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Quality Management of Projects on Sustainable Development: an Evaluation Framework

Working Paper

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Abstract

The Rio Declaration on Environment and Development clearly demonstrates that the concept of sustainable development is a normative, global and regulative idea. As a precondition for the implementation of the concept of sustainable development at regional and local level, questions concerning actors and their responsibilities, the political action level, the timeframe for intervention and the forms of co-operation need to be answered. The concept must prompt a "down-to-earth" approach; it must get a handle on day-to-day political activities with clear-cut, legitimate and evaluative questions. Thus, the aim of this paper is to present a reference frame for projects which actors can approach autonomously and on a co-operative basis. The starting point is the problems concerning implementation that arise from the concept of sustainable development. The paper discuses the level of implementation and focuses on the regional level. It describes the material, procedural and ethical requirements arising from the concept of sustainability and the quality standards required for evaluation. These considerations provide a basis for an assessment tool consisting of 48 questions. The paper describes initial experiences with this assessment tool and evaluates its pros and cons, strengths and weaknesses.

1 A vision awaits implementation ...

The implementation of the concept of sustainable development faces three fundamental challenges:

- The issues at stake:

  The concept of sustainability tends to be adapted to existing structures and constraints and implementation is often limited to material issues such as the use of resources, social distributive justice and economic development. However, these basic dimensions are interrelated and the main challenges for sustainable development arise at the interface between the three dimensions. Science, in particular, will tell us how it has to be done and how much degrees of freedom of action is left. But beyond that, we need specific transformation knowledge to translate the scientific findings into action.

- The temporal horizon:

  Time is scarce; this is what scientists familiar with greenhouse effects and global climate change tell us. Demographic patterns change slowly but have fundamental impacts on consumption and investment behaviour. Thus, the question arises as to which issues are most urgent with respect to time and how do they combine with other issues?

- Spatial delimitation:

  Although sustainable development is a global and normative concept it will primarily be implemented by nation states and their sub-national levels. Again the question arises as to which sustainability issue will be dealt with at which spatial level. We also need to identify the specific tasks that are best dealt with at local, regional, national and even global level.

1.1 ...as a regulative idea

As a regulative idea, sustainability is a highly complex vision; the concept of sustainable development is generally applicable in nature. In its broad-sweeping claims it corresponds to the fundamental rights from the time of the French Revolution. At the same time, however, its visionary power can lead to extensive non-commitment. The concept of sustainability is like the concept of justice: everyone knows what is meant by it but its balanced consideration is difficult in individual cases. To prevent the concept of sustainability from dissolving into something entirely random, it is necessary to integrate it into a

comprehensible analysis framework, which facilitates this balanced consideration. However, it is not easy to find a suitable answer to the question 'what is sustainable?'.

1.2 … as global consensus

Sustainable development is a multi-dimensional concept that deals with different levels of action (Thierstein et al., 1997). Even the final report of the "Brundtland-Commission on Environment and Development" focused on different local and cultural perceptions so as to propose a global problem-solving scheme. Furthermore, many of the 27 principles of the Rio Declaration refer to the fact that in addition to the global level of regulations, both the national and community level play a crucial role in the proper and effective implementation of the concept (UNCED, 1992a).

Chapter 28 of Agenda 21 states: "Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and cooperation of local authorities will be a determining factor in fulfilling its objectives. Local authorities construct, operate and maintain economic, social and environmental infrastructure, oversee planning processes, establish local environmental policies and regulations, and assist in implementing national and subnational environmental policies. As the level of governance closest to the people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development." (UNCED, 1992b).

1.3 … as a political concept

So far it is indisputable: sustainable development must be regarded as a political concept with links to different levels of political action. This raises the need for its perception as a political process which in turn raises questions like the following:

- How and by whom are the objectives for specific spatial entities being set within the general framework of the Rio Declaration and Agenda 21?
- Which authorities are delivering means and producing legitimation? Who are their partners in cooperation and at which stage of the implementation process does this cooperation take place?
- What is the relationship between public and private bodies with regard to the implementation of sustainable development policies and respective measures?

- Who is in charge of evaluating and controlling sustainable development projects and programmes?

1.4 … as a joint co-operation-based project

The preamble of Agenda 21 offers some valuable hints for an effective process of implementing the concept of sustainable development. Section 1-3 of the preamble starts as follows: "Agenda 21 (...) reflects a global consensus and political commitment at the highest level on development and environment cooperation. Its successful implementation is first and foremost the responsibility of Governments. National strategies, plans, policies and processes are crucial in achieving this. International cooperation should support and supplement such national efforts (...). Other international, regional and subregional organisations are also called upon to contribute to this effort. The broadest public participation and the active involvement of the non-governmental organisations and other groups should also be encouraged"[1].

The preamble of Agenda 21 mentions three important requirements for any attempt to implement sustainability policies:

- the selection of the appropriate spatial and institutional level;
- allowing the broad public to participate;
- involving non-governmental organisations and other groups.

Thus, the Local Agenda 21 is regarded as an important strategy and policy tool to make the bottom-up approach work in order to contribute to the globally agreed basis objectives of sustainable development (Lafferty, 2001; Lafferty et al., 1998).

The next section sheds some light on one of the appropriate levels of implementation of sustainable development: regions and city-regions, which may both encompass rural, urban and intermediate spaces.

2 The right level: implementing sustainable development in regions and city-regions

For true conversion of the ‚global project' of sustainable development on the regional level, it is necessary to be aware of the problem to transfer the scale. The difference between the global locality and a region is three fold (Nijkamp et al., 1992):

- The global system is a closed system dependent on sun light, while regions are economic and ecological systems more or less open. They interact with each other; resource flows circulate as inputs and outputs. Policy measures undertaken in the region may or may not hinder or hurt the development process of neighbouring countries or other regions. This idea of space corresponds to 'the full world' conception of Daly, while the dominant economic theory of an 'empty world' is expiring (Daly, 1992). A region can be simultaneously distinguished as a 'clean' and 'sustainable' economy, at the expense of other regions by, e.g., exporting trash or importing energy intensive products.
- Contrary to the global system, regions have elected legislative bodies and legitimate authorities that have to represent the local commons and must deal with conflicting situations. The change of special topics depends on the parameters, within which the inter-regional integration must be taken into account. The economic competitiveness and the use of raw materials, have to be taken under the context of global connections; labour markets, transportation relationships and landscape protection do not stop inside of the regional political boundaries. Conflicts between regionally defined political jurisdictions are pre-programmed. Difficult areas are seen through a local political view, which is tempted by the use of 'narrow-minded' local politics. Trans-regional problems can increase jurisdictional delegations and lead to over taxation of capacities to solve regional problems: not every region has enough specialists to go around (what can be defined as a 'reverse Peter-Principle', see Thierstein et al., 1998).
- Normally regions have different economic, ecologic, and social resources. That is one of the reasons why regions react under these circumstances so differently to trans-regional development, e.g., exogenous effects. Taking this into consideration, different types of cumulative interactions are generated. Problem spaces and political scope of action collapse more often and solutions are sought through

'géométrie variable' (Thierstein et al., 2000). There is a difference between solution relevant structures, actors, instrumental methodology and spatial problems. A central European brown coal industry takes a wholly different view of the climate problem than a Pacific island.

The implementation process at an intermediate level between national and local level involves taking advantage of four functions of space (Fürst 1993):

- The region is a resource space. The classical impact of resources (minerals, etc.) loses its meaning through globalisation and technical innovation. Increasingly, the ability to mould one's own living space takes centre stage, including endogenous development potential and soft localisation factors.
- The region gains in importance as a level for public policies. The trend towards the regionalisation of sectoral policies and the necessity for a transparent arena for a mediating planning process are behind this change.
- The region within its institutional boundary is distinguished as a promoting power for identification, because nowadays affiliation is also politically defined. The commons is normally easier to manage because the level of a community is more transparent.
- Even when openly defined, the region is beginning to be regarded as an arena for networks of actors from different social areas that depend on trust and high levels of communication.

The dependence on national and international framework conditions shows that implementation of sustainability policies cannot be achieved solely within the responsibility of a region or a city-region. However, if the existence of a 'local Agenda 21' in many cities is important for implementing sustainability, then collaboration and coordination between localities is essential. This could be achieved through the development of a regional framework of sustainable development policies (Patterson et al., 1995). Firstly, as an area of identity and actor interaction, the region is manageable – a factor, which may assist in legitimising concerted action and which increases the likelihood of societal coherence. Secondly the regional level is probably better at bringing together fragmented regional interests and avoiding a strict limitation to local interests, in other words 'parish-pump politics'.

Bearing in mind the need to implement the global concept of sustainable development at sub-global levels and taking into consideration the above mentioned challenges, we would like to present a concept for

evaluating projects and programmes that aim to foster sustainable development. In order to create such an evaluation tool, we first had to enlarge and enhance the basic three-dimensional concept by accounting for the political process and ethics.

3 Enlarging the concept of sustainable development

Ethics and politics are often neglected in the sustainable development debate. While much discussion focuses on the ethical principles of sustainability, when it comes to concrete implementation, they constitute a kind of "black box" located on a different problem level. The sustainability concept is normally translated into the three dimensions of ecology, economy and social fabric.

The ecological dimension is easy to grasp using threshold values and legal regulations, for example. In general, the economic dimension in general does not pose major difficulties as it can be expressed not only using a main indicator such as Gross Domestic Product (GDP), but also using various quantitative goals and key figures. However, the social fabric dimension is often handled as a 'remaining quantity': it can describe a combination of factors such as social class, poverty, education, health, participation, culture, ethics etc. To achieve greater consistency for the implementation of the concept of sustainable development, the immaterial and procedural objectives should be separated from material aspects of social fabric.

If the fields of ethics and processes are introduced as additional dimensions to the three commonly identified sectors of ecology, social matters and economy, the concept becomes more complex. At the same time, however, there is also greater transparency. Thus, all of the fields can be combined to give the "Ten Elements of Sustainable Development" (Schleicher-Tappeser et al., 1997; Thierstein et al., 2000) (see figure 1). Our evaluation framework is based on these ten elements:

- The three material elements are the tangible elements of sustainability. These are the petals of a flower, the eye-catcher.
- The elements of the decision-making processes are the soil in which the plant grows and from which it draws the sustenance that allows it to bloom. The political system and political culture are part of this. They define who takes, controls and implements decisions. Thanks to the nutrient content of the soil, the plant can grow and develop.
- Finally, the elements of the social value system which is based on ethics, is the flowerpot that holds it all together (the plant in question is a pot plant). In democratic states, at least, a political decision that fundamentally contradicts social values is inconceivable.

There are many possible solutions to global threats. They range from eco-dictatorship to a vision of a highly automated state in which the functions of nature are almost entirely replaced by machines. This is only the spectrum of visions that have been developed in our cultural sphere – other cultures and religions often produce completely different attitudes to life, the environment and personal development. In the short and medium term, however, the only political decisions that are conceivable for us are those located within our own value system. Thus, the plant cannot break out of its pot: at best, while growing, it may let some of its roots follow the course of the water and grow out of the pot.

With this "sustainability plant" we can serve the social dimension within the concept of sustainability better: in other words, we take into account not just the objective – the project – but also the way it is achieved, that is the process.

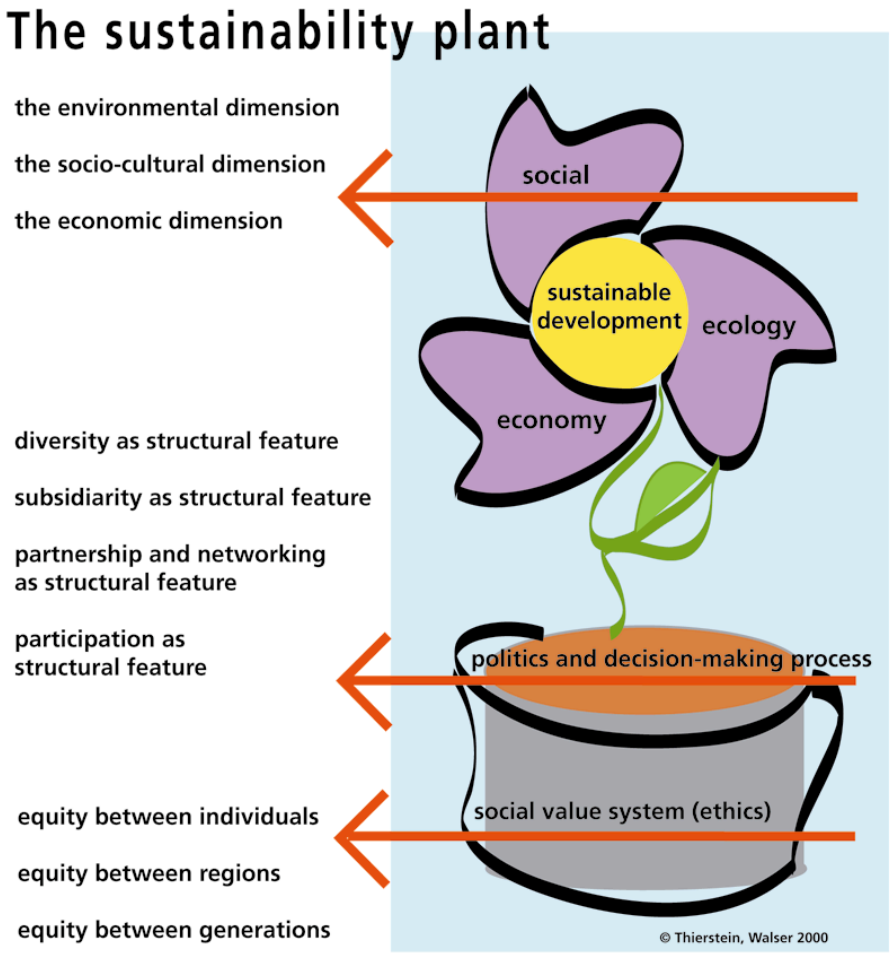

Figure 1: The sustainability plant

4 Developing an evaluation tool

Building on the above mentioned conceptual foundations, our assessment tool comprises ten elements that interpret the five main dimensions of sustainability (Thierstein et al., 2000). The ten elements serve primarily as an ex-ante evaluation tool that helps to improve the overall quality of a given project or political programme. The conceptual framework is translated into an evaluation checklist, which expresses the ten elements in the form of a number of specific questions. The purpose of this checklist is to systematise the discussion of the character and general impact of a given project or programme and to help in the approximate estimation of its level of sustainability.

'Evaluation' is a broad field of science-based political activity. A central concern of democratic governance is that democracies should be both legitimate and effective. Evaluation thus plays a noticeable role within the field of 'policy analysis' (Nagel, 2002; Rist, 1995). It is understood that the responsibility of policy analysts is to improve our understanding of both how implementation works, and the degree to which programmes, policies and single projects actually achieve their declared goals. Evaluation is a value-based scientific endeavour. A crucial task in any policy evaluation is defining the appropriate criterion. Several national evaluation societies have developed evaluation standards, in order to secure the quality of evaluative activities[2]. The Swiss Evaluation Society SEVAL acted as a pioneer, becoming the first European evaluation society to establish its own evaluation standards[3]. The SEVAL Standards are based on the premise that an evaluation should at once be useful, feasible, proper, and accurate. To make these category characteristics more tangible, the SEVAL Standards are operationalised into 27 individual Standards that fall into one of the four larger categories (Widmer et al., 2000):

- Utility: the utility standards are to guarantee that an evaluation is oriented to the information needs of the intended evaluation users.
- Feasibility: the feasibility standards ensure that an evaluation is conducted on a realistic, considered, diplomatic and cost effective manner.
- Propriety: the propriety standards ensure that an evaluation is conducted in a legal and ethical manner and that the welfare of stakeholders is given appropriate attention.

- Accuracy: the accuracy standards ensure that an evaluation produces and disseminates valid and usable information.

One must be aware that the SEVAL Standards are maximum demands – not minimum standards of what is an absolute must but rather a statement of what a good quality evaluation should ideally try to achieve. Particular attention must be paid when discussing the evaluation of sustainable development projects or programs. It is these three aspects that make the evaluator's life difficult (Widmer, 2002):

- the long-term perspective of the concept of sustainability,
- uncertainty as a crucial component of the concept, as well as
- the fact that the concept of sustainability is holistic, thus refusing to restrict itself to one specific aspect.

  To take sustainability seriously means to avoid using it as an overarching evaluation criterion. Widmer suggests to accept ambiguous interpretations of criteria with regard to evaluation with sustainable development activities (Widmer, 2002).

Against this background we developed our assessment tool by implicitly utilising the SEVAL Standard's main characteristics a minimum guidelines and not as maximum requirements. Thus, it is important to recognise that our tool only reaches its full potential when understood as a discursive means for the exchange of opinions and facts on a specific project. The tool is intended for use as a checklist, which raises awareness of the depth and breadth of the concept of sustainable development. The evaluation tool is intended to help its users to be as comprehensive as possible in their exchange of information and opinions regarding the project under discussion. In other words, our evaluation tool aids in the verification of the comprehensiveness of all of the relevant aspects of sustainable development in a given project. Taken as an ex-ante assessment, the checklist can be also be used as a tool for project management improving the quality of certain sustainability dimensions that achieve a lower score than other dimensions.

The three principles of equity, as shown in the lower part of figure 1 above, can be used to assess the long-term consequences of a project by posing the following question: Does this project or measure serve justice? In contrast, the short and medium-term primary objectives of a project, programme or measure

are evaluated using the three fields of ecology, social fabric and economy. Combined with the three material elements and the four structural features for the evaluation of organisations, the resulting ten elements facilitate simple assessments as to whether a planned project is pursuing a sustainable path or rather not.

While developing this evaluation tool we were fully aware that a useful evaluation tool must guarantee a maximum level of transparency. Thus, we tried to select questions and indicators that are (1) limited in number, (2) relevant, (3) responsive, (4) simple and (5) policy-related.

This assessment process is implemented as follows:

- Projects – be they private or public – should be evaluated prior to being implemented. At this stage, the relevant stakeholders who are involved in or concerned with a specific project are called together to jointly develop and share their assessment about that same project. Both expert knowledge and the experience of laypersons based on the three main fields of ecology, economy and social fabric is processed by three groups focusing on "targets", "processes" and "ethics". Each group must provide an answer to the following central evaluative question: Do the objectives of the project in question have a positive or negative impact, or is the impact neutral? In the evaluation, a positive impact is given one plus point, a negative impact one minus point and neutral impact is awarded zero.
- In order to reach a valid answer to the questions or issues posed in the assessment, the group must exchange knowledge and information based on data or experience openly and thoroughly. By doing so, the group will gradually gain an overall impression of the specific sustainability aspects of the project in question.
- By following the order of the checklist, the discursive process of project assessment deals first with more short-term impacts on the level of objectives and eventually culminates with the consideration of the long-term impacts by evaluating the equity dimensions of sustainable development.
- The entire assessment project is time consuming, but it eventually leads to a comprehensive evaluation of the project in question. However, it is unlikely that the result of this assessment will be unanimous.

- Nevertheless, the detailed checklist will enable the identification of certain basic flaws and weaknesses in the project. Quality improvements and compensation measures may then be discussed with the project promoters and funding bodies.

	Field/Criterion	-1	0	+1
1.	Economy			
1.1	Supports regional economic cycles			
1.2	Supports high quality jobs, new work forms and models			
1.3	Supports operational participation processes and the social quality of the world of work			
1.4	Targets innovative products and processes			
1.5	Supports attractiveness of location, an innovative milieu, the networking of economic actors			
1.6	Creates the same economic benefits with reduced consumption of resources (eco-efficiency)			
1.7	Improves the financial situation of public and/or private budgets			
1.8	Minimises material goods traffic			
	Sub-total (minus points subtracted from plus points)			

2.	Ecology			
2.1	Supports near natural landscape and/or near natural elements in urban areas			
2.2	Reduces land use and/or soil sealing			
2.3	Reduces the input of pollutants into air/water/soil			
2.4	Reduces noise			
2.5	Reduces the consumption of (non-renewable) energy			
2.6	Reduces the consumption of (non-renewable) resources, support of material cycles			
2.7	Supports bio-diversity and habitats			
2.8	Supports environment-friendly forms of transport and reduces superfluous mobility			
	Sub-total (minus points subtracted from plus points)			
	Field/Criterion	-1	0	+1
3.	Society and social matters			
3.1	Contributes to security of material livelihood			
3.2	Supports communication and co-existence in the population			
3.3	Increases quality of living conditions and quality of life			
3.4	Supports the educational offer and opportunities for all residents (empowerment)			

3.5	Supports consciousness-raising and behavioural change towards sustainability			
3.6	Supports cultural, social and regional identity			
3.7	Aids health and supports health care			
3.8	Supports the feeling of safety (avoidance of hazards in personal environment)			
	Sub-total (minus points subtracted from plus points)			

4.	Forms of participation			
4.1	Transparency and accessibility			
4.2	Support of weaker or badly organised interests			
4.3	Consensus orientation and discussion of strategic issues (vision)			
5.	Forms of networking			
5.1	Support of dialogue and cooperation between different groups			
5.2	Inclusion of many people and/or many different interests			
5.3	Creation of space and/or media for the exchange of information			
6.	Subsidiarity in interaction between different institutional levels			
6.1	Clearly defined decision-making competencies on different institutional levels			
6.2	Creative freedom at work level			
6.3	Support from higher institutional levels			
7.	Diversity in interaction between different approaches			
7.1	Equal cooperation and decision-making competencies for actors from public and private institutions			
7.2	Combination of different approaches and solutions			
7.3	Cooperation between different perspectives and cultures			
	Sub-total (minus points subtracted from plus points)			
	Field/Criterion	-1	0	+1
8.	Equity between groups			
8.1	Support of social cohesion			
8.2	Support of material balance			
8.3	Support of the integration of disadvantaged groups			
8.4	Support of equity between men and women and/or gender mainstreaming			
9.	Equity between regions			
9.1	No transfer of burdens to the disadvantage of neighbouring regions			

9.2	No transfer of burdens to the disadvantage of other regions world-wide			
9.3	Support of disadvantaged regions through structural changes at home			
9.4	On-site support of poor and disadvantaged regions			
10.	Equity between generations			
10.1	Reduction in the consumption of non-renewable resources of all kinds			
10.2	Reduction in public and private debt			
10.3	Participation of children with decision-making powers			
10.4	Discussion and dissemination of a vision of a sustainable future			
	Sub-total (minus points subtracted from plus points)			
	Total (of all points from the sub-totals)			

Table 1: Checklist for assessment of projects

It is important to note that the five basic dimensions of sustainable development get equal weight in the above table. We are well aware that trade-offs exist between the five basic dimensions. In fact the question of weighting, compensating and substituting one dimension or element against others is very troublesome. In the end it leads to the ethical debate about 'strong sustainability versus weak sustainability', depending on whether you assume the sustainability dimensions as substitutes or as complements (Cabeza, 1996; Daly, 1996).

Later in this paper we will shortly come back to that problem and how it is being handled in practice. The next section describes our initial experiences with the assessment tool.

5 Experiences with the ten-elements evaluation tool

Our ten-elements evaluation tool has already been applied in some projects and the following section briefly describes the circumstances of its application in two cases.

The first case was the 'International Conference of the Lake Constance region' (IBK), which established a regional Agenda 21 initiative in the year 1999[4]. This intergovernmental body is organising an annual competition for sustainable development projects or project ideas in this cross-border region. The competition committee used our tool for the 2001 competition, to which 122 projects at varying stages of completion were submitted. The competition committee was composed of six distinguished experts on sustainable development originating from all four member-countries of the IBK: Germany, Austria, Switzerland and the Principality of Liechtenstein.

The second opportunity for the use of our tool arose in early 2002, when students on the post-graduate course in spatial planning at the Swiss Federal Institute of Technology in Zurich, conducted a real-case ex-ante evaluation of a large-scale infrastructure project within the agglomeration of Zurich. Four groups of students from various professional backgrounds assessed a planned light rail transportation infrastructure project intended to link the urban area between the northeastern periphery of the city of Zurich with the international airport of Zurich-Kloten[5].

The main experiences gained and lessons learnt so far are summarised in the following section.

6 Lessons learnt and preliminary conclusions

The experience gained so far with our ten-elements evaluation tool is limited but nonetheless instructive; the authors of this paper both were involved in the two cases described above. In both cases, the evaluating groups using the assessment tool had to become acquainted with a methodology that initially seemed rather odd. In both cases, within a short period of time, the evaluating groups adopted the tool with an open mind, irrespective of whether they were experts in the field, as in the case of the Lake Constance project, or laypersons as in the second case.

Having assessed the process of the adoption and application of our tool, we have reached the following conclusions.

6.1 …on the strengths of the methodology

- Firstly, our assessment tool is centred round the participation of stakeholders. It is they who are likely to implement the concept of sustainable development in the long run. Although – as was the case in the first example described above – the tool is used by sustainability experts, the methodology urges the users to incorporate a broad perspective on the possible outcomes of a project.

- Secondly, our ten-dimension evaluation tool is not a top-down expert approach, based on sophisticated technology and indicators. It is a discursive, easily grasped and nonetheless systematic method that can be applied in various real-case situations involving the implementation of public or private projects. We are aware of the fact that (SEVAL) evaluation standards ask for 'accuracy, i.e. that valid and reliable information is chosen and that the "information that is collected, analyzed, and presented in an evaluation is systematically checked for errors" (Widmer, 2002). Our tool works with informed laypersons or with highly qualified experts that exchange their implicit information and their tacit knowledge. It is only this discursive process that allows us to have confidence in the performance of our evaluation tool.

- Thirdly, the methodology works well even if there is relatively little information available up front. In both of the cases in which the tool has already been applied, the promoters of the projects under discussion were able to provide initial and necessary information. The quality of the assess-

ment results from the combining of "objective" factual information with implicit or tacit knowledge based on professional and personal experience.

- Fourthly, the discursive character of our assessment procedure allows paying attention to a certain degree to the well-known debate about 'strong vs. weak sustainability'. In the Agenda 21 competition case we distinguished two quality levels of sustainability projects: a project was awarded the 'RIO solution' label only when a certain number of points in all of the dimensions were achieved. Sustainability projects, which achieved a certain number of points in the dimensions, were awarded with the label 'RIO module'. This distinction largely refers, however, to how a project takes the material dimensions of sustainability into account. These two RIO labels indicate a qualitative difference in the consistency of sustainability projects that all strive to reorient public or private activities towards the long term goal of sustainable development as laid down in the Rio Declaration 1992.

- Finally, our tool appears to be more useful for ex-ante evaluation and monitoring, which means the involvement of stakeholders and citizens, than for an ex-post impact assessment. This is mainly due to difficulties in the correct delimitation of time, space and issues. This leads us to the limits of our methodology.

6.2 …on the limits of the methodology

- Firstly, the two cases in which our evaluation tool was applied showed, that the checklist needs to be accompanied by some additional information, such as a 'manual' on how to handle or implement the tool. For example, it clearly emerged that when using the tool for a large-scale infrastructure project, the evaluators must be aware of the spatial delimitation of the project in question. The light rail project, for example, does not only impact in terms of mobility and noise etc. on the actual ground on which it is built and in the immediate areas it serves. A large-scale infrastructure project of this nature must be regarded as a spatial development project that has far reaching consequences, or outcomes over time, for example, for the modal split of transportation, the structures of the urban economy, the prices of real estate and the labour market.

- Secondly, the same problem arises with regard to temporal reach. When examining the consequences for the time horizon, current evaluations regularly distinguish three moments in time: the output of a project, the impact and the outcome. Thus, as chiefly a discursive instrument for checking the comprehensiveness of measures our ten-elements evaluation tool will not produce an easy consensus with regard to temporal consequences. This is because the people involved in assessing a planned project will have greater problems evaluating its impacts the further into the future these impacts accrue. However, it is in this respect, in particular, that the distinction we propose is helpful in judging both short-term aims and long-term ethical consequences in isolation.

- Thirdly and interestingly, the regional Agenda 21 case demonstrated that the use of experts on sustainability is an advantage in the ex-ante assessment of projects. The small group was first instructed on how to use the evaluation tool properly for the 122 projects submitted. Having assessed a certain number of projects, the evaluators began to cut our rather lengthy assessment list of questions and criteria short. The experts then developed a kind of shorthand procedure to win time in the evaluation of the 122 projects submitted. During an intermediate break in the course of the evaluation, discussion among the experts showed that they had made rather similar assessments of each project using their shorthand method as compared with the use of the systematic and comprehensive check list. This finding does not mean that an elaborate evaluation tool is not necessary. It probably reflects the experts' high level of personal experience and knowledge, which again reinforces the quality of our evaluation tool. In contrast, the second real case showed that the post-graduate students used the full version of the questions on the checklist and their evaluation was, therefore, more time-consuming. This investment in terms of time is also of value: it is essential for project organizations, in particular, to develop and be able to demonstrate an expert status that can be perceived from the outside. Although time-consuming, the achievement of this status is highly desirable. The students came to the conclusion that every item in our checklist prompted an equally helpful level of discussion about the sustainability impacts of the light rail transportation system. Thus, they were also forced to develop an agreement on how strictly they should apply the evaluation tool. On the other hand, however, the overall results of the evaluations carried out by the four student groups were quite similar and indicated, therefore, that our tool can achieve a satisfactory level of performance.

- Fourthly, the above described distinction of two quality levels of sustainability projects - the 'RIO solution' and the 'RIO module' – is an attempt to circumvent to ethical debate about 'strong vs. weak sustainability'. While this holds true for the issue of substituting or complementing of 'natural capital' vs. 'man-made capital' (Daly, 1996), the question about whether or not substitution on which spatial level is allowed still remains open for discussion. Take bio-diversity as an example: on a global scale there is 25 hotspots occupying 1.44 percent of the Earth's land surface but contain 43.8 percent of the world's plants; most of these plant species are rare (Lovett, 2002). A loss of these species in favour of economic development would not harm the Earth's overall ecosystem productivity, but had local impacts only. Thus the question arises: do we trade this global perspective – which equals the position of weak sustainability – for local losses and costs or do we not allow it?

7 Preliminary conclusions

Our own preliminary conclusion on the use of our ten-elements tool for the evaluation of sustainable development projects is thus largely promising and positive. Two main aspects dominate in our preliminary conclusions:

Firstly, the checklist has proven to be a well-developed and well-balanced instrument for verifying the comprehensiveness of all of the relevant sustainability dimensions of a project. Needless to say, there is always room for improvement on individual questions and criteria. However, the overall impression prevails that our standardised tool covers a wide variety of project characteristics that can present for evaluation. Nevertheless, certain limitations remain which call for further experimentation and research. This could also include projects of a purely instrumental nature, which serve the purposes of actor networking or the dissemination of information. The content of these projects largely eludes our proposed evaluation system.

Secondly, having gained some experience with the application of our evaluation tool, the question remains as to who should apply our method and in which context it should be applied. So far we believe that our evaluation tool, which is centred round a participative and discursive approach, is suitable for use by both professionals who deal with sustainability questions and laypersons who are motivated and involved, but do not necessarily possess an expert status. Thus, our tool is primarily intended for people and experts who work for regional development agencies or are involved in urban development and regeneration processes; for example dealing with the reuse of brownfield sites as in the case of 'Zurich West', the city's old industrial quarter[6] (Glanzmann et al., 2002). Some experiences with 'Local Agenda 21' processes show that the use of our tool in the assessment of the sustainability of such projects would necessitate the development of a tutorial by external experts. Otherwise, local actors tend to interpret or misuse the tool in favour of their own objectives in order to reach a positive assessment for 'their' project.

8 Looking forward and future research

The two main improvements that need to be made to our assessment tool involve: (1) the management of the evaluation tool itself and: (2) the need for the integration of an evaluation module that covers the process of implementation of a project.

8.1 … for managing the evaluation tool

As already indicated above, the application of our evaluation tool requires additional information on how to handle the instrument in a specific situation. A short manual needs to be developed with a description of a 'standard operating procedure' (SOP) for the tool to ensure that maximum advantage is made of the tool.

- Firstly, the introduction of the SOP should stress the tool's approach as a discursive instrument that requires a fairly high standard in terms of the quality of the discussion process.
- Secondly, the SOP needs to be aware of and discuss in detail the spatial and temporal delimitation of the impacts of the project under discussion.
- Thirdly, the SOP should mention links to available indicator systems for sustainable development. It is well understood that our discursive evaluation tool cannot be used without indicators that provide information on the state, development and response of sustainability aspects that are relevant for the evaluation of a specific public or private project.
- Fourthly, the SOP must clearly state that all projects evaluated must comply with legal and other regulations as a minimum requirement for passing the 'sustainability test'. Where available, corresponding indicators should be used and followed.
- Finally, 'rules of thumb' must be introduced on how to deal with the issue of 'weak vs. strong sustainability'. It is crucial to ask and to discuss on which spatial scale, which set of criteria in which sustainability dimension have to be achieved at minimum.

8.2 … for evaluating the implementation process

Our sustainability approach with the ten-elements evaluation tool places great emphasis on the implementation process and on participation. These facts mean that it is necessary not only to evaluate the 'product' – that is the private or public project – but also the 'process', that is the manner a specific project is designed, implemented, monitored and – in most cases – replaced by a follow-up activity.

In principle, our ten-elements evaluation tool accounts for these procedural aspects, which include 'participation' (element number 4 in our checklist), 'networking' (number 5), 'subsidiarity' (number 6) and 'diversity of approaches' (number 7). However, we need to go beyond that and develop a well-founded indicator system for assessing the implementation process. Adequate process indicators are needed in order to assess the quality of a project's implementation process in its entirety. The main elements of such process indicators must deal with:

- the process of the formulation of the objectives relevant to a specific project;
- the composition of the project leaders in terms of the representation of the main stakeholders;
- the degree of (formalised) legitimation of the proposed project;
- the degree of public transparency of the proposed project.

To our knowledge such an indicator system has not yet fully emerged but first elements are showing up – see for example the University of Applied Sciences in Erfurt where process indicators were proposed to evaluate the process of local Agenda 21[7].

Today, the concept of sustainable development displays the same characteristics of a regulative idea as those displayed by the concept of human rights over two hundred years ago. Its implementation takes time, knowledge and expertise. In 2002, we are only at a stage ten years after the global launch of the concept in Rio de Janeiro. The concept needs not only a thorough discussion on objectives and indicators but also on the management process of its implementation. It is our hope that our evaluation tool can make a small contribution to that long-term endeavour.

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Endnotes:

[1] gopher://gopher.undp.org:70/00/unconfs/UNCED/English/a21_01

[2] http://www.europeanevaluation.org/

[3] http://www.seval.ch/deutsch/stad/stad1.htm

[4] http://www.regio-bodensee.net/agenda/

[5] http://www.vbg.ch/glattalbahn/

[6] http://www.stzh.ch/fste/pro_impulsgruppe.htm

[7] http://www.fh-erfurt.de/vt/

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