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INRES
Insular regions cooperating for maximising the environmental and economic benefits from research in Renewable Energy Sources

Seventh Framework Programme – Capacities (Regions of Knowledge)
Support Action

Work package 5 (Dissemination & Communication)
Deliverable 5.4 (SMEs Surveys)

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Dissemination level - Confidentiality		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1. Summary

The INRES project performed two surveys of small and medium sized enterprises (SMEs) in order to assess the impact of the project. The first survey was early in the project, and the second survey was near the end of the project. By comparison, the level of barriers toward technology transfer improved (decreased) during the project period. On a scale from 0 to 1, where 1 is taken to indicate that barriers are present and 0 that barriers are not present, the score improved from 0.54 to 0.43. The surveys contained a selection of three internal barriers and three external barriers.

2. Introduction

The INRES project concerns the three European insular regions: Canary Islands (Spain), Crete (Greece), and Samso (Denmark). Work package 5 concerns dissemination and communication, and this report is a deliverable (D5.4) under that work package. Its objective is to report the conclusions of a self-assessment of the INRES project.

The description of work in the grant agreement describes the task as follows:

- Ask SMEs to express an opinion on the current RES (Renewable Energy Sources) policies.
- Ask SMEs to assess the existing measures meant to encourage the research transfer to SMEs.
- Ask if SMEs are aware of the existing measures in other regions.

A first round of questions was due in the beginning of the project. In a second round near the end of the project we were to ask the same questions, and conclude whether there were any improvements during the lifetime of the project.

The specifications above are too wide and academic to be put into practice, and we therefore devised a method and very few questions to ask in each island region. Furthermore we attempted to quantify the result in order to make it easier to compare the answers to the questionnaires.

3. Method

First of all we decided to turn the task into a barrier analysis. That is, we formulated a number of possible barriers toward technology transfer, and asked the SMEs their opinion about these barriers. A barrier has a negative connotation, and it is an improvement if the level of barriers decreases during the project. Whether a decrease is also due to the project, that is, whether it is the project that causes a decreased level of barriers, if such a decrease is observed, can be difficult to say.

We view the barriers as either external or internal barriers. Internal barriers are prone to our actions, while we can only observe external barriers. We defined internal and external relative to the geographical boundary of the island / insular region.

We thus defined six propositions, divided into internal and external barriers, see Table 1. Each barrier is a proposition in the sense that it can be answered by a *yes* or a *no*. The collection of propositions is technically speaking a *checklist*. We chose a small number of barriers (six), because the SME target group consists of busy people, and they are already exposed to many other questionnaires and market researches.

Rather than just receiving yes/no answers, we also wished to measure the strength of the barrier. Therefore there are seven answer options in the checklist:

- Yes 1.0
- More or less agree 0.8
- Slightly agree 0.6
- Maybe 0.5
- Slightly disagree 0.4
- More or less disagree 0.2
- No 0.0

Each number is the agreeability that we associate with the response in order to process the results by computer. A score of 1.0 indicates *fully present*, a score of 0.0 indicates *not present*, and an intermediate score indicates present to a degree. Notice that the middle point 0.5 indicates *maybe present* and that the numbers are equally spaced when disregarding the middle point.

TABLE 1. Six barriers that were investigated in the questionnaire.

Internal barriers	**External barriers**
Our customers know too little about renewable energy, unfortunately (comment: it would be easier to sell our products if they did).	Our company has difficulties finding out whether there are products off the island, which maybe could be sold on the island (comment: indicates lack of communication and information sources).
It is too risky for our company to introduce new products (comment: because of the financial situation the company stays with the established products).	It seems cumbersome to apply for subsidies from outside the island, for instance from the region or the EU (comment: indicates bureaucracy or lack of experience).
Our company knows too little about how the local energy agency can help us (comment: indicates that more information about their services would help).	Our company knows too little about the future regulations concerning the energy requirements for a building (comment: indicates a need for courses).

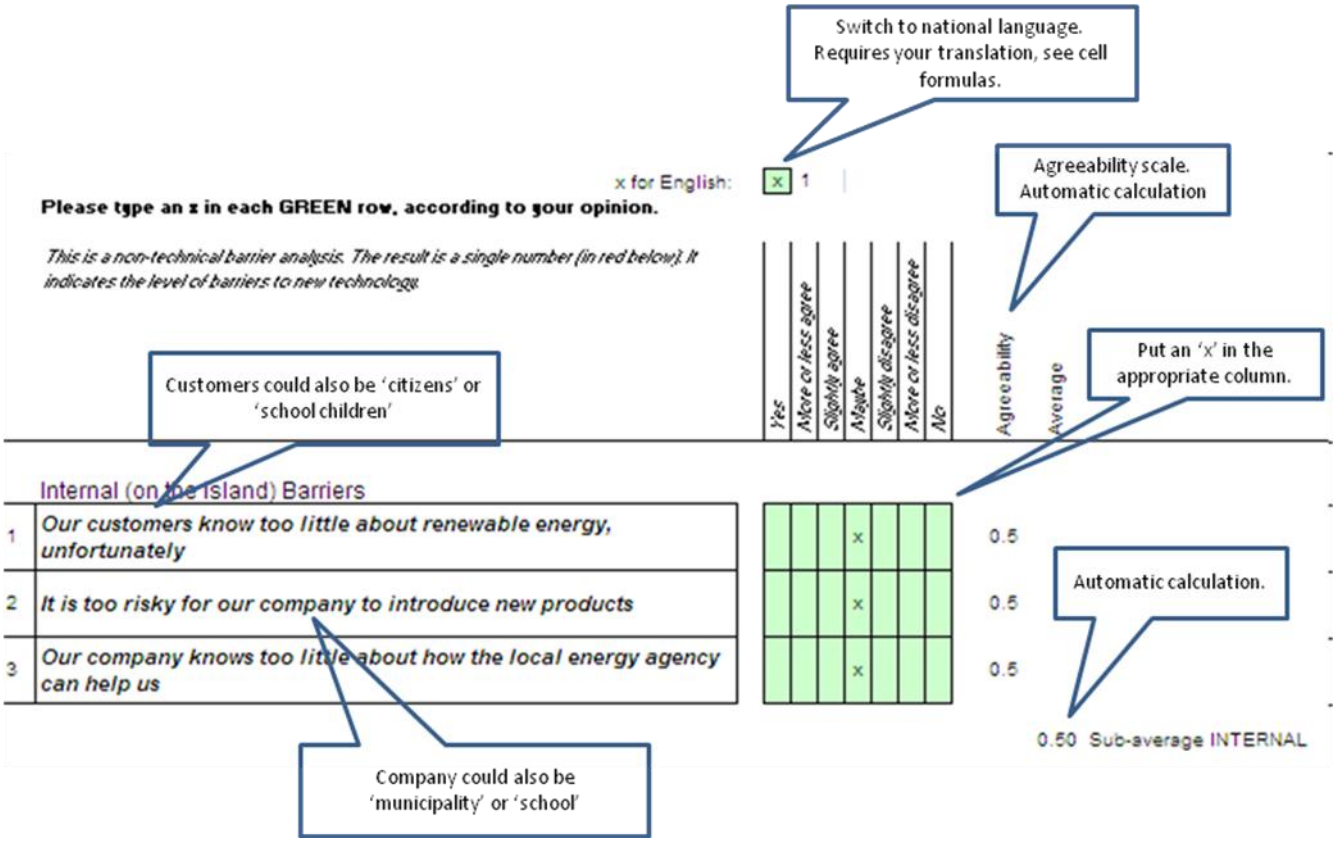

Figure 1. Part of a spreadsheet tool for the interviewer.

We included the barriers and the scoring mechanism in a spreadsheet (Excel, Fig. 1). A blank spreadsheet was distributed to the partners, and the interviewer just had to place six 'x' marks during the interview, and then save the file under a unique name.

4. Results and Discussion

Each of the three island regions performed two surveys, and we received 71 responses from the first survey and 34 from the second survey. The result was:

- The overall level of barriers was 0.54 after the first survey, and it decreased to 0.43 after the second survey (Fig. 2).

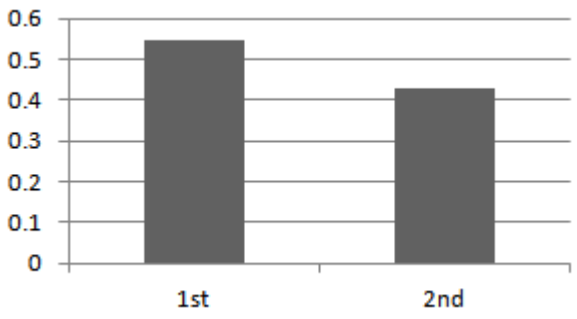

Figure 2. Level of barriers, 1st and 2nd survey.

The initial level of 0.54 is close to *maybe present* and it shows the respondents were uncertain on the whole. Indeed, a histogram of the answers will show that most answers cluster around the middle point (0.5).

The final level is better, and it shows the respondents agreed there were less barriers. The difference is not large, and it may be due to uncertainty in the method, but if we look a little deeper into the results, we see that the improvement is consistent.

Each island improved its level of barriers, see Fig. 3. All islands are initially around 0.5 or a little higher, and all islands finish lower than they started. The improvement is largest in Samso and smallest in the Canary Islands.

This is a consistent result, because the level of barriers decreased in all participating islands. It indicates that the project helped, but of course we would like to have more data in order to conclude anything about the statistical significance. Incidentally, our smallest batch is only six respondents.

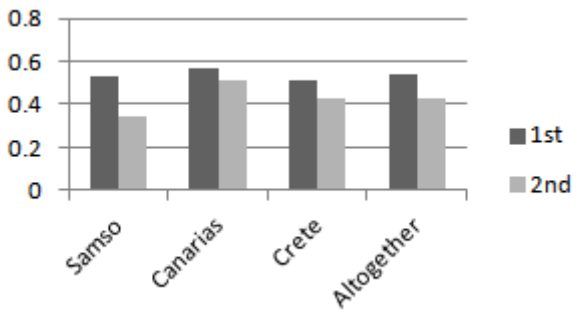

Figure 3. There is an improvement from 1st to 2nd survey in each island.

Even if we look at internal barriers only, the improvement is consistent over all islands; the same with external barriers.

Figure 4 shows how each respondent weighs external and internal barriers. Even though the 2nd survey had less respondents, it is clear that the responses lie more in the lower left hand corner of the plot. This is the region with low internal barriers and low external barriers. Clearly the mean value (the centre of gravity) moved down and left from 1st to 2nd survey, which is what we hoped for.

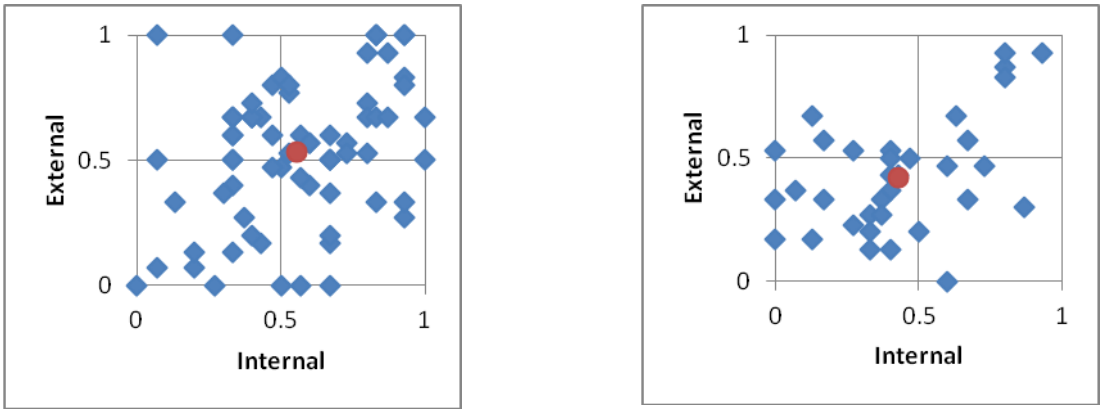

Figure 4. Scatter plots of 1st survey responses (left) and 2nd survey responses (right). Each diamond represents one respondent, and the circle is the mean value of all responses.

TABLE 2. Strengths and weaknesses of the method.

Strengths	**Weaknesses**
Simple, only six questions.	We can never know if we analyse *all* barriers.
It is quantitative.	There are too few questions to cover the whole area.
It is graphical (easy to see results).	There are too few respondents to be statistically significant.
More informative than a qualitative analysis.	The results may not answer the (rather loose) initial questions in the description of work.

The method has some weaknesses, mostly on the statistical side; more respondents would improve the credibility of the results. Furthermore, the propositions are unclear to some people. But it is an attempt to do something more than just a questionnaire, and it yielded many results.

5. Conclusions

With this assessment we hoped to find an improvement from the 1st to the 2nd survey. The survey has shortcomings on the statistical side, the subject contains uncertainty, and we have by no means investigated all possible barriers. Nevertheless, all plots in the report indicate an improvement with no exception. We therefore venture to say that *it is very likely that the project removed some barriers*.

In fact each island or insular region held several regional and inter-regional workshops open to the public. The events were advertised in the local news media, and visitors to the events were in all cases offered demonstrations and expert answers to their questions about renewable energy. The exhibitors were local SMEs, and there was an exchange of knowledge even among the exhibitors.

If the project really did cause some barriers to disappear or diminish, it must be thanks to the workshops.