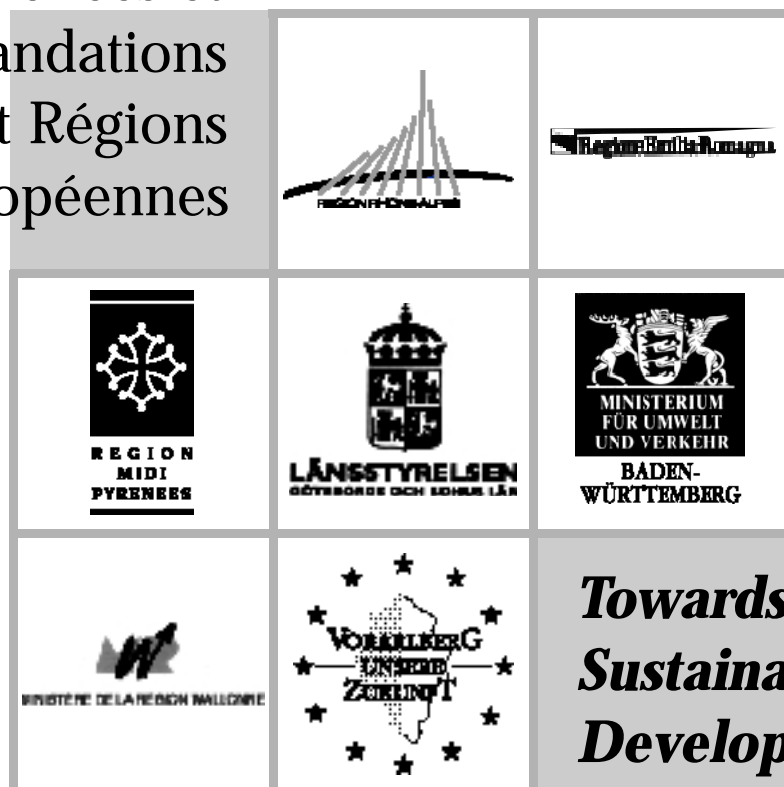


Vers un
Développement
Durable :
Expériences et
Recommandations
de sept Régions
Européennes



***Towards
Sustainable
Development:
Experiences and
Recommendations
of seven European
Regions***

avec le soutien de l'Union Européenne
dans le cadre du programme PACTE



with the support of the European Union
within the framework of the PACTE programme

This report is also available in French

PREFACE

By the Chairman of the Regional Council of Midi-Pyrénées.

Seven “Regions of Europe”, Baden-Württemberg, Emilia Romania, Göteborg & Bohus, Midi-Pyrénées, Rhône-Alpes, Vorarlberg and the Walloon Region have accepted to share experiences and to propose some guidelines for sustainable development at the regional level.

This work was exciting but particularly difficult as well, reflecting in a way the questions raised by the concept of sustainable development.

In this respect, it is much simpler to assess whether or not the decisions made in the past pertained to the principles of sustainable development than to make the right decision today for tomorrow.

Thus, this modest contribution only purports, at the turn of the century, to be only one element of learning, one proposal for a method and analysis for all the Regions of the European Union.

The proposed framework must, however, remain as a means of assessing the decisions that we will have to make in the very heart of our Regions to continue the development.

I am convinced that it is first by going in the direction of our respective natural and cultural identities, by respecting them and making a better use of them that we will find the way to sustainable development.

THE PARTNERS REGIONS



The project has been carried out by members of the administration of the seven participating regions. It has been an intensive common learning experience which changed views and approaches.

Increasingly, the members of the group understood themselves as individuals contributing to a common experience more than as representatives of their administration.

PARTICIPANTS :

Region of Baden-Württemberg

Stefan Frey

Region of Emilia Romagna

Roberto Barilli

Lucia Gola

Region of Göteborg och Bohus

Sven Swedberg

Hans Oscarsson

Region of Midi-Pyrénées (Coordinating region)

Jacques Cransac

Monique Dejean-Servières

Christine Foucras

Region of Rhône-Alpes

Frédéric Bonhoure

Region of Vorarlberg

Manfred Hellrigl

The Walloon Region

Philippe Pignolet

Consultancy

EURES (Institut for Regional Studies in Europe)

Ruggero Schleicher-Tappeser

Johanna Faerber

The regional approaches and experiences presented in chapter 3 are the full responsibility of the regions concerned. The remaining chapters as well as the overall editing have been ensured by the consultants.

The addresses are given at the end of the document.

EXECUTIVE SUMMARY

Sustainable Development - a challenge for European regions

At all political levels “Sustainable Development” has become an important concept. However, what it means is far from obvious. In the broad debate on how to achieve a more sustainable development, the regional level increasingly plays an important part. The question arises as to how the general concept can be put in practice and made good use of at the regional level. Regional decision-makers throughout Europe are faced with this challenge. Based on the experience of seven European regions, this report may give some practical guidance by presenting:

- a framework for structuring the discussion on sustainable development and for assessing projects
- the approaches towards sustainable development of seven European Regions
- 15 transferrable best-practice projects and their assessment in terms of sustainability
- first recommendations on how to approach the issue of sustainability at the regional level.

Confronted with the challenge of sustainability, under the leadership of Midi-Pyrénées and with the help of the Institute for Regional Studies in Europe (EURES) seven regions in six European countries (Midi-Pyrénées / F, Baden-Württemberg / D, Emilia-Romagna / I, Göteborg and Bohus / S, Rhône-Alpes / F, Vorarlberg / A, Wallonie / B) have gathered together in a cooperation project funded by the European Commission. To understand more precisely what sustainability could mean, representatives of the environmental administration of these regions have looked at their different regional approaches to sustainable development and at concrete projects.

This report is the result of this effort. It does not purport to give final answers, definitions, easily applicable indicators or ready recipes for achieving sustainability. Rather it describes what the group has learned by approaching this difficult issue from different cultural and socio-economic backgrounds. Sustainable development is a fundamental challenge for our societies and it seems that we are just at the start of a deep-seated transformation of our views, concepts and policies. However, practical recommendations can already be given.

At the beginning of the project very different interpretations of sustainability led to serious difficulties in understanding each other. After agreeing on a rather broad framework of ten principles of sustainability elaborated by the EURES Institute in another context, a common language was found step by step. The conceptual framework retained is based on the following ten dimensions of sustainability: the development dimensions: environmental, economic and socio-cultural, the equity dimensions: inter-personal (social and gender), spatial (inter-regional and inter-national) and inter-temporal, the systemic dimensions: Diversity, Subsidiarity, Partnership and Participation. The project group felt that this approach was very useful with respect to the structuring of discussions and in assessing policies and projects.

The central work of the project consisted in selecting, assessing and comparing best-practice projects in terms of sustainable development from all participating regions. Knowledge of the different regional backgrounds turns out to be essential for understanding the different approaches used and for appraising the meaning of the projects in all their various aspects. Regional contributions to the report, therefore, not only include a structured description of the selected best-practice projects but also a more general presentation of the regions themselves. The fifteen projects presented cover a wide range of activities and seem to be successfully transferable to other regions.

A comparison of the projects has shown a series of interesting results. Approaches in northern and southern Europe seem to be somewhat differing. The most successful projects seem to be those where the local level has been strongly involved right from the start. Traditional top-down approaches seem to be less appropriate. Moreover, Sustainable Development is not only perceived as a fundamental long-term concept but as an answer to urgent problems.

The group has summarized the result of the discussions in the following conclusions:

- *Action towards Sustainable Development is possible.*
- *Sustainable development is not only necessary but also “profitable”.*
- *The different backgrounds of the European Regions strongly shape their specific approach to sustainability.*
- *It is still a long way to understanding what the general concept of Sustainability can mean in practice.*
- *The regional and the local levels will play an eminent role in implementing Sustainability*
- *Innovative Model projects are a key element of Sustainability strategies.*
- *In their endeavours to reach sustainability European regions can learn a great deal from each other.*
- *The assessment of projects and policies in terms of sustainability must take into account the specific regional context.*
- *Complying with the systemic principles is a condition of success*

Based on these conclusions, a series of recommendations have been formulated under the following headlines:

- *Promote and implement the concept of sustainability using the methodology presented in this report.*
- *Look for win-win solutions.*
- *Develop an adequate style of governance.*
- *Learn from other regions.*
- *Formulate development objectives and draw up an action plan.*
- *Introduce sustainability impact assessment.*
- *Don't wait, act now.*

Partners within the PACTE projet felt that the learning process and the results of this project may be very helpful not only in their own work, but also in other regions. The group has decided to continue its activity in order to further the exchange of experience and to develop more specific tools for regional decision-makers.

1-INTRODUCTION

SUSTAINABILITY: A CHALLENGE FOR EUROPEAN REGIONS

At all political levels “Sustainable Development” has become an important concept. When general political objectives are formulated, the term sustainability is rarely missing. However, what it means is far from obvious. In the broad debate on how to achieve a more sustainable development, it becomes increasingly clear that the regional level has to play an important role. The question then is that of knowing how the general concept can be put in practise and become useful at the regional level. Faced with this issue, members of the environmental administration of seven regions in six European countries (Midi-Pyrénées / F, Baden-Württemberg /D, Emilia-Romagna / I, Göteborg and Bohus / S, Rhône-Alpes / F , Vorarlberg / A, Wallonie /B) have gathered together in a cooperative project funded by the European Commission (PACTE-programme). To understand more precisely what sustainability could mean, they have looked at their different regional approaches to sustainability and at concrete projects.

This report is the result of this effort. It does not purport to give definitive answers, definitions, easily applicable indicators or recipes to achieve sustainability. Rather it describes what the group has learned by approaching this difficult issue from different cultural and socio-economic backgrounds. Sustainable Development is a basic challenge in our society at the end of this millennium, and it seems that a profound transformation of our views, concepts and policies is about to occur. However, practical recommendations can already be made.

The original hope of the group to arrive at a common definition of concrete criteria and indicators for sustainable development in a very limited number of meetings was dashed after a first series of gatherings, in which major differences in the interpretation of sustainability and considerable difficulties of understanding arose. Especially concerning the relative importance of environmental, economic, and social objectives fairly different opinions were held within the group. Whereas the French-speaking members advocated an approach that strongly emphasised the social aspects, the German-speaking, Swedish and Italian partners were more in favour of placing the emphasis on environmental issues.

Then, with the help of an external consultant, a new methodology, based on a European research project, was introduced within a fairly large common framework to start with. Instead of trying to hide differences by definitions and compromise formulae, differences between the various regions have been advantageously used as a fruitful means of understanding the critical issues of sustainability. The members of the group, who are all with environmental administrations, felt that the explicit interregional and intercultural approach considerably widened their perspective. It has been a very intense common learning experience which changed views and approaches. Increasingly, the members of the group perceived themselves as individuals contributing to a common experience and participating in the effort to give substance to a still vague but powerful concept, rather than official representatives of their administration. As a result, this report has been drawn up in a way that should reflect this experience and make it useful for others.

All European regions are faced with the challenge of Sustainable Development. Politicians and administrators will have to find new approaches, guidelines and concrete tools to give answers applicable to the regional context and will also have to cooperate on a European scale. The members of the group are convinced that much can be learned by comparing different regional experiences, and that it is only by understanding and considering the differences of the respective backgrounds that a more concrete common European understanding of Sustainability can emerge. In this sense, this report should be of practical help to regional decision makers when it comes to:

- showing how European regions differently approach the issue and how it is related to their background;
- giving practical examples of best-practice projects which could also be performed elsewhere;
- presenting methods for a rapid sustainability assessment of projects;
- giving first recommendations on policies and projects.

STRUCTURE OF THE REPORT

The structure of the report reflects the methodology adopted for the whole project.

In chapter 2, the overall framework proposed by the consultants and accepted by the group as a common ground for the analysis of the regional activities, is presented. The ten principles of Sustainability presented and explained in the following sections have proven to be a viable and useful basis.

In chapter 3, every region presents its background and experience. First, a presentation of the region features and of the approach towards sustainability is given. These presentations were discussed during a workshop and have led to interesting discoveries about the highly different political-administrative, socio-economic, cultural and environmental conditions that shape the regional approaches towards sustainability.

Subsequently, each region presents two best-practice projects. The selection was made by the regions themselves in order to show experiences of interest for others and typical of the sustainability approach in that particular region. The description and sustainability assessment of the projects have been carried out in accordance with common guidelines proposed by the consultants. Several joint discussions took place about these presentations, especially about the sustainability assessment. However, the responsibility of these texts lies with the regions themselves.

Following the establishment of this core piece of the report, the group tried to compare these different experiences as summarized in chapter 4. Similarities and differences were discussed leading to conclusions on differences in interpretation of sustainability (chapter 5), key issues and particularly promising approaches.

Reflecting on these results, the group has extensively discussed recommendations, particularly for policy makers at the regional level. The recommendations make up the final part of the report.

2. SUSTAINABLE DEVELOPMENT

The approach outlined in the following sections has been devised within the framework of a EU research project coordinated by the EURES Institute¹. It has been accepted by the project group as a general framework for the discussion of the concept of sustainability.

SUSTAINABLE DEVELOPMENT AND THE REGIONAL DIMENSION

Sustainability still is a somewhat elusive concept midway between politics and science. The discussion about it is old and new at the same time. In the last three decades we have witnessed widespread debate concerning environmental issues, regional development approaches and international development policy questions. The emerging concept of sustainability brings about a new situation in the sphere of political and scientific debate as it tries to combine all these efforts. Due to its broad perspective and the widespread acceptance that this concept enjoys, frequent reference is made to it in all kinds of discussions. It is becoming obvious that Sustainability is not only a scientific term but also, and prominently so, a political one. It has gained importance in a specific historical situation as an answer to specific problems. Its political usefulness is mainly due to its novelty and its flexibility as well as its potential to generate consensus and to shift perceptions and values at the same time. However, in order to be useful and fruitful the meaning of this concept and its relevance for political action needs to be more clearly defined. Considering the broad perspective and the fundamental questions raised by the concept of sustainability this would appear to be a major task for the years to come.

The concept of sustainability has emerged at a point in history when the idea of unlimited growth through technical progress has begun to be questioned, when the dominant development model of industrial mass production has lost its naturalness and when the realisation that natural resources are finite has led to serious doubts concerning the future of our civilisation. Drawing on a wide range of scientific and political lines of thinking which have changed our understanding of nature, economy and society during the last decades, the concept of sustainability stands for a more systemic, some would say a more holistic, view of the world.

Concurrent with the increasing discussion of these issues during the last three decades, we have assisted to an increasing importance of the regional dimension. This has not come about by accident. As a counter-movement to the on-going internationalisation the regions are becoming increasingly important as a framework for orientation, as source of identity and as the place where globally necessary changes in policy must be communicated and implemented in a specific context. There is a growing consensus that the regional dimension is most important for the actual implementation of more sustainable development.

The contribution of European regions to a policy of sustainability is therefore essential. Regional policies have gained increasing weight in the national and European context and will be amongst the most influential promoters of a shift towards a more sustainable development model. A detailed analysis of the paradigm shift in regional development policies during the last three decades shows that these changes take the same direction as that indicated by the basic principles of sustainability.

¹ "Instruments for Sustainable Regional Development" (INSURED) funded within the framework of the research programme ENVIRONMENT. Project partners: ÖAR (Austria), SRS (Italy), SICA (Ireland), SIASR (Switzerland), EURES (Germany). A more detailed description of the approach can be found in: Schleicher-Tappeser, R. et al. : *Sustainable Regional Development*, EURES discussion paper dp- 60, Freiburg i.Br. 1997 (ISSN 0938-1805). The text on the following pages has been adapted from: Schleicher-Tappeser, R. *Sustainability Principles*, EURES discussion paper dp-61, Freiburg i.Br. 1997.

LEARNING FROM THE DEBATE OF THE LAST DECADE

The most popular definition for sustainability has been given in the so-called Brundtland-Report of the World Commission on Environment and Development in 1987. Sustainable Development is here defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. This definition pushed questions of equity to the fore. The realisation that natural resources are limited immediately led to the question of who should be allowed to use them and to which extent. The Rio Declaration which has been formulated by the UN Rio Conference in 1992 attempts a much more comprehensive approach in its 27 principles. Since then numerous efforts have been made to devise a more precise definition of the meaning of sustainability.

The Rio declaration can be regarded as a good basis for reaching a wide consensus on what sustainability should mean to us. The 27 principles have been formulated from an international perspective and embrace quite different approaches, they have been put together in a rather pragmatic fashion and are far from being systematic. In trying to apply these principles on a national or regional level and in trying to translate them into concrete policies, different problems have arisen:

- The scope of the concept of sustainability is so vast that attempts to formulate more tangible guidelines result in very long lists of statements covering most of the debates we have had in the last decades. New, necessary and fruitful discussions are thus inspired which, however, do not necessarily lead to consensus.
- Some have hoped to be able to deduce conclusive and clear guidelines for policies and individual behaviour. This old and misleading hope of all doctrines of salvation has been disappointed by the discussions of the last years. Homann, who works on business ethics writes: *“As yet there is no satisfactory definition of sustainability. It cannot exist as the quest itself is erroneous. We will know more about what sustainability is or what can meaningfully be understood by this term after a searching, learning and experiencing process that is going to take decades. However, we will never know it in a definitive way. Just as a physician does not need an operational definition of health before beginning a therapy, an operational definition of sustainability is no precondition for politics.”*
- Discussions in the international and in the European context have shown that different cultures and different regions inevitably interpret the general idea of sustainability in a different way. Even within the relatively homogeneous context of the European Union we find considerable differences in terms of interpretations and perspectives between central and peripheral regions, south and north, latin and germanic cultures.

It appears that Sustainability is a “regulative idea” in the sense of Kant, of the same kind as health, freedom, justice or beauty. Considering the tremendous effort that had to be made in order to operationalise the idea of freedom by way of devising and implementing a body of law which allows for the assessment of the meaning of “freedom” in a given situation, it is evident that there is still a long way to go before the concept of “sustainability” will be operationalised. However, there will always be different interpretations in different regions and cultures.

TOWARDS A CONSENSUS ON GENERAL PRINCIPLES

Practical politics, in dialogue with the public debate, play the central role in the present transformation process. Acknowledging that we are in a historic situation in which our view on the world is fundamentally changing and in which we collectively engage in searching for a new development model and at the same time recognising that differences in perspective are inevitable and fruitful, we can distinguish two basic approaches for intervening in this discussion:

- To propose a consistent high-profile interpretation of sustainability proposing concrete guidelines, targets and thresholds for central problems and to present this proposal as a provocative minority statement in order to encourage discussion and collect consensus.
- To propose a general framework of basic principles which can expect to reach a widespread consensus in order to build a foundation for further discussion, to develop a common language for the exchange of experiences and in order to reveal different interpretations which may be mutually enriching.

For our current project the second approach seems to be the appropriate one. Looking at the different interpretations and experiences will be the most stimulating thing we can do. The concept of sustainability can be looked upon as a tool for learning how to cope with our problems, as a tool for building a new vision. It seems that the best we can expect for the moment is new guidance for learning.

Therefore a limited set of basic principles of sustainability can serve as a common frame of reference for which we can easily find a consensus. This frame of reference can then be used by each region to describe the approach taken and its most interesting projects as well to show how the general principles have been interpreted in each given context.

PROPOSAL FOR A SET OF BASIC PRINCIPLES OF SUSTAINABILITY

In the debate of the last decade we can distinguish three basic approaches to defining sustainability by a series of elements. However, none of these approaches matches the complexity of the Rio approach.

- The approaches originating from the international development policy discussion put the aspects of equity into the foreground. The Brundtland report cited above, which has given us the most widely known and densest definition, is an example for this view.
- A simpler way to put it would be to ask: What do we want to sustain? Over the last years widespread consensus has been reached on that sustainability should not only embrace environmental but also economic and socio-cultural aspects. Understanding sustainability as the “maintenance of the capacity to generate human well-being for generations to come”, there is general agreement that a healthy environment, a functioning economy and satisfying social relationships are the basis for human well-being now and in the future.
- A third perspective places the emphasis on the new concepts for analysing and structuring our world, which the paradigm shift from a mechanistic to a more systemic view has brought about. Adopting systemic principles should enable us to deal with the interrelatedness of a wide variety of problems and to be open for learning processes.

We think that it is necessary to look at the concept of sustainability at least from these three points of view.

In principle we are asking three simple questions:

- What do we want to sustain?
- How shall we deal with different interests, needs and opportunities?
- Which systemic approaches can help us to solve these problems?

Based on the political and scientific debate of the last decade we propose to address these questions with reference to the following list of principles:

Sustainability Principles

development dimensions

- Respect for ecological integrity and the heritage of the man-made environment (environmental dimension)
- Satisfaction of human needs through efficient use of resources (economic dimension)
- Conservation and development of human and social potentials (socio-cultural dimension)

equity dimensions

- Social and gender equity (inter-personal equity)
- Interregional and international equity (spatial equity)
- Equity between present and future generations (inter-temporal equity)

systemic principles

- diversity/ redundancy
- subsidiarity
- partnership/ networking
- participation

By using this list two fundamental ideas of the concept of sustainability have to be given consideration:

- Integration: The approach is innovative as it combines all of the above principles. The combination of principles such as economic efficiency, diversity and intertemporal equity obviously presents us with a great challenge.
- Learning: Openness for learning processes is considered an essential prerequisite for dealing with uncertainty. Many of the above principles are designed to ensure openness and flexibility.

EXPLAINING THE SUSTAINABILITY PRINCIPLES

Development dimensions

With regard to the question “What do we want to sustain?” there appears to be a growing consensus on a general level. The broad scope of the Rio Declaration which embraces not only environmental aspects but also economic and social can be considered as being widely accepted. One interpretation associates these three aspects with the conservation and further development of natural capital, man-made capital and human/ organisational capital. However, there are further connotations:

- Environmental aspects should include a deep respect for ecological systems which are the basis and precondition for all life. Bearing in mind that our European landscapes have been strongly shaped by human activities in the course of thousands of years, environmental aspects should also include the man-made environment, the maintenance of cultural landscapes and the built cultural heritage.
- The economic dimension includes the way of dealing with any kind of scarce resources. Efficient use of natural, man-made and human capital is the essential principle of economy.
- Social aspects, finally, are the most difficult to grasp as they include 1. the satisfaction of all kinds of social needs such as communication, support and security, love and care, recognition and distinction etc. 2. the respect for different forms of societal organisation, and 3. the general obligation to provide a certain degree of equity or equal opportunities. As the matter of equity will be dealt with separately in this context, we will here consider the satisfaction of social needs and the conservation and development of the socio-cultural heritage as the main elements of the social dimension of sustainable development.

Very generally speaking we can devise the following principles with regard to the different dimensions of development:

- Respect for ecological integrity and the heritage of man-made environment (environmental dimension)
- Satisfaction of human needs through efficient use of resources (economic dimension)
- Maintenance and development of human and social potentials (socio-cultural dimension)

Equity dimensions

The question of how to deal with different interests, needs and opportunities of individuals or groups, is not exclusively, but principally a question of equity. Equity questions have played an important role in the development of the concepts of Regional Development (RD) and Sustainable Development (SD). In the last century social equity has dominated the political debate and has led to the labour movement. Simultaneously the gender issue has gained importance as the process of industrialisation has changed traditional gender roles. After World War II, in the context of efforts towards economic recovery, the concept of “development” emerged. Disparities between regions as well as nations, the issue of “spatial equity”, were put on the agenda. The environmental debate from the seventies onwards, finally, has highlighted the problem of inter-generational or inter-temporal equity. It has never been possible to discuss one kind of equity separately from the others. There is widespread consensus that social equity (or in combination with the gender issue we could speak of interpersonal equity), international equity and inter-generational equity are essential to sustainability. Several authors only distinguish between inter-generational and intra-generational equity. However, this categorisation neglects the spatial aspect. Based on the above considerations we propose the following set of equity dimensions:

- inter-personal equity (social and gender)
- inter-spatial equity (inter-regional and inter-national)
- inter-temporal equity

The inter-spatial and inter-temporal dimensions can be further sub-divided depending on scope. For our purposes the inter-spatial equity is of particular interest as in regional development we are dealing with the regional dimension in particular and we will have to clarify its relationship with the national and global level. In practice we will therefore distinguish between inter-regional and inter-national equity.

Systemic principles

The nascent, more systemic way of looking at our world has not only made us look closer at the problems that the dominant development model has created over the last two hundred years. It has made us realise that there is a requirement for a more integrated approach. It also gives some indications as to how to avoid mistakes and cul-de-sacs, albeit in a situation of uncertainty and with very limited knowledge about the details of the systems we are influencing. The primary shift of perspective concerns the way of looking at interrelationships and organisational patterns. New concepts have emerged concerning systemic principles which are seen to be essential for living systems and relationships. They have been developed focusing on different aspects of the vast realm of subjects covered by the concept of sustainability. Contrary to the development

dimensions described above, these principles do not describe specific aspects of our life on this planet or specific development problems, but they rather constitute general approaches to deal with reality. They are tools that help us to describe, understand and structure the world we live in. The underlying idea is, that systems that follow these systemic principles in a balanced way, will probably be able to evolve and to behave sustainably.

Different types of systematization have been discussed by various authors. Without referring in detail to the scientific discussion we propose to consider the following set of systemic principles as essentials.

- Diversity
- Subsidiarity
- Partnership
- Participation

The concept of diversity has its origins in biological ecology. The diversity of subsystems and organisms is essential for ecosystems in order to be able to adapt to changing conditions and to develop new dominant patterns. The evolution of life on earth strongly accelerated when sexual reproduction allowed for greater diversity. Biodiversity is regarded as a most important indicator for the stability of ecosystems. At the Rio Conference a special convention has been dedicated to biodiversity. The concept of sustainability supports the notion that diversity is not only a value in the realm of biology, but also in human societies. Furthermore diversity is an essential prerequisite to cultural and economic vitality. However, according to the systemic view, diversity cannot be understood as an absolute value. As every system can be understood as subsystem of a larger one, there is always a tradeoff between autonomy and integration. The principle of redundancy, which gives stability to systems, is strongly linked to the principle of diversity, in fact it could be regarded as a special case of diversity. The diversity of sub-systems reaches its limits where it disrupts the coordinating capacity of the larger system.

In this sense the concept of diversity is strongly linked to the next principle: subsidiarity, which stresses more explicitly the dialectic tension between autonomy and integration addressing the interrelationship between a series of system levels. Whereas the concept of diversity originates from natural sciences, the concept of subsidiarity stems from the social sciences, more precisely it has its origins in the catholic social doctrine. According to this principle decision-making competencies and power should be allocated to the lowest possible level in the hierarchy of policy-making and be delegated upwards only if tangible advantages for all parties concerned are to be expected.

The emerging more systemic, holistic view which emphasises co-evolution, complementarity and interdependence instead of fierce competition, exclusiveness, hierarchy and domination, stresses the importance of partnership in human and institutional relations and of participation of individuals in decision-making processes by which they are concerned.

The concept of partnership concerns the character of relationships between individuals and between institutions in a horizontal dimension. It has to do with trusting cooperation within a common framework and with mutual respect. Giddens has shown how much the development of modern society is reliant on trust. The concept of partnership emphasises the common responsibility of all parties involved. Partnership also involves striving for fair and peaceful resolution of conflicts.

Participation, finally, is concerned with the relationship between individuals and institutions. The concept implies that the individuals concerned should be involved in decision-making processes which will impact on their future. Participation, therefore, concerns the vertical dimension of societal relationships, the legitimacy of hierarchies. In this sense it is linked to the concept of partnership which concerns horizontal relationships.

APPLYING THE SUSTAINABILITY PRINCIPLES IN PRACTICE

Being faced with the challenge of re-directing regional policies towards a more sustainable type of development, decision-makers need appropriate tools in order to:

- assess current and proposed policies;
- devise new procedures and programmes;
- to initiate and appraise innovative actions and projects.

In fact, much innovation is required to take up the challenge of sustainability. Experimental innovative actions at the local level are important to provide learning and demonstration opportunities to this transformation process. In periods of change, like today, much openness and audacity as well as better direction tools than in quieter times are needed. The ten principles of sustainability can be used for assessing policies and innovative actions at all levels. They provide

the framework for a comprehensive approach which can be refined step by step according to circumstances.

Experts have developed a highly detailed knowledge and differentiated tools to deal with the problems in their field. However, sustainability shows that despite this excellence at the level of details we have neglected the capability of balancing basic aspects of human life on this planet. We have disregarded the development of tools allowing extremely powerful technological and economic instruments to be integrated into a broader human and ecological perspective. The ten principles of sustainability can be used to discuss and assess the (positive or negative) contribution of policies and innovative actions towards a more balanced sustainable development.

Although apparently quite simple, these principles have turned out to be very helpful when it comes to giving an overview of the impact of specific actions, discovering unexpected interrelationships, drawing the attention to neglected aspects, and stimulating cooperation and innovative improvements.

On the following pages, fifteen projects from seven European regions will be discussed using this framework. Similar procedures can be devised for the appraisal of policies.

However, in their general form, the ten principles of sustainability fail to address what sustainable development should mean in practice in a specific region. More specific objectives, indicators and thresholds have to be defined at different political levels where they have not yet been established by existing sectoral policies. However, they will have to be integrated into an overall vision of the sustainable development of the region taking into account the specific opportunities, resources, problems and threats. In the process of developing a consensus on the guiding images for the sustainable development of a country, a region or a local community, the ten principles of sustainability may equally provide a helpful guideline.

3 - REGIONAL APPROACHES AND EXPERIENCES OF SUSTAINABLE DEVELOPMENT

The presentations of the regional experiences in this chapter follow a common framework that has been proposed by the consultants, discussed and accepted by the group. Each regional contribution is in two parts: the presentation of the region and that of best-practice projects in terms of sustainability.

The general part presents the region with its characteristics and political competence. Additionally, it describes the specific problems and the approach towards sustainability retained so far. This background has proved essential for the understanding of the following presentations of the best-practice projects.

The presentation of the projects is subdivided into three parts. First, a summary table is given to facilitate the comparison between projects. Then a more detailed project description is given, presenting the initial situation, the aims, the actions performed and the results obtained. Finally, a "Sustainability Impact Assessment" is carried out, based on the ten principles of sustainability explained in chapter 2.

The texts in this chapter have been provided by the regions themselves. They have been extensively discussed within the project group and revised by the editors. However, each region remains responsible for its own presentation and for the selection of the best-practice projects.

This also holds for the evaluations made in the Sustainability Impact Assessment. Although a convergence of the views has occurred in the course of several workshops, the assessment yardsticks still differ from region to region. The overall presentation of each region should allow these differences to be assessed.

Therefore, the judgements condensed in the little triangle on the bottom of the summary table of each project are subjective and do not represent a standardised external judgement. As a result, the comparability of these "marks" is somewhat limited. However, this kind of triangle turns out to be very useful when one intends to summarize the more qualitative ten-dimensional assessment. In practice, this method allows for making rapid comparisons, e.g. for decision-making on the funding of project proposals.

Approaches and Experiences

THE REGION OF
BADEN-
WÜRTTEMBERG
(GERMANY)

FFFF



THE REGION OF BADEN-WÜRTTEMBERG



CHARACTERISTIC DATA AND FACTS

With an area of 35 750 sq.km, the state of Baden-Württemberg is roughly comparable with Belgium (31 000 sq.km) or the Netherlands and Switzerland (both 41 000 sq.km). With regard to population (10.3 million) Baden-Württemberg equals Belgium. The population density is about 290 inhabitants per sq.km; for comparison purposes : Germany totals 226, former East Germany 145 and West Germany 261 inhabitants per sq.km.

Geographically, Baden-Württemberg is characterized by the River Rhine valley on Baden-Württemberg's 250 km long western border with France and the Rhineland-Palatinate, by hilly land and mountainous areas with maximum elevations between 1000 and 1500 m in the subalpine region and in the Black Forest.

About 60 % of the population live in areas with an industrial concentration. A rather polycentric structure is typical. Smaller and medium-sized towns surround the bigger cities. Stuttgart conurbation, for example has some 2 million people, the town itself 570 000. Among other large cities are Mannheim (320 000 inh.), Karlsruhe (280 000 inh.), Freiburg (200 000 inh.) and Heidelberg (140 000 inh.).

Baden-Württemberg is highly industrialized. In addition to major companies (e. g. Mercedes-Benz, Bosch, Porsche) many SMEs can be found. The main sectors beside the automobile industry are mechanical and electronical engineering. The once dominating textile industry has, since the fifties, lost most of its importance. On the whole, Baden-Württemberg is very much export-orientated.

Tourism and many spas (e. g. Baden-Baden) play a very important role. Baden-Württemberg is the leading "spa-country" in Germany.

In spite of its industrial character, about 50 % of the area of Baden-Württemberg is still made up of agricultural land.

In March 1997, the unemployment rate reached 8 % in Baden-Württemberg against 11.7 % in Germany (former East Germany 18.1 %, West Germany 10.2 %).

Over the last decades, Baden-Württemberg has been one of the few "paymasters" of the nation. In other words the region has contributed up to ECU 1.5 billion per annum for the intra-German fund, therefore subsidizing the "poorer" German Länder (regions), not only in the Eastern part of Germany. Our state would not be indebt, if that contribution had not been made over the last thirty years.

Area: 35 750 sq.km
 Division: 35 land districts and 9 city districts; around 1100 municipalities
 Population: 10.3 million inhabitants
 Density: 290 inhabitants per sq.km
 GNP: 1994: ECU 255 billion; GNP per employed person: ECU 54 700 (50100 in Germany)
 Unemployment rate : 8 % (March 1997)

REGIONAL COMPETENCES

As a State of the Federal Republic of Germany, Baden-Württemberg has, on a limited scale, its own legislative power (especially in the field of education, universities and security). The main legislative decisions, however, are made by the Federal Parliament. However, through the Upper House ("Bundesrat"), the 16 federal states can influence legislation at the federal level.

This being said, the federal states enjoy fairly substantive elbowroom as the implementation not only of the laws of the Land itself but also those of the federal republic is assigned to the federal states. Especially, in cooperation with progressive, future-orientated local authorities (districts and municipalities) there is a wide scope for activities in many fields of environmental protection and sustainable development.

In the region of Baden-Württemberg, there are 35 land districts, 9 city districts and around 1.100 municipalities. Districts are competent for all communal tasks, extending beyond the power of municipalities. A land district consists of about 25 to 40 municipalities with a population between 1 000 and 100 000. In land districts the population approximates 250 000 (from 100 000 to 500 000).

The annual State budget of Baden-Württemberg is around 33 billion ECU. About 2 billion ECU being spent for environmental purposes. Of course, this does not include expenditures and investments of municipalities, cities, districts and the industrial and commercial sectors of the environment.

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Environmental problems

The main environmental problems occur in the fields of climate change and energy savings, air quality and noise (mainly caused by the transport sector) and urban sprawl.

A particularly difficult task is the reduction of CO₂. The Federal Government's target, to reduce CO₂ by 25 % from 1990 to 2005, is being supported by Baden-Württemberg. The latter especially focuses on its energy and transport policy in order to contribute to this target. From 1990 to 1994, however, CO₂ emissions of the transport sector in Baden-Württemberg rose by 9 % (gasoline + 4,4 %, Diesel fuel + 20,4 % due to continuing increase in road transport and - to a limited extent - the growing number of Diesel cars).

The transport sector contributes about 27 % to the CO₂ emissions in Baden-Württemberg. The contribution of transport (road transport accounting for about 90 % of it) to other important emissions like hydrocarbons, benzene, particulates, NO₂ and carbon monoxide ranges from 40 to 90 %.

Another problem - not only in ecological terms - is the "consumption" of land, caused by urban sprawl and continuing pressure of development on conurbations.

A key problem for environmental protection in Baden-Württemberg is that, so far, we have not been very successful in convincing a greater number of people and decision-makers about the job inducing effects of eco-products (technical equipment, eco-services) and of sustainable development. Many people still think that pollution control is a "jobkiller".

Economic problems

The economic problems concern high labour-costs and persistent monostructural patterns (car and car-related industry). Right now, this sector enjoys sufficient demand. To arrive at sustainable development however, a stronger diversification is needed.

High taxes and duties are another problem, especially for SMEs.

Moreover, the tax system includes some ecologically counterproductive rules, which fail to promote innovating investments, e. g. in the field of energy savings or transports.

Other significant issues from an economic perspective are demographic trends (ageing of society, fewer children) and unemployment. The latter is lower in Baden-Württemberg than in most other German States, but still twice what it was in the mid eighties.

Socio-cultural problems

In cultural and social aspects, one main problem is consumer behaviour. The awareness concerning environmental questions is stagnant or even moving backwards. In wide parts of society, there is a gap between the "eco-awareness" and the "eco-acting" (partly due to wrong price signals).

As a new challenge since the early nineties, we face the problem of social segregation (relative poverty particularly in large families).

Responses and obstacles within a sustainable development perspective

The coalition partners of the present State Government (center-right coalition) has - inter alia - laid down in its agreement for the legislative period 1996 - 2001: "It is the aim of the State Government, to safeguard the natural resources within the framework of sustainable development. We strive for sustainable development in order to preserve the living conditions and scope for development of generations to come".

Concrete actions of environmental policy in Baden-Württemberg focus on closer cooperation with industry and other representatives of the society, with the education institutions and through "environmental training" as well as through cooperation with local authorities.

Two measures are given by way of example:

- “Environmental Dialogue”: In close cooperation with industry, NGOs, politicians and other social groups, concrete aims and measures will be laid down and implemented;
- “Environmental Plan Baden-Württemberg”: This is a more strategic instrument for the long term sustainable development in Baden-Württemberg.

The plan will be set up by the Ministry for the Environment and Transport, in close cooperation with industry, universities, and representatives of all social groups. The plan will comprise all aims and measures in the field of environment and will show the dependencies with social and economic questions. It will name the bodies responsible for the implementation of the Environment Plan and set the dates for completion.

Examples of efforts to secure sustainable development

With respect to their content, the projects and examples focus on the key problems of environment in Baden-Württemberg (climate change, energy, transport, strengthening of regional structures).

With respect to methodology, the two projects presented on the following pages focus on supporting the awareness of the environment, especially through influencing consumer behaviour, and on cooperation with local authorities, industry, SMEs and the educational sector.

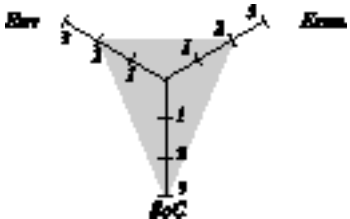
Schools and local authorities are very important for the citizens’ day-to-day experience of environmental questions and for a continuous improvement towards sustainable development both in private and vocational life.

So the example projects are

- a) Energy saving and environmentally friendly Schools (“Schools for climate protection and energy saving”)
- b) Eco-Management and Audit-Scheme (EMAS) in Local Authorities

Project n° 1

SCHOOLS FOR CLIMATE PROTECTION AND ENERGY SAVING

SUMMARY	<p>Each year from 1995 to 1998, 8 - 10 schools in Baden-Württemberg receive grants by the State of Baden-Württemberg for energy saving projects, which are carried out in a cooperation between the school administration, the teacher, the pupils, the school owner (= municipality), the State Agency for Climate protection and local heating engineers and experts in energy saving technology.</p> <p>The project has to be integrated into the lessons. The schools are chosen after a "contest", in which they have to present their basic ideas and concept for climate protection in their schools. The annual savings through reduced use of energy have to be paid back by the school owner to the school itself for at least 3 years and may be used for teaching devices and other school purposes.</p>	
KEY-WORDS	Climate protection; cooperation; education, contest of ideas; reducing costs for energy and other resources.	
STRUCTURE RESPONSIBLE AND PARTNERS	Ministry of Environment and Transport, Regional Agency for Climate Protection, schools concerned.	
CONTACT	Frau Ursula Kreutle, Ministry of Environment and Transport, Tel.: 0711/126-2658; Fax: 0711/126-2881	
DURATION OF THE PROJECT	1995 to 1998	
SPHERE OF	Regional, whole Baden-Württemberg.	
TOTAL COSTS	160.000 ECU	
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and aim

Climate protection and energy saving is one of the main fields of activity in the policy in Baden-Württemberg. The two key problems in this task are first to impart the knowledge about the necessity of climate protection to all people and second to initiate concrete action, so that people undertake the step from knowing and considering to acting.

In order to push ahead this process, we have to train and inform especially the young generation, activate multipliers, i.e. people like teachers and pupils, who may influence their parents. Therefore, practical steps for climate protection and energy saving have to be exemplified particularly in and around schools. The actions are integrated in the everyday school life, discussed in the lessons and carried out together with local SMEs e.g. heating engineers. The school caretakers are also involved in the cooperation concept.

Actions carried out and partners involved

So far, 18 schools took part in the project. They were chosen by a jury out of about 100 applying schools. The jury consisted of members of the Ministry of Environment and Transport, the Ministry of Education, the Ministry of Economic Affairs, a college of education and the State Agency for Climate Protection. The grant given to the schools amounted to ECU 6.000 per school.

The school owner has for a period of at least 3 years to pay back to the school the annual savings resulting from reduced cost for energy.

Results obtained

The results were encouraging:

- An increasing number of schools is willing to take part in the project.
- The project, planned for two years, has been prolonged for one year and may be extended again.
- The schools and their experts have figured out considerable energy savings (e.g. 7000 ECU per year in one school).
- A brochure explaining the practical examples of energy reduction has been issued; it helps to encourage other schools to implement the same ideas, create new ideas and perhaps take part in another round of the project.
- The activity of the schools is now expanding to other fields of environmental protection e. g. eco-management of the whole school.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimensions:

Compared with the overall energy use and emissions, the direct impact of the reduction of energy in the participating school is limited. But the indirect and mid-term/ long-term effect of setting an example for public and private buildings and raising awareness in many households - with children acting as multipliers and future decision makers - is substantial.

Economic dimensions:

For each single partner, the short term effect is limited. But, considering all the schools involved, the savings for the school owners are considerable. Moreover, SMEs which introduce the technical improvement for energy reduction in the school building, may be called for the same purpose by private commerce, willing to follow the idea, spurred perhaps by their younger members who took part in the school project. In the long run, the positive impact of the project is substantial.

Socio-cultural dimensions:

Here we also find short-term results. The project leads to awareness for climate problems and the willingness to act and cooperate is created on a broad scale. Networks are being created, which may equally penetrate other regions .

Equity dimensions

The project meets the requirements of social and gender equity. It may help - at least in the long run - to contribute substantially to interregional and even international equity.

Since the project is especially focused on the younger generation, it also takes care of the needs of future generations.

Systemic principles

The project meets the demands of subsidiarity. The project's activities for sustainable development start on a local level, the decisions are made locally or regionally. The results can be seen and felt at the same level. Nevertheless, the project can also be studied and reproduced on a national and international scale.

The project strongly builds on cooperation of different partners and participation of all people involved.

Lessons learned, difficulties encountered

It turned out to be extremely important to give the teachers high quality information and recommendations, how to integrate the project and the measures into their lessons (mathematics, physics, geography, chemistry, social science).

In a few cases at the beginning of the project, some schools concentrated too much on investing the money for energy saving, but did not take enough care of the integration of the project into the lessons.

Another important element is to ask the meteorological service or an energy supply utility about the weather conditions during the project, compared with previous data. This in turn will allow for weather variability to be taken into account (for example a mild winter).

Reproducibility of the project in another environment

The project can easily be transferred to other regions.

Project n° 2

ECO-MANAGEMENT AND AUDIT SCHEME IN LOCAL AUTHORITIES

SUMMARY	In 3 towns of different size in B.-W., an eco-management system following the EU eco-management and audit scheme (EMAS) regulation No 1836/93 is being established. The aim is to push ahead with an overall approach to sustainable development in local authorities, by using the tools of the EMAS-regulation. Local SMEs and NGOs are taking part in the process.	
KEY-WORDS	EMAS, local authorities, cooperation with SMEs - and NGOs, Agenda 21, reduction of the use of resources, costs reduction.	
STRUCTURE RESPONSIBLE AND PARTNERS	Ministry of the Environment and Transport (MET/UVM) Baden-Württemberg, Stuttgart (1). Environmental Protection Agency (Landesanstalt für Umweltschutz) Baden-Württemberg, Karlsruhe (2).	
CONTACT	(1) Herr Schmidt-Lüttmann, Tel.(0711) 126-2665; Stefan Frey, Tel.(0711) 126-2664; (2) Herr Gerd Ölsner, Tel.(0721) 983-1425 .	
DURATION OF THE PROJECT	Summer 1996 to summer 1998.	
SPHERE OF	3 towns in B.-W., with the possibility for other towns to participate in workshops, scheduled to take place about three times during the project.	
TOTAL COSTS	250 000 ECU	
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation

Local authorities (i.e. municipalities and districts) in Germany have still a rather wide leeway for setting up and implementing environmental goals and measures. It is in the municipalities, where people often feel more intensively about environmental problems and ask for counter measures. Better than a region, a municipality is able to receive the citizens' demand for counteraction and - at least in larger towns - may develop a town policy to push ahead sustainable development. One precondition for successful environmental policy on a local level is cooperation of all stakeholders, especially if the authorities' legal power for issuing direct orders is limited.

Aim

The aim is to push ahead the potential of the municipalities to practise the principles of sustainable development in their own administration and to activate and transform the ideas of the public into the same direction. How municipalities can practise eco-management in their day-to-day work and how they can influence their inhabitants, companies, SMEs and NGOs towards sustainability will be tested.

To make this general idea more concrete, we have identified 3 spheres of activity:

- * The municipality as a business and enterprise; applying EMAS-regulation in the municipality;
- * The municipality as actor in environmental issues, especially with regard to its competence for issuing permits and licensing procedures, local planning, transport and energy supply;
- * The municipality as a forum for other actors like industry, SMEs, social groups, NGOs etc .

Actions carried out and partners involved

The project is carried out in 3 municipalities by the Ministry for the Environment and Transport and the Environmental Protection Agency of Baden-Württemberg, together with 2 consultants. The 3 municipalities are

Teningen (population 12 000)
 Kehl (population 33 000)
 Ulm (population 115 000)

Other municipalities can take part and receive relevant information in workshops. The first workshop was held on 11 April 1996 in Ulm. Around 130 people from about 50 municipalities in Baden-Württemberg and Bavaria took part in the workshop. An interim report was issued shortly before the workshop.

Results obtained

It is still a little early to assess results, but some core findings can already be stated:

- The EMAS-regulation can be applied to local authorities.
- The staff in the local authorities has to be well informed about EMAS, to make sure that they are motivated and do not look at EMAS as just an additional work or duty.
- The implementation of EMAS in local authorities -as everywhere else- takes time and needs support by the head and the executives in the local authority. It is useful to name one person as the main responsible; he/she should be assisted by an audit team.
- Large administrations need more time to implement EMAS.
- The initial environmental review (see Article 2 b EMAS regulation) is a rather tough work, but creates a lot of useful information about the flux of material in the municipality administration.
- The initial environmental review already enables the municipality to reduce the use of resources and costs.
- It is very important to inform the public, the actors and especially the industry and SMEs about the EMAS project, to lead them to the decision to start with eco-management too.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental and economic dimensions:

The direct and short term improvement may be limited. It depends mainly on the question of knowing how good the environmental performance of the municipality as a business and enterprise has been so far. The indirect and mid/long term effect depends more on the question of how many other local actors follow the example of the municipality. That includes not only their own environmental performance, but also their willingness to cooperate with the municipality in the field of sustainable development. Moreover, it is important that other municipalities, following the example of the “EMAS-municipality” embark on EMAS too.

Socio-cultural dimension:

The socio-cultural dimension may lead to earlier results. The project is creating a general sense of mutual responsibility for the “common future”. Hopefully this will lead to a more sustainable decision-making process in business and private life.

Equity dimensions and systemic principles

Since the project is focusing on local problems and demands the cooperation of local groups, it takes into account equity requirements. It is also in line with the idea of subsidiarity.

On the other hand, the local feature of the project may lead to the question, of whether interregional and international equity is sufficiently fulfilled. This fundamental issue should be seen in the light of one basic idea of agenda 21, which imposes a special responsibility on local authorities. The local authorities have to serve as an example for eco-efficient organisation and bring together local actors from all parts of society (industry, SMEs, NGOs etc). So the forum of actors within the project should - by networking and interaction - pave the way to more sustainability. Moreover, the workshops and the reports issued will help to make the project sufficiently well-known to prompt similar initiatives in other local authorities.

Lessons learned, difficulties encountered

See above under the heading “results obtained”.

The crucial question is to know whether the local authorities will succeed not only in achieving good eco-efficiency in their own sphere (this seems to be the case), but also whether they can create an innovative forum for actors supporting and implementing sustainable development in its numerous forms.

Reproducibility of the project in another environment

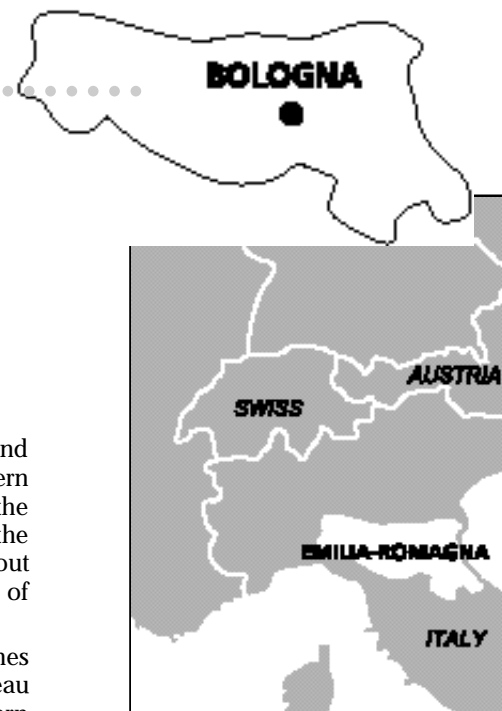
The project is transferable into other regions. Some differences may occur with regard to the competences of the municipalities.

Approaches and Experiences

THE REGION OF
EMILIA-ROMAGNA
(ITALY)

FFFF

THE REGION OF EMILIA-ROMAGNA



CHARACTERISTIC DATA AND FACTS

Our Region, Emilia Romagna, extends between Lombardia and Veneto (on the northern side) Piemonte and Liguria (on the western side) Toscana and Marche (to the south) and the Adriatic sea (on the eastern side). The regional surface is about 22.123 km² (7.3% of the total surface area of the country) for a number of inhabitants of about 3.921.000 (6.8 % of the total Italian population) with a density of 177 inhabitants per sq.km.

The territory may be divided into two areas: the Appennines (south/south-west) which slopes gently down to hills and plateau (making up approximately 50 % of the total area), on the northern and eastern sides, up to the Po river and the Adriatic sea.

Between the mountainous area and the plain, along the ancient Via Emilia road, seven major provincial towns have developed (Piacenza, Parma, Reggio Emilia, Modena, Bologna - capital of the region - Forlì and Rimini), the remaining two, Ferrara and Ravenna, being located in the middle of the plain, on the northern-eastern side. The nine provinces are altogether subdivided into 341 municipalities.

The gross regional product is about 75 billion ECU and accounts for 8.6 % of G.N.P. (ref. year 1995). The unemployment rate of the region is 7.4 % (against 12.0 % at the national level).

The economy of the region is based on:

- intensive agriculture, particularly wheat, sugar beet, fruit and vegetable, for the relevant processing industry;
- thriving breeding, particularly of cattle and swine, with large production of cheese and salted meat;
- relevant industrial sectors (tiles, foodstuffs, textile, mechanical, automation, chemical, ...)
- booming tourism which boasts a first-rate hotel trade on the coast (Rimini, Riccione, Cattolica, Cesenatico, Milano Marittima,...) and several cultural centers (Ravenna, Bologna, Ferrara, Parma).

Area: 22 123 km²

Division:

9 provinces, 341 municipalities

Population: 3.9 million inhabitants

Density: 177 inhabitants per km²

GNP: ECU 75 billion (1995)

Unemployment rate: 7,4 %

REGIONAL COMPETENCES

The main competences of the regional Government, which are being reviewed by the so called "Legge Bassanini" probably to be implemented within the year, cover the following sectors:

International relationships and relations with the Parliament:

On the one hand this competence from one side allows the region to develop relationships with the regions of other nations, and on the other governs the relations with the national Parliament;

Land management and environment:

our region is fully empowered by the State in respect to those competences which relate to the territory and its use ; town planning, programmes for waste water treatment and use and basin planning are significant examples of this competence;

Agriculture and Productive activities:

these two competences are mainly considered as instruments to promote the relevant economical activities and coordinate the financial incentives towards these two sectors;

Local authorities:

this competence concerns the relation between the region and the provinces, municipalities and other local authorities present on the territory of Emilia Romagna. In general, the policy of the Emilia Romagna region aims at getting the local authorities deeply involved;

Culture, sport, tourism and transport.

As for land management and environment, the region has been fully empowered by the State. With respect to tourism, the region of Emilia Romagna mainly promotes the activities and coordinates economical incentives for this sector. With respect to transport, the region is responsible for planning in connection with the planned use of the territory;

Area programmes, building quality, energy savings :

the competences of this sector are the following: to coordinate the development of certain areas by setting up programmes and allocating funds from the sectors involved (industry, transport, environment, agriculture,..), to promote the development of a high building quality and all actions leading to energy savings;

Health , social and family politics:

these competences are self-evident; particularly in the field of health, the region has the direct management of all public structures devoted to medical services;

City quality:

this competence has the aim to improve the life standard inside our cities, in connection with many other sectors : environment, transport, social politics, immigration;

Job, immigration and professional education:

vocational training addressing important questions of finance plays a major role.

The total annual budget of the region is about 5.6 billion Ecu (incl. funds from State)

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Although the region is highly developed economically, based on the growth of an efficient model of SMEs, that have been developing over years thanks to the use of proper instruments and measures of territorial and environmental management, a number of serious problems have been encountered.

Environmental problems

From an environmental point of view, the economic development has caused an important consumption of land and environmental resources which has resulted in a weak "balance" of the system, particularly in terms of water consumption and waste production. On the other hand, the region is faced with the concentration of some industrial sectors in specific and limited areas (districts) and with heavy urbanization of some portions of the territory.

Economic problems

From an economic perspective, low productivity predominates in certain areas previously engaged in agriculture, and more generally some industrial sectors are declining or changing their position in the "chain" of the added value. In any case the consequence is loss of jobs, particularly at the level of productive manpower.

Socio-cultural problems

From the socio-cultural point of view, the consequences of the problems mentioned above have probably not caused their ultimate effect yet. No abandonment of country or mountain villages has happened, and the unemployment rate in our region is still relatively low.

RESPONSES AND OBSTACLES WITHIN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

The responses to the problems may be found in the approach to sustainable development principles. The region of Emilia Romagna has worked out a Regional Territorial Planning policy (Piano Territoriale Regionale - P.T.R.) which contains strategic trends, and directions for various areas. This document, which is being updated, sets out the three main issues for the development of the region, namely :

- a polycentric metropolitan system (to support the process of decentralization from the cities);
- sustainable development;
- the market.

The main task of the P.T.R. is to build up and implement policies for sustainable development, defined as a process of change establishing a durable balance between environment and productive factors.

The strategic directions are:

- to develop policies and actions for restoring and making better use of environmental resources, for ecological reconversion of the productive system and the territorial configuration;
- to develop an environment control system;
- to develop the resulting legislative, administrative and organizational modifications.

A significant example of a regional law which applies the principles of sustainable development is the "Norme in materia di programmi speciali d'area - L.R. 36/90" (Rules for special plans for areas). This Area Plan leads to various actions supposed to bring about innovations in areas characterized by specific economical, socio-cultural and environmental situations and aiming to promote sustainable development. The approval of such an Area Plan is entrusted to the Regional

Council; the financial resources needed are taken from the ordinary regional account to which all sectors contribute (environment-industry-transport...).

To promote the principles of sustainable development, Emilia Romagna, in connection with the European Year for the Conservation of Nature, has initiated the "Premio Emilia Romagna per l'Ambiente - ERA 95", a prize awarded for those experiments and projects applying a satisfactory relation between the environment and the economy. The experience gained has been very fruitful and will be repeated every two years.

Great deal of importance has been given by the region to the active involvement of companies. No sustainable development could be carried out without having most of them "on board". This is why, Emilia Romagna is very active in promoting eco-management and eco-audit in SME as well as in providing incentives, through proper laws, for the promotion / innovation of new companies engaged in eco-compatible activities.

EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

The three projects selected by Emilia Romagna within the framework of the Pacte Programme are considered suitable because :

- they have been selected among the prize-winners of the "Premio Emilia Romagna per l'Ambiente - ERA 95"; in other words they have already gone through a hard process of selection;
- they are representative, for the Region, of its problems and how to address them;

One project gives the results obtained by a private company active in the chemical industry, which, through a technological reconversion of its process, greatly improved its economic efficiency, drastically decreasing the environmental impact and, thereby secured the "right" to continue its activity on its current site within a highly urbanized zone.

The second project describes the results of a private consortium of agricultural enterprises producing wine and fruits, which, by recycling the by-products of their production, has created a new ecological and profitable business;

The last project presents an experience of a public administration aiming to bring an area back to its initial condition (humid zone). This area had been reclaimed and reserved for agriculture a few decades before but only with poor results in terms of productivity. The main issue was to propose to new economic operators a model of a humid area in which a high environmental quality could be combined with cultural/tourist activities likely to create new jobs and profits.

RESTORATION OF THE BIOLOGICAL COMPLEXITY OF RECLAIMED AREAS

SUMMARY	The project describes a pattern showing solutions for thoroughly reorganizing reclaimed areas. These tools aim to improve the environmental conditions and increase profits as well as working opportunities away from the agricultural sector.	
KEY-WORDS	Restoration of the ecosystem biodiversity, social benefits, naturalist tourism.	
STRUCTURE RESPONSIBLE AND PARTNERS	Provincial administration of Ferrara Via Bologna n. 534 44100 FERRARA	
CONTACT	Dr. Natali, Director of "Land Management and Protection of Flora and Fauna" Department Tel. 0532 - 29.97.30, Fax.0532 - 29.97.29	
DURATION OF THE PROJECT	1992-1997	FOLLOW-UP the project is continued with a low financing
SPHERE OF	Local - Mezzano (Ferrara)	
TOTAL COSTS	ECU 480.000	of which 47.3% from E.U. and 57.3% from the Provincial Administration of Ferrara
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The project covers a pattern yielding solutions for a complete reorganization of lands reclaimed from marshes during the fifties and sixties. These devices aim to improve the environmental conditions and increase profits as well as working opportunities different from the agricultural sector. It focuses on the Mezzano area, near the town of Ferrara, which had been reclaimed between the 1950s and 1960s and covering 18.000 hectares. The land lies adjacent to the Comacchio brackish lagoons, wet lands which are recorded in the Ramsar Convention's list.

In this area, agriculture had always been the only means of subsistence, but with very low margins of profits. As a result, actions were taken to overcome the crisis suffered by the agricultural system and thereby improve the general economic situation. Flooding supported activities yielding profits, such as fish-farming and tourism. In the meantime, the environmental quality of the region was improved and the biological complexity of the reclaimed areas restored.

Aim

The project objectives were threefold :

- To develop measures which can be regarded as guide-models for a thorough re-organization of the area.
- To define a precise proposal considering both landscape and the economy.
- To consider the EEC-Medspa project as a model for all reclaimed areas suffering problems due to human activities impacting the environment. Therefore, a balance between environmental and human resources is required.

Action carried out and partners involved

In order to carry out the project, two financial procedures have been followed:

- EEC regulations n. 563/91 for the Mediterranean area
- Funds provided by Provincial Administration of Ferrara

After the two years needed to rent land and begin the environmental restoration work (finished in spring 1994), the renaturalisation process was started.

The main actions consisted in increasing the environmental biodiversity by creating wet lands, wet fields and hedges with a view to re-introducing the original wild species, such as roe-deer, geese, white storks, tench, etc..... Another fundamental measure consisted in creating dammed ponds of freshwater for sport fishing.

A co-operation between the Provincial Administration and private farms was initiated for the rented land. The project was advertised by means of both a convention and a booklet published in 1994 by the Provincial Administration of Ferrara.

Results obtained

As a result of the EEC MEDSPA project, the area is now characterized by a varied environment featuring fresh-water ponds, wet fields and hedges carefully arranged to become the habitat of several animal and plants. In the fresh-water there are ponds, tenches, carps, pikes and others. Furthermore, numerous birds can be found in the wet fields; while roe-deer, geese, white storks and many others live in the dammed lands.

The project shows that wet lands and fresh-water ponds can be created near Mezzano and in traditionally poor lands. With respect to the social and economic aspects, a wetland model providing a high environmental quality and leading to much higher revenues is proposed to farms and co-operatives.

Through local planning of the territory, the association of the area with the Regional Park of the Po Delta has also been contemplated.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension:

The environmental dimension is quite significant since the project is not limited to a mere environmental restoration but also allows for the recreation of a better biological context, the preservation of habitat correlated to the territory, the recovery of an eco-system and a greater biodiversity.

Economic dimension:

The method proposed can easily be repeated. In addition, it presents obvious advantages from an economic perspective, directly benefiting the actors concerned. From the economic point of view, the costs and benefits are being evaluated. However, as the project is both experimental and new, it would also require estimating the social benefits.

- Costs

- Rental of land and costs of periodic servicing: 5.500 ECU per year
- Cost of hydraulic and electric power: 4.000 ECU per year
- Wages of the staff in charge of guard, fishing and management: 7.500 ECU per year
- Initial costs for breeding fish : 500 ECU.

- Benefits

- Income for sports/fishing: 900 ECU per year.
- Capital value of the tourist attractions : 400 ECU per hectare for a total sum of 16.000 ECU per year.

These two incomes have been taken into account using the Calwson method, which underlines the model character of the social-economic development for the whole area (18 000 hectares).

During the experimental phase the cost/benefit ratio shows a small deficit of 600 ECU. Nevertheless, in the future, during the ordinary management phase, some initial fixed costs will no longer be supported, resulting in a positive balance.

Socio-cultural dimension:

The project spanned many domains : environmental teaching at various levels (from school to University), naturalist tourism, socio-recreational benefits.

The project raises the awareness of local people about the possibility to manage their territory from a different approach requiring less investments and yielding reasonable profits. On the contrary, the current productive system requires higher investments without warranting a continuous income.

Equity dimension

Inter-personal equity :

The Provincial Administration has tried to enhance inter-personal equity by involving the local people linking tourism to environmental education (e.g. green trips; scientific research programmes). Various economic actors have benefited from the project: farmers, agro-tourist operators, local actors...

Inter-regional equity :

A contribution to inter-regional equity could consist in projects in similar areas, on a larger scale. The intervention requires little in way of initial efforts to change land management (e.g. diversification of agricultural activities). The project may constitute a pilot scheme for the management of such areas, and there is a wish to arrive at fair co-operation on a larger scale. On the other hand, the project reinforced a certain imbalance : Emilia-Romagna already comprises 20 % of the national wetlands.

Inter-temporal equity:

The inter-temporal equity is represented by the recreation of the original wet habitat.

Systemic principles

Diversity:

From the environmental point of view, the results obtained have been extremely positive. The area has been transformed into an oasis rich in flora and fauna with a high index of biodiversity.

From the economic point of view, the area is a model planned in such a way that more productive activities (e.g. fishing, organised trips, etc.) can be practised without environmental damages.

The project itself is not a model of high productivity, but it allows for differentiated and alternative activities accommodating the economic fluctuations typical of an economy based on Keynesian principles.

Subsidiarity and partnership:

Subsidiarity and partnership have been secured through the involvement of farmers and by making them participate in the project by renting their fields. This has been achieved by informing the public and providing all the instruction allowing for its participation.

Participation:

The Provincial Administration disseminated the results by holding conventions and issuing publications, explaining in detail all the phases of planning as well as the purposes sought. These advertising methods have made local citizens more aware of the possible economic and territorial changes brought about by the project.

Lessons learned, difficulties encountered

Through this experience, the Administration introduced an ambitious project based on the restoration of the environmental values consistent with the economic activities. Consequently, a new method of work has been acquired and applied by environmental researchers and experts.

By recreating the water ecosystem, an in-depth study of the relationships between waters, plants and animals as well as their balance is required.

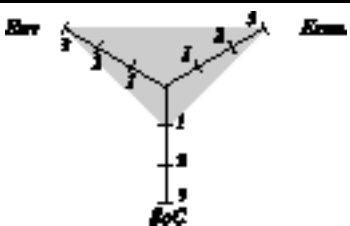
The group of researchers employed by the Provincial Administration has not only presented the project during public meetings but also introduced it in an area where the environmental, social-economic results can easily be observed.

Moreover, the wet lands created represent an ecosystem necessitating controls, monitoring and scientifically-guided management. In the near future, the local government will take into account the possibility of involving the non-profit making associations of naturalists in the management of the project area, in order to increase the participation, awareness and involvement of local inhabitants.

Reproducibility of the project in another environment

The project may be carried out in similar areas suffering from low agricultural revenues. The analysis of the environmental conditions, of the possibility of introducing wild species, of the development of the habitats and of the management criteria is currently available.

PLANT FOR THE PRODUCTION OF ORGANIC FERTILIZER FROM AGROFOOD WASTES

SUMMARY	The project concerns the recovery of organic substances from agro industrial processes to produce compost, thereby reducing the costs for the disposal of agro-food waste.	
KEY-WORDS	Integrated management of agro-food waste, compost, active protection of soil and waters, cost reduction.	
STRUCTURE RESPONSIBLE AND PARTNERS	CA.VI.RO Consortium of Italian Cooperatives for production of wine and fruit Via Convertite n. 12 48018 Faenza (Ravenna)	
CONTACT	Ing. Celotti Tel.: +39 - 546 - 62.91.11, Fax: +39 - 546 - 62.27.69	
DURATION OF THE PROJECT	1992-1995 Technical Life: 15 Years	
SPHERE OF	Local -Plant of Faenza (Ra)	
TOTAL COSTS	ECU 3.000.000	of which ECU 810.000 by public contribution (EU Thermie Programme)
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The project concerns the recovery of organic substance, from the agro-industrial activities and from selective collection of waste of civil origin, with a view to producing compost through microbiological stabilization. Emphasis has been placed on the project to reduce the high costs of disposal of organic waste and obtain a high quality product for use in agriculture, in lieu of chemical fertilizers or manure.

CAVIRO is a Consortium of Italian Cooperatives, gathering 50 000 farmers engaged in wine and fruit production, and paying special attention to environmental problems and the recovery of large quantities of wastes that would otherwise be spoilt, causing pollution.

The project is innovative from the technological point of view and also on account of the quality of the product obtained. The technologies used allow for an integrated recycling of agro-food waste.

Aim

The project objectives were primarily to cut down on disposal costs of liquid and solid agro-food waste in the CAVIRO plant, through an innovative process of transformation into organic fertilizer. Meanwhile, CAVIRO has managed to produce a qualified product with a continuous outlet based on waste expulsion, without stopping the productive chain.

Generally, the expulsion of wastes causes additional production costs. The problem of waste is becoming more difficult to solve, given the lack of discharges and the difficulty to get clearance.

Actions carried out and partners involved

With the financial backing of the EU, the CAVIRO Consortium has developed this innovative project whose process may be described as follows.

The wastes generated by the CAVIRO production can be divided into two main parts : liquids and solids. Liquids are centrifuged; the organic fraction in suspension is thickened and routed to the treatment unit. Solid residues are stocked and introduced into the plant. All these residues are routed forward a mixer.

The material is extracted from the mixer and directed to the trench head, which is the treatment unit of the plant. After the material has been placed on the trench head, a rotary machine stirs the material and progressively routes it toward the trench.

The fully automatic machine, has the following functions:

- turning the mass inside the trench;
- humidification (if required) of masses by sprinkling during turning;
- oxygenation of masses;
- breaking and homogenization of the material to extract the turves;
- taking the oxygen and temperature values.

Due to the high temperature reached during the bio-oxidation phase, the "compost" is free of bacteriological contamination.

After 30 days, the material is extracted to be piled for a secondary ripening (curing) which lasts 20 days. Then, the material is refined and is ready for delivery.

The plant treats 80 t of waste daily, for a total of about 25.000 t/yr. of prime material. It produces 40 t daily of finished product, equal to 12.500 t/yr.

The product obtained is marketed as an organic fertilizer and used by farmers as an organic integrator for lands or growth layers.

Results obtained

The results obtained are the following:

- turning of agricultural and food residues into a fertilizer material: compost
- dramatic reduction of pollution
- compliance with the trends of the EC rules in the fields of agriculture and environment
- avoiding of the use of discharge
- reduction of uncontrolled fermentation

Moreover, the use of compost in agriculture decreases water and soil pollution that might be caused by chemical fertilizers, and generally reduces the use of phyto-drugs and manure.

The savings in the complete cycle are linked to :

- a reduction of fuel consumption due to the reduction of waste (50%) to be transported and moved to the dump (about 140.000 litres of fuel per year saved)
- reduction of the use of pesticides (ECU 13 000 / year saved). It has been noted that the non pathogenous saprophyte organisms present in the compost restrict the colonization of the soil by pathogenous organisms. This antibiotic and competitive mechanism reduces the need for pesticides;
- reduction of agronomic practices. The use of the compost reduces by 70 % the necessary agronomic practices (like irrigations and organic manuring).

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

The basic issues are the use of organic matrices of plant origin in order to obtain a good product for agriculture and to avoid their disposal in a dump, thus saving energy and drastically reducing pollution.

Environmental dimension:

The environmental dimension is represented by an active protection of soils, waters and air from contaminations (reduced use of chemical fertilizers and manure), by the recovery of space in the dump, by a reduction of uncontrolled fermentations and foul smells and by innovative agricultural practices. As a result, the waste material is reduced by almost 50%, the remaining 50% being transformed in a good quality product suitable for agricultural application.

Economic dimension:

The economic dimension of the project is represented by the high added value derived from the results mentioned above. A new "industry" has been created to requalify materials previously discharged. The product obtained from this industrial process is a very good natural fertilizer which may replace more expensive and polluting chemicals. Furthermore, the project allows for considerable energy savings.

Socio-cultural dimension:

The socio-cultural dimension of the project may be defined as a new cultural approach to the typical agricultural waste. It has become a raw resource for a new "industry" creating jobs where nothing existed before but waste.

Equity dimensions

The implementation of this innovative technology yields very good results and, it could, at the European level, sharply reduce the pay-back time. The European production of food processing wastes is about 200 million tons/year. Since this plant can treat 25.000 ton/year, it is therefore theoretically possible to develop hundred of plants with a total energy saving of 6.400.000 TEP/year (inter-temporal equity) and create many new jobs.

Systemic principles

Diversity:

The preservation of the land features in economically active and high quality life areas is the basis of a well-balanced social development.

Participation:

The strong commitment of the company to significantly improve the environment reinforced confidence of the stakeholders (employees, local authorities, social and scientific institutions) as to the consistency of the company's strategies with respect to environmental and social responsibilities.

Lessons learned

The product thus obtained by CAVIRO has been granted the final product approval by a Ministry committee (New rules on fertilizers) as an Organic Fertilizer thus increasing the value of the product and the economical benefits (market price almost doubled). In addition, since September 1996 Coop. Caviro has been listed in the National Register of Companies engaged in waste elimination.

CAVIRO is now developing a new line of amending products, organic, mineral and organic and mixed organic fertilizers - (also including wastes of animal origin).

CAVIRO has already started a diversified collecting plan for organic litter and waste. This is the first experience of this type in the region Emilia-Romagna.

Reproducibility of the project in another environment

The possibility to reproduce the project is not linked to environmental conditions but to similar processes. In this case reproducibility is universal, on a European and world-wide level.

A SYSTEM FOR REDUCING GAS EMISSIONS IN CHEMICAL PLANTS

SUMMARY	An integrated system for decreasing the environmental impact of gaseous emissions in chemical plants has been developed. It is composed of a cooling system for the condensation and recovery of organic solvents and an end-of-pipe treatment (thermal combustion) with energy recovery.	
KEY-WORDS	Reduction of raw resources use, destruction of volatile organic substances, energy recovery, minimisation of waste water, personnel requalification.	
STRUCTURE RESPONSIBLE AND PARTNERS	CIBA Speciality Chemicals - Pontecchio Marconi Plant, Via Pila n. 6/3, 40044 PONTECCHIO MARCONI (BO) CIBA Speciality Chemicals - Environmental Technology Department, Basel	
CONTACT	Sig. P. Pregolato/ Ing. M. Benettin tel. +39-51 - 67.86.220 fax +39-51 - 67.81.124	
DURATION OF THE PROJECT	Project start : 1988 Activated: 1990 Technical Life: 20 Years	
SPHERE OF	Local- Pontecchio Marconi Plant - Bologna	
TOTAL COSTS	ECU 3.365.000	out of which ECU 740.000 contributed by public authorities (National Law 208/82)
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The Pontecchio Marconi plant is part of Ciba Speciality Chemicals, specialized in the production of additives for plastics.

The investment represents an innovation in the management of the purifying treatment process of gas effluents coming from a productive cycle.

To demonstrate this, it is sufficient to think of the breaking down systems traditionally used; their extreme fragmentation does not guarantee high level of efficiency for certain organic solvents, requiring huge amounts of washing water and energy.

Also, the high quantity of washing water requires an adequate treatment to eliminate the pollutants, transferred from the gas effluents to the water.

Aim

The objectives of the project were the following:

- Minimisation of the impact on the environment of emissions;
- Replacing of old breaking down technologies (scrubbers);
- Recovery of solvents and energy;
- Compliance with the legislation by introducing technologies able to eliminate the total waste through recovery (90%) and destruction (10%) of the pollutants present in the gas effluents.

Action led and partners involved

The global optimisation of resources involved in the chemical production and the improvement of the operation efficiency led to an extensive study of the different factors affecting the environment and production.

As a first step, a specific method was applied to lay down objectives and activities, according to the APCT (air pollution control technology), as well as a specific approach to assess air pollution and relevant contamination measures. They were developed in co-operation with the CIBA Environmental Technology Dept.- Basel. The activity started with the preparation of a detailed mass balance, involving all streams coming from the equipment, including the emissions. Then, it continued with the definition of different improvement actions among which one can cite : implementation of a process devoted to environmental performance, specification and design of a cooling system for solvent recovery, selection of end-of-pipe treatment technology and, finally, design of the thermal combustion unit.

The partners in this project were: for the first two actions, engineers operating in the plant; for the last two some engineering and environmental technology Companies.

The main partners at the different steps of the project design and implementation were:

- The Regional Authorities (Regione Emilia Romagna - CRIAER) and the Local Council who fully supported the project.
- The Environmental Technical Department in Ciba - Basel who was active in outlining project definitions and methods.
- Engineering and technology contractors (Smogless/Milan; ICC/Turin) who were active in design and completion.

The project presents a high economic interest, due to its 7 years pay-back period and its internal rate of efficiency of more than 6% per year.

This pay-back is mainly due to savings in the nitrogen consumption as well as to the recovery of production solvents. A relevant quantity of Nitrogen was used in the past in order to move fluids between the different pieces of equipment. This resulted in big flowrates of exhausted gases.

An important part of the project (process improvements) aimed to reduce the Nitrogen consumption by adopting other solution for mass movement.

The plant is located in a highly urbanised area, and therefore conditioned by external factors and the applicable environmental laws. As a result, it was necessary to introduce environmentally friendly measures which also preserved social safety.

Results obtained

Encouraging results have been obtained in relation to all the foregoing objectives.

Major benefits have accrued from the recovery of re-usable materials - particularly solvents which otherwise should have been spread in the atmosphere -, the energy saving system obtained from cooling hot effluents and the reduction of waste waters.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

The project innovates in that it optimizes input resources and reduces wastes. Moreover, it leads to a reduction of raw materials and a recovery / requalification of wastes.

The project purposes are the following:

- Optimisation of resources and enhanced technological efficiency due to the recycling of by-products which would otherwise be eliminated.
- Compliance with the legal emission level through use of a technology allowing almost all pollutants in gas effluents to be eliminated through recovery (90%) or destruction (10%).
- Recovery of solvents and energy savings due to steam production in the incinerator plant.

The environmental and economic dimensions have been addressed through a global approach to the production process: "the production process and wastes should not be considered separate but the improvement of the first can solve or minimize the problems of the second".

Environmental dimension:

The environmental dimension is represented by the combined effect of reduction of raw resources consumption through re-use/recycle, reduction of waste water by the technological improvement of the industrial process, and energy savings through steam generation from the incinerator plant. The combined effect may be quantified as follows:

- solvent recovery is about 550 t/year, representing about 10% of the overall solvent consumption for production purposes;
- thermal energy recovery is about 80 ton/day of steam, equal to about 16-17% of average daily consumption. Steam is used in Pontecchio Marconi as heat in production purposes and in buildings and for the destruction of volatile organic substances;
- the reduction of waste water (about 2.000 t/year)

Economic dimension:

The economic dimension is represented by the relevant reduction of costs resulting from the recycling / re-use of different types of solvents - about 20% - extracted from sub-products of the process and by energy savings.

These results can be achieved thanks to the plant flexibility, a high level of automation and safety and upgrading of technologies.

Socio-cultural dimension:

The socio-cultural dimension of this project may be qualified by the following two effects:

- current laws, this type of industries being prohibited in certain areas. In this case, the plant is located in a highly urbanized area. Without the innovations, it would have been delocalized, thus causing loss of employment;
- the improved efficiency of the industry requires better health conditions for employees and the surrounding population and may contribute to increasing the number and quality of jobs.

The preservation of acceptable environmental conditions in economically active and high quality life areas is the basis for a well-balanced social development.

Equity dimensions

Given the effort made to contain the impact on the environment of chemical industries, the presence of industrial activities alongside housing estates is acceptable. This contributes to a balanced use of the territory.

Systemic principles

Subsidiarity and participation:

The complete involvement of a high number of employees in the crucial phases of the project was a key factor of success in a well-established ecological culture at all levels of the company personnel. About 30 employees were involved at the different phases of the project, according to

their own organisational role and knowledge. This involvement had been scheduled by implementing specific training programmes by the project responsible and Basel specialists. This led to a global growth of culture mainly in the field of ecological issues and treatment unit technologies. The strong commitment of the company to develop a significant showcase for environmental improvement reinforced the confidence of stakeholders (employees, local authorities, social institutions and scientific institutions) in the consistency of the companies' strategies in matters of environment and social responsibilities.

Lessons learned, difficulties encountered

During all phases of the project development, relations with local authorities had been maintained, being both open and intense. This policy resulted in a great deal of smoothness during the approval phase and promoted very active mutual co-operation.

With the full support of CIBA headquarters, a perfect match was achieved between strategy and actions, thereby leading to prompt project funding.

Reproducibility of the project in another environment

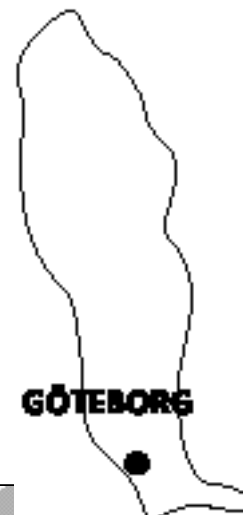
The possibility to reproduce the project is not linked to environmental conditions but to similar industrial processes.

Approaches and Experiences

THE REGION OF
GÖTEBORG
OCH BOHUS
(SWEDEN)

FFFF

THE REGION OF GÖTEBORGS OCH BOHUS



CHARACTERISTIC DATA AND FACTS

The province (region) of Göteborg and Bohus has had the same borders for about 300 years. The province has approximately 770 000 inhabitants (150/km²) and a surface area of 5.140 sq.km, exclusive of the sea, but including approximately 1 000 lakes situated in the province (3% of the area). The land mainly consists of forests (36%), bare rocks (31%), agriculture (16%) and urban areas (11%). From a more general perspective, the province covers 1 % of the national surface area and includes 10 % of its inhabitants. The municipality of Göteborg has almost 450 000 inhabitants making up about 60 % of the population in the province. Göteborg is the second largest city in Sweden and a big trade centre with international characteristics and the largest harbour in Scandinavia. A great deal of trade with foreign countries goes through Göteborg.

In the north, the province borders on Norway with which the region has an interregional co-operation under the INTERREG-programme. Interregional co-operation is also facilitated by the international airport of Göteborg and communications by boat to the UK, Germany, Denmark and Norway. The province has a central location in Scandinavia and is thereby of interest for companies aiming at this region. Potentially the northern part of the province has good qualities capable of attracting Norwegian companies willing to establish in the EU.

The closeness of the sea has left its mark on the trade and industry; fishing, stone industry and shipyards are examples of traditional industries which have now been replaced by manufacturing and chemical industries. 75% of the population work in the service or public sector and almost all of the remaining 25% are engaged in the industry and construction companies. A minor part of the population works in forestry and farming.

The province has about 40 000 private companies, most of them (97 %) with less than 20 employees. A minor part (0.2 %) has more than 200 employees, but these companies account for almost 40 % of the employment in the province.

The province offers a rich natural and cultural heritage. The coastline has thousands of islands and many bays and fjords. This archipelago is unique, not only in Sweden, but also from a global perspective. The long coast, many lakes and streams and the relatively unspoilt forests provide great opportunities for nature experiences and outdoor activities. With respect to the cultural heritage, rock-carvings in Tanum are very famous. Dating back to the bronze age (3 000 years old) they have been elected "world heritage site" by UNESCO. Tourism on the Swedish west coast is very intensive, especially during the summer season.

Area: 5140 sq.km
Division: 15 municipalities
Population: 770000 inhabitants
Density: 150 inhabitants per sq.km
GNP: (1995) : 44,16 million ECU
(25 722 per inhabitant)
Unemployment rate: 13 %

REGIONAL COMPETENCES

The Swedish provinces or counties (Sw. län) are entrusted with implementing central government policies at the regional level and could be described as regional branches of the central government. The Provincial Government functions as a link between the local inhabitants and municipalities, on the one hand, and the national government on the other. It is responsible for co-ordinating the interests of the state in the region. Three main areas of responsibility should be mentioned:

- The implementation of national goals within various fields
- The regional development of the province
- The provision of several administrative services within the province.

The Provincial Government has departments for Environment, Nature Protection, Physical Planning, Cultural Heritage, Regional Development including matters of Equality, Transportation and Communications, Rural Matters, Housing, Civil Defence, Social Services, Legal Matters and Regional Police Matters. The tasks include execution and co-ordination of power, inspection and control and taking regional initiatives on the basis of the national legislation.

The Provincial Government is headed by an Executive Board made up of local politicians and presided over by the Governor, appointed by the national government. Local politicians are appointed by the municipality of Göteborg and the Bohus County Council; these last two bodies are elected by the people. The County Councils are regional governments, mainly responsible for medical care. As one of three exceptions in the country, the municipality of Göteborg is responsible for its own medical care. Usually, municipalities play a major role in several fields, e.g. environmental protection, physical planning, housing, social care, local development and education before university.

Recently, changes in the Swedish regional system were proposed by the national government. South-western Sweden is one area where regional administrative changes will occur from January 1998. Three provinces will then merge into one. One year later, the County Councils will merge into one regional parliament. At present, changes in division of tasks between the different authorities are also being discussed.

REGIONAL APPROACH OF SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Environmental problems:

The national environmental policy defines 13 different environmental threats, some of which assume a global importance. From a national point of view the main problems in our region are:

- 1) Acidification of lakes, forests and groundwater, mainly due to the import of acid rain and traffic emissions.
- 2) Eutrophication of coastal waters due to poor sewage treatment and agriculture.
- 3) Industrial activities in the Göteborg and Stenungsund areas

Economic problems:

Major companies are, to a great extent, active on an international market and sometimes owned by foreign firms. Their expansion will, therefore, take place mainly abroad, and very few jobs are created locally. Structural changes in the region have caused a decline in industrial development. Parts of the province fall under objective 2 and 5B areas. These areas include the 6 northernmost municipalities and the archipelago.

Socio-cultural problems:

The most acute social problem is unemployment whose rate is very high (reaching in excess of 13%, that is, a proportion equal to the national average). The unemployment rate is particularly high among the young people and immigrants. Ethnic segregation has been a growing problem over the last two decades, especially in the largest city, Göteborg. This is because immigration from outside Europe has increased and immigrants cannot be offered a job.

RESPONSES AND OBSTACLES IN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

The national government has set up the policy on sustainable development and already in 1990 four "corner-stones" measures were adopted to protect health, biological diversity, natural resources and landscape, from a natural and cultural point of view.

Furthermore, the new Swedish environmental legislation, which will become effective from 1999, has a paragraph which says that the main objective is to create possibilities for a sustainable development for current and future generations and that all sectors, individuals, companies, authorities and organisations are responsible for achieving this.

The national policy should be implemented in the regions. Sustainability is now part of a global regional policy since all sectors have a common responsibility. The Provincial Government is working on a regional development strategy where unemployment, environment, equality and equity are put in focus together with ecological sustainability. Also a special regional environmental action plan will be presented during 1997, as a follow up to the regional goals of sustainability. Other activities in the region include financial support for new jobs in the environmental sector as well as support for small companies. Several projects have been initiated by the Provincial Government to promote an ecological sustainable development. These projects have contributed to the reduction of dangerous products, i.e. concerning car, tires, paint or the amount of phosphorus in detergents, to an increased collection of waste oil and to a reduction of dangerous components.

The Provincial Government has also developed a system with indicators to evaluate whether or not the province is moving in the right direction toward ecological sustainability. Among these indicators are health, recycling, use of phosphorus, use of sludge from the sewage treatment plants in farming, ecological farming, use of windpower and bioenergy etc. This system is meant as a tool to influence decisionmakers in the region.

Challenges of the region require a strong degree of co-ordination between the national, regional and local bodies due to the high degree of decentralised power. A better co-operation between authorities and private companies has developed lately and is also important for a successful regional development in the future. Environmental problems are met with activities at the international level together with necessary local measures in co-operation with municipalities. Development programmes have been approved by the EU for objectives 2 and 5b areas. Special regional authorities deal with unemployment and segregation problems.

The fact that there are so many different actors sharing responsibilities means that co-ordination is of the utmost importance. To bring the actors together and establish common strategies is essential for a good result.

EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

Two projects have been chosen for evaluation purposes "Sustainability in small and medium sized enterprises" deals with the competitiveness of the SMEs which make up an important target group in the region as far as regional development is concerned. The project "Common goals towards sustainable development" is an initiative from the Provincial Government to unite the various actors in the province towards mutual goals in the field of sustainable development.

Project n° 1

SUSTAINABILITY IN SMALL AND MEDIUM SIZED ENTERPRISES IN THE PROVINCE OF GÖTEBORG AND BOHUS

SUMMARY	<p>Networks of SMEs from similar branches were established. Consultants analysed the participating enterprises to suggest possible improvements from a general environmental point of view and with a sustainability approach. Specific individual assistance to each enterprise was provided. Further support was offered to those enterprises that decided to radically change their business ideas and production towards sustainability.</p>	
KEY-WORDS	<p>Private enterprises, sustainability, competitiveness.</p>	
STRUCTURE RESPONSIBLE AND PARTNERS	<ul style="list-style-type: none"> • Responsible: Provincial Government of Göteborg and Bohus • Partners: National Association of Enterprises, Chamber of Commerce and Regional Employment Authority. • Consultants and private enterprises worked within the project. 	
CONTACT	<p>Mr Sven Swedberg, tel +46 - 31 - 60 58 29, fax +46 - 31 - 60 58 09, e-mail svsw@o.lst.se.</p>	
DURATION OF THE PROJECT	<p>1 January 1995 - 30 June 1996 (1.5 years).</p>	<p>FOLLOW-UP Recently, many new projects related to sustainable development in private enterprises have been launched in the region. The follow-up project of "Sustainability in SMEs" aims to establish an environmental center for competence in Northern Bohuslän, where SMEs in the rural parts of the province could gather together to get environmental services and current information. The project will also co-ordinate all similar ongoing projects in the region, to make it easier for the enterprises to determine which project to choose and to take better advantage of the experience from the various projects.</p>
SPHERE OF	<p>Regional (Province of Göteborg and Bohus).</p>	
TOTAL COSTS	<p>515.000 ECU</p>	<p>(National foundation - 250.000 ECU; Provincial Government/Regional Employment Authority - 115.000 ECU; participating private enterprises - 55.000 ECU (1.600 ECU/enterprise); European Commission (DGXI) - 45.000 ECU, National Swedish Agency of Technical Development - 35.000 ECU, other sources - 15.000 ECU.</p>
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

Environmental concern and sustainability have become strategic issues for the development of private enterprises. The increased environmental concern in society and among consumers results in an environmental competence, which turns out to be a competitive advantage for environmentally concerned enterprises. Large companies are aware of this and have improved their environmental skills and changed their production and methods of production towards sustainability. Eco-auditing is developing and many companies work towards EMAS registration and/or ISO certification. However, SMEs often lack the competence and money putting them at a disadvantage.

Aim

To summarise, the objectives of the project were:

- to develop the environmental work of SMEs in the province and thus take one step further in the development towards sustainability of the whole region;
- to establish networks and a spirit of good co-operation between private and public sectors and within the sectors;
- in a long-term perspective, to reduce the negative environmental effects of the processes and improve product quality.

The different partners in the project had slightly different expectations about the outcome. The consultants wanted to improve their competence in environmental management while companies were looking for practical guidance on how to address with environmental issues in the future and reasons for changing their working habits. The public authorities have a stronger region in mind with new jobs being created and a sustainability profile of the business sector in the region.

Actions carried out and partners involved

Phase 1.

Project promotion and establishing contacts were important initial tasks in the start of phase 1. Approximately 500 companies in the region were contacted to provide them specific information about the project. In total, 140 people attended an initial information meeting. Local newspapers reported the meeting. Various seminars on "Industry and Environment" were staged during the following period. In total, 60 companies decided to take part in the project. Consultants were recruited during an information meeting. Technical consultants were paired with economical consultants to cover the whole theme of business and environment. The consultants started visiting the SMEs to analyse their work with environmental issues and to identify their strong and weak sides from a sustainability point of view.

Phase 2.

Seven branch networks were established out of the 60 participating SMEs. The role of consultants during parts of this phase became very important, at least from the standpoint of the SMEs, as the consultants, not the project leader, enjoyed all the contacts with the SMEs. Experiences were exchanged between the consultant pairs during several meetings. The EMAS guide was developed. This is a PC-based multimedia programme containing all elements a company has to go through to get an EMAS registration or an ISO 14001 certificate. Contacts were established between the project leader and the University and Technical University of Göteborg. A seminar on Life Cycle Assessment was held. One final seminar was held to report the results of the work in the networks and the global results of the project. During this seminar consultants and SMEs exchanged their project experiences. The EMAS guide was demonstrated. A detailed project report (in Swedish) was later presented, based on continuous evaluation during the whole project period.

The main strategies of the project include co-operation, networking and support of environmental work within the SMEs.

Since the project ended only about one year ago the consequences are not so obvious yet. The amount of environmental plans and action programs increased during the project. Some SMEs have decided to continue the environmental work by securing an EMAS registration. Several companies have definitely enhanced their environmental skills. Similar projects with slightly differing objectives are underway in the region, attracting different types of firms. The awareness of environment is increasing in the region.

Results obtained

Positive project results have been obtained:

- increased environmental competence within the SMEs has prompted work to secure an EMAS registration and/or ISO certification, environmental plans within the enterprises and other new initiatives with a spirit of sustainable development;
- enhanced competence on environmental management among the consultants;
- better co-operation between the public and private sectors;
- new networks;
- development of the EMAS guide, a PC-based multimedia programme containing all elements a company has to go through to get an EMAS registration or an ISO 14001 certificate.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension:

The project led to a greater environmental awareness of the participating SMEs and also a greater acceptance of the sustainability concept. Future environmental plans and work towards EMAS registration and/or ISO certification will follow. In a long-term, some SMEs will change their methods of production or their products to achieve sustainability and, as a result, reduce pollution and waste production.

Economic dimension:

Generally the project is supposed to lead to increased competitiveness for the SMEs due to the higher environmental competence. In a long-term, the reduction of pollution and wastes should decrease the costs for the companies, e.g. by reducing pollution taxes and direct costs for waste transport and treatment, but also for the communities by the overall decrease of pollution. The creation of new "green" jobs within companies and consultant agencies will be another positive effect in the long-term and should be considered as part of the socio-cultural dimension.

Socio-cultural dimension:

The project has contributed to developing a new spirit of understanding between SMEs, various authorities and consultants. New networks and partnerships have been set up between companies of related sectors and consultant agencies of different types (environmental or economical consultants). In general, the project raised the awareness to the need for more environmental protection and sustainable development. In the long-term, unemployment should decrease thanks to the creation of new jobs in the environmental sector.

Equity dimensions

Inter-regional equity:

Increasing the environmental quality of production and decreasing pollution and wastes generally contribute to inter-regional equity, by reducing environmental impacts on other regions. Besides, the improvement of the quality of life and the creation of new jobs might lead to a higher attractiveness of the region and induce migration processes in the long-term.

Inter-temporal equity:

The reconciliation between business and environment ensures the inter-temporal equity by working towards a sustainable development that strengthens the economic competitiveness while preserving resources and protecting the environment. Thus, the project is supposed to improve the quality of life of the region in the long term.

Systemic principles

Diversity :

All projects leading to a better protection of the environment also contribute to the preservation of biodiversity. It might also have a positive effect in terms of diversity of economic activities and employment. However, these effects on diversity are not immediate.

Subsidiarity, partnership and participation:

The project success is based on the companies' will to decide what to do in the future. The project was a new start for those enterprises that can see possibilities of future development in increased environmental competence and of working with environmental management systems.

Many companies were offered to join in - sixty of them showed an interest. The SMEs' free choice to join in somehow guaranteed the success of the project. The voluntary commitment of the participating SMEs (also contributing financially) is an important factor for the outcome. Of course, the commitment has to do with profile, management, financial resources and long term objectives within each SME. New partnerships developed, not only between SMEs but also between consultant agencies.

Besides, the project could be shown as an example. Many similar projects are underway just now.

Lessons learned and difficulties encountered

The real results of this pilot project will become more evident later as the goals must be looked at from a long term perspective. The project strengthens the link between environmental, economical and social development in the region and has received a lot of attention throughout Sweden for its sustainability approach.

The important lessons concern those methods needed to attract companies which often implement different approaches and policies and the realisation that these differences require individual treatment. It is also important to realise that one project is not enough to achieve the goals, and the methods need, therefore, to be tested in larger scale. However, many SMEs lack the financial means to address sustainability professionally and require aid from the public sector, at least at the start of the new business direction.

Reproducibility of the project in another environment

Reproducibility of the project is excellent. Many regional projects of similar character are being conducted in Sweden right now. The marketing and sale of the EMAS guide is proceeding smoothly and a new updated version is being prepared. Translation of the EMAS guide into English and probably in German is being contemplated, particularly as contacts have also been established abroad.

Project n° 2

COMMON GOALS TOWARDS SUSTAINABLE DEVELOPMENT / MILJÖ I VÄST - AGENDA 21

SUMMARY	The aim of the project was to create networks and increase knowledge about sustainable development in the province. The project supported a description of the environmental state of the province everyone could agree on, and then also served as a focusing point for environmental goals, and allowed measures to be taken.	
KEY-WORDS	Mutual understanding, knowledge, environmental goals, co-operation, sustainability	
STRUCTURE RESPONSIBLE AND PARTNERS	<ul style="list-style-type: none"> • Provincial Government, • the Bohus County Council, • the City of Göteborg and the Organisation of Municipalities of the Göteborg area and many local and regional NGOs 	
CONTACT	Hans Oscarsson, Provincial Government of Göteborg and Bohus, S-403 40 Göteborg. Tel +46 - 31 - 605736, E-Mail: Haos@o.lst.se	
DURATION OF THE PROJECT	First phase 1993-1995	FOLLOW-UP Currently under examination
SPHERE OF	The whole province plus three municipalities in adjacent provinces	
TOTAL COSTS	ECU 0.8 million	
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The result of the international ecological conference held by the UN in Rio de Janeiro in 1992 initiated a discussion in the Province of Göteborg and Bohus about how to address environmental issues and to implement sustainable development at the regional level.

The environmental and health issues in the region markedly differ today from the situation after the Second World War. At that time it was easy to pinpoint the effluents and review their effects. These types of problems have decreased over the years and it is our lifestyle which today mainly causes damage to our health and environment, thereby preventing sustainable development. It is all due to our transportation, production, consumption and way of cultivating the land, woods and waters. The effects appear after a very long time, thus making it difficult to assess the real ecological state of the region today.

To be able to carry out measures aiming at a sustainable society, it's important to achieve a description of the state of the environment of the country on which we can all agree and also to gather together around environmental goals. All institutions and NGOs must take part in the process so as to go forward. If everyone is aware of, and agrees on the goals, the next step, i.e. the measures, will be much easier to implement.

Aim

- To avail of a description of the state of the environment in the province which can be accepted by the majority;
- To draw up environmental goals for the province that can be accepted by the majority;
- To foment an open dialogue and several networks to enhance knowledge and understanding about sustainability;
- To increase the speed towards sustainability by creating mutual values.

Actions carried out and partners involved

The project aims at a region with a diverse and healthy population living in an environment benefiting from sustainable development based on the proper long-term management of natural resources and a society meeting the constraints of what man and nature can tolerate. To this end the project process makes use of an open dialogue and several networks to increase knowledge and understanding.

Discussions led to an agreement between the Provincial Government, the Bohus County Council, the City of Göteborg and an Association of Municipalities of the Göteborg Area in the spring of 1993, to launch a comprehensive ecological project named "Miljö i Väst- Agenda 21" (Here we called it "Common goals towards sustainable development")

These four initiators decided to manage the project by setting up an organisation with a political board, a steering- and program-group, several reference-groups and a project-secretariat. The Chairman is the Governor of the Province.

Besides the four initiators, many other organisations and representatives of the industry were invited to take part in the project.

Results obtained

So far, the project process has included the following main activities in the region:

- Two teams have provided the descriptions and analyses of the current state of the environment in nature and in four urban areas respectively;

Two other teams have defined environmental quality, quality goals and to some extent, goals for loads, discharge, results and actions. The goals comprise human health, natural resources and biological diversity. A report with the goals assembled was disseminated for comments to the reference-groups, the municipalities, associations and other actors interested in environmental policies and problems;

Subsequently, the results were presented in a report titled "Facts about health and environment".

As a result all municipalities have adopted the same goals in their plans. This in turn has been the starting point for a large project between three municipalities and two regional governments working in a catchment area.

- Five strategy-teams have made analyses about the possibilities and alternatives to reach the goals presented for health and environment in the region. The teams have tackled the following subjects: sustainable transport-systems, sustainable energy-systems, chemicals and the sustainable society, sustainable life in rural areas and sustainable life in urban areas.

The teams have shown how conditions can be tailored, obstacles removed and, in some cases, processes developed to reach the goals. Based on this the project-secretariat has written a book with the aim of inspiring the actors on the "Marketplace-Agenda 21".

- The strategy-teams will gradually expand to incorporate an increasing number of actors. Together and with a joint responsibility the actors form these "Market-place Agenda 21" or Regional development-groups where they put the strategies into practice, negotiate and formulate their agreements and decisions about actions for sustainable development. The documentation of this process, the agreements and decisions have formed the final report of the project as an inspiring introduction to the continued process in "Market-places" and Regional development-groups after June 1995.

- A main theme running through the project are the information activities managed by an information-group and an editorial staff. The booklets, reports, background reports, working papers and other documentation produced within the project comprise a large number of titles.

The newspaper "Miljö i Väst" is published every two months. It is an important connection between all those involved in the project and a good inspiration for the others to take an active part in the process.

An exhibition "Miljö i Väst - Agenda 21" has been arranged for five months at the Museum of Natural History in Göteborg.

Several seminars have been held as a support to the work in the teams and groups and to develop knowledge and understanding among people about the conditions of survival and sustainable development.

Networks for schoolteachers, schoolleaders and the local Agenda 21-secretariats have been developed.

The project "Towards common goals" has started a process which the initiators hope will continue, but in other forms with further political energy and representatives of the municipalities, the trade and industry, universities and non-profit associations among others. It has been proposed that a "Regional Board for Sustainable Development" made up of representatives of the main actors could be a tool to move the process further in the spirit of the Agenda 21.

During 1997, the project results will be examined.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension:

The project has reached its goals to create by means of an environment assessment, a mutual view on the state of the environment, permitting to define environmental goals for the future. Moreover, the knowledge about environmental problems has greatly increased in the province. In the long term, raising the awareness about the environment and sustainable development should contribute to a more environmentally-friendly policy and individual behaviour.

Economic dimension:

So far, no direct economic effects have been established. However, it seems reasonable to believe that it will be profitable if we all go in the same direction, and if the sustainable use of resources and the protection of the environment are economically more viable in the long run than short term (over-)exploitation.

Socio-cultural dimension:

Considerable networks have been created between authorities, institutions and several types of organisations. It is evident that the project has contributed to an open dialogue between all actors involved. Raising the awareness of individuals, groups and communities was one of the main objectives and strong points of the project.

Equity dimensions

In terms of equity, it is difficult to point out immediate results of a project that aims to raise the general awareness of the need for sustainable development. However, the long term effects of such campaigns are likely to influence interregional equity, by reducing transport, pollution, etc. On the other hand, sustainable resource management and environmental protection which should be improved by the project in the long run, can be looked at as positive with respect to inter-temporal equity (conservation of resources, preservation of the natural and cultural heritage...).

Systemic principles

Diversity :

No direct effects can be pointed out, although positive long-term effects are likely.

Subsidiarity, Partnership, Participation :

The distance between authorities and organisations and the general public has decreased. It has become easier for people to pick up the phone to contact different civil servants for discussing environmental matters.

Lessons learned, difficulties encountered

The project has been successful and achieved most of the goals. It has probably created an higher degree of awareness with respect to sustainable development. However, the project took much longer than expected because there were so many participants from different organisations and with so different backgrounds.

Reproducibility of the project in another environment

This approach can probably be reproduced in most other regions and we also think that it is important or perhaps necessary to enjoy a broad support to be able to implement environmental measures successfully.

Approaches and Experiences

THE REGION OF
MIDI-PYRÉNÉES
(FRANCE)

FFFF



THE REGION OF MIDI-PYRÉNÉES



CHARACTERISTIC DATA AND FACTS

With the largest land area in France (larger than Belgium), Midi-Pyrénées has long been regarded as the edge of the European area with the Pyrenees. With the advent of a larger European Union, it has become the crossroads of the Atlantic and Mediterranean, Northern Europe and Southern Europe.

Looking at Midi-Pyrénées, from the Massif Central to the Pyrenees, through the plain of the Garonne river, natural unity is lacking. Indeed, as a result of an administrative breakdown piecing together parts of the former provinces federated by the common identity of the Occitan culture, the regional territory is both rich and diverse.

Demographic contrasts are worth looking at. In 1990, 36.4 percent of the population lived in 27 municipalities of more than 10,000 inhabitants concentrated in 3 percent of the territory. As a rural area from a historical perspective, Toulouse and its suburbs now accommodate one-quarter of the whole population of the region. Likewise, employment is highly concentrated. Out of 3,019 municipalities, 19 offer one-half of the regional employment, while Toulouse and its suburbs take up 45 percent of the economically active population.

The development of Toulouse and that of the regional economy, mainly dominated by the tertiary sector, are the main factors of change in the region. Traditional industries like leather, textile, clothing, metal-working, are going through difficult times but the momentum of Space and Aeronautics, to say nothing of the agro-food industry, has softened the effects of this decline.

Despite a rural decline and an ageing farmer population, Midi-Pyrénées is still very much oriented toward farming with 10.5 percent of its active population (twice the French average), engaged in this sector. Generally, earnings from intensive agriculture over highly specific areas are low. As a point of fact, the added value and the reputation of Midi-Pyrénées agriculture are based on specialized, high quality produce (wines, fruits, cheeses, ducks, etc,...) which are strongly supported by regional policies.

Tourism which is based on the richness of the natural and cultural heritage contributes a substantive amount to the regional economy. In 1996, Midi-Pyrénées ranked second among French regions for tourism.

Finally, the Region possesses an exceptional teaching and research "breeding ground". If Toulouse conurbation is the second French university centre, Midi-Pyrénées comes fourth for research.

Area: 45 348 sq.km
 Division: 8 departments, more than 3 000 municipalities
 Population: 2,5 million inhabitants
 Density: 54 inhabitants / sq.km
 (France: 104 inhabitants / sq.km)
 GIP: (1992): 38,5 billion ECU
 (15 640 per inhabitant)
 Unemployment rate: 12.4 %

REGIONAL COMPETENCES

Although the State has retained the law-making capability and enacts its policies based on its main directions, the French administrative framework has undergone definite changes since the decentralization laws of 1982.

As regional authorities of their own since 1986, supplementing the municipalities and départements, Regional Councils have been entrusted with the competence to “promote economic, social, health, cultural and scientific development and land use planning to preserve the regional identity while respecting the assignments and autonomy of “département” and municipalities.

Regional resources are secured in various ways: through direct or indirect taxes, State endowments made up of the transfers of revenue, corresponding to the transfers of competences, loans, and European Union allocations.

The Region’s primary mission is to carry out City and regional planning and economic development, particularly through the exercise of its competence in the field of Education (erecting and maintenance of “lycées”), vocational training, transport, tourism, the environment and, in particular, the creation of Regional Natural Parks, to which is added in Midi-Pyrénées (the only French region to have accepted this transfer of competence): the responsibility for drawing up a Regional Scheme for the Disposal of Special Industrial Wastes.

Convinced of the territorial pertinence of the regional level for the identification of issues at stake, Midi-Pyrénées has been keen on steering and coordinating initiatives, supporting and speeding up regional development. To do so, it works in close collaboration with such entities as the municipalities, inter-communal structures, the General Councils or vocational and Chamber of Commerce agencies, and associations.

For 1995, the Regional budget amounted to ECU 450 million including one percent earmarked for environmental expenditures.

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Ongoing changes have markedly altered the traditional, natural, socio-economic and cultural balance. Indeed, these changes that have taken place throughout western countries, have led to specific problems and a fortiori new potentialities in a rural-dominated region that has been relatively sheltered from the negative impacts of industrialization in the nineteenth century.

Environmental problems

The main issues are derived from the Region's marked contrasts in terms of land use. On the one hand, the development of an intensive agriculture in the plain region leads to ground and water pollution and, locally, to enhanced erosion. Water needs for agricultural purpose regularly raise the issue of water resources. On the other, the desertification of numerous rural and mountainous areas leads to generalized fallows, a loss of traditional landscapes and less land diversity and increased potential fire hazards.

In addition, the outdated character of traditional industries, particularly the leather industry, textile and metal-working are major causes of pollution of water and soil equally threatened by the unauthorized dumps, industrial wastes, industrial wastelands and organic wastes.

Economic problems

The decline of traditional industries along with the adaptations required and the need for SMEs to create new outlets are the main economic problems. In addition, the gap between research activities and the companies of the Region limits direct economic spinoffs.

In rural zones, the decline of agriculture has led to a sharp fall in the value of farms, and serious economic hardships with farmers moving away from the countryside to the city; thereby reinforcing the trend toward a concentration of activities and pollution in Toulouse.

Socio-cultural problems

Unemployment reaches 12.4 % and is more particularly important among the young population. At present, it undoubtedly constitutes the main challenge. Long duration unemployment leads to marginalization or even reduces a fringe of the population to destitution with the resulting consequences while the rural decline and the loss of landscapes and traditional know-hows leads to an identity crisis.

RESPONSES AND OBSTACLES WITHIN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

Definitely going against the current wave of internationalization, the regional approach mainly relies insofar as directions are concerned, on a carefully thought out and controlled policy of City and regional planning based chiefly on a better use of know-hows, resources and the territory.

Notwithstanding its legal competence, as early as 1990, the Regional Council took an active part in mobilizing the numerous public and private actors (elected representatives, administrative staffs, scientific personnel, associations, industrialists, farmers, etc,...) and setting up sound partnership networks for the promotion of the regional environment.

The organization in 1990 of the First Regional Conference on the Environment gathering more than 1,000 people has led to the definition of 41 practical proposals (the so-called Green Plan for Midi-Pyrénées) which the Region has fully implemented with the partners concerned, assisted in this by the creation of the Agence Régionale pour l'Environnement and the Maison Régionale de l'Environnement' (head offices of the regional associations for the protection of the environment, meeting place, exhibition center, etc,...)

¹ Regional Agency for the Environment and Regional House for the Environment

In 1992, on the basis of the Rio recommendations and of the “5th Community Policy and Action Programme for Sustainable Development and the Environment”, the Regional Council of Midi-Pyrénées organized jointly with the French and Spanish Pyrenees regions and the State of Andorra, the “First Pyrenees Conference for Environment and Development “ which opened up a debate and led to strategic proposals on Sustainable Development in the Pyrenees .

In January 1996, the Regional Council staged the “Regional Conference for the Environment and Sustainable Development.” Thus, 21 proposals were discussed, representing trends, approaches and tools to be implemented within the framework of a regional Sustainable Development. Previously, a survey of 93,000 households in Midi-Pyrénées had given insights into the consumer practices and risen the awareness on the conditions needed to better protect the Environment.

This Sustainable Development rallying effort continued in 1996 and 1997 at the European level. Indeed, as part of the implementation of Chapter 13 of Agenda 21, Midi-Pyrénées staged the “European consultation of NGOs on Sustainable Development in the Mountains” based on a survey of more than 5,000 NGOs from all over Europe and the “European Conference of NGOs” which gathered together more than 100 attendees from 24 countries. During this conference, recommendations to Governments and the European Union were made concerning Sustainable Development of mountains.

Aware of the need for assessment and follow-up tools, the Regional Council, relying on the works of the Regional Conference and on the “advent” of Sustainable Development put forward a series of indicators allowing all the Regional policies to be assessed. The plenary session of elected Regional members on Sustainable Development on March 28, 1997 additionally prompted a broad political debate on practical actions required to include the City and Regional Planning of Midi-Pyrénées in the Sustainable Development perspective.

Aware of the natural and cultural richness of its territory, of the potentiality of a number of processes, notably in agriculture, and of the opportunities created by the mobilization of actors, the Regional Council focuses its interventions on the reasoned city and regional planning. Firstly, the Regional Council has identified new “learning areas” of Sustainable Development.

- The Regional Natural Parks (so far, three parks, one of which is being set up), constitute valuable legal tools for land use planning, based on a strong local identity to provide the protection, management, and economic and social development of the territory concerned.
- the Regional Council also relies on about fifty “territorial contracts” which it drew up and proposed, based on the same spirit of “reappropriation by man of his own territory”.
- With respect to the agricultural sector which is essential to the life of these territories, several investigations and actions have been initiated in connection with the “Agricultural Sustainable Development Plan”, the “Conservatory of the Biological Heritage of Midi-Pyrénées”, and more particularly, the preservation and better use of species and breeds threatened with extinction. Various experimental programmes and pilot actions for fodder crops appropriate to the local conditions or erosion control programmes have been established while experiments designed to enhance production and traditional systems based on quality trademarks were initiated.
- With respect to the industrial sector, and beyond the promotion of environmental research and of the so-called “clean technologies” the Regional Council has commenced a voluntaristic policy (“to produce clean”) whose aim is to help Midi-Pyrénées SMEs better manage the impact of their activities on the Environment while preparing them as best as possible for the ISO 14 000 certification approach (International Standard Organization) or “EMAS” (European Eco-Management and Audit Scheme).

Structured around coordination and pre-diagnosis, training of responsible for each a company and accompaniment in the eco-audit process, this operation is all the more interesting for numerous SMEs as they can expect financial support and attractive bank loans. The new competence of the Regional Council in drawing up and revising the Special Industrial Wastes Disposal and Reduction Plan significantly increases in this context the possibilities of intervention.

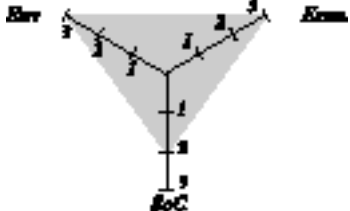
The mobilization momentum initiated a few years ago in Midi-Pyrénées appears as the best opportunity to open up prospects for a more sustainable regional development. It is essential to proceed in that direction and to confirm the socio-political progress already made. In this respect, the definition and dissemination of, and the reference to, clear and pertinent indicators appear to be the most useful approach for Regional actors from a methodological viewpoint.

EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

On the basis of the competences that are those of the French regions, Midi-Pyrénées has initiated a voluntaristic approach to raise the awareness and mobilize all actors so that they better take into account the principles of Sustainable Development.

The projects presented reflect this approach. In the two cases, the mobilization of local actors (farmers, craftsmen, local communities), along with their active involvement and even reappropriation of the projects by the interested parties themselves, are the main characteristics.

In addition, the projects address the main issues of the Region: farm lands abandoned and the resulting lands laid fallow, economic phasing out of rural sectors with the related depopulation and migration towards the city, and long duration unemployment which has become the main social challenge.

<p>These issues correspond to the main responsibility: city and regional proposed which reinforce the protection of the Environment</p>	<p>These areas in which the French Regions have been assigned their main responsibility: city and regional. The solutions proposed which reinforce the local economy, soil identity and subsidiarity while participating in the protection of the Environment while proposing a mode of conservation economically viable that ensures a high quality production,</p> <ul style="list-style-type: none"> - to structure the development of technology by the mobilisation and dialogue between the local actors involved, - to contribute to the use of renewable energies replacing fossil energy, thus limiting air pollution, and - to facilitate the preservation of grasslands and of planted meadows with long-term turn over. 	
<p>KEY-WORDS</p>	<p>Forage drying, demonstration project, energy, grassland conservation</p>	
<p>STRUCTURE RESPONSIBLE AND PARTNERS</p>	<p>SOLAGRO, Association governed by the French law of 1901 European Community (DG XVII, Programme Thermie) Regional Council of Midi-Pyrénées, ADEME Midi-Pyrénées General confederation of Roquefort, farmers, centers for construction material, Electricity of France (EDF)</p>	
<p>CONTACT</p>	<p>Jean Luc BOCHU, SOLAGRO, 219 Avenue de Muret, 31300 Toulouse, France. Tel:+33 (0)5 61 59 56 16.; Fax: +33 (0)5 61 59 98 41.</p>	
<p>DURATION OF THE PROJECT</p>	<p>3 years (1993-1996)</p>	<p>FOLLOW-UP:</p> <ul style="list-style-type: none"> • local coordination by a new association of farmers • extension to other regions (France-Spain-Germany-Portugal network) • evaluation of a possible use for other applications (seeds...)
<p>SPHERE OF</p>	<p>local</p>	
<p>TOTAL COSTS</p>	<p>546 400 ECU</p>	<p>among which 164 670 ECU of the CE 83 710 ECU Regional Council of Midi-Pyrénées /ADEME 298 020 ECU SOLAGRO and farmers</p>
<p>ASSESSMENT SYNTHESIS</p>		
<p>Env. = environmental dimension</p>		
<p>Econ.= economic dimension</p>		
<p>SoC = socio-cultural dimension</p>		

Project n° 1

SOLAR DRYING OF FORAGE IN THE REGION OF ROQUEFORT

DESCRIPTION

Initial situation and problem:

Drying of agricultural produce is one of the most common technique of conservation in the world, and without any doubts, one of the oldest. The traditional methods of drying: in the field for forage, in well-ventilated boxes for maize, etc. used natural energies such as wind and sun. Nowadays, new techniques are being introduced which are compatible with modern farming: refrigeration, dehydration, drying by forced ventilation or fermentation by ensilage.

These methods entail drawbacks: the efficiency of the traditional techniques is limited by the weather conditions, while the current techniques often need considerable energy input, usually in the form of fossil energy. Furthermore, ensilage supposes an intensification of farming based in most cases on planted annual meadows (Ray-grass...) or maize; generally the quality of ensilaged forage is lower than dried forage.

Following the ois crisis in the seventies, a reflection was started in South-West France, in the Laboratory for Rural Energy of the National High School for Agronomy of Toulouse (ENSAT), to study the possibilities of a new technology: solar drying of forage in barns. The work was organised with a double approach in mind: to study technical aspects of such a method (design, characteristics of solar panels), and to evaluate the benefit of solar drying for the farmers from a socio-economic point of view.

Aim

The objectives of the project were:

- to develop and promote a high quality method of forage conservation which would be both economically viable and environmentally friendly, thereby supporting the local economy;
- to contribute to saving non-renewable energy and to promote solar energy;
- to promote modes of operation that limit negative impacts on the environment and landscapes.

Actions carried out and partners involved

30 solar forage drying facilities in barns have been installed in sheep breeding farms producing the milk used to make Roquefort cheese. They were added to 20 solar drying facilities for forage, seeds and medicinal plants that have been existing in the South-West of France and in Portugal since the 80's. The approach was based on mobilisation and raising the awareness of all potential actors in the area concerned.

The facilities make use of traditional construction techniques and can even be constructed without an expert's help. In fact, the panel which receives the solar radiation is made up of the roof of the agricultural building; to increase temperature, it is dark. An isolating layer is installed below. The air circulates between the roof and this layer, being warmed-up and ventilated in the barn. The hotter and drier, the higher the "evaporation capability". The solar panels increase the temperature by five degrees which will double the evaporating capability of the air.

Energy saving is effective not only in terms of petrol (less or no heating), but also electricity (shorter ventillation time).

The programme was completed within the framework of the Thermie programme of the European Commission (DG XVII), supported by the General Confederation of Roquefort, the Regional Council of Midi-Pyrénées, the Agency for the Environment and for Energy Management (ADEME), the farmers, enterprises selling materials for construction, and Electricity of France (EDF).

Results obtained

This demonstration project has highlighted the benefits of using solar drying.

Compared with ensilage, solar drying allows:

- harvesting at the optimal vegetative stage in terms of nutrient quality, a better spreading of the harvest, a limitation of losses linked to climatic risks, a better forage conservation, a reduction of the risk of deterioration following bad ensilaging. Consequently, solar drying contributes to less food being purchased and brings about a higher security to farmers.
- a reduction of costs in terms of veterinary expenses and for renewing the livestock, as well as an increased milk quality. Indeed, forage drying avoids the spreading of pathogen germs deteriorating the quality of milk that may occur in case of ensilaging.
- a reduction of working time of about 10 to 15%.

- the possibility to enhance natural grasslands and cultivated meadows with mean- or long-term turn over, few productive and, thus, economically not viable in case of ensilage that supposes intensive farming. Thus, solar drying emphasises the preservation and restoration of grasslands of a generally high biodiversity. It also contributes to the preservation of traditional landscapes and to the reduction of fertiliser and pesticide input resulting from intensive farming.

Compared with traditional forage drying, solar drying allows:

- faster drying.
- considerable energy savings. Indeed, one solar drying facility allows to about 5000 litres of fuel to be saved per year. For the 30 facilities, this represents an annual energy substitution of 120 tonnes of petrol. Simultaneously, about 40 % of electricity is saved, as ventilation time is considerably reduced.
- reduced pollution. For the 30 facilities, 350 tonnes of CO₂ , 720 kg of SO₂ and 250 kg of NO_x could be avoided.

Furthermore, the project contributes to regional development. The programme generated activities for about 370 000 ECU, mostly with local crafts and companies. Thus, the project has contributed to the maintaining and promoting of a relevant local activity.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension:

The project meets a double environmental concern: on one hand, solar drying reduces the consumption of non renewable energy and of the resulting pollution. On the other, the project emphasises the enhancement of natural grasslands and cultivated meadows with long turn over, and reduces potential fertiliser and pesticide input resulting from intensive farming and ensilage. It also contributes to the conservation of traditional landscapes and to the reinforcement of biodiversity.

Economic dimension:

The technology used has obvious advantages in terms of quality and competitiveness: optimisation of the harvest and decreasing purchase of additional forage; increased quality of forage and milk, leading to a higher cheese value; improved health of the livestock and reduction of various costs (veterinary, energy, investments and working time).

Furthermore, the project contributed to rural development, enhancing areas where productivity was low by promoting the activities of local crafts and companies providing construction materials. The economic viability of the project after reduction of or end to public subsidies demonstrates its economic interest.

Socio-cultural dimension:

The project reinforces the identity of the region by stabilising the rural economy. Furthermore, by maintaining of traditional landscapes and improving the quality of a symbolic regional product, the project has prompted a new impetus at a local level. This mobilisation was made possible by the creation of an association of farmers that currently promotes solar drying. The experience gained through exchanges between beneficiaries, local actors and decision makers has slowly led to a change in mentality inside the decision making structures. This process should favour the completion of new facilities in the future. On the other hand, solar drying emphasises family work (harvesting for three weeks), whereas ensilage needs mutual aid of farmers (harvest implemented in a few days, then work for the neighbour).

Equity dimensions

Inter-personal equity:

Generally speaking, the project has allowed to reinforce farming and craft industry at the local level creating work for people with a low level of education (construction...). With respect to the farm, drying led to a better work distribution and enhanced the value of the work of women who often participate in the harvest doing half of all work done.

Inter-regional equity:

By reinforcing the local economy and stabilising the income in rural areas, the project contributes to maintaining an active population, avoiding a migration of peripheral areas to urban centres, participating thus to the inter-regional equity.

Furthermore, the utilisation of renewable energies reduces the dependence on other regions (fuel, electricity), while reduced pollution (in particular air and water) decreases the impact on neighbour regions. Finally, the project has supported international exchanges, at the level of research laboratories and by being applied to different regions and productions (creation of a network).

Inter-temporal equity:

The economic viability of the project contributes to stabilising the rural economy in the long term (crafts, production of a high quality product: Roquefort cheese). The improvement brought about by this technology is considerable for the farmers already working. On the other hand, it may promote the return of young people to the farm and increase the life quality for future generations. It should also be pointed out that energy saving, reduction of pollution and conservation of the diversity are positive results in the long term.

Systemic principles

Diversity:

The exploitation of extensive grasslands as a result of solar drying of forage directly contributes to maintaining these grasslands which are a part of our heritage and of the landscape diversity of the region. In some cases, solar drying may prevent an overall reorganisation of land which is often indispensable in case of intensive farming. At the level of plots, by maintaining natural grasslands, it contributes to the conservation of biodiversity (flora and fauna) of open extensive areas. Solar drying also allows for one-species meadows (Ray-grass), planted for a short period, to be replaced by different types of meadows intended for longer times.

On the other hand, the development of solar drying reinforces the diversity of the rural economic activity.

Subsidiarity, partnership:

The concept of solar drying was first put forward at the University (applied research), but the project described was initiated and implemented by an NGO: SOLAGRO. It is supported by the European Union, the French State through ADEME and by the Regional Council of Midi-Pyrénées. Certain farming organisations that expressed reservations about the project initially seem more favorable now.

The technical input and the initial supervision, from University and SOLAGRO, proved indispensable. SOLAGRO currently works on an extension of the project to other geographical zones (network in France, Spain, Germany, Portugal). On the other hand, the local construction material enterprises are interested in disseminating the technique locally.

Participation:

The project generated a dynamics at a local level. Promotion was mainly secured through personal contacts between farmers and local artisans. The follow-up was organised by the farmers who set up an association in September 1996. The project is now implemented and promoted by the local actors, fulfilling all necessary conditions for a better acceptance and for success in the future.

Lessons learned, difficulties encountered:

The project strengthens the interest of a mixed approach aiming simultaneously to support the local economy, protect the environment and reinforce social dynamics. The highlights of the project lie in the technical innovation, collaboration with the University - NGO - local actors and the creation of an association providing the follow-up. It should be outlined that the success of the project is closely linked to an individual initiative and implication.

No specific difficulty can be pointed out as far as the technology is concerned. However, the difficult integration in the agricultural sector considerably slowed down the project implementation. Further information of all potential beneficiaries will certainly allow this new technique to be soon better taken into account.

Contribution to resolving the regional problems

The project addresses the regional issues at two levels: on the one hand, it stabilises the rural economy and the image of the region (high quality production), thus avoiding rural exodus. On the other, it contributes to the protection of the environment, by saving non-renewable energy, reducing pollution and maintaining traditional landscapes.

Reproducibility of the project in another environment

On the one hand, solar drying of forage can be developed in all stock-breeding regions, particularly in milk production regions where quality improvement is a priority. It could also be developed in more favoured regions, if farmers wished to contribute to environment protection and improve both life quality and the quality of their produce. There exist no geographical limits: this easy to implement technology can be used in all stock-breeding regions, in the North and South of Europe, as well as in all developing countries.

On the other hand, providing some adaptations of the existing technology are made, solar drying can be used for a wide range of applications which have not been all tested yet. Solar drying of several products has already been experimented or developed, e.g. seeds, medicinal plants,

SUMMARY	Subsidies have been given for the creation and maintainance of fire-breaks by farmers, mainly by grazing, to reduce fire hazards, to develop the local economic activity, increase the quality of landscapes and improve the current situation of land-control .	
KEY-WORDS		
STRUCTURE RESPONSIBLE AND PARTNERS	Local economy, land management, hazard prevention, subsidies for farming, agri-environmental measures,ECC article 19.	
CONTACT	Implementation: District Direction for Agriculture and Forest (D.D.A.F.) of the Lot district, in collaboration with A.D.A.S.E.A. (Association Départementale pour l'Aménagement des Structures des Exploitations Agricoles). Technical Assistance: District Council, Regional Council, National Forest Office (O.N.F.).	
DURATION OF THE PROJECT	Local animation: A.D.A.S.E.A., in collaboration with persons locally in charge of farming	Isabelle Lapèze, Charles Tapie, A.D.A.S.E.A. du Lot, Maison de l'Agriculture, BP 199 46004 Cahors Cedex, France Tel.: +33 (0)5 65 23 22 70 Fax: +33 (0)5 65 23 22 79
SPHERE OF	1990 - 1995	FOLLOW-UP • The land maintenance by farmers is
TOTAL COSTS	pursued without any remuneration:	the exploitation of the areas has become economically viable. • A national audit is planned, to evaluate the project and envisage an extension of subsidies (continuation of the project, geographical extension).
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

grapes, garlic, rice, cod, pepper, beans, mushrooms, plums, figs, bulbs of flowers, etc. The solar drying technique features an important development potential.

MANAGEMENT OF FIRE-BREAKS BY MEANS OF PASTURES IN THE LOT DISTRICT

.....

DESCRIPTION

Initial situation and problem

The area concerned, 43 000 hectares of dry, stony and hilly ground, is situated in the valleys of Lot and Célé (Lot district). Sparsely populated (10 inhabitants per km²) and mostly covered by woodland, its tourist appeal is linked to the landscape diversity and to the rich ethnographical and cultural heritage.

The progressive abandonment of traditional agricultural activities and the distribution of land leaving a major part to non-resident owners has promoted the emergence of shrub and reforestation with conifers that caused several fires in 1989, burning over 2000 hectares of forest (nearly the total national forest of the district).

Considering their important ecological and economic consequences and to prevent these hazards, farmers and competent authorities decided to initiate a programme of restoration of fallow land and of spontaneous woodland through pastoral activities, focusing on strategic sites for fire fighting purposes.

Aim

The project objectives were numerous:

- fire prevention by creating and maintaining of fire-break tongues
- assistance to the local economic activity (farming)
- landscape management and preservation/restoring of the biological diversity
- improvement of the recent situation of land-control

Actions carried out and partners involved

Two procedures have been implemented:

- application of the European regulation of article 19/N° 797/85),
- accompanying measures.

After one year of local mobilisation and of preparation studies, the first actions have been implemented in 1991 by means of a "grouped operation for remodelling of land-ownership" (OGAF) within the framework of the application of agro-environmental measures (regulation 19).

Farmers accepting to maintain fire-breaks for a period of five years received an annual subsidy per hectare. The commitments were formalised by contracts.

The amount of subsidies varied in relation to the work done. Maintenance through sustained pastures of enclosed areas was paid about 32 ECU/ha per year, mechanical clearing for two years in addition to pasture 57 ECU/ha, transformation of shrubs in sowed meadows 115 ECU/ha, manual clearing in woodlands in addition to pasture 165 ECU/ha, and planting, maintenance and cutting of meadows in areas with particularly low agricultural potential 180 ECU/ha.

For the objectives of OGAF to be attained, accompanying measures have been implemented permitting farmers to adapt their farms to the new constraints linked to the maintenance of the environment: subsidies for the creation of fire-breaks and enclosures, for equipment, for the restructuring of ownership, for coordination.

Local coordination was ensured by A.D.A.S.E.A., in collaboration with the municipal responsables in charge of facilitating the contacts between farmers and the coordinating organisation (ADASEA).

A steering committee has been established, composed of the president of the OGAF commission, representatives of the agricultural profession, local associations for the protection of nature, the fire brigade department (S.D.I.S.) of the district, the National Forest Office (O.N.F.), the regional and local administration and the local delegation of the CNASEA. The committee's role was to define the main principles and the agreement to specific projects.

Results obtained

Encouraging results have been obtained in relation to all the objectives mentioned above.

fire prevention:

planting and maintenance of 3 200 hectares of fire-breaks, distributed in strategic "stripes" areas located in fire sensitive areas (mostly ridges), including mechanical clearing, creation of tracks, restoration of meadows and the establishment of 213 km of fences permitting better use of pastures and, thus, better clearing of shrub by the livestock. The "stripes" will serve as natural fire-breaks and, in particular, ensure access of the fire brigade to the area in case of fire. Additionally, farmers and land-owners have become aware of the fire hazard.

development of economic activity:

increase in livestock by 3 600 sheep and about 100 cattle; economic assistance to approx. 80 farms (60 % in the area); sustainable reinforcement of the local economy and of employment (contribution to the conservation or creation of about 15 jobs, remuneration for the landscape conservation work done by farmers).

landscape management and diversity:

re-installation of traditional landscapes and reinforcement of the biological diversity by the return to meadows and dry grasslands; reinforcement of the tourist appeal of the area.

improvement of the recent land-control:

initiation of "transfer for land maintenance". On 35 % of the land concerned, land-control has been reorganised by means of long term conventions, lease or purchase, leading to a more extensive use of land and increased economic reliability of the farms.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

The interest of the project lies in its multifunctionality that led to positive results from an economic, social or environmental point of view.

Environmental dimension:

Completed by a programme for integrated development within the framework of a community of villages and a planned Regional Natural Park, the project has allowed for a concerted policy of re-appropriation of the environment. Land maintenance and restoration of traditional landscapes allowed in particular to preserve the diversity of the area and its variety of plants and animals. Furthermore, the partitioning of the area concerned by means of fire-breaks reduces potential fire hazard and, thus, minimizes its negative impact (leading to uniformity of landscapes, erosion...).

Economic dimensions:

The project has efficiently supported the regional agricultural activity and contributed to saving employment. On the other hand, the conservation of landscapes reinforced the tourist attraction to the region. Relatively high costs can be justified by the fairly large investments made (fences, mechanical clearing...), and by the interest of the results in the long term: indeed, the conditions for a sustainable, long-term preservation of farming activities and, thus, of landscapes seem to be established (investments made, land-control secured...). Since the end of the project in 1995, the maintenance of the areas continues, in particular by means of pastures, without specific remuneration: the exploitation of the enhanced areas has become economically viable.

In the special case of the "Protection of Forests against Fire" projects (DFCI), combined with subsidies for the agro-pastoral sector, the measures are also interesting in macro-economic terms: the expenses incurred for prevention (installation of fire-breaks) lead to direct and indirect economies by reducing potential fire damage (destruction or reduced quality of timber, resulting costs for reforestation, land-management...), by reducing the necessary fire defence system,

Approaches and Experiences

THE REGION OF
RHÔNE-ALPES
(FRANCE)

FFFF



THE REGION OF RHÔNE-ALPES



CHARACTERISTIC DATA AND FACTS

As a privileged crossroads of international relations, Rhône-Alpes ranks second at the economic level with industries engaged in traditional activities (textile, mechanical engineering, chemistry, petrochemistry), and leading edge enterprises in electronics, data processing, biotechnologies, and also asserts its reputation through the quality of its agricultural and agri-food productions from its soil (Beaujolais, Savoy and Côtes du Rhône wines, fruits, cheeses, and poultry).

With a land area of 43 700 sq.km, a population of 5.5 million people (census as of 1/1/95) and a density of 125 inhabitants / sq.km for a French average of 104, the region of Rhône-Alpes is characterized by a young population with a mean age of 37.5 years, one of the youngest in France, living mainly in cities (70 % of the population is concentrated over 10 % of the territory) and by natural "spaces" (the so-called "natural" landscapes, mountains, forests, wet lands, etc,... making up 57 % of the land use).

Rhône-Alpes also features 2 900 municipalities located in 8 "départements" (eg, Ain, Ardèche, Drôme, Isère, Loire, Rhône, Savoie and Haute Savoie).

In addition, it still offers an original urban fabric composed of major cities like Lyons (1.2 million inhabitants live in Lyons and its suburbs, making it the second metropolis in France), Grenoble, St Etienne, Chambéry, Valence, Aubenas, Annecy, Bourg-en-Bresse, etc,... and about sixty other towns of more than 10 000 people.

Finally, Rhône-Alpes boasts a rich and diverse biological and landscape heritage which is both protected in part and supporting winter as well as summer tourism. Rhône-Alpes has two National Parks (Vanoise, Ecrins), 4 regional Natural Parks (Vercors, Pilat, Chatreuse, Bauges) and several projects of Park creation or extension (Haut-Jura, Ardèche chestnut grove), 25 National Reserves covering 59 000 ha, that is, 45 % of the total French reserves area (based on 1995 data) and 170 listed sites.



Area: 43 700 sq.km
 Division: 8 départements,
 2900 municipalities
 Population: 5,5 million inhabitants
 Density: 125 inhabitants per sq.km
 GNP 1994: ECU 1.07 billion (ECU
 18 409 per inhabitant)
 Unemployment rate: 11.5 %
 (versus 12.7 in France)

REGIONAL COMPETENCES

The French laws on "decentralization" of 1982 entrusted the Region with the mission of "promoting the economic, social, health, cultural and scientific development of the Region and its land use planning so as to preserve its identity while respecting the integrity, autonomy and

assignments of the “départements” and municipalities. Then, following the transfers of competence, the Region has been specially entrusted with training people.

To allow for a harmonious development and planning of its territory and to secure a future for its inhabitants, the Rhône-Alpes region set out three priority areas of intervention:

- Education and Training (erection and maintenance of “lycées”, vocational training and apprenticeship support);
- Economic Development and Employment (support to companies, agriculture, tourism, setting up of an Employment Support Fund including in particular subsidies for concerted projects aiming at a collective reduction of the working time as well as subsidies for first time recruitment of young people).
- Regional planning (drawing up of global development contracts on specific territories, organization of regional common transports within the framework of a pilot experiment in France in partnership with the French railway Board SNCF, better use of tourism resources, protection and putting to good use of the environment).

The Rhône-Alpes Region budget needed to embody this policy is about ECU 1.07 billion in 1997 (including ECU 22.9 million) earmarked for the environment (without counting the actions to reduce agricultural pollution, and research on the Environment programmes,...).

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Environmental problems

At the environmental level, the pressure exerted by human activity (industry, nuclear, tourism, agriculture) remains significant.

Rhône-Alpes accommodates 42 plants falling under the "SEVESO" directive and 143 other potentially hazardous facilities.

The region ranks second in France for the production of industrial wastes but has no ultimate waste storage facility despite repeated efforts to create one.

In addition, Rhône-Alpes is the most "nuclearized" region of France with 15 nuclear power stations in operation.

Pollution and degradation of the aquatic environment (rivers, lakes and water tables) remains locally a problem due to a lack of servicing and purification (household, agricultural and, in some cases, industrial pollutions).

Locally a strong pressure is felt as a result of animal excrements (in the Valence plain and Eastern Lyons).

Air pollution mainly occurs in major cities like Lyons and Grenoble.

The natural terrain and landscapes of Rhône-Alpes are gradually undergoing "colonization" owing to urbanization and major construction work (the surfaces occupied by built-up and unbuilt areas, roads and car parks having steadily risen ie, + 21.3 %, +23 % and + 12.5 % between 1982 and 1990).

Economic problems

The economic dynamism of Rhône-Alpes has suffered a number of difficulties and brought about imbalances. Thus, several zones of Rhône-Alpes have been listed under Objectives 2 and 5b.

The unemployment rate is 11.5 % versus a national average of 12.7 % (data as of end of 96).

Socio-cultural problems

From a social viewpoint, the districts located at the periphery of conurbations are faced with social and economic difficulties.

RESPONSES AND OBSTACLES WITHIN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

So far, the Rhône-Alpes Region has carried out a pragmatic policy in terms of sustainable development without actually qualifying it as such.

In particular, this has resulted in:

- a so-called "environment" policy which in many respects equally pertains to the realm of sustainable development aiming at:
 - . the management of the natural heritage, particularly through the use of such tools as the regional natural parks and the rivers and lakes contracts (more than 40 catchment areas are concerned with this type of programmes designed to restore the lakes and rivers in Rhône-Alpes).
 - . the conservation of Energy and development of renewable sources of Energy
 - . the management of household and industrial wastes: (20 facilities for the treatment and better use of special wastes (network of 230 wastes treatment facilities)
 - . Information, public awareness raising: Education of the younger population concerning environment issues.

- Sectoral policies which contribute to sustainable development

In its main spheres of expertise, the Rhône-Alpes Region is progressively assuming a sustainable development strategy. For example, with respect to the erection of lycées the Region innovates with the design of buildings featuring a high environmental standard.

Faced with unemployment problems, the Region actively supports the creation of employment, particularly through agreements designed to reduce working time in companies and also through a system facilitating the first vocational experience of young people (PAPEP), and more specifically applied to the environment.

Other measures, like the environment employment contracts allow for the maintenance or creation of sustainable employment by encouraging environment and landscape maintenance activities.

If the Region contributes to the support of the local economic development, it tries to do so while respecting natural resources.

A Regional Environment Consultancy Support Fund (so-called FRAC) facilitates the recourse to environment consultants by SMEs so as to include the environmental aspects in the development strategy of companies.

In the agricultural or agri-food sector, the Region supports partnership contracts between the rural world and local communities for the management of rural areas and landscapes as well as projects for the development of quality agricultural production processes through "Agricultural Development Integrated Programmes".

Aid to Research in the field of natural hazards, urban engineering, environment and social sciences aims to facilitate the emergence of regional research centres and to prepare the Region for coming technological and social change.

With respect to regional planning, the Region supports the development of Rhône-Alpes territories through "Integrated Development Contracts" in accordance with the local specifications (existing industrial activities, cultural and natural heritage).

The promotion of common transports (regional express transports) facilitates the link between the territories, the cities that make up Rhône-Alpes, while complying with the environment and with the aim to improve the quality of life of Rhône-Alpes inhabitants.

The issue of sustainable development gained momentum in 1996 when the Region staged a regional Conference on Sustainable Development dealing with four main topics: regional natural Parks, Transport, with a workshop on sustainable development, pollution control, information and education.

This regional Conference should lead to a number of proposals for action which will be officially presented during a plenary session in June 1997.

Without stating in advance what the future decisions will be, the main lines of contemplated action can be pointed out:

- territorial actions with the development of Agenda 21 over well-identified territories (regional natural Parks, territories related to a "global development contract", urban conurbation),
- development of research in the field of sustainable development, particularly in three principal areas: biotechnologies, sustainable development, clean and cost efficient technologies,
- promotion of buildings featuring a high environmental quality,
- setting up of international networks on the topic of sustainable development at the national and European levels as a follow-on to the initiated actions. Indeed, the Rhône-Alpes Region has signed the European Charter on the Environment known as the Valencia Charter and organized in November 96, the Preparatory Conference for the Environmental Ministers Conference of the European Regions in Göteborg.
- The Region is a member of the Assembly of European Regions and a member of the Four Engines for Europe (Baden-Württemberg, Catalonia, Lombardia, Rhône-Alpes) and the Working Community of Western Alps (COTRAO).

Moving from an environmental policy to a development strategy is time-consuming and requires a good deal of coordinating efforts between the different directorates concerned in the region, leading to numerous difficulties.

On the other hand, there exist various levels of competence, the decentralized departments of the State, Region, Département, State-owned Public establishments, local communities necessitating constant discussions.

EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

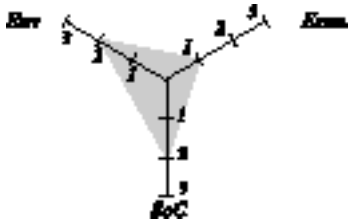
The projects selected meet numerous regional concerns.

The “Drôme River Contract” allows for the rehabilitation and maintenance of a degraded environment promoting the development of tourism based on the discovery of the natural and rural heritage, creating employment and making the public aware of the need to preserve their environment and the identity of their soil.

The dissemination of solar preheating in the individual home contributes to the reduction in household fossil fuel energy consumption and hence, to air pollution control, promotes individual awareness of sustainable development and permits the promotion of the regional companies thereby leading to more employment.

Project n° 1

THE DRÔME RIVER CONTRACT

SUMMARY	The purpose of the "Drôme" River Contract was to improve the quality of the water (Section A), to restore the river bed and banks and promote the river (Section B), and to ensure the long-term survival of the river through a programme of river purification and restoration work. The River Contract finished at the end of 1996.	
KEY-WORDS	Purification, water treatment, restoration, promotion, maintenance, jobs, observatory, quality follow-up, tourism.	
STRUCTURE RESPONSIBLE AND PARTNERS	Coordination: Val de Drôme Planning District (District d'Aménagement du Val de Drôme - DAVD) Contract Partners: European Union, Ministry of the Environment, Rhône-Alpes Region, Drôme Department, Rhône-Mediterranean-Corsican Water Authority - River Drôme Joint Planning Association - Diois Rural Development District.	
CONTACT	Jean Serret, President of the DAVD - President of the Drôme SAGE Local Water Commission, DAVD, BP 331, 26402 Crest Cedex Tel. +33 - (0)4 - 75 25 43 82	
DURATION OF THE PROJECT	7 years (1990-1996)	A Water Development and Management Scheme (Schéma d'aménagement et de Gestion des Eaux - SAGE) will be adopted in September 1997. This Scheme will be applied through a new river contract which will begin in 1998.
SPHERE OF	The whole of the river Drôme catchment basin (1640 KM2 km2)	
TOTAL COSTS	ECU 19 115 854	EU: ECU 1 524 390 State: ECU 1 768 293 Region: ECU 3 048 780 Department: ECU 4 939 024 Water Authority: ECU 3 307 927 Local Authorities: ECU 4 527 439
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ. = economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial Situation and problem

Preliminary studies had revealed serious low water levels and increasing demand on water resources due to the spread of irrigated crops.

The quality of the water was also a cause for concern: at the outset bathing was authorised along a 2 km stretch of water only.

Finally, inadequate maintenance had destabilised the river bed and caused damage to the banks.

Aim

The elected representatives of the catchment basin therefore adopted three major objectives:

- to restore the quality of the water so as to make the rivers fit for bathing,
- to restore and develop the river banks and surrounding areas through a series of operations designed to encourage environment-friendly tourism,
- to provide the necessary maintenance resources.

Properly restored, developed and maintained, the rivers will very shortly form a springboard for a series of accommodation, reception, organisation and tourist promotion actions.

Actions carried out and partners involved

The quality of the water was restored thanks to a purification scheme covering the whole of the catchment basin and to household waste water purification and treatment work (sewage works, lagooning, tertiary treatment by infiltration basins) covering 41 towns and villages which, separately and/or collectively, exercised contracting authority for the work.

- The renewal of the river banks was ensured by some 50 projects notably consisting of:
 - . linear restoration work often defined by sector: selective clearing, removal of obstacles and dead trees, aggradations, localised consolidation, access paths for maintenance
 - . countryside improvement and plantation work, minor riverside development

Many of these actions have had a favourable impact on fishing, with a number of specific measures being taken: fish ladders, rudimentary thresholds for fish shelters, etc..

Restoration work on the river bed and bank and improvements to the surrounding area obviously have a beneficial effect in making the practice of canoeing safer and more agreeable. In addition, however, some programmes have been specifically devised to encourage the development of this sport: initiation pools (2), access paths for canoes, special embarkation areas.

- . Localised hydraulic development work such as: strengthening or creating thresholds, restoring fords, protecting constructions.
- Promotional actions have mostly focused on:
 - . The creation of a riverside itinerary as a "green alternative" to the main road. The increasing popularity of cycling and the high quality of the Drôme Valley landscape make this a viable proposition. The proposed cycle track runs along farm tracks, country lanes or dike paths and will make it possible to ride from Châtillon to Crest avoiding the main road on all but rare occasions. This cycle/hiking/horse-riding itinerary could form the central axis for a series of walking circuits on either side.
 - . The management of the Ramières Nature Reserve. Situated in the lower Drôme Valley, the reserve covers an area of 350 hectares (70% publicly owned) and is listed on the European registry of relevant areas of migrating birds. The project aimed to provide the development necessary to ensure that the reserve could be open to the public without danger to the biotope.

A reserve centre - designed to be the sole entry point to the reserve and for the organisation of exhibitions and training for visitors - was created for this purpose, and other access points have been restricted. Special observation posts now allow visitors to discover the fauna without disturbing it, and knowledge of the environment is facilitated by a nature trail.

- . The management of several major nature sites which already attract tourists in large numbers. Specific development actions are also planned for these sites, notably the installation of "compost" toilet facilities, an essential precondition for maintaining the high quality of the most popular sites.

Results Obtained

The contract has helped to renew the quality of the water, particularly for bathing in certain stretches of the river, to improve the riverside landscapes and ecosystems (notably Ramières), to

restore and maintain the banks (selective cuts, clearing and cleaning operations have been carried out over 85 linear km of banks). The contract has also reduced the amount of pollution of domestic origin: the building of 17 purification works has had the effect of cutting pollution by an extra 67 000 inhabitant-equivalent.

SUSTAINABILITY IMPACT ASSESSMENT

Development Dimension

Environmental dimension:

A review of river quality was carried out in 1996 by the River Drôme Joint Planning Association (Syndicat Mixte d'Aménagement de la Rivière Drôme - SMARD). Final results are not yet to hand, but it is already clear, on the strength of provisional documents and of analyses performed by the Departmental Sanitary and Social Affairs Board, that physicochemical and bacteriological quality has improved substantially as a result of the River Contract.

Economic dimension:

The contract has created employment linked to the maintenance of the river banks and bed (11 jobs created for a minimum period of 5 years). It has had a favourable effect in developing tourism in the valley: improved conditions for the practice of canoeing (5 improvements made) and bathing, the creation of tracks suitable for cyclists (78 km constructed or in progress). The contract has also stimulated the relatively lethargic water purification market by speeding up work often held back through lack of funds.

It has also, through its river bed and bank maintenance sector, led to savings which are far from negligible in terms of repairing the damage caused by floods.

Socio-cultural dimension:

In addition to creating jobs, the contract has mobilised all the socio-economic players of the Drôme Valley. The valley's identity centred on its river has been considerably enhanced.

Ten issues of the river newsletter, each with a print run of 2000 copies, have been published and distributed widely among the inhabitants of the valley.

A reception centre (the Ramières Reserve Centre) has been developed with a view to informing visitors on the treasures of the local environments.

Special pedagogical initiatives involving 15 classes from primary and secondary schools have already been carried out, and a further 15 are planned.

In creating a Local Water Commission, the contract has enabled all the river users to meet each other and to exchange points of view. This in turn has fostered consultation and limited the risk of conflict.

Equity dimension

Inter-regional equity:

This contract has encouraged the expression of solidarity between local authorities: upstream/downstream solidarity, solidarity between those authorities receiving subsidies in the context of the contract's purification section and other authorities through the creation of an Intercommunal Investment Fund which is partly financed by a contribution from the towns and villages in proportion to the amount of the subsidy received under Section A of the River Contract. The result is that actions coming under section B of the contract are placed on a firmer financial footing.

Inter-temporal equity:

This contract helps to maintain and even enhance the environmental biodiversity and heritage. It also plays a part in offering long-term job prospects to those in situations of social and professional integration.

Systemic principles

Diversity:

If properly restored and maintained, and better managed in terms of resources, the river can provide a home for a wider variety of species (biodiversity) and accommodate a range of uses (fishing, tourism, canoeing, pedagogical activities, etc.). The Local Water Commission (CLE) associates all the public authorities and users concerned.

Subsidiarity, Partnership and Participation:

The programme was the work of 102 towns and villages of the catchment basin under the umbrella of 3 intercommunal structure. These structures benefited from both the financial and technical support of a wide variety of public authorities, State, Regional and Departmental Services, Water Authority.

The scientific, associative, agricultural, etc. communities were, and are, closely associated with the procedure through their participation in the CLE and the geographical commissions.

With a view to reinforcing the evaluation aspect of the project, a firm of consultants (IRAP) was entrusted in February 1997 with the task of conducting a global survey of the contract. Amongst other things, this study will analyse the degree of satisfaction expressed by the towns, villages and local residents by means of a questionnaire sent through the post.

Delivery of the study report is expected for June 1997.

Lessons learned and difficulties encountered

Overall, the results of the contract are fairly satisfactory.

The public players (towns, villages, intercommunal associations, State, Regional and Departmental Services, Water Authority) have contributed actively to the project.

In particular, there has been good communication with the general public, thanks to the "Inf Eau" newsletter devoted to the river Drôme contract.

The contract is now being prolonged through a series of concrete actions. It has effectively led to the creation of a river maintenance team (11 persons) and to the recruitment of a river technician and a representative.

The procedure was immediately followed up by the preparation of a Water Development and Management Scheme (Schéma d'aménagement et de Gestion des Eaux - SAGE), the first SAGE in France, which will be adopted in September 1997.

However, the restoration programme is not yet over. A second river contract, putting the Water Development and Management Scheme into action, should transform the river Drôme into an environment of exceptional quality.

Naturally, there is room for improvement:

The objectives were not costed at the outset of the project and there was no thorough qualitative follow-up of the procedure. This lack will be made good in the future namely by the creation of a water and biodiversity observatory.

Work has fallen well behind schedule for certain essential aspects of water quality restoration, for the physical restoration of the river and the promotion of the national environment (average rate of work completion).

The socio-economic review of the contract has yet to be carried out and will in part be addressed by the IRAP survey.

Reproducibility of the project in another environment

This has already been accomplished to a large extent since there are some forty ongoing or projected river contracts in the Rhône-Alpes region.

Project n° 2

DIRECT SOLAR HEATING OF FLOORS WITH INTEGRATED AUXILIARY HEATING IN INDIVIDUAL HOUSING

SUMMARY	<p>The project of direct solar heating of floors in individual houses aims to fulfil four objectives:</p> <ul style="list-style-type: none"> - to spread an innovative technique of solar heating for individual housing to a large area : the Direct solar floor with integrated auxiliary heating. - to promote the use of an innovative transfer module with its hydraulic diagram, regulation and measuring capabilities. The diagram allows all the functions of heating to be carried out and production of domestic hot water. The regulation automatically controls the additional inputs of the solar and auxiliary heating. The systematic implementation of components such as temperature gauges, flowmeters, modem allows for a telemonitoring of the performance of each installation. - to initiate the definition of a GSR (Guarantee of Solar Results). - to bring about a cost reduction through maximum industrialization of the components. 	
KEY-WORDS	distribution, promotion, results warranty, costs decrease, solar heating, direct solar floor.	
STRUCTURE RESPONSIBLE AND PARTNERS	Rhônealpennergie - Environnement, 10 Rue des Archers, 69 002 Lyon	
CONTACT	<p>Jean-Paul Goy Telephone : +33 - (0)4 - 78 37 29 14 Fax: +33 - (0)4 - 78 37 64 91 E-mail : rae@imagnet.fr</p>	
DURATION OF THE PROJECT	From 1985 to 1998	
SPHERE OF	Rhône-Alpes area.	
TOTAL COSTS	ECU 960.000	Distribution : Europe : ECU 250.000 Rhône-Alpes Region : ECU 710.000
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ. = economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The Direct Solar Heating Floor technology was developed by the “ Ecole Supérieure des Ingénieurs de Marseille ” at the end of the seventies.

The search for maximum solar heating for the auxiliary use of hot water led to an excess which is reflected in solar collector surfaces, very large storage facilities or large glazing surfaces. Several problems had to be addressed: complex facilities, over-heating in the summer and during the mid-season, excessive costs and architectures presented too typical to be integrated.

Then following a market-analysis, the different solar systems were compared and a selection was made. As a result the following was identified:

- solar heating of summer swimming pools (simplified collectors),
- solar drying of crops (simplified collectors),
- hot water heating in multiple dwellings (greenhouse effect, collectors)
- climatic houses (greenhouse, double-glazing), and of course
- direct solar floor.

At the end of 1985, the direct solar floor heating technology was not very-well known.

The process consists in an individual solar installation for heating and production of hot water which combines the advantages of standardization with the flexibility of a modular system. The core of the system is composed of a hydraulic transfer module industrially manufactured, which carries out the connection between the two heat generators, i.e. the solar collector and the auxiliary heating boiler, and the heat emitters, i.e. the heating floors and the tanks for the production of hot water.

Standardization is obtained through a Transfer Module, all models of which are identical except, if necessary, for the number of heating circuits : either a single heating circuit in the floor, or two independent heating floor areas, or one heating floor zone equipped with radiators if concrete slabs can not be poured on the whole surface of the house (wooden floor on the first floor).

The process modularity lies in the type of auxiliary boiler used (natural gas, propane, oil, electricity or wood) and the size of the solar cell fitted.

The field of application of this heating system is the individual dwelling of about 250 sq.m maximum. Depending on the geographical location, the cells surface connected to the transfer module may cover 10 to 20 % of the floor area or 30 sq.m maximum.

Actions led and partners involved

Within the framework of the regional programme, a demonstration programme based on a direct solar floor fitted with built - in auxiliary heating, was first initiated by Rhôna alpenergie and Ademe (Agence de l'Environnement et de la Maîtrise de l'Energie) on five individual houses in order to check a number of references against a representative sample over several departments. This programme was conducted by the Association de Savoie de Développement des Energies Renouvelables, a local association entrusted with promoting renewable energies.

Direct solar floor with integrated auxiliary heating programmes were subsidied up to around 50 %.

Since 1986, a precise follow up was done on 14 new or existing facilities, underlining the benefit of a direct solar floor with integrated auxiliary heating on a fairly small collection surface from 10 to 15 sq.m. Furthermore, 40 to 60 % of the heating and hot water needs can be met with the collectors delivering between 430 to 550 kWh/m².

The Ecole Supérieure des Ingénieurs de Marseille's facility dimensioning computation seems to be validated by the results. The direct solar floor comfort is appreciated by the users, the facilities are easy to use and maintain, are of good quality and the overall satisfaction of the owners is encouraging.

A pre-dissemination programme was started in 7 individual houses where direct solar floors were built; subsidies decreased to 40 %.

Since 1987, grouped programmes were successively initiated by Rhonalpennergie-Environnement with a subsidy ratio of 30 %. Since then, 8 projects for ten direct solar floors in individual housings have been carried out, and we can add another 75 house programme implemented within the framework of the THERMIE programme whose main objective was the dissemination of the technique of direct solar floor with integrated auxiliary heating in individual housing. This programme has now been almost fully completed, only one third remaining to be done.

Different actors got involved in this project.

- the T2I company (Technologies Innovations Industrielles) with good quality cells located in the roof,

- The Association de Savoie de développement des Energies Renouvelables, design offices and architects,
- The Rhône-Alpes Ademe and Rhônalpénergie-Environnement with technical and financial assistance.

All these actors contributed to a local dynamism based on two logics which share common items :

- a demonstration policy,
- a technical policy.

Results

The first direct solar floors were built in 1985 in the Rhône-Alpes region.

Since then, numerous facilities were installed :

- more than 250 individual houses,
- more than 30 collective equipment in which 5 buildings, 9 shelters, 1 refuge, 15 "tertiary" buildings (i.e. hospitals, old people home's, communal inns ...)

SUSTAINABILITY IMPACT ASSESSMENT

Development dimension

Environmental dimension:

The implementation of the project will have positive effects on the protection of the environment, through a reduction of the atmospheric pollution brought about by saving traditional energy.

The decrease in pollutant emissions can be estimated by calculating the quantities of CO₂, SO₂ and NO_x not released in the atmosphere. We obtain the following figures :

- quantity of CO₂ avoided : 230 t per year
- quantity of SO₂ avoided : 700 kg per year
- quantity of NO_x avoided : 560 kg per year
- quantity of CO₂ equivalent avoided : 310 t per year

Other positive effects are brought about by the reduction in traditional energy consumption but are more difficult to assess like the decrease in the risks related to petroleum product transportation, by sea, rail or road. But we can state the reduced amount of nuclear wastes related to the production of electricity.

Moreover, this project has an impact on the wildlife and landscapes because it does not rely on power lines or roads to allow electricity or petroleum product to be transported.

Economic dimension:

Payback in the absence of subsidy remains long, of the order of 20 years.

Rhône-Alpes Region is the only region granting subsidies to any owner wishing to implement a direct solar floor.

An increase in market size would rapidly result in subsidies no longer being needed, due to the diminished costs linked to higher production.

While waiting for the prices to decrease, some owners may give up their projects due to a lack of funding. However there is a real demand for this kind of facility.

At present, a normal facility would cost about ECU 19 645 including taxes (with auxiliary heating) leading to a 40% decrease in energy loads, and the Rhône-Alpes Region allocates an average subsidy of ECU 3 571 for each installation.

On the other hand, the project will impact employment, either directly through the support to the T2I firm employing 20 people and only working in the field of solar energy, or indirectly through the activity created for the consultants carrying out the dimensioning studies, and through the companies installing the equipment.

Socio-cultural dimension:

To raise the general public awareness of this facility, a brochure on direct solar floor was published. At present, a thematic sheet about direct solar floor and other heating techniques is being produced.

On the other hand, some practical presentations have been done and proved that we can save from 40 to 60 % of the energy according to the geographical location.

This project allows professionals, administrations and owners to become more aware of the environmental problems linked to the use of conventional energies.

Equity dimension

Interpersonal equity:

This project leads to a decrease in the operating costs thanks to a higher level of autonomy: only an auxiliary heating being needed. Thus, facilities are less expensive to run and offer added benefits to the disabled.

Inter-regional equity:

It can be stated that this project has a great deal of influence on a large scale, owing to the technology used and the approach retained to address issues or technology dissemination. Indeed, such facilities were also built in Germany.

With respect to the environmental level, this project proposed solutions to decrease the pollutions due to the use of traditional energy.

Repercussions are not only local but global, since pollution knows no borders (acid rain, greenhouse effect, water pollution...).

Inter-temporal equity:

This project takes part in maintaining the air quality and stimulates the creation of durable employment.

Systemics principles

Diversity:

This project therefore allows the field of renewable energies to be opened up to include house heating. This project was possible thanks to those who took part in it and through the promotion of that innovating technology.

Subsidiarity, participation:

During its elaboration and development phases, the project allowed to associate different decisional levels. It has resulted in numerous consequences at each level : personal, local, national, European and at the corporate level:

- At the personal level, it decreases the heating costs and enlarges the range of energy choices for the home.
- At the corporate level, a new technology has been promoted and the technical and financial side of the companies have also been promoted.
- At the regional level, the project coordination by Rhônaldéveloppement-Environnement is worth pointing out just like the non negligible role of the Rhône-Alpes Region and the French State.

Finally, the role of the European Commission should be emphasized, for financial support and know-how transfer from a pilot region to regions through its different programmes.

Lessons learned and difficulties encountered

During this project, measures had been carried out in order to create a reliable data base about heating facilities and the equipment used. Facilities with good outputs (covering 40 to 60 % of the heating needs), can be found with guaranteed solar results in terms of cost reduction and energy saving.

Moreover, the new technologies used (regulators, automatic controls ...) bring in a higher level of comfort for the users.

At the regional level, this project strenghtens the dissemination of a new technology and its development by means of a high level of subsidies (one third of the installations on average). These subsidies will decrease with the diminishing cost of the facilities due to the development of the direct solar floor market.

Taken as a whole, solar heating appears profitable.

At the technological level, the project allowed for the development of hot water solar heating and of two heating techniques: the first technique is the direct solar floors with separated auxiliary heating which needs a manual intervention in order to be switched over from the solar system to auxiliary heating. The second technique is the direct solar floor with integrated auxiliary heating using a regulator for thermal needs and using automatic controls rather than manual interventions for the heating mode switch-over.

The profitability of the technology presented remains to be proven, due to the low price of the substituted energies, linked to the non internalization of their negative impact on the

environment. The creation of eco-taxes penalizing the use of conventional energy because of its contribution to the greenhouse effect would improve this profitability.

Within the framework of a wider dissemination of this technique, a decrease in price is expected (estimated at 30 % for the cell and the transfer module, and 50 % or more for the study), if efficient computing tools and proper software are designed. Only the cells installation cost and their connection to the transfer module are unlikely to change.

On average, the overall cost of each solar cell installation could decrease by 25 %. The average payback time would consequently decrease at least to 15 years.

Reproducibility of the project

The objectives of this project are not only a future expansion of the individual heating technology to public heating by using the data base including the 250 French installations, but also the application of this methodology to other projects.

Approaches and Experiences

THE REGION OF
VORARLBERG
(AUSTRIA)

FFFF



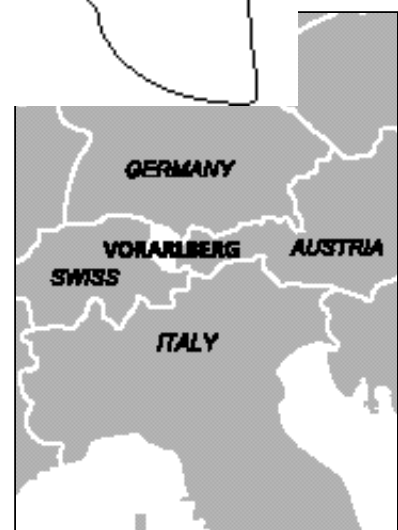
THE REGION OF VORARLBERG



CHARACTERISTIC DATA AND FACTS

Vorarlberg distinguishes itself by its unusual geographic location with only 19% of its borders inland and the rest being state borders to Germany, Switzerland and the principality of Liechtenstein. 90 % of the region's terrain is mountainous. The central area of the region is the Rhine Valley in which three quarters of the population resides. Vorarlberg is one of the wealthiest areas of Austria. The economy is characterized by a small to medium sized structure.

- Only 2.7 % of the working population is employed in agriculture and forestry and they are responsible for working a relatively large area of land. Emphasis is placed on cattle farming. Grain is rarely planted.
- With 46 % of the working population employed in this sector, industry plays the leading economic role (downward trend) and is strongly orientated towards export. The highly traditional textile industry, which accounted for the biggest amount of industrial production in Vorarlberg until the middle of the seventies, is losing significance while the metal processing industry is gaining impetus.
- 34.9 % of the working population is employed in trade. Wholesaling is dominated by industries such as metal goods, household appliances, machines and building materials, retail trade by food and semi-luxury foods and tobacco, textile goods and clothing, vehicles and furniture.
- Although only 6.3 % of the population is employed in tourism, it is a very important industry since it has been developed in certain parts of the province which are unsuitable for sustaining any other commercial activity.



Area: 2 601.4 sq.km (3.1% of the total area of Austria)
 Division: 4 administrative districts, 96 municipalities
 Population: about 350 000 inhabitants
 Density: 132 inhabitants per sq.km
 GNP 1994: ECU 7 billion (4.2% of the total GNP of Austria)
 Unemployment rate: 6.2%

REGIONAL COMPETENCES

Areas of competence lie first and foremost with the Federal Government. Exceptions are in the areas of conservation, energy, air quality control/heating systems and land protection. Otherwise, the main task areas lie in the hands of executive law.

The annual budget of the Regional Government is ECU 930 million (1997).

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT



SPECIFIC PROBLEMS

Environmental problems:

Because just 10 % of the land area is suitable for structural and intensive agricultural use, conflicts of interest inevitably occur between, on the one hand, the establishment of businesses, erection of buildings and road construction and, conservation on the other. Numerous areas of land have simply disappeared.

The amount of traffic has increased three times over the last 20 years. 11.7 million vehicles are driven per year on Vorarlberg's most used roads, that is 32 000 per day.

With the regularly carried out air quality controls in the whole of the region, it is the harmful substances, above all the ground ozone which are the main cause for concern: in the summer months the precautionary limits are regularly exceeded.

Economic problems:

As a result of competition from countries with cheap labour costs, the textile industry has come under great pressure. Many companies have had to close and let their employees go.

In response to more taxations and the reduction of land and work, agriculture has reacted by implementing a more intensive use of land, an enlargement of companies and more mechanisation. However, life is considerably more difficult in the mountainous regions where the grants from the Regional and Federal Government are by no means a cure for everything.

Because of the bad economic situation at home and abroad and the competition from cheap long distance travel, the state of tourism is stagnant or declining.

In the Vorarlberg retail trading business, a tendency towards individual conurbations and large shopping centres can be noted, which goes as far as to say that an above average percentage of consumer spending takes place outside of one's home town. This concentration has led to a fifty percent reduction in the number of food shops since 1970 which has jeopardized the structure of local supply, especially in smaller communities.

Socio-cultural problems:

After many decades of low unemployment in Vorarlberg, recent years have witnessed a relatively high increase in the number of people out of work. Over the last years, numerous traditional industries have disappeared, leaving behind them a feeling of insecurity.

With a decline in tourism, agricultural hardships and a lack of local supply, the mountain valleys have become less and less attractive. Migration and commuting have led to a decline in customer spending and an increase in traffic so that the cultural characteristics of these valleys have become more and more superficial.

RESPONSES AND OBSTACLES WITHIN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

As a response to the economic problems, the Regional Government reacted with an "Economic Campaign", which among other things contains the following points:

- Offensive-taking policies for the setting up of businesses;
- Prospects capital for the setting up of companies;
- Promotion of related research and development;
- Expansion of educational and further educational possibilities.

Examples of ecological approaches:

- Expansion of the public transport system;
- Amendment of the Conservation Law;

- Creation of new nature reserves;
- Initiation of different campaigns to inform and motivate the people (ozone campaign, cycling campaign, climate campaign).

Until recently there was no regional conception of sustainable development in Vorarlberg. So far in the regional government it has mainly been Landesrat Ing. Erich Schwärzler who has shown an awareness of this topic. His areas of responsibility are agriculture, the environment and the protection of nature.

The topic was taken up in the spring of 1996 in collaboration with the regional government of Vorarlberg and the local authorities through the launching of the climate campaign. Since then this issue has been a great source of discussion. Alongside primarily climate-related activities, the climate campaign framework has also introduced a series of activities related to the subject of sustainable development:

- In the autumn of 1996 the regional government of Vorarlberg organized its own symposium on the subject.
- The administrative offices for community development changed their supporting guidelines so that the projects taking sustainable development into consideration can also be provided with support in the future.
- Sustainable development became a specific part of the training for those who are qualified to work as project leaders for community development processes.

The concept of sustainability, or rather approaches towards the idea, can be found in many key concepts that have been looked at over the last few years, i.e. in the concepts of land protection, traffic and energy. Also in the concept of tourism, sustainability can be regarded as a major issue.

The only law, in which sustainability is explicitly referred to as an aim for the future, is the Nature Protection and Landscape Development Law which was introduced in December 1996 by the regional government of Vorarlberg.

Given the nature of the issue it is only logical that many departments and services are confronted with the subject of sustainable development, albeit some more than others. Up to now it has been the Environmental Institute, the Environmental Institute press office and the Community Development Office who have had to address this issue on a regular basis.

Vorarlberg is involved in a series of programmes which aim at inter-regional co-operation (LEADER, EFRE, Cultural landscape research project etc.)

The above mentioned Vorarlberg climate campaign will assert itself more as a campaign for sustainable development in the future and above all it will support related activities in the communities. For this purpose more emphasis in the campaign will be placed on promoting sustainable development structures. This project will become one of the most central starting-points for putting the idea of sustainability into practice through the community to the people. This is a starting-point which in the form of the so-called local agenda 21, entitled quality of life and sustainability, will motivate the citizens to assist in developing their local community in the direction of sustainability. It should also offer them the relevant help which they need to define aims and put measures into practice.

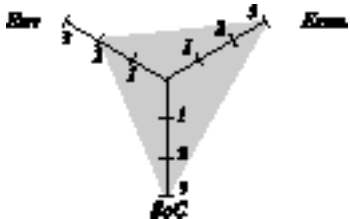
EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

Both projects have been chosen because they

- describe problem areas that are typical of the situation in Vorarlberg, and
- both seek a common basis that the regional government of Vorarlberg would like to support in accordance with sustainable policies: the promotion of local and regional campaigns that are looking for solutions to existing problems on a wider level in an independent and cooperative way. Participation plays a key role in the process. The projects show that sustainability cannot be understood as being one dimensional, but rather that ecological progress is equally linked to economic and social progress.

Project n° 1

NATURE AND LIFE IN BREGENZERWALD

SUMMARY	The project consists in a regional campaign for the requirement of partnerships in the area of tourism, economics, agriculture and education and the effects shown on the province of Vorarlberg.		
KEY-WORDS	Partnerships, LEADER II, rural innovations		
STRUCTURE RESPONSIBLE AND PARTNERS	<ul style="list-style-type: none"> • Involved business associated organisations (the Vorarlberg Young Hotel Industry, Bregenzerwald Tourist Office, Vorarlberg Agricultural Chamber, Vorarlberg Association of Natural Products), farmers, processing industries, restaurant owners, business and trade, local authorities, educational institutions • Regional responsibility: Regional Planning Group (REGIO - amalgamation of all the communities in the region) • Specialist advice and regional management: Regional Development Bregenzerwald GmbH. 		
CONTACT	Reinhard Lechner, Programme Coordinator Hof 579, A-6861 Alberschwende Tel. +43 - 5597 - 71 06-42, fax - 9 e-mail: Lechner@telesis.vol.at		
DURATION OF THE PROJECT	1995 - 2000	FOLLOW-UP still open	
SPHERE OF	regional (24 communities)		
TOTAL COSTS	ECU 1 million	EU - share (LEADER II): EFRE - ECU 167.000 EAGFL - ECU 184.000 National contribution: ECU 351.000 Regional and private: ECU 292.429	
ASSESSMENT SYNTHESIS			
Env. = environmental dimension			
Econ. = economic dimension			
SoC = socio-cultural dimension			

DESCRIPTION

Initial situation and problem

In the Bregenzerwald, a region with an acquisition structure based on agriculture (milk and cattle economy), tourism and business, agricultural businesses decreased considerably in the years up to 1990. Only 40 % of the remaining farms were managed by full time farmers in 1990. Around two thirds of all business occur in the mountain farming zone I und II and the rest in III and IV.

Problem areas were: the decrease in farming population due to plummeting real income, rising business costs and, for a large part, the stagnating and even partly falling prices of farming products, difficulties in sales. But also a lower social prestige, a growing awareness of leisure and worries about the future certainly had their consequences.

The majority of the restaurant owners, business people and of the population purchased their foodstuffs outside the region in large shopping centres.

Also, in the catering trade (mainly family businesses), the lack of young blood was a problem. The high pressures of work, falling profits, rising personnel costs, lack of qualified personnel and, above all, the change in behaviour of guests with their health conscious views, were all deciding factors for a new kind of orientation for the young restaurant owners.

The Young Hotel Industry (Association of Young Proprietors) has become aware through the catering position for the Bregenzerwald that they have to work in partnerships with the farmers to create synergies between tourism and agriculture.

Aim

Aims of the campaign Nature and Life in Bregenzerwald were as follows :

- Building up of organisational structures to support collaboration between different trades;
- Increase in the net product from agricultural production;
- Raising the general public awareness of the cultural landscape which has been greatly influenced by rural traditions, and the need to maintain this landscape;
- Creation of communal marketing structures;
- Improvement of the competitive situation through enhanced quality, selling fresh products through short sales and innovative product refining.

The campaign initially spurred by agriculture and tourism has now extended its partnerships to small, medium-sized companies, business, trade and has assumed a new content in the individual campaign groups (education, economics, tourism and agriculture). Projects should be initiated for the promotion of a better quality of life and an increase in the regional net product. Central development themes are the ecologising of regional economic areas; development of tourism; regionally integrated craft.

Actions carried out and partners involved

The campaign "Nature and Life in Bregenzerwald" is made up of several individual activities and projects that have been carried out under the LEADER II programme since 1996. The project was initiated by the Vorarlberg Natural Products Association and the Young Hotel Industry. The implementation of the project was conducted by various institutions and organisations (see above) with specially assigned tasks. Since 1996, a local campaign group (LAG) has headed the campaign. It consists of representatives from many trades and interest groups and also is divided into groups in charge of education, economics, tourism and agriculture. The LAG is coordinated by the Bregenzerwald REGIO. For the professionals carrying out the programme (target 5b and LEADER II), a non-profit making organisation was founded in partnership with the Bregenzerwald Regional Planning Organisation. Management of the project has been entrusted to the management consultancy, "telesis."

The following activities have, so far, been formed within the framework of the campaign "Nature and Life in Bregenzerwald"

- Award of the agricultural innovation prize in Vorarlberg (impulses came from the campaign.)
- a cheese premiere of the Bregenzerwald Alps and Alpine farms.
- joint provincial & catering culinary delights (speciality weeks), where the farming produce of the region is the central attraction of the offering.
- Training offers for farmers (innovative workshop)
- Annual joint sales exhibitions to show the participation of all age groups in the campaign
- ÖKOPROFIT - Bregenzerwald, a communal project for Bregenzerwald hotel owners introducing the topic of environmental management.

In the context of the LEADER II project, there are still measures to be taken to acquire a specialist knowledge, innovations in rural areas and transnational collaboration.

Results obtained

By raising the awareness of the people (i.e. restaurant and business owners) to purchasing regional produce, an improvement in the regional cycle has been achieved.

Today, restaurant owners of the region purchase up to 25% of their goods from Bregenzerwald. By processing whey (for drinks, cosmetics), cheese, meat and herbs, and through successful marketing, the region has achieved a net product of 50 million ATS. In many places, marketing has been carried out jointly by restaurant owners and the tourism board (e.g. the farmer-restaurant owner campaign : printed on two menus is the farmer's name where the produce was bought. Also the agricultural produce may be sold in a special "Farmer's corner").

For guests and those interested in the region, a cheese trail was devised to demonstrate the cheese culture by looking at the cultural aspect of industrial processing.

The project also indirectly impacted the setting up of an Alpine farm co-operative of organic farmers. Once again, the desire to keep the Bregenzerwald as a silo-free region was stressed in the discussion.

Last but not least, the project has helped the inhabitants of this rural region gain self-confidence. As a result, they can more easily and positively identify themselves with the region.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimensions:

The project contributes to maintaining the cultural landscape. The environmentally-friendly economic methods of the agriculture are promoted. The farmers of the region can once again explicitly express their wish to remain a silo-free region as part of the project!

With the ÖKOPROFIT project (a campaign within the framework of "Nature and Life in Bregenzerwald"), practical measures relevant to the environment in the hotel and catering business were put into practice.

Economic dimensions:

A real increase in price was obtained by refining and innovating the agricultural produce.

Since the initiation of the project, the so called "farmer decline" has really been halted. Through the measures taken, jobs in agriculture have once again be secured.

Through the project, a higher use of local supply has been achieved (regional cyclic economy, close shopping markets and short distances to cover etc.)

Socio-cultural dimensions:

Above all, the self consciousness of the farmers has been strengthened. Many farmers have taken their own initiative. Also their awareness of education has been raised. Furthermore the relationship between the individual professional groups has improved. Interests in the problems faced by other groups has become more acute. Altogether, it is possible to record a stronger sense of socio-political commitment.

The pleasure taken in innovation within the professional groups involved could also be encouraged - this was specially the case with the farmers.

Equity dimensions

Inter-personal equity:

The farmer's social position in the region has risen again. His business chances have grown.

Inter-regional equity:

Several projects or campaigns in the Vorarlberg province originated from discussions and campaigns from the Bregenzerwald. One example of this is the innovation prize for agriculture and the farmer-restaurant owner campaign.

Through publicity and presentations in various regions of Europe, an active exchange of ideas and experience has taken place. The Austrian Working Co-operative for Regional Development (ÖAR) organises this exchange within the Leader regions.

Inter-temporal equity:

Through the campaign Nature and Life in Bregenzerwald, the values of the region have been restored again. Not only amongst the people but the region also presents itself to outsiders as a forward-thinking living and economic area.

Systemic principles

Diversity:

The project attempts to create partnerships between different vocational groups and organisations. Through this a broad basis for disseminating the project philosophy has been achieved. The form of organisation of this project serves as a framework which other campaigns can take up. The guidelines of a regional organisation, i.e. status of charity, the strengthening of the regional net product, the aim of keeping regional cycles closed, the “ecologizing” of individual areas of the economy as well as regional development, are all valid criteria.

Subsidiarity:

Within the framework of the project, the support of co-operative campaigns can be seen. The Regional Development Bregenzerwald GmbH assumes - on request - administrative duties, management, marketing as well as leadership and coordination. It also provides help when initiating projects. The initiators, the REGIO, the Vorarlberg Natural Products Association and the collaborating organisations have only a limited influence on the application of the concept. Through motivation, training, enlightenment and the creation of suitable frameworks, the aim is to achieve the goals in co-operation with the partners.

The following independent organisations were set up through the project, both directly and indirectly:

- Bregenzerwald Direct Marketing Association
- ARGE - Organic - Farmers - Sulzberg (collaboration of organic farmers and an Alpine farm group in Bregenzerwald)
- Hotel business community NATURE + CULTURE, a group which offers various offers on these themes to its customers.

Partnership:

The project would like to encourage collaboration between differing vocational groups. A stronger regional consciousness should thus be promoted. The organisation of this project is dependent on partnerships as of day one. The project has been established following a partnership between the communities (REGION-Bregenzerwald).

Participation:

The former idea of the Young Hotel Industry and the Vorarlberg Natural Products Association was taken up by the political grouping REGIO Bregenzerwald and further developed as a regional campaign. Partnerships between the different organisations and institutions can be seen as a method of reaching common aims and are, by no means, a rarity. The LEADER II project is an example of this, a locally installed campaigning group made up of representatives from different economic areas and organisations.

Lessons learned, difficulties encountered

The following conclusions can be drawn.

Through co-operations across different spheres of activities and communities it was possible to change the local “village way of thinking” to regional consciousness. This is one of the great positive effects of this project. Several stringent requirements have to be laid down:

- Political freedom is important for the application of such a concept. A framework as well as impulses have to be provided. The active organisation should be left to the participants themselves however .
- In order to put the concept into practice it is necessary to have a suitable form of organisation. For a project which features many levels, it is good to have someone in charge of coordination and organisation.
- One hurdle is the financial side of things. At the beginning of the project the financial method used was uncommon and fairly ambitious: the organisations, clubs and individuals involved supported their own costs. Before EU financing was available, about ECU 175 000 were raised and spent by the various groups.
- To implement the project, having numerous pioneers and dedicated supporters is of course an advantage as these people are the driving force, the initiators and innovators in the region.

Reproducibility of the project

The idea of inter-business collaboration, the employment of a professional project leader and the forms of organisation can also be taken up in other regions. The building up of the project and setting goals must be left to each individual region.

LOCAL SUPPLY IN THE COMMUNITIES OF GÖTZIS AND LANGENEGG

SUMMARY	The project consists in building up and expanding local supply structures in rural communities with the aim of promoting a sense of community in the village, safeguarding a sustainable quality of life, retaining autonomy and promoting the local economy.	
KEY-WORDS	Local supply, self supply, local economics, village community.	
STRUCTURE RESPONSIBLE AND PARTNERS	Implementation: - Deputy Mayor Mag. Wolfgang Berchtold - Götzis - Mayor Peter Nußbaumer - Langenegg	
CONTACT	<ul style="list-style-type: none"> • Deputy Mayor Mag. Wolfgang Berchtold Am Hang 20, A-6840 Götzis Tel./Fax: +43 - 5523 - 52 784 • Mayor Peter Nußbaumer Gemeindeamt Langenegg, A-6941 Langenegg Tel. +43- 5513 - 617-3, fax -6 	
DURATION OF THE PROJECT	<ul style="list-style-type: none"> • Local authority of Götzis: preliminary projects since 1990, impulse programme "Pro-local supply" 1996-97 • Local authority of Langenegg: pilot project: 1994-97 	FOLLOW-UP Projects are being planned for both of these projects
SPHERE OF	Local	
TOTAL COSTS	Götzis: ECU 7700 Langenegg: ECU 1 million	Both projects are funded by local resources
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation, problem and objectives

From the sixties to the eighties, centralizing tendencies (trade, public institutions, work, leisure and so on) led to the displacement and losses in infrastructure in the small and medium-sized and in the not so practically situated communities.

In the community of Götzis (10 000 inhabitants) it was above all the people's awareness of the traffic problem that brought about the decision to initiate a local supply project. Early campaigns for the promotion of local transport have long since developed into a community project with the aim of establishing and expanding the necessary economic and social infrastructure on the spot. Smaller campaigns and signalling projects promoting awareness in the community are being led in the form of the current key project "Pro-local supply in Götzis".

As a residential village (1 000 inhabitants) where people work outside the community, the village of Langenegg is fighting for the maintenance or rather the acquisition of public utilities to meet its daily needs (grocery shops, doctors, household requirements, pubs etc.). In 1990 the local authority decided to take active countermeasures and renovated a traditional Bregenzerwald farmhouse in the middle of the community. Small businesses, trade and services previously lacking in the community, should be attracted because of the cooperative infrastructure and lower rent prices.

Aim

In addition to wanting to improve the communal infrastructure, both community projects aim to improve the quality of village life through educating and motivating the population to bring about changes in shopping, leisure and social behaviour.

Actions carried out and partners involved

Community of Götzis:

The project "Pro-local supply" has devised several campaigns and introduced many measures in the community which have been carried out over the past years under various circumstances. Direction was provided by the FAHR-RAD campaign (literally, "go by bike") started in 1993 in collaboration with the Provincial Government of Vorarlberg and the local authorities of Vorarlberg.

The concept for the current project "Pro-local supply" was inspired by the SPES Group, . Bildungs- und Studiengesellschaft mbH & Co KG in Schlierbach, Upper Austria.

Community of Langenegg:

The renovation project of the Bregenzerwald house was initiated by the district council. Costs were partly supported by the Austrian Institute for the Protection of Historical Monuments but the greater part of the cost was borne by the local authority itself. A survey of the people promoted a greater acceptance of the renovation project. A survey of the purchasing power of the people done by a local school of commerce described the local needs. Follow-up discussions with the Mayor led to several successful regional companies setting up a branch in the renovated parish house. There are no outside partners involved in this project. This Community Development Business Centre belongs to the Provincial Government of Vorarlberg, the International Alliance of Climate Communities and the project "Nature and Life - Bregenzerwald".

Results obtained

In both communities positive effects can be felt and seen through the reactions of the people.

Götzis:

The key project "Pro-local supply" has not been running long enough for any measurable results to be established. Results of the previous campaigns are reflected in the setting up of a local bus, a group taxi service, an increase in the amount of cycle traffic through an improvement of the infrastructure and the demand for bike trailers. Further campaigns for the strengthening of local organic farmers and the supply of old peoples home with organic produce has taken off.

Langenegg:

In the renovated parish house various businesses, a hairdresser and two doctors have set up business and have been accepted by the community. The reactivation of the village centre has also had indirect effect on other economic areas. In the meantime, an Alpine dairy and a building/material market have also been established.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension:

In both projects, the distance between the resident population and their cultural environment has been reduced. The concrete environmental effects can be seen in different areas in each community as a result of the measures:

- Götzis:
 - increased use of local public transport;
 - strengthening of bike and pedestrian traffic;
 - changing purchasing behaviour of the citizens: they use more shops in the town itself;
 - new markets for the products of the local organic farmers.
- Langenegg:
 - savings in transport;
 - more responsible use of resources by locals;
 - less packaging waste;
 - use of local resources and craftsmen for the renovation of a traditional farming house;
 - encouraging the population to renovate and maintain more old buildings;
 - wood chippings heating system which heats the surrounding building (all public and a few private households).

Economic dimension:

- creation of new jobs on the spot;
- strengthening of the local transport and local economy;
- jobs have been secured;
- for the organic farmers a market has definitely been created;
- increased local spending;
- decentralisation of services.

Socio-cultural dimension:

The self-consciousness of the population is greater. The quality of their own community has become evident again. Also the conversational climate amongst the people has improved and the village community feeling has been activated (in Langenegg this can be seen in communal market activities, co-operation between farmers - Alpine farms and farmers - local trade.)

For the pedestrians and cyclists in Götzis, the infrastructure has improved enormously. Through the setting up of childcare, playgrounds and the decentralization of the infant schools, the situation has improved for children and parents, more particularly for women.

For the people of Langenegg medical care has improved, above all through the opening of the practice of a female doctor in the region.

Equity dimensions

Inter-personal equity:

Both communities aim to make the area a better place to live for their population. Above all, this means meeting the needs of the population as far as possible where they live.

In Götzis, there exist leisure institutions and service opportunities for the elderly, the young or families.

For Langenegg, this means expanding the community with respect to everyday institutions and shops which have moved away to larger neighbouring communities over the years.

Local structures are legitimate as they can be reached by everyone.

Inter-regional equity:

By bringing one's own surroundings closer and the qualities that go with them, it also brings about a greater awareness of attacks suffered by the environment and the exploitation of one's own culture. At the same time access, the access to far-away and foreign regions declines.

Not so well located places on the outskirts have been strengthened through decentralisation and diversification of individual functions (shopping, living, leisure etc.)

Inter-temporal equity

Lang-distance supply usually goes hand in hand with a heavy use of fossil energy carriers. Local trade (organic masses, solar power, products made of local wood and local agriculture etc.) supports the use of the raw materials generated. By supporting regional circulation, the people's awareness of local raw materials is increased. At the same time, attitudes and technology will develop, eventually benefiting the next generations.

Through the maintenance and improvement of the communal infrastructures as well as the local quality of life, the people develop a greater feeling of personal-responsibility for their village or town, as well as towards their own personal development.

Systemic principles

Diversity:

Strengthening local supply also means maintaining the cultural variety in a region. The sometimes strongly distinctive separation of functions between zones (local functions, residential areas, tourist resorts etc.) can cause a leveling of local tradition and culture.

Local supply also leads to various offers for the supply and care locally. Thus, the people's sense of well-being, and hence, proper behaviour is raised as well. When the social fabric becomes more closely knit, more people will become part of it.

Subsidiarity:

Both projects cite examples of more autonomy in the community. Basically, it can be stated that these projects could survive if taken over by the economy and the people. Decentralisation is an important aid to local supply.

In the community of Götzis various groups and clubs have been involved in the organisation of the project. They were asked to provide ideas and put them into practice in the campaigns. Right now it is still too early to see any end results.

Partnership and participation:

Both projects promote different types of partnerships:

In Götzis schools, nursery schools, clubs, local authority departments and youth clubs are working together to develop ideas and introduce them into the project.

The project in Langenegg calls for business collaboration. On the one hand, it deals with the protection of an economic area, and on the other, with the maintenance as well as extension of what is available. Practical partnerships have developed between the communal tenants of the renovated parish house, as well as between local farmer's wives and a sale outlet in the building. The Alpine Farm Co-operative can also be regarded as a partnership.

Lessons learned, difficulties encountered

In order to strengthen and extend the local supply in a community, which means going against the grain, there is need for committed individuals really believing in what they are fighting and acting as the driving force behind the project.

For the project in Götzis it is still too early to pinpoint any real strengths and weaknesses. In principle, one can say that at all levels the real issue is shedding off unwieldy habits - basically calling for a change in behaviour.

A project such as that of Langenegg can only provide impetus for a long-lasting development. In other words it must be seen as a first aid measure when the economic power is receding and causing vast gaps in supply. Almost all of the activities of this project originate from a single person (the Mayor). For further campaigns it is necessary to find other partners.

Reproducibility of the project

A key area in both projects is the shaping of political ideas of the residential population in order to strengthen the village structure and make it last a long time. In both places, exemplary model projects (with different dimensions) have been put into practice by the municipality, which has not expressed a will but also implemented practical measures which may be taken up elsewhere.

An important factor of success of a project, when comparing the two communities - is the active involvement and mobilization of the population at an early stage.

Approaches and Experiences

THE WALLOON
REGION
(BELGIUM)

FFFF



MINISTÈRE DE LA RÉGION WALLONNE

THE WALLOON REGION



CHARACTERISTIC DATA AND FACTS

The Walloon Region was officially created in 1970 but only became a reality in practice following the special laws of August 1980.

The Region includes the five Walloon provinces, 262 municipalities, 3.314.568 inhabitants (as per the 1996 census) for a territory of 16 844 sq.km; that is, a density of 196.8 inhabitants per sq.km while Belgium includes three regions (the Walloon area, Flanders, Brussels), 10 provinces, 589 municipalities, 10 143 047 people, 30 518 sq.km; that is, 332.4 people per sq km. The territory is distributed in 2 065 sq.km of urbanized land, 9 250 sq.km of rural land and 5 300 sq.km of forests.

The Walloon population is distributed into 89.6 percent of Belgians and 10.4 percent of foreigners. The active Walloon population consists of 1 390 333 people including 18.3 % job seekers; the active population comprises 232 087 self-employed, 822 470 employees out of which 321 843 are with the public sector and education.

The 1995 Walloon G.I.P. was ECU 52 billion, while the Belgian G.I.P. amounted to ECU 198 billion.

The 1995 turn-over was ECU 83 billion for the Walloon Region against ECU 473 billion for Belgium.

The 1995 exports came to ECU 25 billion for the Walloon Region against ECU 190 billion for Belgium.

Area: 16 844 sq.km
Division: 262 municipalities, 5 provinces
Population: 3 314 568 inhabitants (1996)
Density: 197 inhabitants / sq.km
GIP: ECU 52 billion
Unemployment rate : 18,3%

REGIONAL COMPETENCES

As a highly autonomous component of the federal state, the Walloon Region boasts skills and competence in the following areas:

Land development, environment and water, rural renovation and the conservation of nature, housing and the agricultural policy, economy (aids to companies), energy (transport and distribution), tutelary powers (organization and exercise of ordinary tutelary power over "provinces" and municipalities, intercommunal and interprovincial bodies), employment (placement of workers, putting people to work, granting of work permits, etc...), transportation and public works (roads, motorways, city and byroad common transport, school transports), scientific research, international cooperation, tourism, sports premises, vocational training and social promotion, immigrant welcome and integration, policy for the disabled, family planning, provision of care and the elderly.

Worthy of note is a power structure, the French Community handling the so-called customizable matters like education, culture and health, which operates at the same level and along a very similar structure to ours. This political entity covers virtually the same ground as that of the Walloon region except that it equally includes the French-speaking majority in the Region of the capital Brussels.

The 1997 Walloon budget (total means of payment) is ECU 4.3 billion and the regional environmental and tutelary power budget (including provinces and municipalities) ECU 0.56 billion.

REGIONAL APPROACH TO SUSTAINABLE DEVELOPMENT

SPECIFIC PROBLEMS

Environmental problems

Environmental awareness progressively raised since the 1970s.

At the time, the objective was the short term management of an acceptable level of nuisances, to limit health hazards, to organize the life setting (notably the land use) as well as to protect species and environments regarded as under threat.

This first generation of environmental policies (from 1970 to 1985) featured:

- a highly sectoral design of the approach and actions (air, water, wastes, etc,...);
- the fight against the most visible forms of local degradations and pollutions;
- relatively limited objectives and means.

Since the end of the 1980s, deep-seated changes have taken place.

Firstly, the first actions on the Environment were hardly significant and degradations continued in several areas.

Then, alongside local problems, large scale environmental concerns (global scale) were highlighted like the climate changes or the ozone layer.

Finally, cumulative and long term effects were blamed as likely to cause a transfer of consequences onto the next generations.

The environment which used to be a very marginal issue for companies steadily assumed a greater importance at the core of the industrial system, increasingly influencing the technologies used and the products manufactured. Thus, the environment became one of the key factors, increasingly impacting strategic corporate choices.

In addition, economic activities associated with the environmental sector are now expanding, bringing about technological innovations and creating jobs.

Economic problems

The conjunction of a number of economic and social elements served as a distant backcloth to our thinking. By intentionally oversimplifying, among the economic and social items which more particularly affect the Environment, two salient features may be more specifically recalled:

- the Walloon industrial situation built upon the industry of the nineteenth century and that of the turn of the century. With the decline of this sector, all types of well-known social disturbances appeared together with environmental nuisances due to the closure of traditional heavy industries). To this, one may add a hardly competitive Belgian tax system which generates some highly sensitive intra-European relocations.
- The Walloon agricultural situation: primarily intensive, the pressures on the Environment adding to a delicate European agricultural situation; making it a highly sensitive sphere of activity.

Socio-cultural problems

One of the most important socio-cultural problems is the behaviour of the Walloon consumer who, like any Western European consumer, overconsumes while depending to a great extent on waste producing techniques, notably in the packaging sector.

RESPONSES AND OBSTACLES WITHIN A SUSTAINABLE DEVELOPMENT PERSPECTIVE

Since January 92, in the Walloon Region, all matters related to the environment and natural resources have been assigned to a single minister. As a result, coherence between the various aspects of the environment can be reinforced (water, air, wastes, noise, etc,...), but mainly, a real global approach can be implemented in the region.

Planning has become mandatory for all public authorities in several sectors. The experience gained from the First Walloon Wastes Plan (1991-1995), a first approach to action planning by the actors concerned in one of the sectors of the environment, has shown that planning was needed to coordinate the actions of the different regional actors within the global perspective of the environment and natural resources, so as to raise their awareness and handle their cooperation.

The Walloon government has carried out two actions in parallel:

- drawing up of a decree related to environmental planning as part of sustainable development in the Walloon Region so as to set out a general framework for the whole approach and primarily give it a legal base.
- drawing up of the first environmental Plan for sustainable development in the Walloon Region.

The decree related to environment planning as part of sustainable development has been passed by the Walloon Regional Council in April 1994 that is, less than two years after the Rio Conference.

This decree introduces sustainable development as one of the basic principles of the regional policy and lays down the legal framework of environmental planning in the Walloon Region.

Pursuant to this decree, environmental planning has been assigned the following objectives:

- preservation of the natural resources and ecosystems
- prevention and phasing out of nuisances;
- setting up of sustainable development.

The decree structures and organizes environmental planning in several phases.

The first stage consists of the Report on the State of the Walloon environment. This report produced each year for the last ten years can be viewed as a "snapshot" of the environmental situation in the Walloon Region.

The second stage consists in the environment Plan for sustainable development. This plan devised by the Walloon government contains the main guide-lines in the mid and long term for decision making by the Walloon Government, the regional administration, the para-regional companies, the private persons entrusted with a public sector mission and, in matters of regional interest, the provinces, municipalities and associations of municipalities.

In particular, the plan contains the following items:

- The objectives for the different components of the environment and the means of actions to be developed.
- The items allowing the environment to be integrated and the preservation of natural resources in the process of development of the Region and in all regional sectoral policies.

The decree provides for the plan to be drawn up every five years but remains in force as long as it has not been replaced.

The second plan is being contemplated for the purpose of assessing the implementation of the actions planned and, where needed, by altering their directions, and establishing possible avenues of action.

The third step is made up of various sectoral programmes related to the air, water, wastes, nature and the soil.

Some of the sectoral environmental programmes already exist and have been implemented such as the Walloon Wastes Plan (1991-1995) or are under preparation, such as the programme of action for the quality of water, including the Ground Water Pollution Reduction Programme initiated by a 1985 decree on ground water pollution control.

The decree also includes an Action Programme on Air Quality and another one on soil quality while a third programme is focused on the protection of nature.

The decree provides for a similar elaboration procedure for sectoral programmes, like the environment Plan for sustainable development, with the same type of public consultation.

EXAMPLES OF EFFORTS TO SECURE SUSTAINABLE DEVELOPMENT

Based on the foregoing, it appears that the greater part of the response to our sustainable development problems can come from a sense of enhanced responsibility of the actors. This sense of enhanced responsibility will be reliant upon four basic concepts:

- information
- awareness raising
- training
- participation.

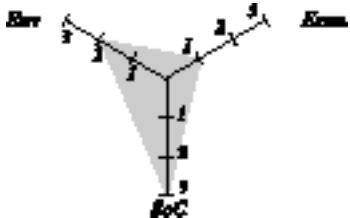
These principles seem essential and prerequisites for any action carried out or coordinated by the Walloon Region and also greatly support the choice of projects submitted by the Walloon area of Belgium.

The "River Contract" Project submitted by the Walloon Region matches all these concerns and seems particularly well-suited to the objective pursued by this Pacte programme, more particularly as it is a very popular idea in the countries of Western Europe, it should contribute to a better use of the experience gained and supplement individual approaches. Mutual visits are considered between Rhône-Alpes and the Walloon area of Belgium.

The Gazel project for the production of electricity from short cycle undergrowth illustrates the association of research between a major electricity utility operating under virtually monopolistic conditions and the university setting, to meet the energy needs of small or medium sized consumers, to investigate the use of a renewable source of energy and also match agricultural production concerns as well as the requirements of the Common Agricultural Policy.

Project n° 1

SEMOIS RIVER CONTRACT

SUMMARY	The project intends to ensure an integrated and consensual management of the river basin by the elaboration of an agreement protocol between all public and private actors on the objectives aiming at conciliating the many uses and functions of the rivers, their surroundings and the basin's water resources.	
KEY-WORDS	Sustainable development, water, river, partnership, consensus	
STRUCTURE RESPONSIBLE AND PARTNERS	<ul style="list-style-type: none"> - Initiators of the project : the 12 cities of the Semois basin (Arlon, Etalle, Habay, Tintigny, Léglise, Neufchâteau, Chiny, Florenville, Herbeumont, Bertrix, Bouillon and Vresse) - Administration in charge : Ministry of the Walloon Region - Directorate General of Natural resources and Environment - Water Division - Directorate of Surface Waters - avenue Prince de Liège, 15 - 5100 Jambes. - Project author : Fondation Universitaire Luxembourgeoise, avenue de Longwy, 185 at 6700 ARLON 	
CONTACT	Secretariat of the Semois River Contract Fondation Universitaire Luxembourgeoise, av. de Longwy 185 at 6700 ARLON MM. F. ROSILLON and P. VANDER BORGHT Tel.: 063/23.08.52 - Fax : 063/23.08.00).	
DURATION OF THE PROJECT	1993-1996 (elaboration phase of the river contract)	FOLLOW UP 1997-2001 (application phase of the river contract)
SPHERE OF	Hydrographic basin of the Belgian Semois : 1,230 km ²	Transborder project Semois/Semoy : is being studied.
TOTAL COSTS	ECU 206 000	of which : regional part : ECU 91 000 local authorities : ECU 106 000 other partners : ECU 9 000 Funding of the follow up phase : regional support : ECU 10 000 per year during 3 years local authorities : ECU 20 000 per year N.B.: these amounts only cover the study and follow up expenses. Transborder project Semois/Semoy : the INTERREG II file is being studied.
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ. = economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

Following the degradation, at the end of the eighties, of the quality of the water in the upper waters of the river Semois, the mayors of the valley, alarmed by the fishing societies, organized a debate with a view to improving this problematic situation.

Moreover, there were ever more conflicts as to the use of the basin, following the increase of various pressures on the environment.

The many actors of the basin seemed to have some difficulties to reconcile the concerns of everyone while seeing to the respect of the river ecosystem. The relationships between the users worsened and tensions developed between fishermen and kayak lovers, hydraulicians and naturalists, managers and defenders of the heritage, farmers and foresters,...

In 1993, a ministerial circular pertaining to the acceptability conditions and to the application modalities of river contracts in the Walloon Region allowed the implementation of the approach. This consensual approach corresponded to the expectations of the partners wishing to improve the quality of the environment in the Semois basin.

From 1993 on, the 12 cities who initiated the project chose the 'Fondation Universitaire Luxembourgeoise' at Arlon as the project author. After the elaboration of a preparatory file, a study convention of 3 years (1994-1996) was signed between the Ministry of the Environment of the Walloon Region and the 12 cities.

The river committee, including the representatives of all public and private actors, was set up early in 1994.

Aim

There are 12 objectives corresponding to the twelve chapters of the contract :

1. Improve the quality of the waters to reach the objective of salmon breeding quality
2. Concerted and integrated development of the river and its affluents
3. Moderation of the extreme situations of lowest water levels and floods
4. Upkeep and restauration of the natural environment
5. Putting to better use the cultural and landscape heritage
6. Promotion of an agriculture respecting the watercourses
7. Forest management in a context of watercourses protection
8. Development of tourism and leasure respecting the natural and human environment
9. Semois Valley : clean valley.
10. Cultural identity of the valley
11. Pedagogy of the environment in the basin and scientific research
12. Sufficient human resources to ensure the follow up of the partners' commitments.

Actions carried out and partners involved

On the basis of the 12 objectives defined above and which form the charter of the Semois basin, the partners have proposed practical restauration actions of the watercourses and their surroundings. These actions are part of the spirit and the general dynamics of the charter. Each partner (administration, user, association) is engaged, every one in his field of competence, in implementing the action programme according to his human, technical and financial possibilities.

By way of example, the following actions are being developed :

- improvement of the quality of the water (implementation of the purification programme, operation "salmon 2000", control of the bacteriological quality of the bathing areas),
- protection and restauration operations (creation of a natural reservation at the watermeadow of the Ai à Frahan, renaturalizing of the brook of Waschbur at Arlon, study of the restauration of the 'Jambon' site at Membre),
- development and works campaigns (improvement of the concertation as to the works in the watercourses, cleaning out operation of the lake of Neufchâteau, development of a beach at Ste-Cécile),
- information and awareness raising campaigns (informing the managers and users about the biological sites to be preserved, updating of the atlas of the easily flooded areas, organization of a transborder collaboration within the framework of the INTERREG II programme).

Results obtained

The contract (= action programme) was signed in December 1996 by all partners (62). The application of this actions programme is planned for the coming years. But already, we could mention the following results :

- Phase 1 : elaboration of the river contract

This elaboration phase of the river contract has entailed a qualitative approach of the valley through a good knowledge of the problems and advantages of the basin via an inventory of the field, improvement of the relations between users and a better consideration of the concerns of all users. In particular it has enabled a good consensus to be reached on a programme of 300 actions.

- Phase 2 : Implementation of the actions :

In a first stage and after a few months of existence, the first actions have been implemented : control campaign of the quality of the waters, reinforcement of the debate process as to the management of the watercourses, management of the floods by specific developments, implementation of an information leaflet on the protection of the humid areas (in progress), information on the agri-environmental measures, creation of a 'Forest' pavillion (in progress), operation "clean river", editing of a liaison bulletin, pedagogic activities with the schools, creation of a watercourses service in the Province of Luxembourg,...

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension

The passage from sector management to global management allows to take into account the whole "watercourses" ecosystem and the various factors which may influence it (e.g.: agricultural practices respecting the watercourses, suppression of the conifers at the bottom of the valley, purification of the waste water effluents,...). Apart from the improvement of the water quality, the contract advocates the improvement of the natural environment (flora and fauna, state of the waterside and bed, landscape,...).

Economic dimension

The economic impact can be grasped indirectly through the improvement of the quality of the environment and its potential to welcome tourist activities. The job creation for the watercourses management is justified insofar as at present, the maintenance of the small watercourses is not taken into account. Within the framework of the SRC, a watercourse surveying service has been created in the province of Luxembourg.

Within the framework of a global thinking on the management of the watercourses at the level of the basin as a whole, the damage due to floods should be reduced.

Social dimension

The social contribution is evident in this type of project, carried out in partnership with all actors of the valley. The river committee is the only meeting place between all public and private partners of the basin. The representatives have got to know one another and to create the relationship of confidence, needed for the success of this approach. The respect of all users and the search for a consensus allowing to reconcile the various concerns are being developed. This consensus approach aims at reducing the conflicts between actors. Moreover, one observes a social reappropriation of the civil society (via the associations, the local commissions, the riverside residents) in respect of the management of a natural resource, i.e. water.

A quarterly bulletin, Info-Semois, allows to develop a spirit of belonging to the Semois basin.

Equity dimensions

Inter-personal equity

Bringing together around the same table professional representatives of various origins, allows the interprofessional contacts to be improved and most of the defined actions tend to recreate among the users a deep sense of identification with the valley and a solidarity respecting everyone's rights.

The river contract also allows a quality heritage to be shared with the local users, and, as well, with the tourists and the occasional visitors.

Inter-regional equity

The choice of the entire basin, a reference spatial unit within the framework of the water management, allows the development of the project from Arlon (source) to the French border, each region of the valley benefiting from an equal attention.

Integration of the contract into an Interreg project with the French region of Champagne-Ardenne encourages the French authorities to continue the action up to Monthermé (junction with the Meuse).

Intertemporal equity

This project is part of the context of the sustainable development with, in the long term, the environmental restoration of the valley (quality of the waters, of the landscapes,...). As a result it clearly ensures the transfer to future generations of a space where biodiversity is restored and the heritage preserved.

Systemic principles

Diversity

To reconcile various uses and functions of the watercourse is a sure means of conserving the valley's diversity, not only as to the "conservation of nature", but also in terms of diversity of the developed activities, fishing, tourism, educational discovery,...

Subsidiarity

The initiative of the project originates from the common will of all cities of the valley; the follow up of the management of the contract also being part of a specific structure including the twelve cities. But, it is also clear that the success of the project also comes from the framework structures, the funding and the support of the Walloon Region.

Partnership and participation

This kind of consensus management with respect to a basin is only possible thanks to the collaboration of all the public and private actors concerned. We must nevertheless note, that few individuals participate personally in this project. With its 80 members, the river committee is the representative body of this partnership. The success of such a project thus directly depends on the degree of involvement of the various partners.

Lessons learned and difficulties encountered

- make the river contract approach official and enshrine it in a general water policy in the Walloon Region;
- promote the management of the basin;
- ensure the permanent follow up of the application of the resolutions and commitments of the partners (with adequate means);
- continue the information and awareness raising of the various actors by the publication of a liaison bulletin.

at the social level :

- the difficulty to overcome the partition into sectors in order to develop a consensus management;
- the practice of the consensus which, in certain cases, resembles "bargaining"
- a slow evolution of mentalities for an ecosystemic vision of the problems

structurally :

- the public actors legitimately call for a legislation defining their competence and their strict missions, but not yet integrating the spirit of the river contract
- the small means, both human and financial, put at the disposal of the coordination cell
- the lack of involvement of the cities
- the no-allocation, so far, of specific budget resources for the implementation of actions which are set out in the contract (funding is obtained via budget items which already exist and available to certain partners)
- the river contract is a voluntaristic approach sanctioned by a moral commitment. It is not the law.

Reproducibility of the project in another environment

The philosophy of the river contract can be developed without major difficulty each time the actors meet to manage in a consensual manner the problem of the water in a catchment basin. Other countries recommend this management system : France, England, Holland,... At the FUL (Fondation Universitaire luxembourgeoise), contacts are established with the Southern countries in order to study river contract projects (Marocco, Burkina Fs, Ecuador, ...),

Project n° 2

ELECTRICITY PRODUCTION BY THE GASIFICATION OF LIGNO-CELLULOSE CULTURES IN SMALL UNITS (TtCR-GAZEL).

SUMMARY	The project aims at implementing and analyzing from an economic and environmental point of view, a decentralized electricity production line by the gasification of wood cultivated on agricultural fields (coppice with very short rotation). The line integrates the agricultural aspects, the mechanization as well as the conversion of the wood into electricity and its delivery to the net.	
KEY-WORDS	Biomass, energy, CO2 reduction, agricultural diversification	
STRUCTURE RESPONSIBLE AND PARTNERS	<p>Financial partners:</p> <ul style="list-style-type: none"> - Ministry of the Walloon Region - Directorate General of Technologies, Research and Education - Ministry of the Walloon Region - Directorate General of Agriculture - Ministry of the Walloon Region - Directorate General of Natural resources and Environment - Electrabel - private company of electricity production <p>Scientific partners:</p> <ul style="list-style-type: none"> - Catholic University of Louvain - Faculty of Agronomy - Unit of Large Cultures Ecology - Gembloux Agronomical Research Center - Faculty of Applied Sciences - Unit of Thermodynamics and Turbomachines - Notre Dame de la Paix University Faculties - Centre for Research in Walloon Economy 	
CONTACT	<p>M. Frédéric BOURGOIS - Unit of Thermodynamics and Turbomachines - Catholic University of Louvain - Place du Levant, 2 - B 1348 Louvain-la-Neuve - BELGIUM</p> <p>Phone + 32 10 47 22 00 - Fax : + 32 10 45 26 92 - E-mail : secret@term.ucl.ac.bc - http://www.term.ucl.be</p>	
DURATION OF THE PROJECT	4 years : from September 1995 to August 1999.	
SPHERE OF APPLICATION	Walloon Region	
TOTAL COSTS	ECU 1.1 million	75 % Walloon Region, 25 % Industry
ASSESSMENT SYNTHESIS		
Env. = environmental dimension		
Econ.= economic dimension		
SoC = socio-cultural dimension		

DESCRIPTION

Initial situation and problem

The agricultural crisis

The farmers, encouraged to produce ever more, have implemented an intensive agriculture requiring fertilizers, phytosanitary products and heavy mechanization. The productivity gains which have thus been acquired entailed an overproduction which is difficult to manage and to a social and environmental degradation of the rural areas.

The Rio Conference

Since the Rio Conference, the reduction of the emission of the gases with a greenhouse effect - mainly the CO₂ - constitutes a priority of the environmental programmes of the participating countries. Unfortunately, the CO₂ emissions statistics show a stagnation and even an increase of these emissions. Strict measures ought to be taken in order that the objectives of Rio be met. Among these measures, the recourse to renewable energies is to be encouraged and developed.

Aim

The TtCR-GAZEL project consists in the creation of a decentralized power production line by the gasification of copsewood with short rotation. The objectives of the project are :

1. Study the technical viability of the complete line :
 - culture of the TtCR
 - harvesting and conditioning of the wood
 - conversion of the wood into gas and production of electricity delivered to the net.
 2. Analyse the environmental impact of the culture :
 - the agricultural aspects (inputs, biodiversity, landscape)
 - the CO₂ and energy balances
 - the liquid and gaseous effluents.
 3. Evaluate the social-economic aspects of the line :
 - the economic viability conditions of such a line
 - the macroeconomic impacts.
- The objectives of the line are :
- to propose an agricultural diversification possibility respecting the environment
 - to contribute to a reduction of CO₂
 - to participate in a decentralised production of electricity aiming at the production of electricity closer to the place of consumption.

Actions carried out and partners involved

Creation of the pilot line :

- Planting of 8 ha of TtCR, study of the plant techniques, study of the impact of the culture on the environment (CO₂ balance, evolution of the nitrogen in the ground, impact on the neighbouring cultures).
- Study, test and evaluation of various equipments for the mechanization of the culture (planting, weeding, harvesting, crushing)
- Design and implementation of a 150 kW demonstration unit, installed at the farm and managed by the farmer during the 2 last years of the project
- Implementation of an economic model for the economic evaluation of the line in different contexts in the Walloon Region.

Results obtained

The project is in progress. One cannot as yet speak of results, but rather of a state of progress :

- 4 ha of TtCR have been planted
- several planting machines, derived from truck gardening planters, have been tested,
- the equipments of the wood-electricity conversion unit are being delivered and tested
- the economic model allowing the evaluation on the basis of the data is ready.

SUSTAINABILITY IMPACT ASSESSMENT

Development dimensions

Environmental dimension

The TtCR culture is not very intensive : it requires reduced manuring, little weedkillers, no insecticides, or fungicides.

The TtCR, which is active from the very first days of Spring, acts as a 'nitrates pump' and thus prevents their percolation towards the aquifers.

The CO₂ balance of the line is very positive : the CO₂ emitted during the combustion of the gases in the generating unit is, in fact, CO₂ previously absorbed by the TtCR during its growth. By substitution to the fossile fuels, the line contributed to a reduction of the CO₂ emissions.

The production of electricity is also environmentally friendly since all the liquid and solid effluents are recycled. As to the gaseous effluents, these should be comparable to those of a diesel engine of the same power. The sound emissions are strictly controlled.

Economic dimension

One of the objectives of the project is to propose a new market possibility to the farmers which should bring them new financial resources.

The development of the line will entail the direct creation of jobs for the manufacturing of the equipments (agricultural machines, gasifier, generating set) as well as for their maintenance.

The substitution of imported fuel for electricity production by locally produced wood allows the reorientation of a fraction of the country's energy bill in favour of its interior development and in particular in favour of the rural areas, which are often in crisis.

Social dimension

If the pilot project meets the technical, economic and environmental objectives, the line may, by its decentralizing nature, imply a great number of farmers and thus contribute and improve the status by :

- the generation of extra financial income,
- the diversification and the opening of the farmer's job : from a food producer (primary sector), he becomes an electricity producer (secondary sector). The dynamics introduced by this function modification might, moreover, allow him to extend his sphere of activity. Why couldn't he, as the Austrian farmers do, supply heat and work the urban heating networks ? Why, being equipped with heavy material, couldn't he keep up roads, green spaces,...? The harvested wood could be put to better use in the wood-electricity conversion unit.

Equity dimension

Inter-regional equity

This project, oriented towards the rural world, often less advantaged, adheres to the equity principle. This is all the more true as the TtCR, a not very intensive culture, will preferably be planted on fields of lesser quality, the best ones being reserved for the food production.

Intertemporal equity

The proposed line should improve the living environment of the future generations by its contribution :

- to the limitation of the CO₂ emissions,
- to a better environmental integration of the agriculture (inputs, landscape, biodiversity)
- the production of a clean electricity
- the definition of a new profession as a farmer,

Systemic principles

Diversity

In the monoculture spaces, the coppice with short rotation introduces a break in the monotony. It is also a refuge for a large number of animals (insects, birds, mammals).

If, as the project recommends, the TtCR is planted in wind-cutter strips of 6 m width and if it includes different varieties of willows or poplars, the TtCR considerably improves the quality of the landscape (grove, wood-fields transition,...)

Subsidiarity and partnership

Two levels must be considered : the pilot project and the line such as it might develop when the pilot project will have shown its validity.

The pilot project

The initiative belongs to a working party including representatives of the administration of the Walloon Region, Electrabel and 4 scientific institutes.

The same working party carries the project:

- the financial contributions of the project come from the Walloon Region and Electrabel,
- the main orientations of the project are taken in agreement between the financial partners and the scientific partners.
- the day-to-day evolution of the project is the responsibility of the scientific partners.

The correct working of the project is submitted to the granting of the building licence (city and town planning) and of the working licence (city, province and other administrative services).

The TtCR-GAZEL line

The line will be able to develop only if:

- farmers take the initiative to start in this new direction,
- the power distributors guarantee, by long term contract, the purchase and the payment of the produced electricity,
- a financial support (investment support, low cost loans,...) is granted to those who wish to personally invest in this line,
- the administrative procedures (building licence, working licence) are not too heavy.

The project is multidisciplinary and implies all actors, both financial and scientific as well as the involved farmers. The default of one of them would endanger the entire project.

Participation

The line is already present in the agricultural world : the 8 ha of cultures are divided between several farmers. The pilot unit will be installed at the farm of one of them, who will manage it.

The participation of the agricultural world to this project appears on several levels :

- implication of several farmers in the project,
- follow up of the project by the farmers' unions,
- individual requests of farmers for TtCR planting,
- active participation of the farmers to the various presentations of the line or during a demonstration day of TtCR planting
- requests for the planting of production units (coppice + conversion unit).

Lessons learned, difficulties encountered

There is a considerable advantage to be drawn from the integrated aspect of the project such as it has been elaborated both on a financial level and as to the scientific collaborations.

Up to now, the main difficulties are of an administrative nature, foreign to the partners of the project : complexity, bad understanding and slowness to obtain the various licences. These difficulties are linked to the absence of references characterizing the innovating aspect of the project.

The cost of the electricity connection was also unexpected.

Reproducibility of the project to another environment

The biomass production line for conversion into electricity seems quite transposable to other contexts, whether Belgian, European or even worldwide (Developing Countries, especially). It is nonetheless important to see to it that this line be always duly integrated into its environmental, technical and social-economic context.

The conversion unit, possibly associating the production of heat to that of electricity, features a certain interest for the industries possessing wood refuse (packing, production refuse,...) or for local organizations possessing wood resources (forest working refuse, maintaining of roadsides,...). Such a conversion unit would allow the transformation of a refuse into energy with optimal energy efficiency, while contributing to the reduction of the CO₂ emissions !

4 - COMPARISON OF PROJECTS AND REGIONAL APPROACHES

BASIS FOR COMPARISON AND HETEROGENEITY OF THE PROJECTS

To clarify our intention and avoid any misunderstanding, it will be pointed out that the comparison of the regional approaches developed here relies on 15 projects analysed as part of this study. Clearly, the limited number of projects allows neither for a statistical study nor for a presentation of all the aspects of the regional policies. In addition, the projects selected by the regional partners were intentionally subjective and reflect not only a regional choice but also and, maybe primarily, a personal choice. Thus, the absence of one aspect of Sustainable Development in the two projects presented here by way of example should not be construed a fortiori as meaning that it is not taken into consideration at the regional level.

The clarifications made as to the existing problems, the presentation of the regional policies and the discussion held during the work meetings did furnish additional information allowing for the projects to be restated within their regional context. However, the approach remains subjective, influenced as it is by the administrative context of the participants (environmental departments), and by personal preferences. Likewise, the evaluation of the project impact in terms of sustainability has been carried out by the authors of the projects and is, therefore, necessarily subjective.

It is interesting to note that the projects presented within the framework of this study pertain to highly different sectors.

Seven projects deal with the primary sector, 6 with the secondary and 9 with the tertiary¹. Looking at their broad outline, 4 projects deal with management, 5 with the local economy, 6 with resources, energy and pollution, 7 with employment. Two projects (Eco-audit in local authorities and Agenda 21) are difficult to assess; they more particularly pertain to the general awareness raising category. With respect to the target, there again, projects vary. Seven concern public institutes viewed as a priority, 10, private companies and 6 the general public.

A great deal of diversity of projects

This great heterogeneousness of projects allows us to present and consider highly diversified cases and aspects of sustainability. However, it also renders difficult any comparison between projects from the standpoint of practical aspects and concrete actions. Indeed, how can we compare the application of agro-environmental measures with the implementation of a less polluting chemical industry ?

A reasonable and well-founded comparison must therefore deal with the approaches adopted and notably with the taking into account of the sustainability principles discussed jointly and accepted by all partners

These criteria can be applied to all the projects, whether dealing with awareness raising (7 of them), coordination and planning (5) or actual achievements in the right sense of the word (7). In addition, as approaches are being evaluated, the comparison can easily take account of the projects that are only in their starting phases and which, therefore, cannot yield any results yet.

¹ Several projects deal with two or three sectors

TABLE 1

REGION	PROJECT	TARGET			SECTORS			THEMES				METHODS	
		Public Institutions	Private companies	Population	Primary	Secondary	Tertiary	Land management	Local Economy	Ressources, energy, pollution	Employment	Consultancy/awareness raising	Coordination/planning
BADEN-W	Eco-audit in local authorities	X					X					X	
BADEN-W	Energy-schools	X		X			X			X		X	
EMILIE-R	Waste-compost	X	X		X	X				X	X		X
EMILIE-R	Restoration of reclaimed areas		X	X	X		X	X			X		X X
EMILIE-R	Industrial emissions of chemical plants		X		X					X			X
GÖTEBORG	Audit in SMEs		X			X				X		X	
GÖTEBORG	Agenda 21	X	X	X			X					X	
MIDI-PYR.	Fire-breaks		X		X		X	X				X	X
MIDI-PYR.	Solar drying		X			X			X		X		X
RHÔNE-A	River contract	X					X	X	X				X
RHÔNE-A	Solar heating of floors	X		X	X					X	X		X
VORARLBERG	Local infrastructure		X	X	X	X	X		X		X	X	X
VORARLBERG	Nature and life		X	X	X	X	X		X		X	X	X
WALLONIE	River contract	X					X	X	X				X
WALLONIE	Energy/wood		X			X				X	X		X
TOTAL													

TABLE 2

REGION	PROJECT	ENVIRONMENTAL DIMENSION	ECONOMIC DIMENSION	SOCIO-CULTURAL DIMENSION	TYPE OF PROJECT *
BADEN-W	Eco-audit in local authorities	2	2	2	C
BADEN-W	Energy-schools	2	2	3	C
EMILIE-R	Waste-compost	3	3	1	B
EMILIE-R	Restoration of reclaimed areas	3	1	3	B
EMILIE-R	Industrial emissions of chemical plants	3	2	1	B
GÖTEBORG	Audit in SMEs	1	2	2	C
GÖTEBORG	Agenda 21	3	2	3	C
MIDI-PYR.	Solar drying	3	3	2	C
MIDI-PYR.	Fire-breaks	2	1	3	B
RHÔNE-A	River contract	2	1	2	C
RHÔNE-A	Solar heating of floors	3	2	2	C
VORARLBERG	Local infrastructure	1	2	2	C
VORARLBERG	Nature and life	2	3	3	C
WALLONIE	River contract	2	1	3	B
WALLONIE	Energy/wood	3	3	1	B

* A : Project that stress one dimension of development
 B : Project that stress two dimensions of development
 C : Project that answers more or less to the three dimensions

Taking into account the development dimensions

The environmental aspects

The interpretation of the projects presented which, as already stated, does not necessarily reflect all aspects of the regional policy, underscores the key role of environmental aspects in the motivation of almost all projects. Indeed, in the 15 projects, the sum of points attributed to the environment dimension amounts to 35 versus 33 for the socio-cultural dimension and 30 for the economic dimension.

The fact that all members of the working group were part of the environment administrations and that sustainable development issues are usually related to these departments can in part account for the importance allocated to the environment. However the projects presented cover various topics in the different regions; those of Midi-Pyrénées, Rhône-Alpes and the Walloon region place the emphasis on the “landscape and nature” aspects while for Baden-Württemberg and Göteborg “energy and pollution” as well as the “overall climate change” are the issues at stake.

However, it is worth emphasizing again that all these differences do not automatically reflect the absence of one aspect in the discussion and regional policies even if the choice of such and such example project can reflect priorities. All group members stressed, for example, that the “landscape” aspect was an important issue for their region but it only appears as a central concern for the French-speaking regions. On the other hand, the “overall climate change” seems more taken into consideration by the Swedish- and German-speaking regions. One has to point out as well that the Italian region of Emilia Romagna is difficult to classify in this context.

The economic aspects

Usually, the economic aspect does not play a major role in terms of project motivation. It is never presented as the main argument for a project but in almost half the cases, economy is listed as a co-priority.

However, economic feasibility is looked at as a major precondition for completing the projects. Several projects underpin the need for public support during the implementation and initiation phase but most are likely to be economically viable and autonomous in the long term. For all partners, long term economic viability is a prime concern. However, it has been shown during discussions in the project group that this criterion is not a sine qua non condition. Certain projects, particularly related to the protection of the environment and socio-cultural projects may require long term subsidies while being indispensable for sustainable development. In the presentation of their projects, some regions stress the importance of the regional or even local economic development. This territorial approach somewhat distances itself from the “sectoral” approach found in some other projects. However, the efforts of companies in terms of Eco-audit, which are more particularly forming part of a sectoral approach also implicitly include regional development concerns.

The socio-cultural aspects

The socio-cultural aspects play an important part in most projects: in three of them, these aspects are a priority, while in six others they are a co-priority. Only three assign only one point to the socio-cultural concern.

However, the socio-cultural aspects are often limited to a change in behaviours and in the way the environment is perceived. Socio-cultural aspects as such are often regarded from an employment and local identity perspective but in the sample of projects presented, they are seldom defined as a priority objective.

Balance between the development dimensions

It is worthwhile noting that in all the projects presented, at least one point is assigned to each of the three development principles² (see table above). Nine projects out of 15 strike a balance (equal values for the three principles, or with only one point difference: projects C). The six others consider two principles as important but the third one is only secondary (project B).

² The evaluation scale going up to 3

A one-dimension project which mainly takes into account one dimension does not seem to be considered as a sustainable development project. Integration of the economic, environmental and socio-cultural aspects is regarded as the most important challenge. The projects which take into consideration all sustainability aspects in a balanced way are viewed as good examples of sustainability.

The group also thought, however, that in the context of a regional sustainable development policy, one-dimension projects can have their own role to play.

Taking into account the equity dimensions

Inter-personal equity

Inter-personal equity (social and gender equity) does not play a significant role in any project.

Inter-regional equity

Inter-regional equity plays an important role if one considers the overall environmental problems. Nonetheless, only Baden-Württemberg and Göteborg selected projects underlining this international aspect (see the "environmental dimension" chapter).

Likewise, the group hardly addressed the inter-regional aspect on a small scale. However, diminishing pollution will also impact the surrounding regions.

In a broader perspective, projects for integrated development in less favoured regions can be viewed as a contribution to inter-regional equity.

Inter-temporal equity

Inter temporal equity is implicitly a major challenge in almost all projects. Most often however, it is only envisaged in a very general manner in terms of reducing environmental risks or landscape conservation.

In the Midi-Pyrénées and Vorarlberg projects, reinforcing a traditional production of quality and maintaining an active rural population are also interpreted in that direction.

Taking into account the systemic principles

The principle of diversity has not been explicitly considered during the development of the projects presented. However, this challenge is implicitly included in all projects considered. The term diversity is used in every sense of the word, that is, biodiversity, diversity of the economic structures, diversity of approaches from an organisational viewpoint, diversity of landscapes, or diversity of the use of land and other resources.

Similarly, the principle of subsidiarity seems a key issue in all projects. The initiative and the implementation of projects originate from very different levels. An early involvement of local actors and of higher levels is considered important. In several projects, it is qualified as essential for the success of a project.

The role of the region and of the State vary greatly from one region to the next. These differences can partly be accounted for by the fact that the legal competences of partner regions are not the same. However, they equally reflect different approaches. The Vorarlberg and Emilia Romagna projects are the only ones to be carried out without State or regional involvement, as it is considered that sustainable development must rely on local actions.

European funding has been important in most cases. One can consider that it often provides a major incentive to launch a project and that it greatly increased the possibilities of innovative actions relative to the possibilities offered by political, legal and financial, tools at regional and national levels.

Partnership and networking play a significant role in most projects. The group considered that these aspects greatly condition the success of initiatives. In particular, multidimensional projects rely on a broad discussion.

At the same time, a networking going beyond the municipalities, zones or regions directly concerned by the project remains difficult to implement. Only technical projects (eg, energy/wood, industrial emissions, waste-compost, solar drying) show some efforts in that direction.

The participation of the local actors concerned is a salient feature of most projects. However, it is not clearly evidenced in some technical projects.

Within the framework of sustainable development, the improvement of learning capabilities and the ability to adapt to varying conditions is viewed as a prerequisite. This aspect is found in most projects.

KEY ISSUES

Comparing the different experiences, several key issues emerged which led to longer discussions.

Top-down or bottom-up approach?

The approaches of the participating regions differed concerning the emphasis on top-down or bottom-up initiatives. Partly this can be explained by the different legal and financial possibilities that the regional policy level has. But there are also markedly different traditions and basic attitudes. However, all members of the group agreed that traditional top-down approaches would lead to rather limited results. Sustainable development needs innovation, strong commitment and a conscious effort to integrate aspects that so far have been dealt with separately.

The interaction of top-down and bottom-up activities and the way coordination between different activities takes place seem to be the key issues determining the success of regional sustainability policies. Strong involvement (participation) of local actors at an early stage is seen as an important condition for success. On the other hand, regional policy can initiate activities, give support and create favourable general conditions.

Discussion and contractual procedures as in the river contract projects that operate with a sense of partnership have proved to be very successful. Similar procedures have been introduced more generally in Belgium, France and Italy and might also be worth considering in greater details in other countries.

The overall discussion about the key factors of success of model projects showed that the four systemic principles (diversity, subsidiarity, partnership and networking, participation) play a very central role.

If sustainable development calls for increased efforts towards subsidiarity, partnership, networking and participation, this may have important consequences for the way in which we conceive politics and governance. The current evolution of the role and of the policies of the regions in Europe points to the same direction. To develop new approaches and procedures is a challenge for the years ahead.

Sustainable development is an answer to urgent problems

The question emerged whether Sustainable Development is a fundamental long-term concept that would need to be discussed somewhat separately from day-to-day politics, or whether it is an answer to urgent problems. The group agreed that the debate on sustainable development is not merely philosophical, but that we urgently need concepts in this direction to solve a series of simultaneous problems. Therefore, regional sustainability policies must be assessed in the light of the problems faced by a specific region.

Long-term thinking is essential for sustainability and we may witness a historical transformation of our ideas on development and the relationship between humans and nature. However, new approaches must enable people to take action and contribute to solving urgent problems. Crises may even help structure the emerging paradigm of sustainability.

Sustainable development, therefore, is not just something for future generations. It matters now. And the projects presented in this report show that it can work.

How fast do we need success?

Linked to the previous issue is the question of how quickly one can expect results from model projects and a reorientation of policies. Rather different temperaments were represented in the group. Some counselled caution about unrealistic expectations, since sustainable development needs time to become a visible success. Others argued that fast and easily understandable results are important. Probably, both approaches will be needed.

Must sustainable projects in the long run be viable without public funds?

Some argued that projects relying heavily on public funding were not really sustainable. The group felt that no general rule can be found. Giving innovative impulses with public funds was not seen as a problem. On the other hand, publicly funded projects which simply compensate for environmental or social external costs caused by unsustainable business, cannot be considered as sustainable.

5. CONCLUSIONS

Action toward Sustainable Development is possible.

The best-practice projects presented by the regions have shown that it is possible to move toward a much more sustainable development. There already exist approaches which can be implemented right now.

Sustainable Development is not only necessary but also “profitable”.

The best-practice projects and the more general experience of the regions have shown that Sustainable Development is economically feasible. Win-win solutions where all parties are gaining can often be found. For industry many actions are already profitable in a short run. Others need longer periods. Economically, there is no alternative in the long run to sustainability.

The different backgrounds of European Regions strongly shape their specific approach to sustainability.

Comparing the economy, social conditions, the cultural tradition, the political and administrative system and the environmental conditions of their regions, the members of the project group were impressed by the diversity of backgrounds when it comes to regional sustainable development policies. Model projects and policies for Sustainable Development encompass many dimensions that may differ from one region to the next. Therefore the meaning and importance of actions and programmes strongly depend on the socio-cultural, economic and environmental context. The general concept of sustainable development, therefore, is being interpreted slightly differently from region to region. However, there exists a strong convergence in problem perception. Recognising all these differences, the project group discovered an important common basis for mutual learning and joint development of action strategies.

It is still a long way before we understand what the general concept of Sustainability can mean in practice.

Easy recipes for sustainability are not available. Sustainability is an emerging regulatory idea that may strongly transform our way of thinking and policies in the years to come. The interpretation and emphasis on one or the other aspect will necessarily differ from region to region. Developing some common understanding of sustainable development requires establishing somehow a baseline vision and common objectives for the future development of European regions. This challenge goes beyond the development of sets of indicators. In many circumstances, conflicts between different aspects of sustainability may remain. We will have to establish procedures for engineering trade-offs and finding acceptable solutions for all the interests at stake.

Promoting the ability to learn may be considered as the most essential item of sustainability. Therefore, no ultimate definition can be given to this concept. The process of experimenting with different interpretations and approaches, creating visions, inventing new procedures, setting and achieving intermediate objectives will continuously improve and transform our understanding of sustainability.

The regional and local level will play a preeminent role in implementing sustainability

Sustainable development calls for new patterns of interaction between different levels of policy making. As in business, flexibility, innovation and the diversity of approaches are needed to cope with the pressing problems of society. However, this can only be achieved by less hierarchical structures, stronger responsibility at lower levels, enhanced participation of the persons concerned and co-operation in partnership. Subsidiarity, which calls for entrusting the decision-making power to the lowest reasonable level, is an essential item of sustainability.

Innovative Model projects are key element of sustainability strategies.

At the regional level, simple top-down policies are not adequate to meet the challenge of sustainability. Innovative bottom-up activities at the implementation level are essential for success. Regional policies can initiate, support and complement such innovative actions without replacing them. However, to understand and promote sustainable development, an experience in model projects is essential.

As sustainability spans a wide spectrum of domains, model projects cannot be characterised by specific contents. It seems more promising to characterise them as follows:

- * projects which integrate the different dimensions of sustainability in an exemplary manner ;
- * projects which give an extraordinary contribution to one dimension while meeting the others ;
- * projects which significantly promote the ability to learn and openness to different perspectives.

Consequently, the question of knowing what approaches, procedures and structures have been adopted in these projects, is of particular interest.

In their endeavours for sustainability, European regions can learn a great deal from each other.

The short experience reported here, has shown that an exchange of experiences between European regions can be very fruitful. Comparing different perspectives, backgrounds and interpretations of sustainability, has contributed to a more differentiated and deeper understanding of the concept. Members of the group discovered how different backgrounds can lead to different interpretations and approaches, and started to question their own assumptions which they had taken for granted. Also they analysed the prerequisites for success in their own region and in others. They realized how important and difficult it is for European regions to hold a dialogue on sustainable development so as to distance oneself from one's own regional perspective. By understanding the differences we were able to secure a better view of existing and potential commonalities. Many project approaches were considered highly interesting for other regions. The project group agreed that there existed a strong potential for developing a more differentiated and concrete common understanding of sustainability.

The assessment of projects and policies in terms of sustainability must take into account the specific regional context.

The group agreed that it would be desirable to reach a consensus on indicators allowing to assess the extent to which the projects and programmes are oriented towards sustainability. The initial objective aiming to develop detailed indicators and criteria for assessing sustainable development projects throughout Europe could not be fulfilled. It was acknowledged that an assessment in terms of sustainability must strongly take into account the specific regional context and, moreover, that the principle of subsidiarity has also to be respected in defining objectives at different levels. Therefore, an evaluation of those projects relating to sustainability would have to rely on a whole hierarchy of objectives and criteria which, from a rather general European framework, would address objectives at a more local level. Such a hierarchy of goals is only slowly emerging through public discussion at all levels. The project group successfully experimented with possible elements of such a European framework proposed by the consultant. Looking at the progress achieved, the group decided to continue to work in this direction. The rough evaluations reported here have been made by the regions themselves after some discussion with the whole group. Further work could interestingly focus on a more detailed multiple cross-evaluation.

Complying with the systemic principles is a condition for success

Most of the best-practice projects presented here, strongly meet the systemic principles of the common evaluation framework - diversity, subsidiarity, partnership and participation. It seems that these systemic principles, which had only been introduced after the selection of the projects and which at first seem rather abstract, are essential for the understanding of sustainability. Discussing the single projects, the group was increasingly convinced that the compliance with the systemic principles is an important prerequisite for success in the other sustainability dimensions.

6 - RECOMMENDATIONS

The following recommendations are addressed to policy makers at the regional level in particular. However, many of the conclusions are also important for local actors and for policy makers at national and European level. As the project group intends to continue its work in a second phase, these recommendations represent a first approach to the matter.

Promote and implement the concept of sustainability using the methodology presented in this report

- The fundamental idea of sustainability is applicable to all policy fields and to all kinds of projects. All activities should be based on the consideration of their long-term environmental, economic and socio-cultural consequences.
- The ten principles of sustainability (see below) can serve as useful guidelines.
- The emerging concept of sustainability is the expression of a fundamental transformation of our ideas about development. This process is only starting and will require wide-spread public discussion. Decision-makers at all levels should promote and encourage an open public debate on models and priorities for development.

Look for win-win solutions

- Innovative sustainable development projects show that for most problems solutions can be found which are favourable for all parties involved. However, within established structures new challenges tend to be perceived as being threatening. It requires creativity to look at problems from a new perspective, to discover new opportunities and to forge new alliances. New players such as citizens' action groups or environmental organisations can encourage novel perceptions of problems and fresh ideas. They should be welcomed as serious partners.
- Look for opportunities and not only for problems. Support creative commercial and political entrepreneurs who have a wider perspective and give them leeway for experimenting.
- Encourage cooperation and partnership. Special incentives, round tables and other networking infrastructure can be helpful. Seek novel forms of cooperation.
- Quite often the requirement for innovation is greater in the field of social organisation than in the field of technology. Create appropriate infrastructures for the support of social innovation.
- Remove initial obstacles to win-win solutions by creating a favourable environment, e.g. consulting opportunities, green taxes.

Develop an adequate style of governance

- In a complex world, for governments at all levels hierarchical decision-making becomes less important than negotiating with other governments or private interest groups. Civil servants should be prepared for this new challenge.
- Develop a spirit of partnership-based cross-sectoral cooperation within administrations. Enhance mutual understanding and encourage mutual support. Promote job rotation between services and departments. Establish inter-service project groups.
- Develop formal procedures and structures for the incorporation of environmental and social requests into all policy fields.
- Introduce concertation and contracting procedures, especially for the integrated development of delimited territories (protected areas, river basins, etc.). All interests concerned should be involved.
- Involve NGOs and innovative local actors in the formulation and implementation of policies.
- Participation may initially be time-consuming, however, in the long run it will save much time and energy.

Learn from other regions

- Establish networks amongst the European regions in order to facilitate the exchange of experiences gained with sustainable development.
- Develop a strategy for networking with other regions. Evaluate previous networking experience.
- Encourage the exchange of civil servants between regions.

- Improve the access to information about your activities. Provide translations of important documents.

Formulate development objectives and draw up an action plan

- Define medium and long-term development objectives for your region by way of a political and public discussion process involving all stakeholders.
- Set priorities for action in terms of sustainable development and identify the administrations and stakeholders to be involved.
- Devise an action plan which states clear objectives and defines responsibilities. In order to ensure the active involvement of all those in charge a comprehensive discussion process will be required.
- Promote the idea and the challenge of sustainability within administrations. Organise appropriate events and discussions on the action plan. This will help to raise motivation, clarify responsibilities and create a spirit of innovation amongst civil servants.
- Ensure regular monitoring and updating of the action plan.

Introduce sustainability impact assessment

- Assess project proposals in terms of sustainable development.
- Assess policy proposals in terms of sustainable development.
- Promote further development of assessment methodologies.

Don't wait, act today

- Do not lose time. Urgent problems call for new solutions.
- Dare to be innovative

Sustainability Principles

development dimensions

- Respect for ecological integrity and the heritage of the man-made environment (environmental dimension)
- Satisfaction of human needs through efficient use of resources (economic dimension)
- Conservation and development of human and social potentials (socio-cultural dimension)

equity dimensions

- Social and gender equity (inter-personal equity)
- Interregional and international equity (spatial equity)
- Equity between present and future generations (inter-temporal equity)

systemic principles

- diversity/ redundancy
- subsidiarity
- partnership/ networking
- participation

ADDRESS LIST

COORDINATING REGION

Region of Midi-Pyrénées

22 bd Maréchal Juin
31077 Toulouse Cedex
France

Organisation responsible for the coordination of the project:
Agence Régionale Pour l'Environnement Midi-Pyrénées
14 rue de Tivoli
F-31068 Toulouse Cedex
France

Contact person :

Jacques Cransac

Monique Déjean-Servières

Christine Foucras

Tél : (+33) - 5 - 61.33.50.79 - Fax : (+33) - 5 - 61.33.53.11. - E-mail : arpemp@mipnet.fr

PARTNER REGIONS

Region of Baden-Württemberg

Umweltministerium Baden-Württemberg
Kernerplatz 9
D-70182 Stuttgart
Germany

Contact person :

Stefan Frey

Tél : (+49) - 711 - 126 2719 - Fax : (+49) - 711 - 126 2881

Region of Emilia Romagna

Direzione Generale Area Ambiente
Via dei Mille 21
I-40121 Bologna
Italy

Contact person :

Roberto Barilli

Lucia Gola

Tél : (+39) - 51 - 639 68 86 - Fax : (+39) - 51 - 639 69 91

Region of Göteborg och Bohus

Provincial Government
Department of Environment and Cultural Heritage
Lilla Badhusgatan 2,
S-403 40 Göteborg
Sweden

Contact person:
Sven Swedberg
Hans Oscarsson

Tél : (+46) - 31 - 60 58 29 - Fax : (+46) - 31 - 60 58 09 - E-mail : svsw@o.lst.se; haos@o.lst.se

Region of Rhône-Alpes

Direction Environnement et Energie
78 route de Paris
B.P. 19
F-69751 Charbonnières-les-Bains Cedex
France

Contact person :
Frédéric Bonheure

Tél : (+33) - 4 - 72 59 41 85 - Fax : (+33) - 4 - 72 59 47 23

Region of Vorarlberg

Umweltinstitut des Landes Vorarlberg
Montfortstrasse 4
A-6901 Bregenz
Austria

Contact person :
Manfred Hellrigl

Tél : (+43) - 5574 - 511 4201 - Fax : (+43) - 5574 - 511 4218 - E-mail : mhellrigl@vir.gv.at

Walloon Region

Direction Generale des Ressources Naturelles et de
l'Environnement du Ministère de la Région Wallone
15 avenue Prince de Liège
B-5100 Jambes
Belgium

Contact person :
Philippe Pignolet

Tél : (+32) - 81 - 32 56 79 - Fax : (+32) - 81 - 32 59 84 - E-mail : p.pignolet@rw.be

CONSULTANCY

EURES (Institut for Regional Studies in Europe)
Basler Str. 19
D-79100 Freiburg i Br.
Germany

Contact person :
Ruggero Schleicher-Tappeser
Johanna Faerber

Tél : (+49) - 761 - 71441 0 - Fax : (+49) - 761 - 70441 44 - E-mail : EURES-Institut@t-online.de

CONTENTS

Preface	p.	5
The partner regions	p.	6
Executive summary	p.	8
1 - Introduction	p.	11
<i>Sustainability: a challenge for European regions</i>	<i>p.</i>	<i>11</i>
<i>Structure of the report</i>	<i>p.</i>	<i>12</i>
2 - Sustainable Development	p.	14
<i>Sustainable Development and the Regional Dimension</i>	<i>p.</i>	<i>14</i>
<i>Learning from the debate of the last decade</i>	<i>p.</i>	<i>15</i>
<i>Towards a consensus on general principles</i>	<i>p.</i>	<i>15</i>
<i>Proposal for a set of basic principles of sustainability</i>	<i>p.</i>	<i>16</i>
<i>Explaining the Sustainability Principles</i>	<i>p.</i>	<i>17</i>
<i>Applying the sustainability principles in practice</i>	<i>p.</i>	<i>19</i>
3 - The approaches and experiences of the participating regions	p.	21
<i>Baden-Württemberg</i>	<i>p.</i>	<i>23</i>
<i>Emilia Romagna</i>	<i>p.</i>	<i>39</i>
<i>Göteborg och Bohus</i>	<i>p.</i>	<i>59</i>
<i>Midi-Pyrénées</i>	<i>p.</i>	<i>75</i>
<i>Rhône-Alpes</i>	<i>p.</i>	<i>93</i>
<i>Vorarlberg</i>	<i>p.</i>	<i>111</i>
<i>Région Wallonne</i>	<i>p.</i>	<i>127</i>
4 - Comparing approaches and experiences	p.	143
<i>A first overview: What can be compared?</i>	<i>p.</i>	<i>143</i>
<i>Consideration of the Sustainability Principles</i>	<i>p.</i>	<i>145</i>
<i>Key issues</i>	<i>p.</i>	<i>147</i>
5 - Conclusions	p.	149
6 - Recommendations	p.	152
Address list	p.	155

© Agence Régionale Pour l'Environnement
de Midi-Pyrénées 1997
ISBN: 2-9507486-6-6

Chapter 2: © EURES KG 1997
ISBN: 2-9507486-8-6

Layout
Contours

Copy of the internal pages
Dynadoc - Copy2000

Cover/gathering
Imprimerie Ménard

Printed on chlorine-free paper