policy Multiplier Index:** describes the ratio between generated and financed investment
- 21) **Success Rate Indices:** describes relative changes in innovation applications; R&D / patenting; employment; turnover; productivity; investments; profits; etc
- 22) **Effectiveness Index:** describes whether the policies were able to meet their targets

## Methodology implementation

The indicators, developed by OMEN, were developed with the aim of designing a comprehensive assessment framework, which implies ex ante planning and the gathering of fresh information.

The analytical framework must be adapted to the particularities of future policies and implemented during the definition phase of Regional Innovation Strategy or Programme.

The assessments of innovation policies done within OMEN was developed essentially ex post and based on available information and in the light of analyses carried out during the project. Some important lessons were learnt and collected in a White Book available both on project ([www.omen-project.org](http://www.omen-project.org)) and IRE websites.

Furthermore, in support of programme managers that would like to introduce the OMEN methodology, a software tool has been developed and is freely available at [www.omen-project.org/tool](http://www.omen-project.org/tool)

### OMEN

(Optimal practices, development policies and predictive models for regions in an enlarged EU)

### Participating regions:

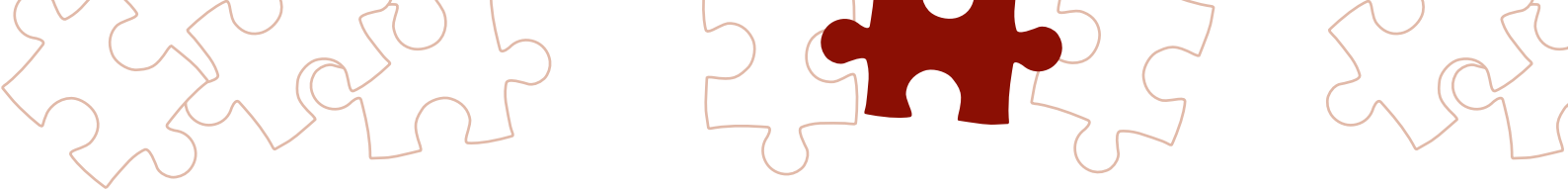
Stockholm (SE), Tuscany (IT), Andalusia (ES), Cyprus (CY), Lazio (IT), Podkarpackie (PL), Prague (CZ), Saxony-Anhalt (DE)

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## Annex 2. Published Sources of Information

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IRC-IRE Central Unit, Regional Innovation in Europe – Journals of the IRE Network, Issues no 3, 2002 – Towards regional innovation benchmarking.

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Innovating Regions in Europe Network – RIS Methodological Guide Stage 1 (February 2006)

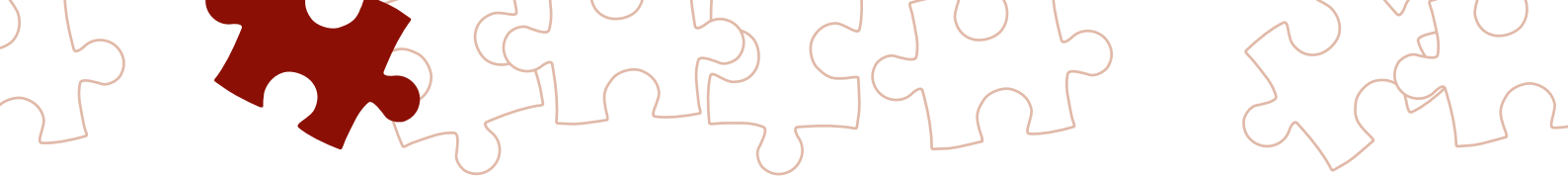
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OECD Science, Technology and Industry Scoreboard, 2007

OECD Science, Technology and Industry Outlook, 2006



## Annex 3. Glossary of Terms

### **Additionality**

The change that can be attributed to a programme.

### **Auditing**

A process of checking that a project has been managed as planned, especially that resources have been allocated and spent properly. Auditing focuses on compliance with commonly agreed procedures, or rules, often of a financial nature.

### **Benchmarking**

A process in which an entity (region, development agency, service provider, company) carries out three processes: (i) compares its systems performance with others; (ii) determines how better systems achieve superior performance; and (iii) uses this information to improve its own performance. All systems and processes can be benchmarked: the difficulty is to identify what should be measured.

### **Best practice**

The most efficient (least amount of effort) and effective (best results) way of accomplishing a task or achieving an outcome, based on repeatable procedures that have proven themselves over time. Identifying Best Practice, involves identifying techniques, methods, processes, activities, that are more effective at delivering a particular outcome than any other technique, method, process, etc. The intent behind best practice is improvement of processes. Good practice is a related term when objective comparative measures have not been established.

### **Community Innovation Survey**

A common methodology to coordinate between EU Member States was set out in the Oslo Manual. National statistics offices carry out the survey, and the EU statistics office Eurostat makes the datasets available. Data are available at regional level (NUTS 2).

### **Effective**

Evaluation of effectiveness explores the management of activities to see if there was good communication of objectives and progress, avoidance of redundancy and ability to detect and address problems as they arose.

### **Efficient**

Evaluation of efficiency of an initiative (policy, programme, project, service) determines if objectives have been met.

### **Efficacy**

Evaluation of efficacy considers relevance of an initiative (policy, programme, project, service) in relation to broad policy goals to which it was designed to contribute.

### **Evaluation**

Determines how well a policy or a programme achieves its objectives. Sometimes evaluation is determined according to: effectiveness, efficiency, or efficacy. Different timing of evaluation is described as: Ex ante, intermediate, real time and ex post evaluation

### **Ex ante**

Ex ante evaluation is the evaluation of the objectives of a programme before it is implemented.

### **Ex post**

Ex post evaluation is the evaluation of the results of a programme when it is completed. (See also Ex ante evaluation and real time evaluation)

### **Governance**

The exercise of authority or control, and the body of persons responsible for it.

### **Impact assessment**

Reviewing the effect of decisions is described as impact assessment. Consequences of decisions, including non-action are measured.

### **Indicator**

Allows the analysis of performance and the prediction of future performance.

### **Matrix**

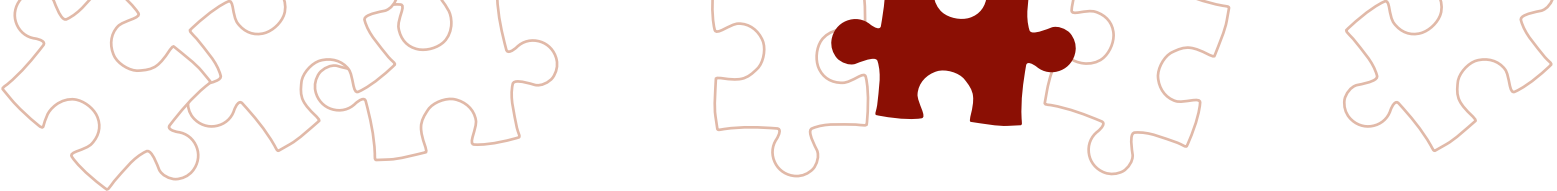
The presentation of a rectangular array of elements (or entries) set out by rows and columns. The entries may be numeric, or abstract quantities to be added and multiplied. Matrices are used to describe linear equations, keep track of the coefficients of linear transformations and to record data that depend on multiple parameters. Matrices can be used to collect innovation indicators, where the indicators used depend on the methodology.

### **Method**

A method for evaluation is a tool or technique used to answer specific questions. It could be: use of a questionnaire, conducting interviews, surveys, statistical analysis, preparing case studies, or a mixed method combining many techniques to answering questions.

### **Methodology**

The principle upon which a method for evaluation is based is methodology. In selecting a methodology, the best fit or relationship between what is to be evaluated and the method to answer questions is sought. Measuring the benefits from investments in innovation is complex: therefore many methodologies are applied, allowing triangulation of results. (Marginally on P69,72 of Smart Innov)



### **Monitoring**

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The observation of a programme, system, or project for change over time.

### **Networks analysis**

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The analysis of networks through network theory, where the networks may be social, organisational, etc.

### **Path analysis**

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A statistical method of finding cause/effect relationships. It is a type of multiple regression analysis in statistics. Path analysis can include causal modelling, analysis of covariance structures, and latent variable models.

### **Real time evaluation**

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The ongoing and continuous analysis of a programme. (See also Ex ante evaluation and Ex post evaluations)

### **Spider diagrams**

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Help to visualise and highlight the differences between comparative sets of data, i.e. expected and achieved results, different outcomes according to region, etc. Spider diagrams combine and extend Venn diagrams and Euler circles to express constraints on sets and their relationships with other sets.

### **Success stories**

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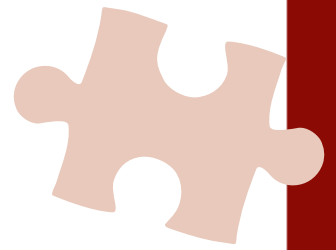
Descriptions of positive outcomes of initiatives (programmes, projects, services) are called success stories. They tend to lack a depth of analysis. Where the description analyses the basis for the success it approaches evaluation. Frequently success stories are used to present good practice.

### **Triangulation**

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Refers to a technique of validating results using different sources, and or methods, thereby reinforcing the robustness of conclusions.





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