



## ASSESSING AND PLANNING SUSTAINABLE STRATEGIES AND PROJECTS

THE PROJECT INNOVATION MATRIX –  
A TOOL FOR SUSTAINABLE REGIONAL DEVELOPMENT

ASPECTS OF SUSTAINABILITY IN ENVIRONMENTAL  
MANAGEMENT SYSTEMS FOR ENTERPRISES



## P R O J E C T

# METHODS FOR THE ANALYSIS AND ASSESSMENT OF SUSTAINABLE PROJECTS

### *The Project Innovation Matrix: Integrated Systemic Development For Sustainability*

The Federal Ministry for Transport, Innovation and Technology (bmvit) supported research projects that investigate the analysis and assessment of complex objectives, planned projects, and effects with a view to a sustainable economy and which present new assessment methods and test them in practical applications.

region Feldbach (evaluation of a regional development program within the scope of the "Leader II" initiative), Local Agenda 21 communities in the province of Styria, and the "Redevelopment Pool Feldbach", a regional cooperation project involving nine service providers in the building sector.

The two projects below also used the PIM and explored the potential for strategies towards sustainability in the industrial sector and analyzed environmental management systems for enterprises.

■ Global perspectives for the next century require a comprehensive re-orientation of our economies towards sustainability. Strategies for sustainability aim at economic, ecological, technological, and social innovation and at the development of future-oriented products, services, and processes. These objectives have to be implemented in all fields of the economy: At the level of enterprises and organizations, networks and cooperation projects as well as at the level of municipalities and regions. Successful sustainable development requires networking between all these levels. The integration of measures realized in enterprises into systemic approaches beyond the enterprise level and the harmonization with sustainable regional planning are of great importance.

Industrial enterprises usually try to implement sustainable development by means of environmental measures within the enterprise; municipalities and regions use special development schemes, i.e. a great number of projects and activities by individual actors. In both fields, decision makers and planners are hardly able to assess the overall effects of the individual projects with a view to sustainable development. An assessment and positioning of individual activities within the whole development process is possible only in parts.

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### Die Projekt-Innovations-Matrix (PIM)

A Tool For Sustainable Regional Development  
(H.P. Wallner, K. Schauer, A. Windsperger, H. Strebel, E. Schwarz, St. Pölten, Austria 2001/2002)

Experts participating in this research project, which ran over several years, developed a tool that permits a comprehensive representation and qualitative assessment of innovation projects at different levels (from individual enterprise to region) with a view to the target dimensions of a sustainable development (ecology, economy, and social issues). The Project Innovation Matrix (PIM) will facilitate the systematic representation of development programs realized in municipalities and regions as well as in network and cooperation projects and thus also enhance the discussion process. The tool provides decision makers with a method to evaluate planned projects with a view to their contribution to sustainable development and to compare, evaluate, and select submitted project proposals. In addition, the PIM permits to analyze the overall development of a region, to evaluate ongoing activities, and to plan the next steps necessary for a sustainable development.

The new method has already been tested at different levels. The final report on the project includes a documentation of the following examples: Region St. Pölten (evaluation of 40 municipalities from the perspective of experts),

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### Nachhaltigkeit im Industriebereich – Situationen und Perspektiven

(Institute for Industrial Ecology, St. Pölten, 2003)

This project aimed to analyze current developments in the Austrian industrial sector and to assess the state of affairs using the criteria for sustainability. Another objective of the study consisted in the assessment of planned new measures, possible interactions, and future perspectives. The PIM developed by experts was successfully used as a consistent framework for the analysis of the current situation and planned measures.

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### Analyse der Nachhaltigkeitsaspekte bei Umweltmanagementsystemen

(Institute for Industrial Ecology, St. Pölten, 2003)

The project goal consisted in the representation of the economy's potential to contribute to sustainable development within the scope of voluntary environmental measures such as EMAS (Eco-Management and Audit Scheme) and Ökoprofit. Measures realized in 82 enterprises were analyzed and assessed by means of the Project Innovation Matrix.

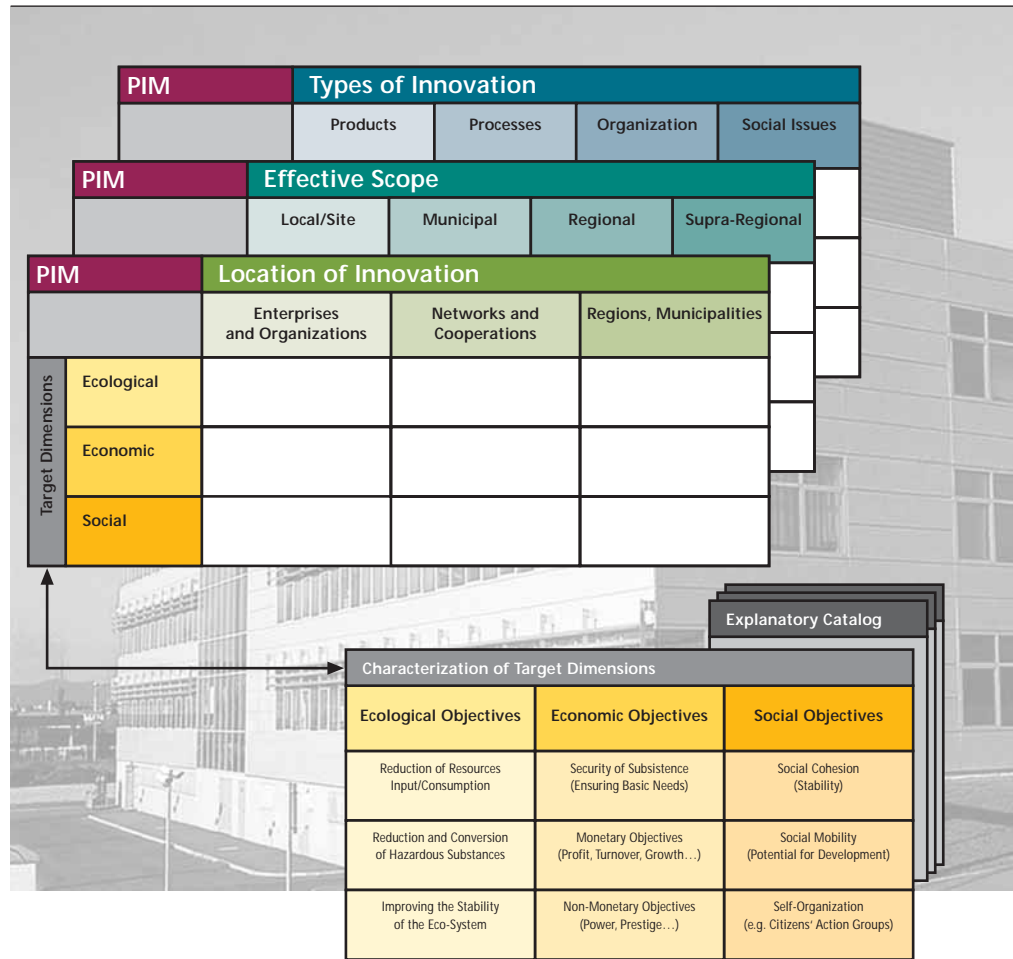


# THE PROJECT INNOVATION MATRIX (PIM): A TOOL FOR SUSTAINABLE REGIONAL DEVELOPMENT

■ The regional Project Innovation Matrix (PIM) provides provinces (Austrian Laender), regions, and municipalities with a simple tool for a targeted assessment of programs and planned projects. Representation is very simple and, at the same time, yields highly dense information. The method uses clear structuring of planned projects in a matrix and differentiates between a part dealing with principal issues and one addressing individual regional development projects.

The **Project Innovation Matrix** provides for:

- a **weighting of the objectives of regional development**, adapted to existing concepts and current and planned projects
- a **systematic assessment of individual projects** concerning their contributions to sustainable development; the assessment addresses ecological, economic, social and cultural dimensions of the objectives
- a **systematic classification of projects by "location of innovation"**, i.e. whether the measures affect a company, a network or cooperation project or else a municipal/regional project
- a **systematic classification by "type of innovation"**; the innovation may involve a product, a process, organizational or social issues
- an **assessment of the effective scope of the project**; will the effects act at a local, municipal, regional or supra-regional level
- an **overview** of current municipal and regional projects and their respective contribution to sustainable development and, deduced from this, the need for further development.



*The goals to be achieved are classified according to the 3 dimensions of sustainable development and each may be defined by means of three principal categories. For each target category, there is a catalog of explanatory notes describing the individual targets contained within the principal categories. The PIM permits to assess the contribution of each project for the successful achievement of these objectives.*

Each project will be assessed by the relevant steering group such as the regional advisory board on the basis of a defined point system. Points awarded depend on the degree of agreement with the objectives defined for sustainable development and on the effects that can be expected from the project. Weighting of individual projects is based on the objectives of the overall concept of regional development. Collection and analysis of the project data rely on a database application. Analysis of the data results in a ranking of the individual projects. The projects with the highest scores can be identified and will be supported accordingly.

The complex processes involved in sustainable development can be effec-

tively supported and controlled in each phase by means of the Project Innovation Matrix. The PIM serves not only as a tool for analysis and assessment, it also supports communication, planning of comprehensive development programs, and controlling of realized projects. The PIM thus constitutes a management tool for the systematic monitoring, supervision of, and support for sustainable development processes.

Comprehensive experience drawn from pilot applications have confirmed the wide-ranging potential of the PIM. On account of practical experience, the PIM has been modified for special applications and adapted to concrete requirements. The final report on this



## LOWER AUSTRIA, DISTRICT OF ST. PÖLTEN (MUNICIPAL LEVEL)

■ A pilot project aiming at modeling and testing the PIM evaluated 40 municipalities of the region of St. Pölten, Lower Austria, with a view to their state of development from the perspective of experts. A comprehensive set of data and facts drawn from statistics was collected and analyzed, interviews were conducted on the site, and the results were subsequently analyzed and presented by experts. The emphasis was on the pooling of analyses of regional structures and on the analysis of individual activities and projects in the municipalities, the PIM providing for a consistent framework.

In order to be able to represent the actual situation of each municipality, researchers compiled, for each PIM target dimension, the parameters at the municipal level and correlated them with the target criteria. The project analysis also used the PIM to correlate the municipal projects with the criteria for sustainability. A comparison of the actual situation and the effect measures have for each target will identify those activities that have already been realized to use existing potentials or to repair deficits. A feedback process with the individual municipalities was used to discuss exactly where there was further need for action.

The assessment of municipalities has shown how a vast set of data can be prepared and structured and how a meaningful arrangement of statistical information by means of the PIM can be used to yield a picture of the situation. This picture correlated well with the subjective feelings and statements of the interviewees. Clustering of all results from the individual municipalities permits to demonstrate the state of development of a whole region and to identify the potentials individual municipalities have.



## STYRIA, REGION OF FELDBACH – EVALUATION OF THE LEADER II PROGRAM (REGIONAL LEVEL)

■ This project aimed at evaluating a regional development program realized within the scope of the Leader II initiative by means of the PIM. This practice-oriented example used the PIM as a simple method to structure the participative process of discussion and assessment among stakeholders of the region. The necessary information was provided by the actors in charge of the program; the weighting of the objectives of development and the subsequent assessment of the projects, too, was exercised by actors from the region. A large group of people discussed and assessed all relevant projects within the scope of a “Leader II Workshop”. This process permitted to highlight the overall effect of the various projects within a program and to analyze how the Leader II program contributed to a sustainable development of the region.

project documents, amongst others, two concrete examples, which nicely illustrate the different approaches to the application of the method. The PIM may be used, both, for expert oriented, quantitative approaches as well as for participative processes of discussion in a qualitative approach. Both examples will show the flexibility and the great number of applications of the PIM as a tool for sustainable regional development.

The PIM concept permits to weight the aspects of development according to the special needs and requirements of a given region. As the region of Feldbach has a well developed natural environment, little environmental burden through economic activity, and a high quality of life, emphasis in weighting the target dimensions was placed (in accordance with the regional development concept) on economy and social issues. However, the final analysis of the Leader II projects has shown that, although the aspect of ecology was attributed less weight, this dimension was still given too little attention. The economic dimension, on the contrary, enjoys a degree of attention that goes far beyond the basic concept of the region. The social dimension corresponded to the objectives of the regional concept.





## SUSTAINABILITY IN THE INDUSTRIAL SECTOR

### *Situation, Measures, And Perspectives*

■ On account of its intermediate position between extraction of raw materials and consumption, the economy plays a key role in sustainable development. A reliable, energy and resource efficient supply of goods and services at reasonable prices as well as actors who take into account all aspects of sustainability in formulating their optimization goals constitute important prerequisites for a sustainable economy.

In addition to the improvement of environmental protection issues in enterprises life cycle thinking in the assessment of products and services as well as economic and social aspects are becoming increasingly important. Sustainable development will depend more and more on measures that go beyond the individual enterprise. This requires the integration of corporate level activities into supra-enterprise systemic approaches and the harmonization of activities with regional planning processes. Improved eco-efficiency and synergies constitute objectives that can be achieved by using intensified cooperation, the establishment of corporate networks, and eco-clusters. Extending the corporate level approach to networking beyond the individual enterprise as well as the integration of activities at the regional level will improve the utilization of regional potentials.

Two projects supported by the bmvit and carried out by the Institute for Industrial Ecology (St. Pölten) explored aspects of sustainability in the industrial sector.

The project: **"Nachhaltigkeit im Industriebereich – Situation und Perspektiven"** aimed to portray and assess the actual situation in the industrial sector in Austria and to propose further, more far-reaching options. The core element

refers to the integration of all dimensions of sustainability (social, economic, and ecological aspects) and the analysis of relevant data using a tool that forms a consistent framework for analysis. An adapted version of the PIM was successfully used for this purpose.

The project: **"Analyse der Nachhaltigkeitsaspekte bei betrieblichen Umweltmanagementsystemen"** aimed to show the possible contribution by the economy to sustainable development within the scope of voluntary environmental management systems (EMAS, Ökoprofit) and to compare this potential with the actual situation in Austria. The analysis of weak points for Austria identified the most important objectives of Austrian strategies towards sustainability and compared them with the current state of affairs. The survey relied on data sources from Statistics Austria, the Laender as well as on reports from ministries, the Austrian Economic Chamber, and other professional associations.

Activities and measures from both environmental management systems were assessed, with a view to the actual situation and incoming results; assessment considered twelve fields of action, which were deduced from the strategy towards sustainability. The

measures realized in a sample of 82 enterprises were analyzed with a view to the type of innovation and the leverage of the contribution in the various **fields of action**. The Project Innovation Matrix was used as the tool for modeling, analysis, and assessment.

Results were grouped according to three different perspectives: by the eight business sectors analyzed (food stuffs, lumber & paper, chemical industry, metal industry, finished products, energy, building construction, and services), by environmental management system used, and aggregated for all enterprises analyzed.

The greatest potential was identified for the target dimension "ecology", in the fields of action "near-nature production" and "reduction of environmental impact"; deficits in these fields have also been shown to be essential in the overall analysis of weak points for Austria. An extension of EMAS would probably afford further contributions in the economic dimension, particularly in the fields organization, producer responsibility, and consumer responsibility. In the social fields of action, especially for physical mobility, no contributions should be expected according to the findings drawn from the environmental policy statements analyzed.

#### **Fields of action**

- **Target dimension ecology**  
*Near-nature production, near-nature environment, reduction of environmental impact, integrated systems*
- **Target dimension economy**  
*Diversity of trades, organization, innovation, producer responsibility*
- **Target dimension social issues**  
*Consumer responsibility, participation, social mobility, physical mobility*



## PIM-APPLICATION IN THE "LOCAL AGENDA 21" PROCESS

■ The Project Innovation Matrix was also used in a highly participative approach in several municipalities in Styria within the scope of the scientific supervision of "Local Agenda 21" programs performed by the ÖLE (Ökologische Landentwicklung Steiermark). The project team (Wallner&Schauer GmbH, Graz – Vienna) modified the PIM for the local evaluation and developed a tool that permits to apply the method in a slim and simple version.

The tool relies on the tried and tested calculation method and software, while the forms of representation used by the PIM have been further developed. The project team improved the graphic representation of the PIM and of the individual evaluation levels and interdependencies in order to facilitate the presentation within the scope of the local discussions and evaluation processes in the municipalities. The new graphic solution is to provide for a quick overview of the need for action. This will permit to use the Project Innovation Matrix with stakeholders who do not know the background of the tool and of the details of the processes involved.

One of the approaches in the further development of the PIM consisted in



introducing easy-to-understand, non-technical terms; the "Local Agenda 21" evaluation, for instance, established an "energy profile" and an "efficiency profile" for communities. The analysis of projects by means of the PIM is to demonstrate how the actual situation deviates from the objectives of sustainable development. Information drawn from the know-how of the project team will be collected, activities and projects will be discussed in workshops by as many actors as possible, and the results will finally be submitted to the Municipal Council.

Eight members of the ÖLE Steiermark ([www.oele-stmk.at](http://www.oele-stmk.at)) currently use the new tool for expert supervision of "Local Agenda 21" processes in several communities.

## PROJECT SPONSORS

**"Die Projekt-Innovations-Matrix – Ein Instrument zur nachhaltigen Regionalentwicklung"**

Methoden und Grundlagen,  
St. Pölten 2001

Weiterentwicklung und Fallstudien,  
St. Pölten 2002

A. Windsperger, B. Windsperger,  
H.P. Wallner, K. Schauer, H. Strebel,  
E. Schwarz, B. Lenz

Commissioned by: Austrian Federal Ministry for Transport, Innovation and Technology (bmvit), Austrian Economic Chamber, Office of the Styrian Government, Ökologische Landentwicklung Steiermark

**"Nachhaltigkeit im Industriebereich – Situationen und Perspektiven"**

St. Pölten 2003

**"Analyse der Nachhaltigkeitsaspekte bei betrieblichen Umweltmanagementsystemen"**

St. Pölten 2003

Both studies were carried out by the Institute for Industrial Ecology.

Commissioned by: Austrian Federal Ministry for Transport, Innovation and Technology (bmvit), Austrian Federal Ministry for Agriculture, Forestry, Environment and Water Management, Austrian Economic Chamber and, NÖ Landesakademie

## INFORMATION

Both final reports on the "Project-Innovation-Matrix" have been published in the bmvit series "Berichte aus Energie- und Umweltforschung" ("Reports on Energy and Environment Research", also as download: 14/2001, 30/2002) by the bmvit and are available from: [www.NachhaltigWirtschaften.at](http://www.NachhaltigWirtschaften.at)

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## IMPRESSUM

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