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## How to generate an appropriate data base in food processing and marketing – The case of Germany

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### Abstract

Beside other measures the framework of regulation 1257 (EC)/1999 offered the possibility to implement promotion schemes in food processing and marketing (Art. 25-28). The regulation also claims an evaluation of such measures geared to guidelines formulated through the EU-Commission for this purpose. The EU, therefore, has been defined two types of common evaluation questions: chapter specific questions and cross cutting questions. In order to answer these questions a methodological IT-based approach and questionnaire was developed.

The methodological approach is presented in detail and also important factors affecting the process of implementation to get sufficient support throughout all stages and authorities involved. First results indicate the intentions of the investors so far and mainly reflect the potential of the database gained through the questionnaire such as detailed breakdown of aims of the supported investments, indicators for competitiveness and a first attempt to get an aggregate measure to assess envisaged aims.

**Keywords:** food industry, rural development, Germany,

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# 1 Introduction

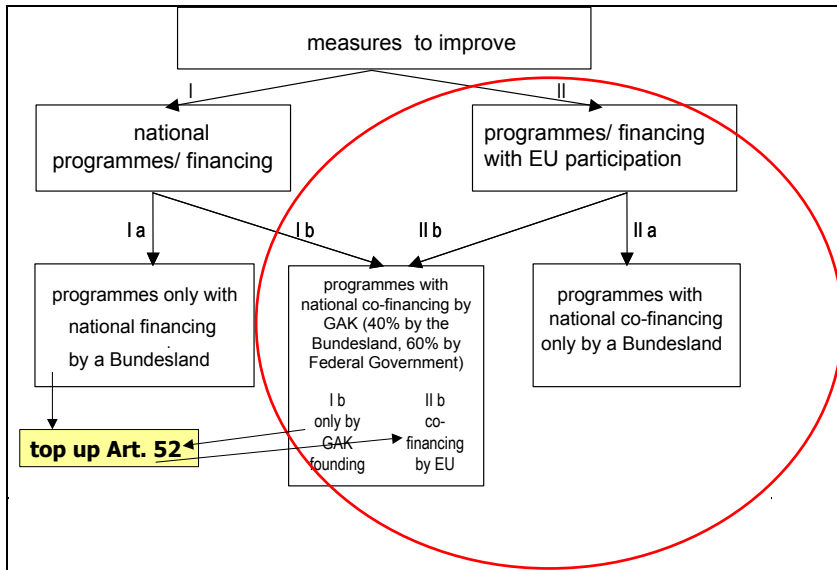
In the framework of regulation 1257 (EC)/1999 promotion schemes in food processing and marketing could be implemented (Art. 25-28). Different from preceding periods the EU stresses now how important it is to evaluate the promotion measures consisting in 'ex ante evaluation', 'mid term evaluation' and 'ex post evaluation'. This should strengthen efficiency as well as fulfil claims for instance of the European Parliament to provide evidence of the effects of such promotion schemes.

The aggregation of results and the added value of the programme at Community level needs a standardised evaluation system as prescribed by the EU. For this purpose, two types of common evaluation questions have been defined: chapter specific questions and cross cutting questions. If a measure is implemented in a member state or a region these questions have to be answered by evaluation accompanied by achievement related to criteria and indicators laid down also by the EU. An important element of the mid term evaluation is to create a system for collecting data needed and provide the information required to answer the common evaluation questions. This paper will focus especially on the chapter specific questions. Nevertheless, the generated database also allows to answer some of cross cutting questions.

To meet these requirements it is necessary to formulate and develop an adequate approach for data collection and analysis following the intervention logic of the EU. This means, to start with identifying the needs of the region or sector regarded, derive from this aims and survey the relevance, establish specific measures, put in financial and administrative resources to generate results and impacts in an effective way and check how far they are related to the objectives and needs determined before.

In Germany improving market structure is carried out in different ways according to financial sources (see Fig. 1). Projects could be supported only by national funding (I) or with cofinancing by the EU (II). The national aid can be split up further into measures financed only by the particular Bundesland (Ia) and the GAK (joint task for improvement of agricultural structures and coastal protection) of which 60 % is financed by the federal government and 40 % by the Bundesländer; Ib). In case II the national contribution can be provided exclusively by the particular Bundesland (IIa) or by the GAK (IIb). Measures for which Community support is or can be granted and which are notified could be applied as so called 'top up' measures according to Art. 52 Reg. 1257/1999.

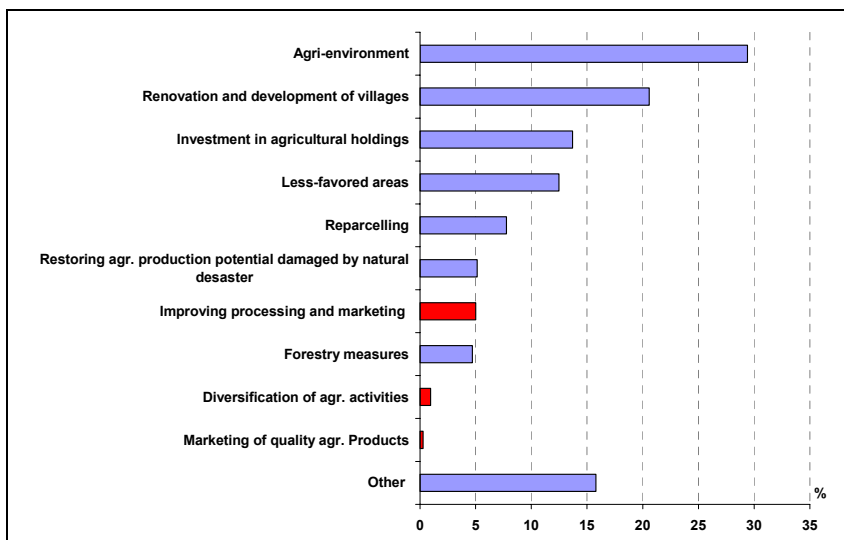
**Fig. 1: Financial schemes to improve the structure of agricultural and food markets in Germany**



Source: Own presentation.

Fig. 2 illustrates the weight of measures to improve market structures within the support scheme of Reg. 1257/1999 in Germany. Only little more than 5 % is provided for this purpose.

**Fig. 2: Importance of measures within the programmes Reg. 1257/1999 in Germany**



Source: OSTERBURG et al. (2002).

In Germany measures relating to articles 25-28 and other measures for improving market structure are evaluated for the mid-term-review by a standardised scheme for each Bundesland and Germany in total by our institute. Each specific Bundesland chapter was provided to the evaluator of each Bundesland for utilisation in the programme evaluation of the Bundesland considered.

The paper highlights in detail the methodological approach of data collection in Germany and also important factors affecting the process of transformation to get sufficient support throughout all stages and authorities involved. Furthermore first results will be presented concerning the potential of the database gained through the developed questionnaire.

## **2 Methodological approach and data**

### **2.1 Method**

Given a huge lack of data needed to measure the impact of the programme it is necessary to develop a pragmatic evaluation approach meeting these restrictions. Comparing firms with and without support (counterfactual situation) fails because it is not possible to get data from firms which have not been supported out of official statistics as well as from surveys. The latter is due to problems to oblige not supported enterprises to provide such data and also to find almost identical ones which are appropriate for comparison. Furthermore, information about a relevant norm or best practice achieved previously or elsewhere is also missing. Therefore our evaluation concentrates on (1) to compare supported firm before and after the supported investment comes into force and (2) to compare wanted and realised results of supported firms. Both approaches rely as strongly as possible to the large number of criteria and indicators suggested by the EU.

For this purpose a questionnaire was developed surveying all supported projects. Each beneficiary is obliged to report on the relevant level, which could be the enterprise, the processing plant or an establishment. These specifications are checked and completed by the responsible approval authority. In order to get largely a standardised specification and interpretation of the criteria and aspects asked for in the questionnaire we have arranged several workshops with the persons involved in the approval and supporting scheme. This time consuming action emerged as a very fruitful approach to get more reliable data for analysis, even if they are not available so far in a sufficient way, as well as other insight information concerning the support scheme.

### **2.2 Data**

At the beginning of 2000 we started with the first steps to develop an appropriate questionnaire. Officials of all Bundesländer responsible for measures to improve market structure were involved in this process by discussions at several meetings. The first draft of the questionnaire was distributed in autumn 2000. The 'final' version has been applied since August 2001 after the first workshop with involved actors as mentioned above. A revised 'final' version has been implemented since August 2002 after the second round of workshops with involved persons. The questionnaire intends to fulfil the guidelines and indicator proposals of the EU as far as possible. Fig. 3 gives an example how the indicator proposals are implemented. As there were no signs that the EU would allow any lowering in the number or the content of indicators the questionnaire becomes rather large.

**Fig. 3: Implementation scheme of EU indicator proposals concerning chapter VII**

<p><u>Question</u></p> <p>To what extent have the supported investments improved the situation of the basic agricultural production sector?</p> <p><u>Indicator proposal EU</u></p> <ul style="list-style-type: none"><li>➤ Trend (in terms of quantity and price) in purchases of raw materials by assisted production/marketing lines</li><li>➤ Share (within area of programme) of gross sales of basic agricultural products that are sold to outlets safeguarded or created thanks to the assistance (%)</li></ul> <p><u>Transformation in the questionnaire</u></p> <ul style="list-style-type: none"><li>➤ Covering quantity and value of 5 main agricultural raw products</li><li>➤ Share of raw products under contract</li><li>➤ Share of organically grown products</li><li>➤ Supply by producer group / producers' organisation</li><li>➤ Running time of contracts</li><li>➤ Shares of raw products with fixed prices, market prices, price markup</li><li>➤ Quality markup in % of producer price y/n.</li><li>➤ Price gap in % of the average market prices</li></ul>
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Source: WENDT et al. (2003).

In order to get answers of most indicators an Excel-based questionnaire was developed. To facilitate the answering by some beneficiaries a printed version was offered too which has to be transferred into the Excel-file by the approval authority. The questionnaire covers 2 different phases:

(a) baseline information as an element of application including data of the initial situation (t-0) as well as the intended effects (t-1a)

(b) realised results in the full business year one year after the investment comes into force (t-1b).

Therefore each beneficiary has to fill in the project form twice. First when the project starts and second not earlier than one year after the investment is completed. Often more than one year lies between both dates in the food processing and marketing sector. The announced data intended as a result of the investment are automatically transferred into the second project data form in order to facilitate fulfilment of the second form by the beneficiary. A special problem arises from the introduction of the Euro in the year 2002. This demanded an exchange of the project forms fulfilled before into the new currency.

The project data forms allow to obtain key elements of the information needed for the mid-term evaluation as well as future ex-post-evaluation. This refers to a comparison of the initial situation with the plan and also with the results in reality. Furthermore deviations can be analysed between planned and realised results. To get data not distorted by initial difficulties it was intended at an early stage of the study to carry out another data survey three years after completion of the project. This would enable us to evaluate more sustainable effects of the investment too. But we failed to realise this intention as the administration was not able to foster this plan as needed.

Since the project data form contains only figures of the supported establishment, firm or company the results indicate just gross effects of the object covered. It is not possible to identify net effects for all enterprises of the region not even of all establishments of one company. Therefore effects which affect other firms or establishments like reduction in purchases of raw materials or employment at not supported plants remain unconsidered. The same applies to the

question what would have happened without the intervention and how far only windfall gains are realised.

However the questionnaire offers information to get as far as possible answers to the common evaluation questions of the EU. Up to now data management is done by a quite simple more or less independent form. Together with the application or a change of application each beneficiary offers a project data form to the approval authority. There the specifications are checked and completed and could be used for different analyses, announcements, reports etc. The form also indicate different aims of the investment as needed for the monitoring system. But links to the monitoring or to the financial management and control system are very scarce so far although feasible in principle. In future such links between different sources of data should be aimed at in one data base. This enables to simplify procedures for granting assistance and to facilitate announcements, reports and analyses for different purposes.

### 3 First research findings

As mentioned earlier an accurately and completely filled-in project data form should be an prerequisite for each decision to grant aid. But reality is quite different. That means, out of 471 projects approved till the end of 2002 we got only for 125 projects the data form by the end of March 2003 (see Tab. 1). Only 81 project data forms are fully acceptable and suitable for analysis currently as we have had to stop the check up one year ago due to lack of personal and time. To get first results for mid term evaluation purposes we used 234 project data forms. They are partly incomplete and not checked in detail but usable to show some options first rough of analysis. These 234 forms are more or less as indicated later at each case the basis for the following evaluation.

**Tab. 1: Receipt of project data forms and their quality**

	Number	Share in all 471 projects
approved Projects, state 31.Dec. 2002	471	
project data forms received and checked, March 2003	125	
of which returned for adjustment		
once	120	
twice	35	
triple	9	
fully acceptable and suitable for analysis currently	81	17 %
not checked until today	346	83 %
project data forms received, August 2003	283	60 %
of which could be used for this first evaluation	234	49 %

Contrary to our work plan we had to check the evaluation forms intensively and had to sent back a sizeable share of the received forms. Many forms were filled in very poorly. This time consuming work led to an enormous pressure on the entire evaluation design.

One reason of these difficulties was the complex and time consuming handling of the extensive evaluation form which is a result of the official and ambitious guidelines and additional papers of the EU Commission. Although we organised workshops concerning the evaluation forms and the evaluation procedure there exists sometimes an insufficient willingness or possibility to meet the agreed arrangement on the part of the regional approval authorities.

These authorities have not in every case the capacities concerning time as well as sometimes know how to check the evaluation form received from the companies which made an application. Another and more important reason is the insufficient willingness to fill in the evaluation form on the part of the companies because they have no interest in an intensive evaluation of the projects. This conclusion can be made because important parts of the evaluation forms are filled in only marginally by the companies. Moreover, we had to accept that in practice the regional approval authorities were not able to enforce the obligation to complete the evaluation form by the private companies. Obviously the 'support machine' must run forward regardless of missing evaluation forms.

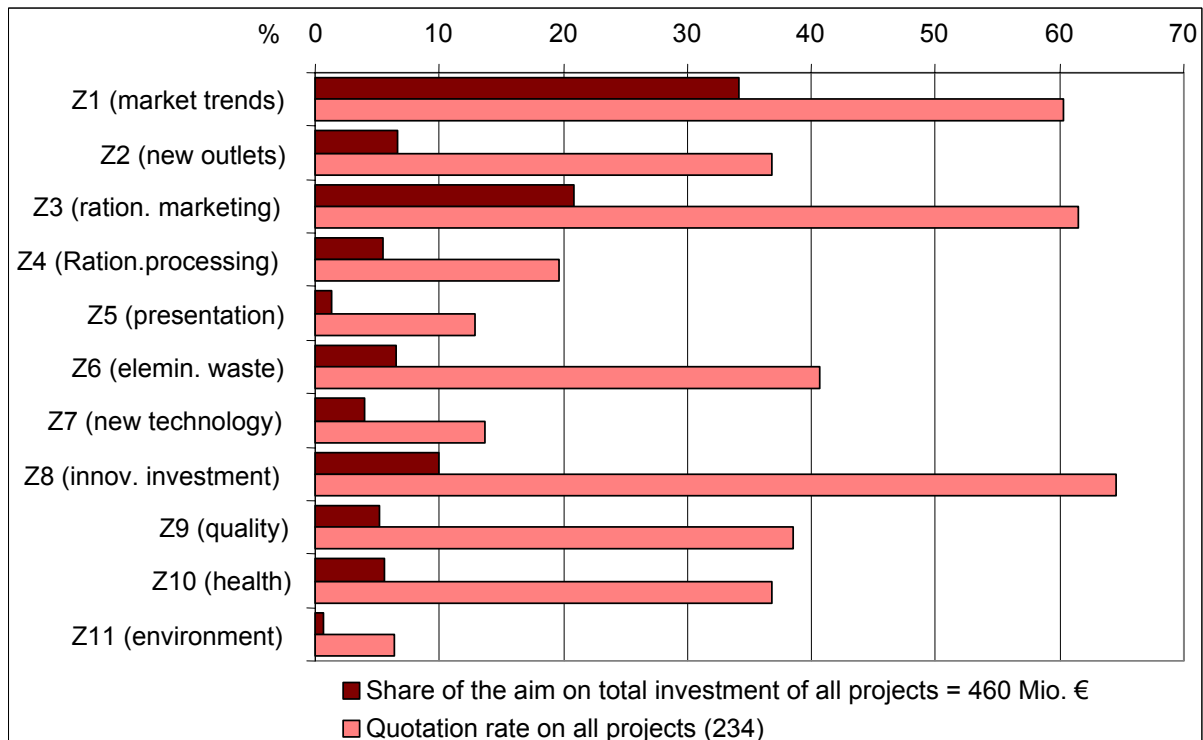
Tab. 2 shows how far figures from the project data form used here fit with official financial data. First, official financial data of the support measures demonstrate that in total 471 projects with total investments of 900 Mio. Euro were approved until Dec. 2002. In contrast, our evaluation relies on only 234 projects with total investments of 461 Mio. Euro (approx. 50 %).

**Tab. 2: Difference between official financial data and evaluation data of the used project data forms**

	official financial database	analysable data from project data - form	project data form as portion of financial database
	Jan. 00 - Dez. 02	Jan. 00 - Aug. 03	
total investment	900,6 Mio. €	461,5 Mio. €	51%
investment eligible for support (B)	848,7 Mio. €	415,9 Mio. €	49%
public commitments (C)	246,1 Mio. €	117,2 Mio. €	48%
support intensity (C/B)	29%	28%	
number of projects	471	234	49%

Source: 229 Project data forms until August 2003; information by administration.

In the EU monitoring system the applicant has to ascribe the investment in total to one of 11 objectives of the program laid down in the Commission Working Document from February 2002. In contrast to the EU monitoring system the applicants (companies) can split the investment in the project data form and can distribute the investment among the 11 objectives provided by the EU and livestock hygiene and animal welfare in addition. The last is not included in the list of the EU, nevertheless it is necessary to consider the so called 'Green investments'. They are calculate as the sum of 'livestock hygiene and animal welfare' and 'investments with the aim of protecting and enhancing the environment'. This procedure enables the regional authorising agencies as well as the relevant administration in the ministries to get in a direct way the necessary information about green investments that means the importance of green investment related to total investments as claimed by the monitoring system. Thus, in our opinion by identifying investments by a detailed breakdown of aims we have a more realistic view of the direction of the investment in question.

**Fig. 4: Importance of envisaged aims referring to total investments and number of projects**

Source: Project data form until August 2003.

Fig. 4 points out the objectives aimed at by the investments. Market orientation and strengthening competitiveness are the main objectives of the supported projects. More than 40 % of total investments (460 Mio. €) are allocated to objective 1 and 2 (market trends and new outlets for agricultural products). 20 % of total investments are related to aspects like modernisation and rationalisation (obj. 3, 4), further 20 % target at innovation and quality improvements (obj. 7, 8, 9). The remaining five objectives account only for a small part of total investments (7 %).

Usually an investment follows a bundle of objectives. The quotation rate of each specific aim is illustrated in Fig. 4. Some objectives are relatively often announced, but associated with a small share in total investment only.

It has to be mentioned that the aims are not complementary to each other, but sometimes conflicting. This happens in the case of widening sales in new market segments by more convenient packaging which can be in conflict with environmental objectives.

One major intention of the support scheme and the corresponding investments is that agricultural producers benefit from supported investment. This could happen by purchases on the basis of contracts with farmers. In Germany the beneficiary has to meet the precondition that not less than 50 % of the agricultural raw material he receives depend on contracts with farmers of the region. The contractual partner could be a single farmer or a horizontal integrated pool of farmers. The project data form provides such information. Tab. 3 shows that farmers will profit from the expansion expected by investment to a considerable amount (407 Mill. €). The share of purchases under contracts before and after investment should remain stable at the level of 77 %.

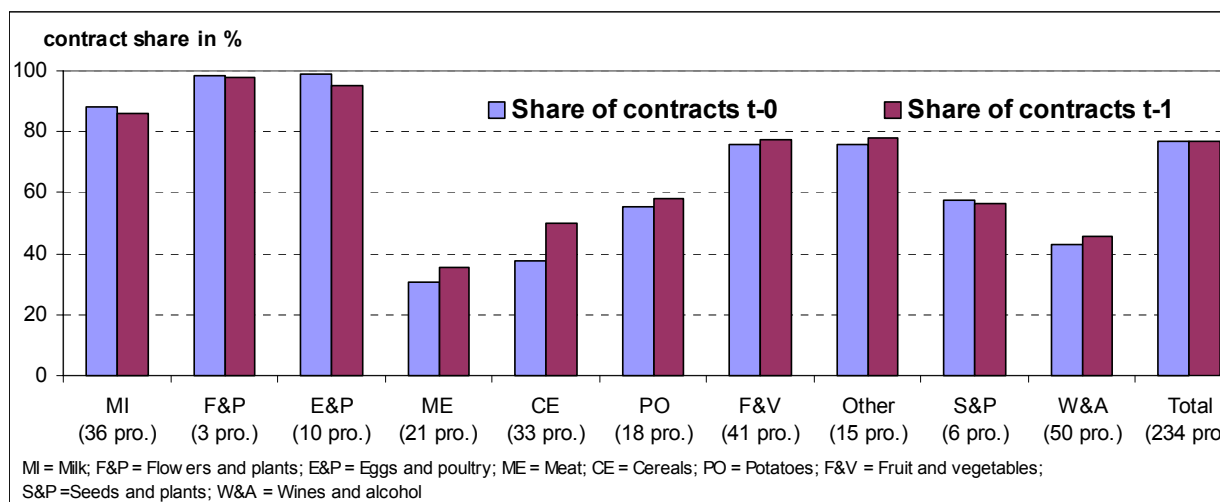


**Tab. 3: Extent and development of purchases depending on contracts (229 projects)**

	total agr. raw material	Purchases of agr. raw material depending on contracts	share of raw material purchases by contracts
agr. raw material t-0	4 073 Mill. €	3 137 Mill. €	77
agr. raw material t-1	4 601 Mill. €	3 544 Mill. €	77
Change t-0 → t-1	+ 528 Mill. €	+ 407 Mill. €	

Source: Evaluation form; 229 forms until August 2003.

Fig. 5 illustrates great differences between sectors concerning the amount of purchases bound to contracts. The highest degree of such linkages exist in the sectors dairy/milk, flowers & plant and eggs & poultry. Surprisingly not all projects fit with the minimum bounding degree of 50 %. This might be attributed to the fact, that the analysed project data forms are not proved in detail so far and may not be filled out completely or correctly. However, this example gives an indication of the analytical potential of the project data forms provided that they are accurate.

**Fig. 5: Proposed change in purchases depending on contracts by agricultural sectors (234 projects)**

Source: Project data form until August 2003.

The evaluation form covers information related to the chapter specific and the cross cutting questions of the EU Commission. But the single dataset cannot show a valuable result necessary to evaluate respectively justify a whole project and a support measure too. Statements concerning relevance, effectiveness or efficiency etc. are difficult to make especially if one tries to include a set of single aspects. To overcome this obstacle and in reaction to similar shortages of many evaluation approaches we tried to implement a ranking and benchmarking system as a new evaluation tool base of information out of the project data forms.

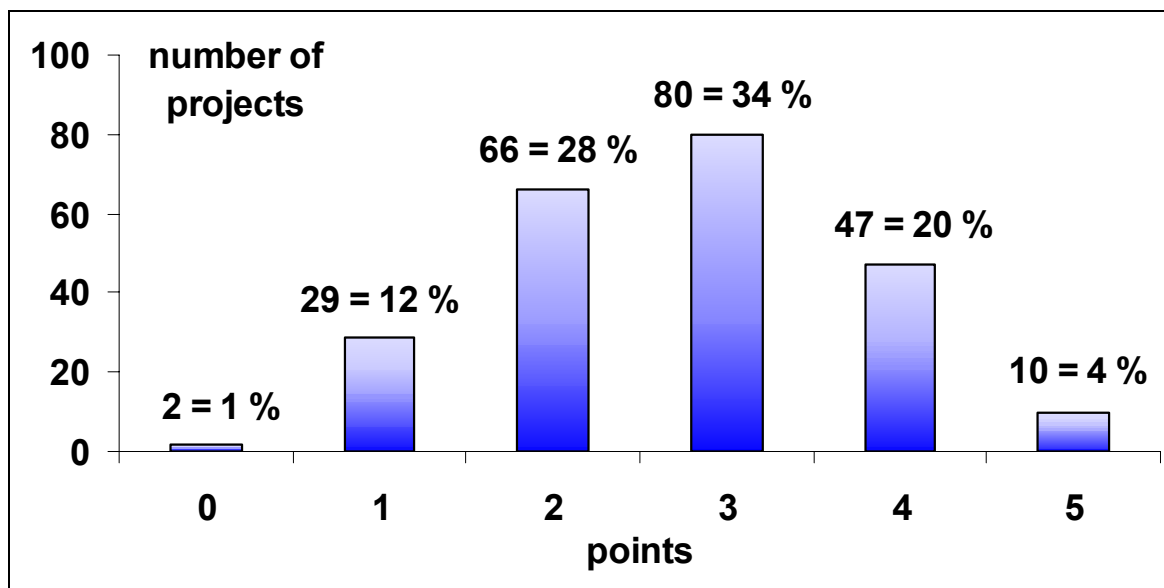
Therefore we constructed a ranking scheme as follows. First we identified 5 criteria which could be calculated out of project data forms and seem to be important to us concerning competitiveness (see Tab. 4). If one criteria applied it was given one point in this example, but could be changed if the importance of the criteria is valued different. Thus we got an aggregate measure of each project according to competitiveness. This enabled us to prove over the whole range of projects to what extent projects (companies) can improve the competitive position by using the aspects presented below.

**Tab. 4: Criteria of a ranking list for projects in the field of competitiveness**

criteria	valuation
→ positive employment trend	= 1
→ positive trend in value added	= 1
→ use of quality management systems	= 1
→ make use of newly developed products	= 1
→ investment in obj. 7 (new technique) and or obj. 8 (innovation)	= 1

Source: Own composition.

Applied to 234 project data forms which are available this ranking shows results as presented in Fig. 6. Only few projects have no or negligible activities concerning these five criteria. Anyway, almost 60 % of the projects achieve three or more points that means, they contain different positive attributes concerning competitiveness as defined here.

**Fig. 6: Ranking of the projects according to the 5 criteria**

Source: 234 project data forms until August 2003.

Until now it has been a preliminary attempt. Preliminary because we have to discuss in a broader way the different possible criteria which can be considered with market and business experts and in particular with experts in the regional authorising agencies and the relevant ministries. In a next step we will carry out a weighting of the chosen criteria also within a discussion process.

As one can see easily the criteria-set and the weighting of these criteria are important. In tendency one should consider criteria that are strongly related to the objectives of the support scheme. Furthermore if one takes into account a broader list of criteria, the risk of a misinterpretation respectively wrong classification of projects will be diminished. Consequently, in future we should try to enlarge this criteria list and possibly implement different lists in order to produce special results for different main topics of the evaluation.

## 4 Conclusion

The Excel-based project data form is in principle of considerable value to get information relevant to answer common evaluation questions required by the EU. But the real worth depends to a large extent on accurate filling in of the forms. To obtain this ambitious aim needs

encouragement of all actors involved in the supported measures and a lot of time too. This could not be realised sufficiently so far and asked for further efforts all the more it provides a lot of useful information needed for a well founded evaluation. But even with such information it is not possible to calculate net effects or to identify pure windfall gains. After the running support period is finished it should be possible to decide against the background of the used project data forms which indicators could be eliminated in future support schemes because they are not significant for evaluation purposes.

Considering examples the analysis demonstrates the potential of the project data form in arranging a ranking respectively benchmarking method which should be improved and broadened further in the future. This offers in our view an excellent way to present results and impacts in a comprehensive manner. Thereby the transparency of the support scheme and the evaluation too could be improved. May be such a benchmarking analysis offers also an option to improve the monitoring and control system of RDP measures and to help program administrators and program committees to adjust measures if necessary.

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