EURES preprint

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The challenge of sustainable development

Since the Amsterdam Treaty of 1997, the European Union has required that all policies and programmes funded by the EU be conceived and implemented in accordance with the principles of Sustainable Development. The regulations for the new generation of the European Structural Funds (1999) and more recently the EU Strategy for Sustainable Development decided at the Gothenburg Council (2001) have confirmed this commitment. However, until now, operational tools that allow the assessment of the fulfilment of this commitment are largely lacking.

The reasons for this deficiency are to be found in the essence of the fundamental concept of Sustainable Development. It is an idea that has been publicly discussed for less than two decades. Sustainable Development is not only a new concept, it is a new paradigm, and it requires viewing many things from a new perspective. To understand what that implies takes time and meets with resistance.

Since the Rio Conference in 1992, the call for Sustainable Development has led to many disputes about its interpretation. The growing consensus, which emerges meanwhile from these discussions, is that Sustainability is a general idea, a "regulative idea" in the Kantian sense, as are, for example, beauty, freedom or health (Homann 1996). It cannot be assessed or achieved by simple rules, it needs interpretation in a specific context.

The concept of Sustainable Development was invented because of the obvious shortcomings of conventional development approaches. It presents two basic challenges:

- Whereas the extraordinary development of technology, industry and large organisations of the modern age were strongly based on an increasingly sophisticated differentiation and specialisation, the concept of sustainable development stresses the necessity of an *integrated consideration of different dimensions of development*. Considering simultaneously different dimensions in order to avoid counter-productive effects is not an easy task for highly differentiated administrations. More difficult still is to systematically look for synergies and win-win solutions. Different actors, different organisations, different disciplines will need to cooperate more fully.

- Sustainable development(SD) requires *openness towards the future* – for "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987) we need not only to conserve potentials and resources but also to encourage innovation in the right direction and to improve the ability to learn. Learning may include the shifting of perspectives and priorities. Therefore, the concept of SD and corresponding assessments must also allow for changing objectives and priorities over time. Sustainable development is an open process. "Sustainability" can never be achieved definitively. Yardsticks change as your knowledge increases.

Two additional challenges emerge in formulating Sustainable Development policies at the European Union level:

- Across Europe the cultural, the political, the economic and the environmental contexts of development vary considerably. Nevertheless, European policies need a common framework that is able to deal with this *diversity of contexts*. Assessments will need to take into account differences between contexts and at the same time allow for comparisons. For transferring experiences, a description and an understanding of these differences is necessary.

- European policies often concern five or six political or administrative levels, from the European level to the local level. Transparency and participation are high priority principles of the EU. A coherent sustainable development policy across the Union requires *multi-level governance:* appropriate systems for ensuring co-ordination and an integrated view of the responsibilities and activities of all levels are needed.

Assessing Sustainable Development

These challenges arising from the concept of sustainable development lead to considerable difficulties in the assessment of "Sustainability" when using conventional approaches:

- How does one look simultaneously at different dimensions of development? How does one integrate different disciplines? How does one measure a balanced development?

- How does one account for changing views? How does one guide and encourage innovation?

- How does one account for different contexts and priorities in different European regions and cultures?

- How does one ensure transparency and shared responsibility across a hierarchy of political levels? How does one deal with such a wide range of issues and the complexities of their interrelationships over space and time in a dialogue between experts, politicians and the public?

Many attempts have been made to reduce the whole issue of Sustainable Development to a limited number of easily comprehensible indicators that can be measured and monitored using conventional means. These approaches have been very useful for gaining a quick overview. However, limiting the assessment to the measurement of a standardised set of indicators has not led to a satisfactory response to the abovementioned challenges. Such a conventional approach easily leads to the reproduction of a sectoral view– it is not able to deal with views and priorities which change over time, and often it is not felt to be adequate to the specific local situation. In practice, the wide variety of initiatives that have attempted to assess progress in the direction of sustainable development (such as local agendas, state programmes, companies etc.) have often devoted considerable efforts to developing very specific and detailed assessment systems with varying levels of success.

This wide variety of approaches has for a long time given rise to polemics that argued that the concept of Sustainable Development was without any precise meaning and therefore useless. However, despite the difficulties in giving precise definitions and assessment rules, the concept has not lost its attractiveness and political effectiveness. Reviewing the main EU research projects concerning sustainable regional development three years ago, I was astonished at the extent to which a consensus concerning the main challenges of sustainable development had grown in only a couple of years (Schleicher-Tappeser & Strati 1999a). Today, we can build on a rather large consensus, as can practitioners, that SD is a useful concept that involves an open learning process, and that it makes no sense to give a detailed universal measurement rule for "sustainability".

We therefore need new approaches in assessing Sustainable Development. This is particularly true in the domain of public policies, where – mainly as a result of continued efforts of the European Commission – the concept of evaluation has made considerable progress in recent years, yet it is far from being generally understood. In the business world, the necessity of dealing with complexity and continuous change has led to several concepts that may be most useful in this context: "change management", "quality management", "learning organisations", are all concepts that have abandoned the old "command and control" approach and try to make use of systematic self-reflexive learning processes. Our democratic systems indeed rely more or less systematically on these kinds of feedback mechanisms – many administrations however, still operate on the basis of a rather conventional top-down logic and have difficulties in conceiving of assessments and evaluations as occasions for learning.

I think that understanding Sustainable Development as a collective learning process is the key to developing adequate assessment systems. Learning continuously changes the perspective concerning what could and should be done (the objectives) and how it could and should be done (means and methods). Assessments can help on both levels.

They can help in learning what should be done:

- by analysing a situation

- by identifying alternative developments and actions

- by specifying and revising objectives

And they can help in learning how to do better:

- by monitoring progress towards set objectives and refocusing actions

- by reminding that the different dimensions of development need consideration

- by comparing different approaches

- by exchanging experiences between different contexts.

To consider assessments as tools for learning implies that those who are involved in assessments should be interested in learning. On the one hand it is therefore important to motivate and to enable people to learn from these assessments. On the other hand we must recognise the long tradition of command and control and the limited openness to new approaches in many cases. Hence it is advisable to provide very simple assessment tools for simple cases.

The aforementioned concept of *Quality Management* seems to be particularly appropriate for developing a new assessment approach. Its widespread use in industry facilitates acceptance and understanding. Also, we intuitively accept that quality is always relative, it can never be reached absolutely. Quality Management means that permanent attention to quality is important at every stage of "production", everybody at all levels shares the collective responsibility. The emphasis of a quality management system lies on the procedures. Objectives and criteria are not fixed forever, they are re-examined on a regular basis. The transparency of objectives, continuous monitoring and regular evaluation are constitutive elements of such a learning system.

In the case of industrial environmental policies a paradigm shift from "command and control" towards "quality management" has already taken place: the introduction of environmental quality management systems has brought about a quantum leap in the efforts towards improved environmental performance. It has also shown how much still is to be learned. However, many examples demonstrate that minimum standards and their enforcement by public authorities do not by any means become obsolete. The same holds true for Sustainable Development: the concept of SD and the best assessment systems will never replace the highly differentiated system of regulations developed as a result of environmental, economic and social policies over the last two hundred years. But note that the concept of SD is something different, it amounts to more than the sum of these regulations and standards.

I distinguish between a "*defensive*" and a "*constructive*" approach to Sustainable Development. There are many administrators who would like to have an assessment tool that tells them that they do no major harm, which guarantees that nobody can blame them for supporting "unsustainable" activities. They would be happy with additional checklists leading to a final stamp which confirms that all is well. However, they are aware that final users would be reluctant to fill in another series of control forms in order to get public aid or service. Indeed, procedures of this kind could easily be integrated into conventional administrative practices, but they would not really add new elements to existing legal requirements (which surely could be improved), they would create supplementary complications in the name of sustainable development and would provoke resistance and de-motivation in the public. A less defensive and more constructive approach would need to involve the encouragement of learning and innovation.

Sustainable Quality Management

In order to respond to these challenges and to operationalise the concept of Sustainable Development without loosing its innovative and constructive characteristics, we have developed the system "*SQM – Sustainable Quality Management ®*" over recent years. Since 2001 it is being commercialised by the *SQM-praxis* company.

"SQM – Sustainable Quality Management ®" is a versatile system for the assessment and management of all kinds of sustainable development processes. Its basic concepts were developedin 1996-1998 in the EU research project funded by the ENVIRONMENT programme (Schleicher-Tappeser et al. 1997; Schleicher-Tappeser et al. 1998; Schleicher-Tappeser et al. 1997; Schleicher-Tappeser et al. 1998). Since then it has been further developed in a series of research and pilot application projects in different European Countries.
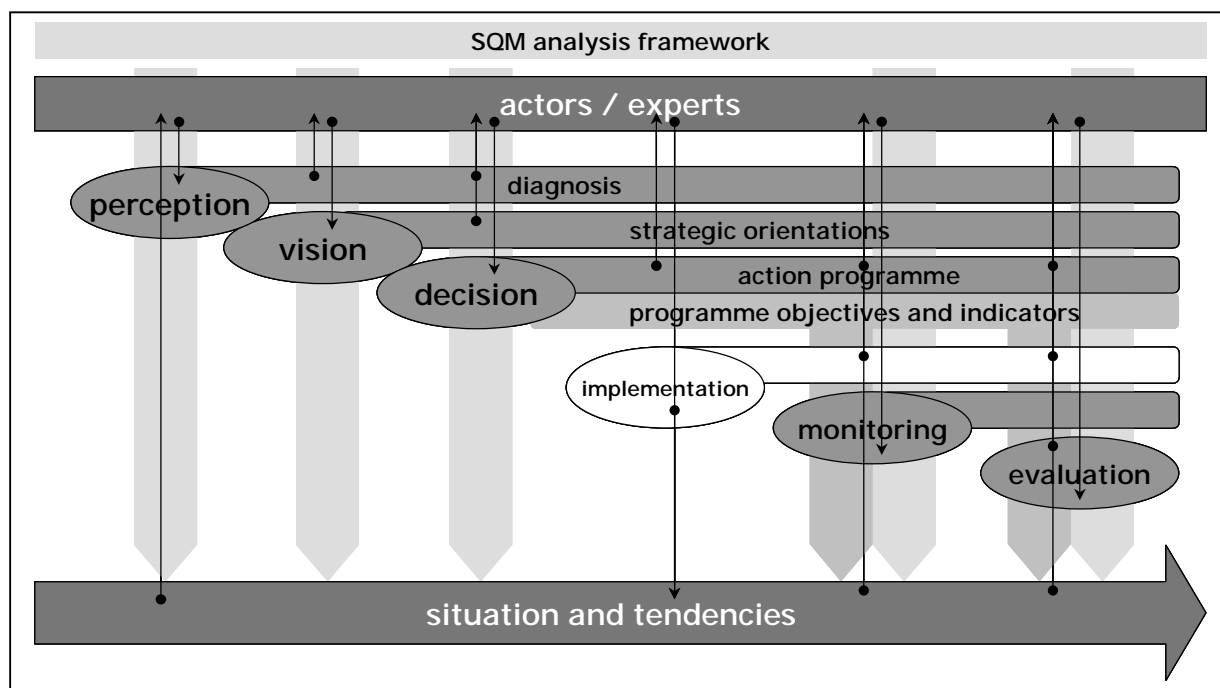

Figure 1: Use of SQM appraisals over the whole policy cycle

SQM is a modular system that can be adapted to a wide variety of different users and tasks. It consists of *concepts* (including the general analysis framework), a wide variety of application *methods* and internet-based software *tools*.

The SQM system has been constructed around basic appreciation procedures in order to provide support at every step through the whole policy cycle (see Fig. 1). Special attention is being given to developing a complete set of methods and tools for the management of Structural Funds programmes.

The *SQM analysis framework* consists of 32 rather general aspects that can be applied to and refined in different contexts. It can be regarded as a kind of "language" in which different points of view, priorities and contexts can be expressed. From the beginning, SQM has been designed to allow for intercultural exchange and discussion in Europe. In effect, this approach to providing a common framework of dimensions to be considered has proven to be most useful for intercultural communication.

SQM methods are designed to support learning processes and to facilitate the involvement of a large variety of actors: experts, administrators, politicians, local actors etc. They concern the appreciation technique itself, the facilitation of workshops, inquiries by questionnaires, the integration of given

indicator systems, the development of strategies and programmes, teaching, and the exchange of experiences.

The *SQM online tools* combine these elements and provide efficient support for different users and tasks over the internet.

SQM – Sustainable Quality Management ®		
a modular system for the management of sustainable development processes		
Concepts Sustainable Development as regulative idea and dynamic process …		
Quality Management of development processes, evaluation …		
Subsidiarity as a central concept of governance …		
Framework	**Methods**	**Tools**
- the SQM analysis framework	- diagnosis of situations	- Internet-based online-tools
- ORIENTATION: 10 Components of Sustainability	- strategy and programme development	- *SQM.guide*: public guide to funding programmes
- SOCIAL POTENTIAL: 16 Regional Key Factors	- monitoring and evaluation of programmes and projects	- *SQM.progman*: tool for managing funding programmes
- ACTION DYNAMICS: 6 Basic Transformation Levers	- SQM-appraisal combining qualitative and quantitative analysis	- *SQM.project*: versatile expert tool for SQM-related projects
	- participative facilitation	- *SQM.experience*: experience exchange
	- synthesis and visualisation	
	- training	

Table 1: The SQM system

The SQM analysis framework

In order to provide a better understanding of SQM a short explanation of the SQM analysis framework and the actual assessment procedure are necessary.

The three groups of aspects contained in the *SQM analysis framework* are the answers to three simple questions:

- Which direction do we choose for our future?
  → The principles of sustainable development: ORIENTATION

- Which are the societal forces and the capacities for co-operation?
  → The local key factors for a sustainable development: SOCIAL POTENTIAL

- Which levers could be used for reorienting development?
  → The transformation levers: ACTION DYNAMICS

The ten components of the *ORIENTATION towards Sustainable Development* have been developed by comparing a very wide range of systems and definitions of sustainable development. It is possible to establish a full correspondence with the less systematic 21 principles of the Rio Declaration. The components of the ORIENTATION towards Sustainable Development are also based on three questions:
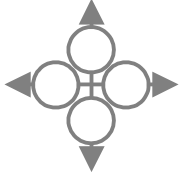
SQM analysis framework		
The ten elements of ORIENTATION towards Sustainable Development		
What do we want to sustain?	**The Development Dimensions**	
	1. Environmental dimension	
	2. Economic dimension	
	3. Socio-cultural dimension	
Which conflicts of interest are driving the debate?	**The Equity Dimensions**	
	4. Social and gender equity (inter-personal)	
	5. Equity between regions (spatial)	
	6. Equity between generations (temporal)	
Which basic approaches can help us?	**The Systemic Principles**	
	7. Diversity	
	8. Subsidiarity	
	9. Networking / Partnership	
	10. Participation	

Table 2: The SQM analysis framework

The first three elements are the common three basic dimensions of Sustainable Development with the third one encompassing what some other systems call "society" rather than merely the usual "social" aspects. These are looked at in more detail in the second group which has proved to be very useful for discussing the "future generations" issue in relation to other equity conflicts that have driven policies historically. The most innovative part is the "Systemic Principles": they are a systematic synthesis of various underlying principles often mentioned in this context but usually not seen as core elements of the concept of Sustainable Development. To include these kinds of more basic orientations in practice requires some additional initial explanations, but it has proven to be extremely helpful in discussing essential relationships and in elaborating strategies.

The second major group of aspects in the SQM analysis framework concerns the *SOCIAL POTENTIAL*. Sixteen key factors for local sustainable development have been identified in order to describe the co-operation and communication structure in a given community. In fact, these elements allow for the identification of the obstacles and the particular potentials for promoting sustainable development in a given local or regional context. For the comparison of experiences in different contexts and cultures and for evaluating their transferability, a description of the contexts in these terms has been shown to be essential.

Finally, for analysing and designing actions, policies and programmes, the third group of the SQM analysis framework proposes the six basic "transformation levers" that describe the ACTION DYNAMICS.

The SQM assessment procedure

Depending on the specific appraisal task and the specific circumstances, an appropriate selection of these 32 rather general aspects is used in carrying out an SQM appraisal, e.g.

- for analysing the situation and the trends in a territory
- for analysing the intentions of a policy or a programme
- for evaluation proposals
- for evaluating projects and programmes
- etc.

The standard SQM appraisal consists of the following steps:

1. select the aspects to be considered

2. collect some key quantitative data concerning each aspect

3. carry out a qualitative SWOT analysis concerning each aspect (Strengths, Weaknesses, Opportunities, Threats)

4. attribute an importance to each single mention in the SWOT analyses (0 to 5 points)

5. attribute an importance to the Strengths, Weaknesses, Opportunities and Threats of each aspect

6. synthesise these latter importances to a graphical profile that allows to identify the "hot spots"

7. compile the most important single mentions concerning Opportunities and Threats for the identification of where more detailed analysis is necessary or for planning concrete actions

8. define sub-aspects for a more detailed appraisal where appropriate

9. identify indicators for detailed monitoring where appropriate.

The central element of this procedure is the SWOT analysis. Its advantages in this context are that it allows in particular

- the inclusion of qualitative appraisals by experts and laymen and the refinement of the analysis step by step as appropriate:

- the discussion of the dynamics of a situation and the discovery of new opportunities by examining the Weaknesses and the interrelationships between different aspects

- the structured collection of concrete ideas for action

- the provision of a framework which is equally useful for group discussions and individual questionnaires, and for the inclusion of highly precise expert information and for the representation of the more general perceptions and priorities of local actors

For involving less experienced participants it is advisable to translate the general aspects into questions which are more pertinent to the actual task and situation.

ORIENTATION		S	W	O	T
O1	Environment	●●●●	●●●	●●	●●
O2	Economy	●●●	●●●●●	●●●●	●●●●
O3	Socio-Culture	●●●	●●	●●●	●
O4	Equity between individuals	●●●	●●●	●●●	●●
O5	Equity between territories	●●●●	●●●●	●●	●●●
O6	Equity between generations	●●●	●●	●●●●	●●●
O7	Diversity	●●●	●●●●	●●●●●	●
O8	Subsidiarity	●●●●	●●	●●●	●●
O9	Partnership / Networks	●	●●●●●	●●●	●●●
O10	Participation	●●	●●●	●●●●	●●●●

Table 3: Example of an SQM profile

Experiences in using the SQM system

An early successful experience with parts of the SQM framework involved a dialogue project between seven European regions. Representatives of the environmental administrations of Emilia-Romagna, Rhône-Alpes, Midi-Pyrénées, Vorarlberg, Baden-Württemberg, Wallonie and the Province of Gothenburg had come together in a series of workshops to draw common conclusions from their experiences with sustainable development projects. However, they had serious difficulties in agreeing on a common terminology and on a framework for evaluating their projects. The later introduction of the SQM framework allowed the formulation of the differing priorities in the interpretation of SD, the considerable improvement in the mutual understanding of those of very different backgrounds, the evaluation of the projects within a common framework, the discussion of the transferability of experiences and the formulation of a series of pertinent conclusions and recommendations concerning SD policies at the regional level. Particular advantages of the framework were shown to be that it allowed the formulation of different points of view and priorities within the larger debate concerning SD, that the basic categories could be understood in different cultures, and that assessments using this framework were very suitable for a collective learning process (ARPE, Schleicher-Tappeser & Faerber 1997ARPE, Schleicher-Tappeser & Faerber 1997).

An important occasion for testing and promoting the SQM approach was a series of twelve pilot projects funded by DG Regio concerning the integration of the concept of Sustainable Development into the Structural Funds. The project, carried out in Midi-Pyrénées, was based on SQM and consisted of a participatory programme development in two small Objective 2 areas. In each of these areas, a working group of local actors went through an intensive learning process, developing a common perception of the difficult and conflict-burdened territories, analysing previous interventions, identifying the main challenges, formulating key strategies and defining the basic structure of a programme. A project team facilitated the workshops, conducted supplementary interviews and synthesised the results of workshops and questionnaires. The second generation of supporting SQM software was developed in parallel with the project. In both territories, the SQM approach proved to be very useful in helping to examine the local situation from an unusual perspective. This allowed local actors to overcome old disputes and to develop genuinely new common visions. However, it was clear that competent facilitation was necessary in order to find the right balance between breaking up old stalemates and ritual discussions on the one hand and providing the security that a useful result would emerge on the other hand. Feedback from the local actors and the results were very positive although some lessons had to be learned concerning a simplification of the procedures (ARPE & Schleicher-Tappeser 1999). In the evaluation of the twelve pilot projects carried out on behalf of the EU commission, SQM was considered to be the most advanced system in this context (Moss et al. 2000).

Subsequent projects in Midi-Pyrénées also showed that with simplified procedures an SQM-based participatory programme development inevitably takes a longer time than the more usual top-down programming. A Franco-German cross-border development project in a small rural area on the Rhine confirmed later that larger SQM appraisal questionnaires can only be used with people with a certain experience in systematic development discussions: for local actors at the village level without other representative experiences, workshops seem to be the only adequate method of involving them into SQM-based discussions on community development.

Whereas programme development is a creative process which requires experienced guidance with sensibility and flexibility, subsequent tasks in the management of the programme can be structured in a more formalised way. For the current Structural Funds programmes in Midi-Pyrénées we are now implementing a public website consisting of a public guide to the complex programme including the opportunity for project proposers to pre-evaluate for themselves their project proposals in terms of Sustainable Development and the objectives of the programme. A series of difficult questions had to be solved in transferring adequately the experiences of direct consultation to the anonymous format of the internet (see www.sqm-praxis.net).
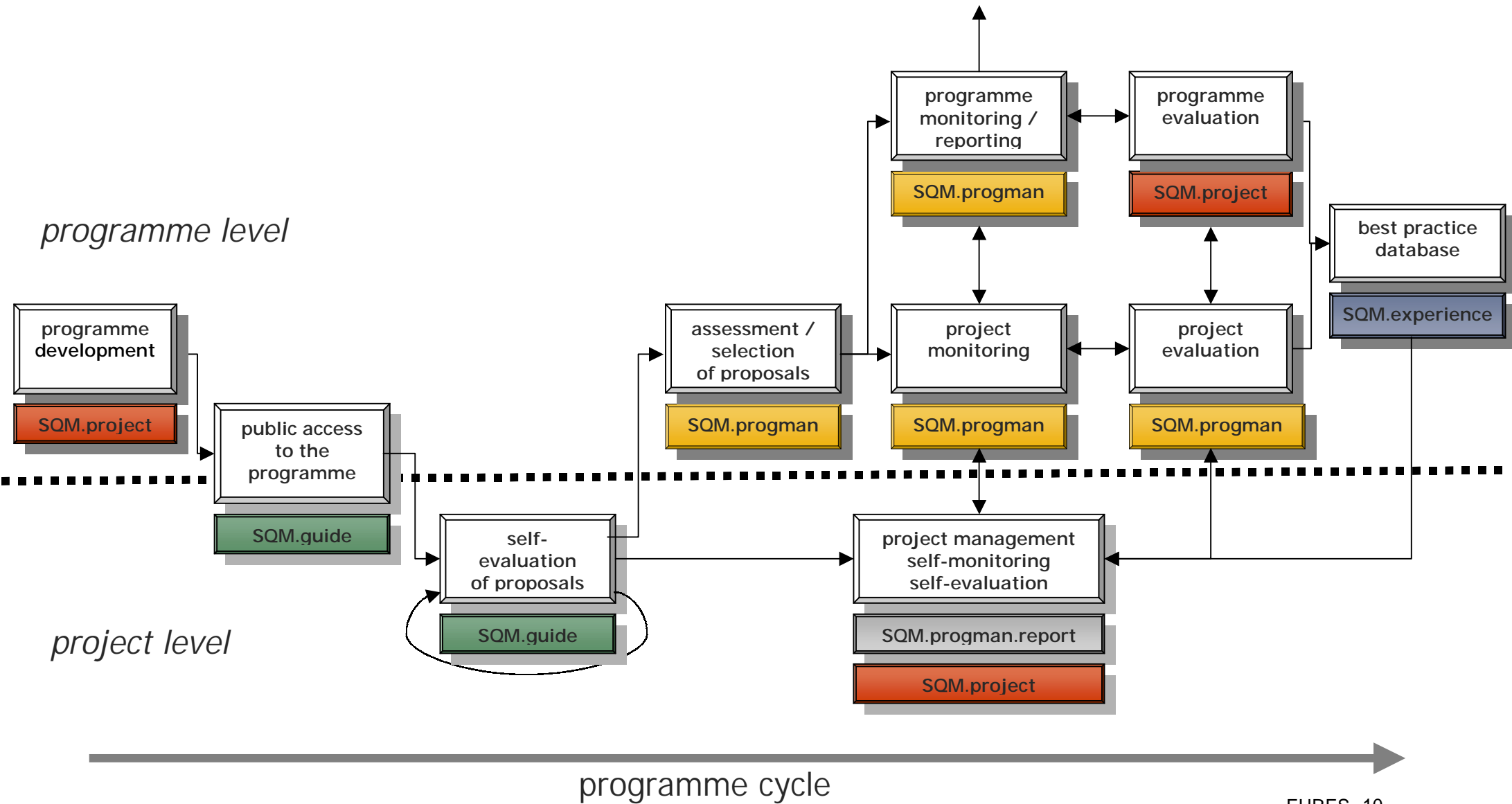
SQM – Examples of projects
1998: Towards Sustainable Development: Experiences and Recommendations of seven European Regions. PACTE programme. (FR, IT, BE, SE, DE, AT)
1998: Development of procedures for the consideration of SD criteria in the awarding of Structural Funds. Saxony (DE)
1999: D2MiP: a DG Regio pilot project in Midi-Pyrénées (FR) concerning the participatory elaboration of local objective 2 programmes. Evaluation by DG Research.
2000: Proposal of a charter for the Local Agenda 21 in Florence (IT)
2000: PROMETEO: CD-ROM for supporting project development respecting the principles of SD for the Engineers Association of Cosenza (IT)
2000-01: KARMIS: Cross-border landscape development scheme Marckolsheim-Sasbach-Endingen (FR/DE).
2001-02: SQM.guide MiP: internet-based programme guide for the Midi-Pyrénées structural funds with auto-evaluation facility for project proposals (FR)
2001-02: D2ParcsMiP: Programme development for 3 Regional Natural Parks in Midi-Pyrénées (FR)
2002-04: INNESTO: EU research project concerning "Sustainable District Logistics" (IT, DK, DE, SP, NL)

SQM online tools

On the basis of these experiences *SQM-praxis* is now creating a third generation of software tools which will be available online via the Internet. This allows the provision of an integrated modular system of tools for all tasks that occur in managing public funding programmes. The coherent, and at the same time flexible, structure based on the SQM concepts allows the implementation of complex management systems with differentiated access rights for all those working in such a programme, ensuring transparency, ease of communication and coherent monitoring and evaluation. Better projects, more transparent programmes, more focused activities, more meaningful evaluations, and finally also reduced costs should result.

Fig. 2: Use of SQM online tools in the context of public funding programme

programme level

project level

programme monitoring / reporting
SQM.progman

programme evaluation
SQM.project

best practice database
SQM.experience

programme development
SQM.project

public access to the programme
SQM.guide

assessment / selection of proposals
SQM.progman

project monitoring
SQM.progman

project evaluation
SQM.progman

self-evaluation of proposals
SQM.guide

project management self-monitoring self-evaluation
SQM.progman.report
SQM.project

programme cycle

Consequences for Research Policy

Sustainable Development is a new paradigm with far-reaching consequences. It is not a new discipline. The understanding of the full range of implications of this new concept and its dissemination will take a long time. In particular, SD will have deep consequences for the cooperation between disciplines and for the relationships between researchers, policy-makers and the public. Therefore, research policy should provide room and funding for probing basic questions and for new forms of dialogue.
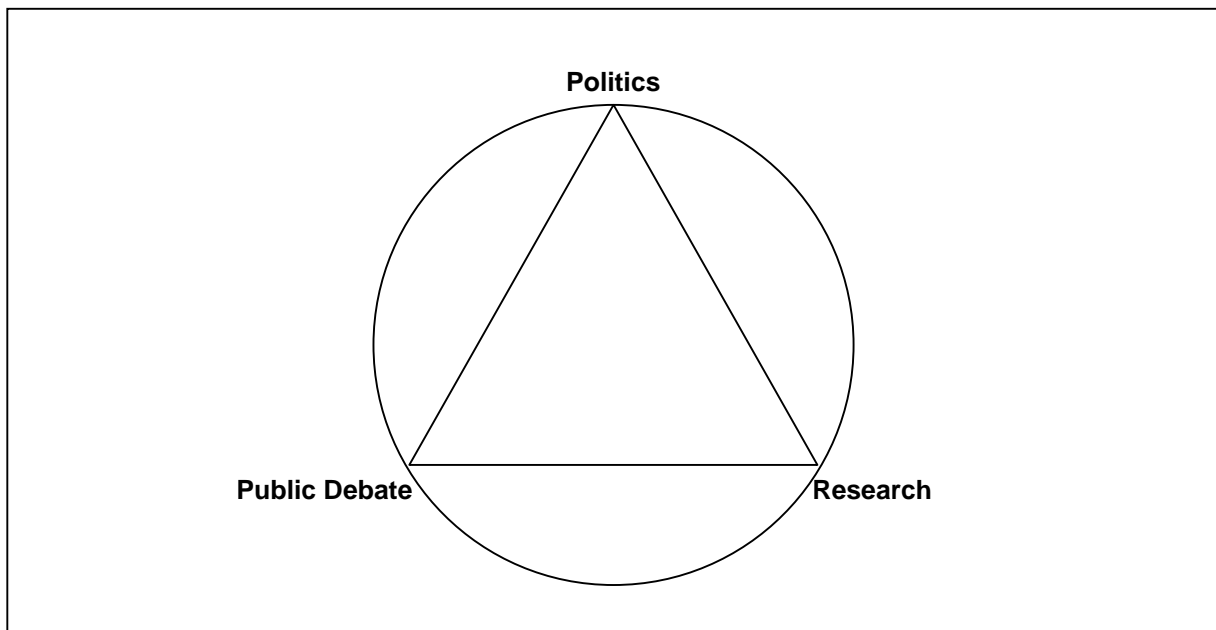

Figure 2

Research is increasingly becoming directly involved in complex collective learning processes with feed-back mechanisms that are accelerating. Research policy therefore must develop more intensive links to other policy fields and to the public debate.

SD encounters resistance and its label is being misused for reselling old approaches. Therefore it is important to monitor the changing use of this concept and to build bridges in the form of exchanges of experience and simple but challenging tools. Research policy, in my view, should actively assume an important role in the societal learning process associated with the transition from the industrial development paradigm to the emerging sustainable development paradigm. It therefore should try to provide adequate instruments for supporting this process.

Intercultural co-operation and confrontation is essential for understanding the role and the potential of the concept of SD. As a paradigm shift involves the difficult questioning of assumptions and perspectives previously taken for granted (Kuhn 1967), confrontation with the views of other cultures can be as fruitful as confrontation with other disciplines. Europe has a unique opportunity in this sense – several highly developed cultures have developed different approaches towards the same issues, they have a common basis for understanding and they now also have common institutions. This results in a dual challenge. On the one hand European intercultural research has specific innovation potentials which are usually underestimated. On the other hand it is becoming increasingly evident that European integration that takes advantage of the rich variety of European cultures needs a new form of governance in which the SD principles seem to be essential.

As SD calls for the integration of different development dimensions, it becomes more and more important to integrate social science considerations into issues that until now have mainly been treated as technical or natural science issues. Whereas European co-operation in technology and natural sciences is relatively easy and well-developed as concepts and methods do not differ significantly between different European cultures, co-operation and mutual understanding in social sciences is much more difficult. We have seen that in many European projects where a real partnership prevented the easy dominance of one approach over another and forced genuine confrontation and comparison of different perspectives this difficult, and for many unusual, intercultural questioning process was a major source of innovation (Schleicher-Tappeser & Strati 1999b; Schleicher-Tappeser & Strati 1999a). However, the resources which are necessary for this process have generally been underestimated. The trend to "think big" in the discussions concerning the new European research programmes could result in destroying a culture of innovative cooperation that has evolved in recent years: in order to minimise risks, managers of large projects will tend to limit intercultural cooperation to more technical issues.

In order to promote Sustainable Development in the policies and actions of the European Union, a much improved cooperation between researchers and practitioners is needed. Research provides concepts, but practitioners require ready to use tools for communication, management and teaching. Today such tools also need software support, which is very expensive to develop. The result of present funding structures is that there is a considerable gap between interesting concepts on one side and the practical short-term needs for management and evaluation on the other. The pragmatic solutions for evaluation, management and training developed under extreme time and funding constraints generally do not correspond to the much more advanced state of the art concepts and knowledge resulting from research. Improved cooperation, for example, between DG Research and DG Regio could result in more adequate funding and practical experimentation and testing opportunities for the intermediate development stages of learning and management systems.

Europe, with its variety of traditions and cultures, with its long history of political and intellectual struggle for combining cultural, economic, social and individual development in a rich and varied but restricted environment, has a unique chance to play a leading role in the transition towards more sustainable development. Research policy should meet this challenge by mobilising and recombining these specifically European resources and making them accessible for a collective learning process.

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More detailed information and literature concerning SQM can be found on the web-site www.sqm-praxis.net. Most references quoted here are available as downloads.

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