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## Conference Paper

# Sustainability indicators - a tool for regional co-operation

42nd Congress of the European Regional Science Association: "From Industry to Advanced Services - Perspectives of European Metropolitan Regions", August 27th - 31st, 2002, Dortmund, Germany

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42<sup>nd</sup> European Congress of the Regional Science Association  
August 27 – 31, 2002, Dortmund

**Sustainability Indicators –  
A Tool For Regional Co-operation**

by

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**Abstract**

Sustainability indicators and co-operation for sustainability are two topics of the sustainability discourse being discussed separately until now which are combined in this paper. First it is shown theoretically how some factors for success of regional co-operation are supported through the development and use of indicators. Afterwards first experiences in a use-case are presented.

## CONTENT

<b><u>1 THE IDEA OF CO-OPERATIVE INDICATORS DEVELOPMENT .....</u></b>	<b><u>2</u></b>
1.1 REGIONAL CO-OPERATION FOR SUSTAINABILITY .....	3
1.2 SUSTAINABILITY INDICATORS.....	4
1.3 CO-OPERATIVE INDICATORS DEVELOPMENT .....	7
<b><u>2 CO-OPERATIVE INDICATORS DEVELOPMENT IN THE MODELLREGION MÄRKISCHER KREIS - FIRST EXPERIENCES .....</u></b>	<b><u>10</u></b>
2.1 THE DEVELOPMENT OF THE INDICATORS.....	12
2.2 THE INDICATORS OF THE MODELLREGION MÄRKISCHER KREIS.....	15
2.3 MODELLREGION AND INDICATORS TODAY.....	16
<b><u>3 LESSONS LEARNED FROM THE FIELD-STUDY .....</u></b>	<b><u>17</u></b>

## **1 The idea of co-operative indicators development**

*“A sustainable world can never come into being if it cannot be envisioned. The vision must be built up from the contributions of many people before it is complete and compelling.”*  
*(Donella H. & Dennis Meadows)*

In this paper different topics of the discussion on sustainability are combined to make a proposal to solve some problems causing the gap between visioning sustainability and acting sustainable. These are the topics regional co-operation for sustainability and sustainability indicators. In this paper the assumption is discussed that co-operation for sustainability becomes more effective if the joining actors develop indicators in common. To make this idea plain first the topics of regional co-operation and indicators for sustainability are explained in short. Afterwards the core idea of co-operative indicators development is presented. Terminating some first experiences of co-operative

indicators development in the “Modellregion Märkischer Kreis” a region in Germany are illustrated.

### **1.1 Regional co-operation for sustainability**

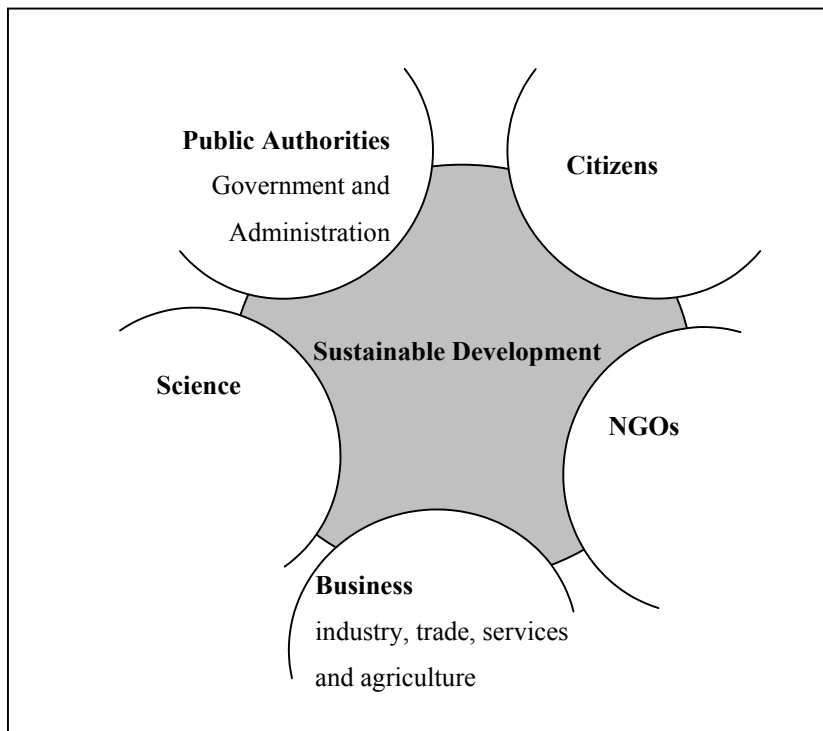
The importance of co-operation<sup>i</sup> for regional development in general is out of question today. No longer does the state government provide plans on its own and strive for implementation. This is even more true for sustainable development, the vision adopted in Agenda 21 that could be characterised by words like global, long-term, facing ecological limits, just, co-operative, holistic, targeted and using economic principles. Because of the challenging character of sustainability the abilities and possibilities of as many actors as possible are needed for its implementation. On the local level one can find Local Agenda 21 initiatives nearly all around the world. But as regional scientists know for sure lots of functions do not stop in front of municipality borders. For this reason Regional Agenda 21 initiatives are needed and take place. Here a region is seen as the scale larger than municipality and smaller than state, a more precise definition is not needed for this version but has to be found in the usecase. Regional Agenda 21 initiatives differ from the local ones as well on the subjects they deal with as on the actors involved. The following figure 1 gives an overview of the actors needed for sustainability based on Agenda 21 in general. As the regional level is not the scale of identification for lots of normal citizens it is consequential that those are not involved as much as the other groups mentioned. In the same way actors with regional importance are involved, what generally spoken means that more ambassadors are involved than individuals. While talking about co-operation it is important to differ between inside and outside of a co-operation, because for different reasons not everyone could be or wants to be part of the co-operation. Figure 1 is going to be employed for the use-case of the Modellregion Märkischer Kreis later on.

As much as regional co-operation for sustainability is out of question, as much does it have to face problems. To list only a few:

- Seldom all powerful people or institutions are involved.<sup>ii</sup>
- The people involved often do not manage to find a consensus on their understanding of sustainability as the basis for common action. This is not at least caused by the great existing diversity of people working together on such a complex topic.<sup>iii</sup>

- Because of the complexity of sustainability there is on the one hand the danger of being too superficial, on the other hand the danger of inability to take any decisions.
- The information basis is weak with regards to the relatively new topic.<sup>iv</sup>
- Success or failure is not visible.
- Still lots of unsustainable project are realised in the region in spite of existing co-operations.

*Figure 1: Actors needed for sustainable development*



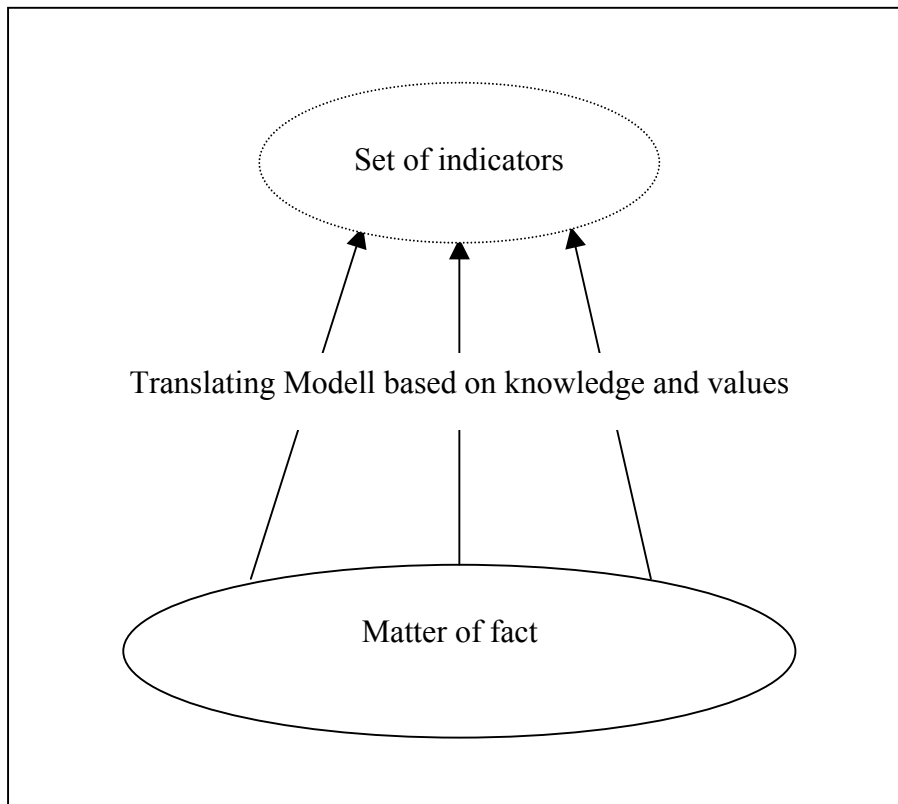
*Source: Koitka 2001: 4*

## **1.2 Sustainability indicators**

As mentioned above sustainability is described by lots of characteristics that are to be conducted in a coherent concept. Therefore sustainability is a very complex matter wherefore again indicators were seen as important for sustainability from the very beginning.<sup>v</sup> Because they are a tool made for handling complex situations, as they are representatives for complex matters of fact that are not directly measurable. By defining indicators and collecting the corresponding data that shows change over time facts could be characterised, analysed or prognosed, new information is gained. This is the basic function of indicators for different circumstances. But indicators are more than just numbers. J.K. Gailbraith is the one how described the aura of indicators very properly

by saying: *“If it is not counted it tends not to be noticed.”* (quoted in: Mc Gillivray, Zadek 1995:3). By these words he points out that a society needs indicators in spite of all their limitations according to their significance. No indicator is able to give the full picture of reality, but the alternative would be – to use the words of Gailbraith – not to notice important things. The other way around one can construe his words that those things who are important should be represented by indicators. At this point it is significant to consider whom by this importance is defined, whether a certain group of actors according to figure 1 or a mix of actors does this. Cobb and Rixford point out in this context: *“There is no such thing as a value-free indicator. Whatever anyone tells you to the contrary, all serious indicators work is political. The very act of deciding what to count and how to count it involves making value judgements.”* (Cobb, Rixford 1998: 17). As mentioned in this quote and shown in figure 2 all indicators are based on knowledge and values, which are the specifying components of the model that translates the matter of fact into (a set of) indicators. So the indicators themselves representing a certain circumstance like sustainability are determined by knowledge and values which both change over time and place.<sup>vi</sup> This makes plain that sustainability indicators differ from region to region and will change in the long-run.

Figure 2 : From matter of fact to indicator

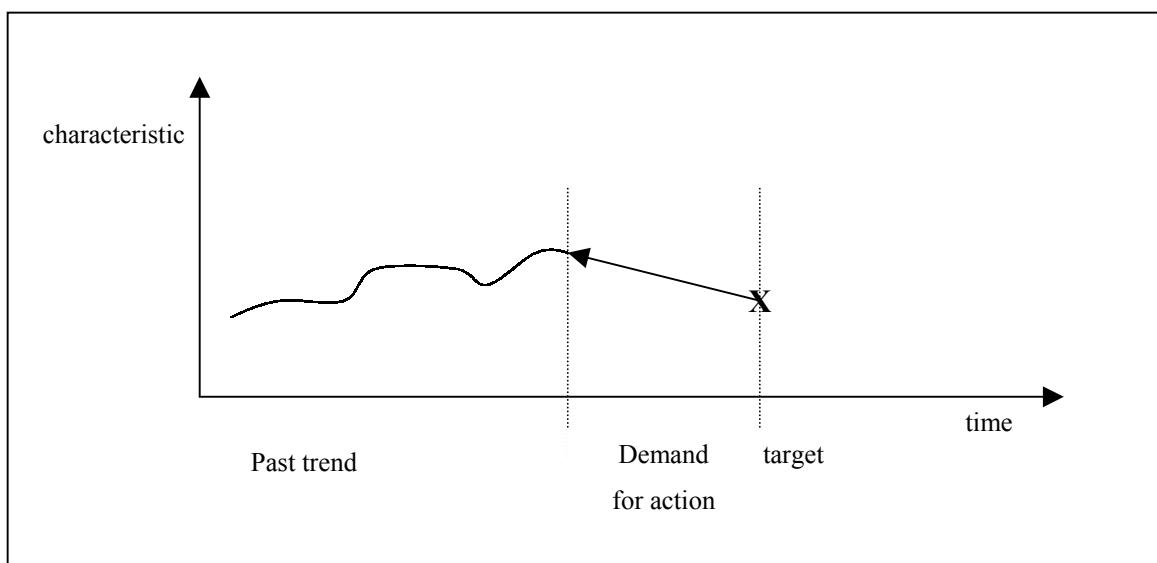


To pick up Gailbraith again: If good sustainability indicators are selected and used in the public debate, sustainability itself will be noticed. It is assumed that sustainability indicators have an educational value. To expound this the developers of the indicators have to keep the people addressed in mind, because they might vary for example from politicians to normal citizens or scientists.

Besides the effects mentioned so far, indicators offer the chance to set quantitative targets. If targets are set for indicators their function changes from monitoring to leading towards action. This was pointed out by David Swain project leader of the Quality of Life Indicators in Jacksonville, Florida as follows: *"And so because those trend-lines were there and because the goal was there, people started asking different questions about the indicators. They were not just asking what can we understand about ourselves or how can we understand our quality of life, but what can we do to meet the goal. Now that we have a goal, we need to do something about it. So that changed the purpose of the project fairly quickly toward making it something useful for community benefit, for a community change, not just for understanding."* (Koitka 2001: 7)

As figure 3 shows, by looking back from the target the need for action is obvious for everyone: for the people who are addressed to act and for those who want to value the peoples action. The question of how to set the targets is going to be picked up in the following sub-chapter.

Figure 3: Ascertaining of demand for action by target setting



Sustainability indicators do not have to be supplemented by quantitative targets in general. It depends on the end that is followed through the indicators development. And this is not only the case for setting targets. Also one has to decide whether the indicators are to be the basis for a comparison or are to give precise information on the local situation. Whether they should give a scientifically most sound picture of sustainability or illustrate the will of a group of actors working on this topic. These are only two contrasts to show the width of purposes sustainability indicators could be used for and each one has its right of existence. But one has to accept that some purposes exclude one another and that no set of indicators could carry out all requirements. As explained below the indicator approaches differ slightly or clear from purpose to purpose. Most important is the fact that indicators are no end in themselves they are no more or less than means to an end.<sup>vii</sup>

### **1.3 Co-operative indicators development**

*“This is a thermometer of ourselves and we established the point at which we said this is normal for us, this is the way Jacksonville is, not what is normal for another city.”*

*(Julie Mason)*

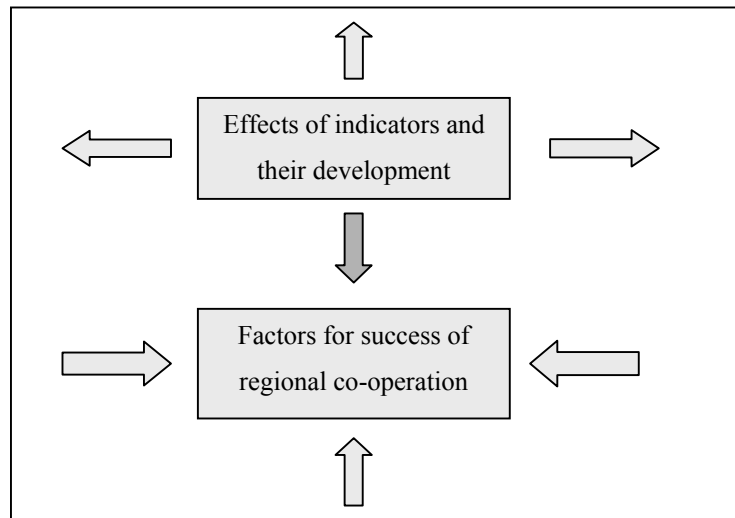
By now some findings on co-operation and on indicators development have been fixed separately. The basic idea is as mentioned before to conduct these two topics. It is a matter of course that such a conduction is fruitful on those topics only at those the development of indicators supports effects for success of regional co-operation. As figure 4 shows abstractly co-operation is influenced by a lot of factors for success not caused by indicators-development and vice versa. In this version only the arrow in the middle of figure 4 is discussed. The other arrows as well as the question of how co-operation improves the quality of the indicators developed is not followed up.

Co-operative indicators development means that the people working together in a Regional Agenda 21 initiative (see figure 1) develop indicators on their own and use these as some sort of management instrument to support their own work.

As mentioned before indicators are means to an end. The co-operative indicators development pursues different means, that differ from means pursued by other indicators approaches. This is important to classify the idea discussed in this paper. At no point is said, that co-operative indicators development is the only way to gain sustainability indicators. Much more it is a specific way for specific needs.



Figure 4: The support of co-operation by indicators and their development



Co-operative indicators development is characterised as follows in connection with the purposes described below:

- As a Regional Agenda 21 initiative seeks to improve the situation of the own region, the indicators have to represent the regional circumstances. Bell and Morse (1999:10) point out the importance of regional difference for sustainability as follows: *"(...)this flexibility as to what sustainability means can also be great strength in a very diverse world. People differ in the environmental, social and economic conditions within which they have to live, and having a single definition that one attempts to apply across this diversity could be both impractical and dangerous."*

Because of this regional differences and the reference to regional action the indicators have a strong reference to locality and are not principally comparable.

- The indicators are developed by the people joining the co-operation and not by external consultants. This is of great importance for the people working together, because through the indicators development they are somehow forced to fix a consensus.

But it is also important for the quality of the indicators and so for their use for implementation. As sustainability and consequently its indicators are normative it is assumed that by a wide participation something like the main opinion of the region is represented. Kirk Swenson (United Way, Jacksonville) sees the volunteer process including about 100 people in the co-operative indicators

development in his region as a main reason for the credibility of the indicators that have been found: „*I think it was important to do it on a volunteer basis. Because if we did this internally, if we did this right here right in my office, we would come up with some data that people might think you picked this data because you are biased. So this comes from a third party theoretically unbiased person. Unbiased agency and provides us with unbiased data. That is not internal. That is external.*” (quoted in Koitka 2001: 6)

- The co-operative indicators development offers the opportunity to gain data by other than official sources. Quite often good sustainability indicators could not be filled with the required data, because it is not part of the official statistics. The alternative solutions are using data from other sources or collecting new data. As experienced in the field study presented below, the data-collection could be handled by the actors themselves, as they are experts on their topics. They own endogenous knowledge sometimes without knowing it. They may already have the required data or be able to collect it. As the actors have developed the indicators on their own and collected the data themselves they do have ownership of the indicators. This is important as well for the acceptance as for the use of the indicators as Besleme and Mullin point out: "*The process of indicator development enables participants to recognise shared goals and visions, as well as the limitations of existing measures of well-being. Moreover, it is this process that provides meaning and credibility to information in a way that ultimately influences action.*" (Besleme; Mullin 1997: 44).
- As illustrated above indicators could be supplemented by quantitative targets (see figure 3). By setting targets the action-orientation of sustainability is emphasised. If targets are set within a co-operation they are the expression of a political process and they will differ from scientific targets. They are an expression of the effort that the people working together are willing or/and able to make. An interesting question remaining for science is whether people defining indicators here and now are able to reach the global and long-term effort of sustainability.<sup>viii</sup>

The setting of priorities is additionally important for action. As sustainability is that complex not everything could be done at once. Through indicators priorities

could be set at two steps: First through the selection of the indicators themselves and secondly by prioritising the selected indicators.

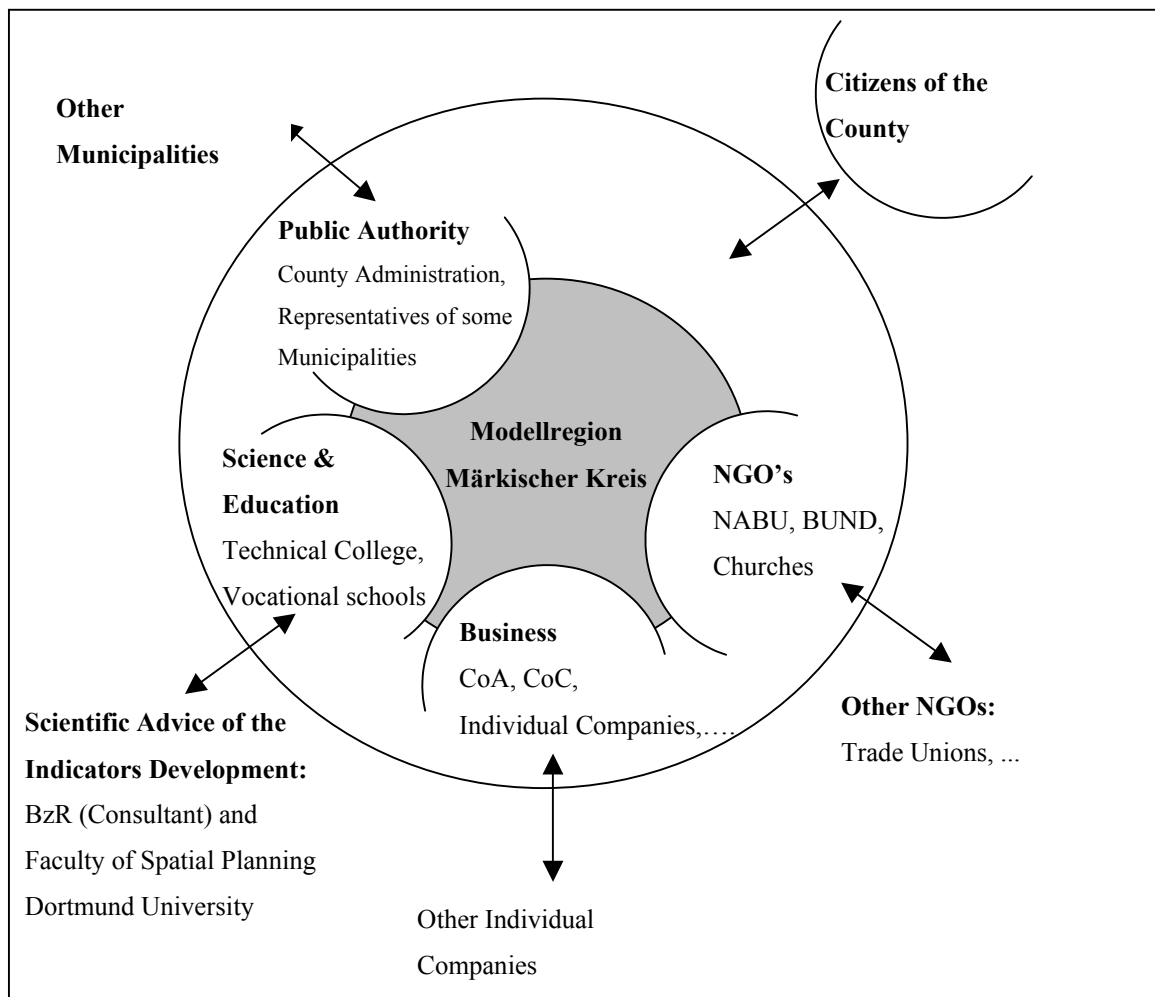
- As implementation is the core concern of Regional Agenda 21 initiatives certain projects, programmes and actions have to be related to the indicators. Although the indicators are to evaluate the development of the region and not the success or failure of a single project, it is needed to attach certain projects to the indicators. As a consequence the option for action on the matter presented by the indicator is an important selection criteria. This topic is going to be picked up in the field study illustrated below.
- As mentioned above sustainability and its indicators do not only change over place, they also change over time. For this reason the set of indicators has to be renewed on a regular basis. The dilemma deriving from renewal is that between appropriate indicators and loosing time-lines, especially if the indicators are not taken from the official statistic. But it is even more true that collecting data on irrelevant topics makes no sense. Therefore, if the co-operation is still active, the indicators have to be renewed regularly and the co-operation should ask itself whether its will is still well represented by the indicators.

## **2 Co-operative Indicators Development in the Modellregion Märkischer Kreis - First Experiences<sup>ix</sup>**

The Märkischer Kreis is a county in Northrhine-Westfalia consisting of 15 municipalities. It is a transition zone in the western part of Germany between the dense populated agglomerations of the Ruhr and the Rhine area and the more rural region called Sauerland. The landscape is dominated by low mountain range, lots of small rivers and a high proportion of forest (49,4%) (LDS 1996). Its economy is determined by small and medium sized enterprises mainly in the manufacturing industry and in agriculture. The Märkischer Kreis is a suburban region for the dense populated areas nearby with the result that in some municipalities the build area grew of 30% in the years from 1975 to 1996 (ILS 1998).<sup>x</sup> With this small spot of information one can imagine that this region has special problems, potentials and obligations according to the vision of sustainability from which some are represented in the indicators shown in figure 9.

In 1996 the county government decided to initiate a Regional Agenda 21 process with the name ‘Modellregion Märkischer Kreis’. The aim of the initiative was to activate different actors in the region to work on regional sustainability under the motto ‘Work, Environment and Innovation’. The support of the initiative was limited for three years. The actors involved (figure 5) included the local chamber of commerce (CoC), chamber of agriculture (CoA), environmental groups (NABU, BUND), technical colleges, vocational schools, churches, individual companies and others. Besides the people who have played an active role in the Modellregion different actors have been outside the co-operation and have been addressed by the Modellregion or contributed work on single aspects, like a consultant<sup>xi</sup> who attended the whole process scientifically or our department that accompanied the indicators development together with the consultant. The county administration was very much involved as motivator and facilitator. It was agreed that the regional politicians should not play an active role in the process.

Figure 5: Actors and indirect addressees of the Modellregion Märkischer Kreis



Source: own translation of Koitka, Krefl 2000: 491

The different actors worked together in six working groups: regional commerce, energy, new media, material flows and technology, build area and transport. In these working groups the actors first discussed about the general vision of sustainability and formulated guiding principles. Afterwards they started to develop certain projects, which were to be implemented by the actors themselves with public financial support or on their own budget. The initiative joined a German-wide competition called ‘Regions of Tomorrow’ and received one of the gold-medals handed over at the United Nations Conference Urban 21 in Berlin in July 2000.<sup>xii</sup>

## **2.1 The development of the indicators**

While the first projects have been developed and were brought to implementation the demand for evaluation of success grew constantly. Additionally the Modellregion wanted to represent itself to those who are not directly involved. It also became plain that the first activities led to some interesting projects but have not been structured enough to face the topic of sustainability in its width and depth. For this the will to develop indicators existed. One important factor for the final decision pro developing indicators was the scientific support through our department.

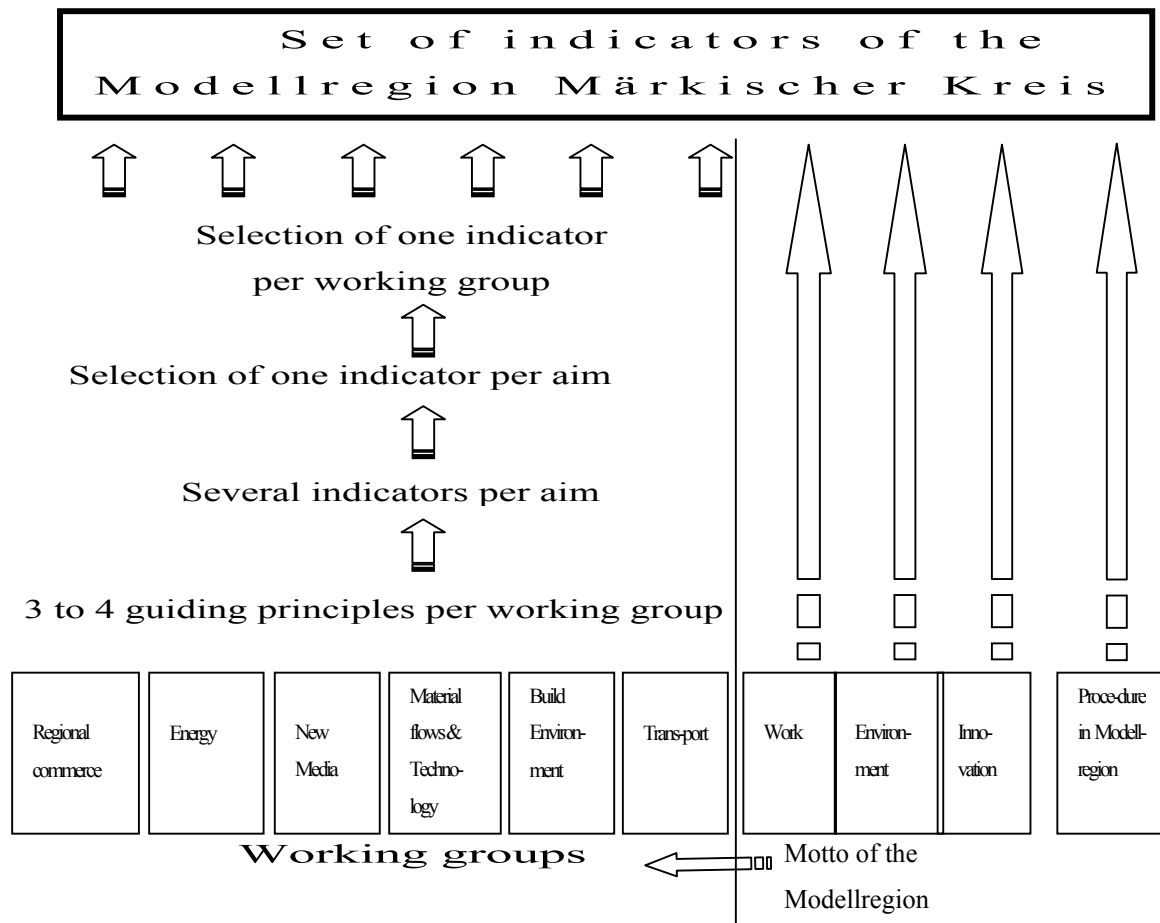
The indicators development pursued the following intentions:

- ✓ Making plain what the people involved in the Modellregion want to do.
- ✓ Setting priorities.
- ✓ Improving the basis for decision making.
- ✓ Making results visible.
- ✓ Measuring sustainability in Märkischer Kreis against itself.

When the indicators development started in spring 1999 the whole initiative was more than a year old and it was agreed to accept the existing structure and to use it as basic model for the indicator development. There are three basic elements shown in the bottom line of figure 7: first the working groups as the core of the initiative, secondly the three elements generating the motto and additionally the procedure of the Modellregion itself. The development of indicators for the procedure was demanded by the actors themselves. When they realised that the indicators point out what is of great importance, they wanted the process itself also to be represented, because it was

something definitely new, it was an institutional innovation they were proud of. Also the initiative was at no point supported by all powerful actors and parties in the region and some criticised the work in the public. The further support of the Modellregion was one topic in the election campaign 1999. So it was worried about the future of the initiative.

Figure 7: Basic structure of the indicators development in the Modellregion Märkischer Kreis



Source: own translation of Koitka, Kreft, Borlich, 2000: 31

As shown in figure 7 first indicators were found in the working-groups for each guiding principle. The work was structured with a sheet (figure 8) which was filled during the discussion on the indicator in the working group. Besides the function of structuring and making sure that no point remained open the sheet helped to keep the results. After some discussion and scientific advice each working group had a list of indicators from which it chose one indicator per guiding principle. This selection was made for two

reasons: first the number of indicators should be low to have a set of indicators which is operational and which allows a clear view. Second the actors wanted to prioritise to make plain what they wanted to do most. Indicators which have not been chosen could have been followed within the working groups but were not to become part of the set of indicators representing the whole initiative. It was agreed on three selection criteria:

1. The indicator should be clear for public debate.
2. The indicator should be relevant for the actors of the Modellregion Märkischer Kreis. Could the actors of the Modellregion or others in the county not yet involved contribute to an improvement of the matter of fact represented by the indicator?
3. The indicator should be measurable and the data available (through official statistics and own sources/collection)

When the indicators have been selected for each one a person of the working group was named as a ‘godparent’ and was so for responsible for the data collection and the further development of the indicators sheet (see figure 8).

*Figure 8: Indicator Sheet*

Indicator: _____
Aim Reference:
Data-collection:
a) source:
b) way of calculation/validity:
Interlinkages:
a) within the working group:
b) with other working groups:
Priority of the indicator:
Quantified aim:
Action to reach the aim (incl. responsibility and time):

*Source: translation of Koitka 1999: 94*

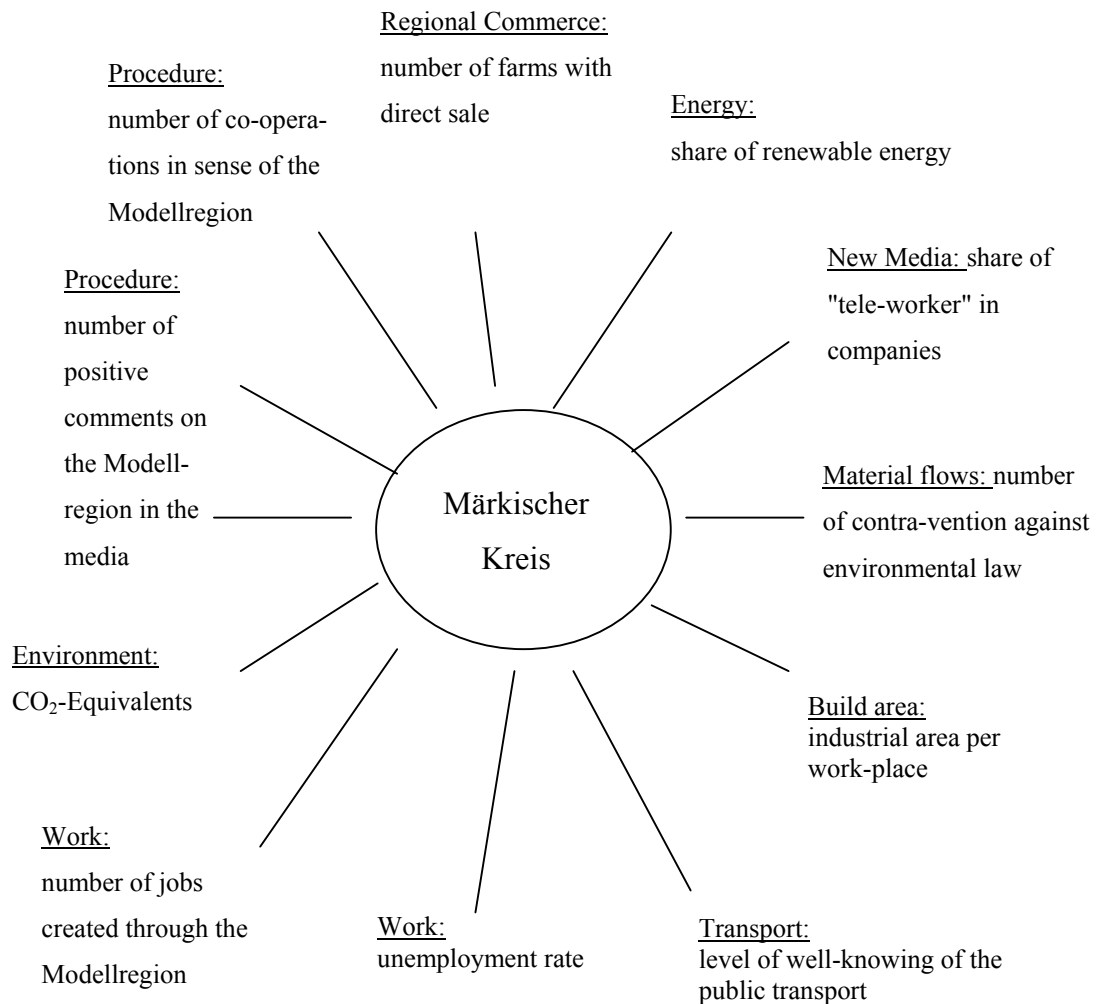
Those indicators, which have been developed in the working groups, have been the basis for a big workshop that included ambassadors from all working-groups and which was held to agree on a common set of indicators for the whole Modellregion.

The set of indicators that was agreed on is shown in figure 9. The indicators have been published in a report explaining the single indicators as well as the whole idea of co-operative indicators development (Koitka, Kreft, Borlich 2000). Finally has to be stressed that all indicators have been found in consensus and all actors were enjoying equal rights and the selection was unanimously.

## 2.2 The indicators of the Modellregion Märkischer Kreis

Figure 9 gives an overview of the indicators representing the Modellregion Märkischer Kreis. They are presented through an indicators sun to illustrate that indicators are to 'lighten the dark' – to give an overview in a complex situation.

Figure 9: Set of indicators of the Modellregion Märkischer Kreis



Source: own translation of Koitka, Kreft, Borlich 2000: 33



At this point it is interesting to ask what the indicators tell us about the Modellregion. Therefore it is interesting to look at the single indicators and at the set as a whole. On each single indicator the limits of how meaningful it is, are explained in the indicators report. This was of great importance for the godparents of the indicators. While working on indicators those limitations became obvious to them and they wanted the users of the indicators to know them.

Some indicators like that of ‘number of positive comments on the Modellregion in the media’ could only be understood with knowledge of the certain situation in the Modellregion and might not be of long existence, as the Modellregion as such does no longer exist (see below).

Looking at the set of indicators one can see the function of the indicator for supporting the co-operation as mentioned in chapter 1. As the indicators are to represent the will for action of the people co-operating today it is a pragmatic approach. Compared to the width of the concept of sustainability some gaps become plain: social aspects are not well represented as well as global ones. So neither is the aspects of children and youth, or gender, or of integrating foreigners, nor the poor represented through the indicators. Have the people worked meticulously on the indicators? To give an answer to this: Yes! But as well the structure of the co-operation with its working groups as the people involved are the reasons for this gaps. The next step would be to decide whether this topics should be added and if so, to gain the relevant actors for the co-operation. Much more conclusions like this could be drawn and are explained in Koitka, Kreft, Borlich 2000 and Koitka, Kreft 2000.

### ***2.3 Modellregion and indicators today***

Two years after the development of the indicators the situation in the Märkischer Kreis is a difficult one. As mentioned above the initiative founded by the county government was limited in time and against the will of the majority of the people involved the county government decided to stop the support of the Modellregion given by the county administration. As mentioned above the county administration played an important role not only according to organisational support. As a result of that decision the Modellregion as such does no longer exist. Some working groups are still active as single groups, some have found a new status as association.

Even after the ‘death of the Modellregion’ – the words mostly used to describe the present situation – the godparents met each other and discussed whether the work on the

indicators could hold the single activities together. Today it is not clear whether this will work or not. At the moment a poster as a shortened version of the indicators report which gives an overview of the indicators is to be finished and distributed in short. The actors decided to update the data.

### **3 Lessons learned from the field-study**

Some lessons that could be learned so far from the experiences made in the field-study are the following:

- Co-operative indicators development works.
- Indicators development is just one influencing effect for co-operations others are more compelling.
- Co-operative developed indicators represent the now and here of a certain region and the actors involved.
- The data collection through the actors themselves is a chance to activate and use endogenous knowledge.
- Actors work with their indicators, they have ownership of them.
- Already now it could be seen that the co-operation was supported in some of the assumed purposes (improving information basis, fixing consensus and others)
- Setting targets was seen as important but not possible as an early first step. As start the actors agreed on as direction.

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<sup>i</sup> “Co-operation means the voluntary teamwork of a limited number of different people. The decision-making is transferred from government to the co-operation as the people joining the co-operation are willing and able to contribute to implementing those decisions.” (Koitka 2001: 3)

<sup>ii</sup> see e.g. Hammerbacher; Claus 2001

<sup>iii</sup> see e.g. Partners for Human Investment 1993: 10, Fürst et al. 1999

<sup>iv</sup> see Diefenbacher et al 1997: 250f.

<sup>v</sup> see Agenda 21: Chapter 40, Bellagio Principles (Hardi, Peter; Zdan, Terrence 1997)

<sup>vi</sup> Thierstein; Lambrecht 1998:105; Cobb, Rixford 1998: 13; Giddens 1995: 52ff.; Schemel 1993: 113; Innes 1990: 194

<sup>vii</sup> More remarks on different characteristics of indicators corresponding to different means in Koitka 2001b.

<sup>viii</sup> The ability of long-term thinking of co-operations is questioned e.g. by Böhret 1994: 68.

<sup>ix</sup> See Koitka, Kreft 2000, Koitka, Kreft, Borlich 2000 (all in German)

<sup>x</sup> General information on the Märkischer Kreis: <http://www.maerkischer-kreis.de/> (last access 02/05/22)

<sup>xi</sup> Dr. Holger Kreft from the BzR (Büro für zukunftsfähige Regionalentwicklung /Office on sustainable regional development)

<sup>xii</sup> for general information on the competition “Regions of Tomorrow” (“Regionen der Zukunft”) see: <http://www.zukunftsregionen.de/> (last access 02/05/22)