

BETTER
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VALORISING EMAS

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1 Introduction to the case study

The Region of Tuscany has adopted many simplification measures to support the implementation of EMAS registration, especially in small and medium-sized businesses. 15 simplification measures have been put into effect at the regional level to remove various barriers that limit the adoption of environmental management systems that conform to the EMAS Regulation. In particular, the Region of Tuscany has been the first Italian region to apply tax incentives to support the diffusion of environmental practices such as EMAS and ISO 14001 or the Ecolabel certification.

In particular it has enacted a rate reduction for a regional tax on productive activities. This measure was approved for the first time in 2004 by the L.R. of 24/12/2003 n. 58 and was applicable for the fiscal years of 2005-2007. In 2008 and 2009 this reduction was confirmed by the L.R. financial laws of 24/12/2007 n. 67 and L.R. of 24/12/2007 n. 69. In the end, the financial law of 2009 (n. 69/2008) was extended to the reduction of the IRAP until 2010 and the Regional Law of 29/12/2010 n. 65 art. 119 “Renewal of expected incentives from the financial law of 2005,” confirms the reduction until 2013. The data on the number of EMAS enterprises in Tuscany shows that from the introduction of the reduction of the IRAP the adoption of EMAS in the Region has significantly increased.

1.1 Motivation for the case study

The choice of the Tuscan case study was shared with the representatives of the Region; the choice was based on the relevance of the measures adopted and on their value for businesses. The process of selection had the objective of identifying the most innovative regional simplification that would bring about better results in terms of an increased number of EMAS registrations.

The criteria for the choice of the case study were the following:

1. Originality of the measure: the IRAP reduction was adopted for the first time in 2004. Tuscany was the first region in Italy to try out this type of incentive to support the diffusion of the EMAS Regulation. The Tuscan experience was then followed by other Italian regions such as Veneto and Marche. The European report on the simplification measures for EMAS businesses (“Report on the incentives for the EMAS-registered organizations,” COM (2004) 745 final) shows that, at that date, tax reductions of similar nature were not adopted in other European States. The IRAP reduction, moreover, represents a successful tool, given the increase in the number of registered organizations since its implementation.
2. The breadth of application of the simplification measure: unlike other simplification measures, which often focus on specific sectors (for example the waste sector), the regional tax on productive activities applies to all businesses that produce goods and services.

3. The existence of data on the impact of the measures: data is available on the number of companies that have benefited from the rate reduction and the exact economic burden sustained by the Region as a result of its implementation.
4. The relevance of the measure for the regional Authority: the regional administration considers the IRAP rate reduction the principle measure adopted to popularize the environmental certification.

1.2 Context

Until today, there has been no research on the effects of this simplification measure.

1.3 Methodology

The methodological approach of the present study is based on the analysis of the data provided by the Region of Tuscany on the spread of the simplification measure under consideration as well as a survey study that involved all EMAS registered productive companies. The goal was to evaluate the effect of the simplification measures that currently exist as well as provide an indication of the effectiveness of the environmental management systems.

With respect to the first mode of analysis, the IRAP data were examined, including the number of enterprises that have benefited each year from the IRAP reduction from 2004 to 2009, the taxable value, the value of the tax, and the loss of revenue.

- Definition of the list of EMAS registered companies to which to submit the survey;
- Collection of data on the IRAP simplification implemented at the regional level;
- Preparation of the survey;
- Data collection;
- Analysis of data;

The first phase was dedicated to the identification of the companies that make up the statistic reference population, namely the EMAS registered productive companies operating in Tuscany through the consultation of both the EMAS register published on the ISPRA website and of the register of the European Commission, which can be found at the website <http://ec.europa.eu/environment/emas/register/>. Through both of these consultations it was possible to have the information regarding the sector of the businesses. This has made it possible, for example, to eliminate public administration from the list, given that they are not subject to payment of the IRAP, accommodations, and consulting firms. The decision to concentrate on the productive sector (including the waste sector and other environmental services) has a twofold justification: the first is that the possibility to define different simplification measures is certainly broader since productive enterprises are subject to a heavier burden of work related to the environmental regulations. The second reason is that the impact of the internal environmental management systems is certainly larger than in companies of the tertiary sector.

Faced with this choice, the list of target companies for the investigation was formed initially by 60 businesses that operate in the industrial and environmental services sectors. Through a deeper analysis it was established that 3 businesses were no longer active, 1 had abandoned its registration (although it was still included in the EMAS register) and 2 were in the process of

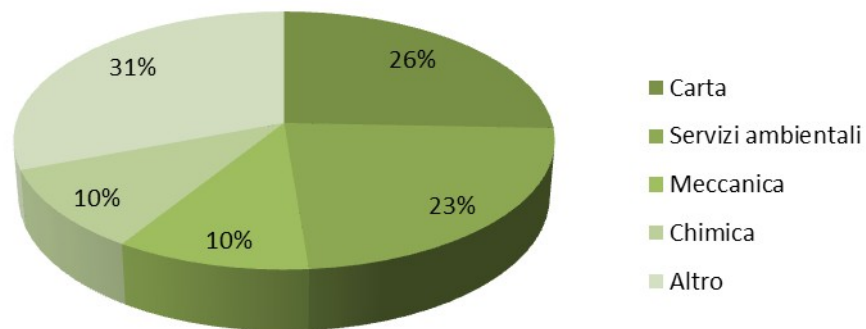
going out of business. Therefore the statistic population of reference is made up of 54 businesses. The survey study was conducted using the online platform “SurveyMonkey,” through which the organizations inserted their responses to the queries independently. The email addresses were obtained from the EMAS register in which contact information was provided for the person of each organization that manages the environmental management system. Each company received, therefore, an email containing the description of the project, the instructions for accessing and filling out the questionnaire and the contact information of the researchers of the Sant’Anna Superior School to whom they could refer in case of problems with the questionnaire form. The first dispatch of the email took place on July 20. Some telephone recalls followed this first dispatch as well as some recalls by email at the end of the month of July (30-31) and on September 1. The deadline for filling out the questionnaire was initially decided to be September 18 and was later extended to September 25. The questionnaire is composed of 24 multiple choice questions and is subdivided into the 6 sections described below:

- SECTION 1 – Personal data of the business. The goal of this is to analyze in detail the following characteristics of the business: age of the organization, number of full-time employees, classification of the principle clients, size of the key market, competition of other businesses on the main product, competitive factors to evaluate the product on the market, evaluation of their economic performance in the last 3 years of commercial activity.
- SECTION 2—The environmental management system. The questions were directed toward evaluation of the level of implementation of the environmental management system. The participants responded by giving judgments on the following aspects: planning of environmental activities, training and involvement of employees in environmental matters, implementation of environmental management initiatives, measurement activities, monitoring and internal control.
- SECTION 3—The environmental performance of the enterprise. The questions that make up this section aim to evaluate the environmental aspects of the business and the relative amount of work necessary in order to improve them.
- SECTION 4—Investments. This section analyzes the investments of the organization, in the last three years of commercial activity, towards progressive environmental improvement.
- SECTION 5—Simplification. This section intends to investigate whether or not the organization has benefited from the simplification, and if it was the reason for undertaking the work of registration for EMAS. Moreover, this section aims to evaluate what kind of advantages and obstacles the company has had in utilizing the simplification and if other simplifications may be appropriate.
- SECTION 6—Incentives and barriers: the last section of the survey is composed of two questions regarding the role of the stakeholder in influencing the adoption of these environmental actions and the barriers and difficulties they encountered in the implementation of the environmental management system.

1.3.1 Description of the survey sample

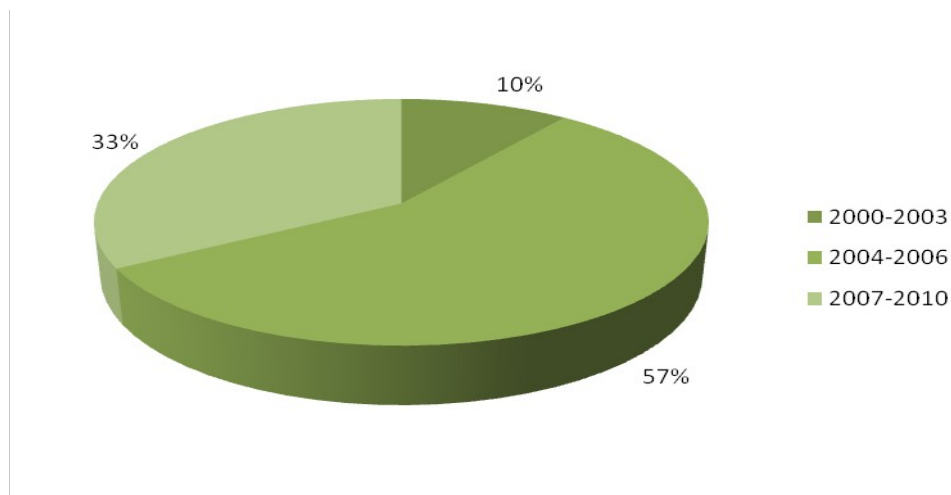
Of the 54 companies contacted, 39 responded to the survey for a 72% response rate. The majority (26%) of these are part of the paper industry. 23% are environmental services. The chemical and mechanical sectors each make up 10% of the companies that responded.

Figure 1, Composition of the sample



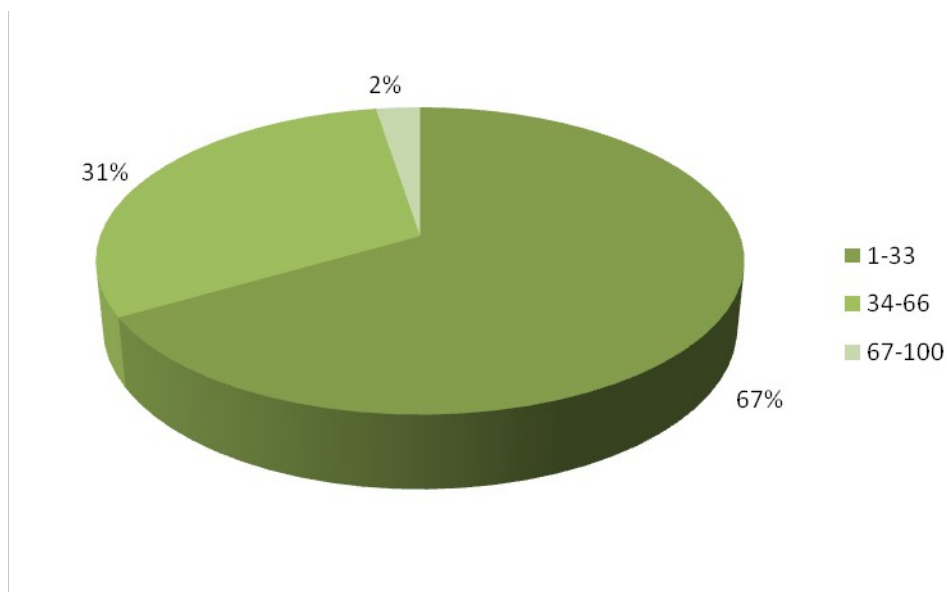
Of those who responded, most of the businesses obtained the first registration in the 2004-2006 biennial period, 33% between 2007 and 2010, and 10% between 2000 and 2003

Figure 2, Year of registration



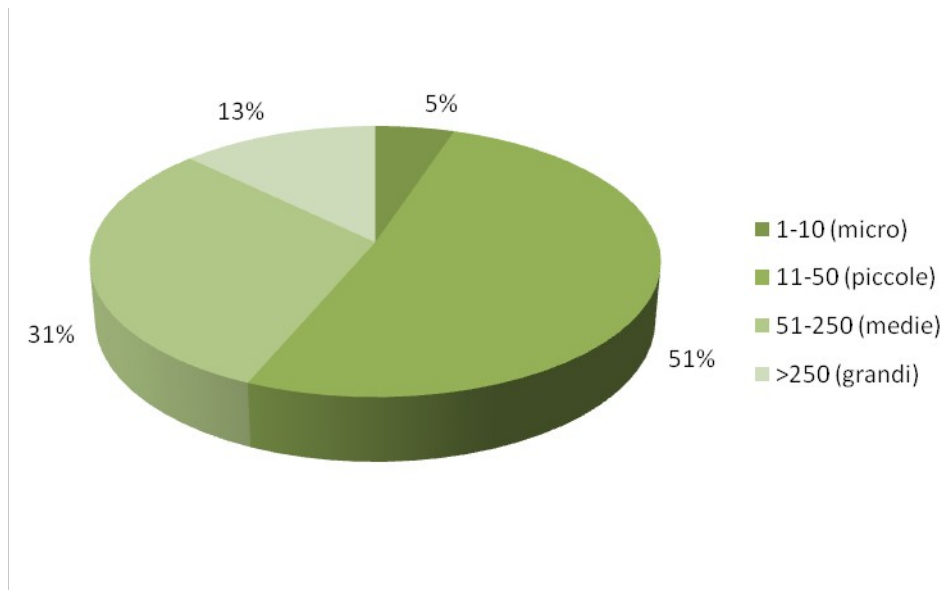
Concerning the years of presence of the businesses on the market, more than 60% have been operating for less than 30 years, slightly less than one third from 34 to 66 years, and one single company has been operating for more than 67 years. The average age of the responding companies is 32 years.

Figure 3, Age of the organization



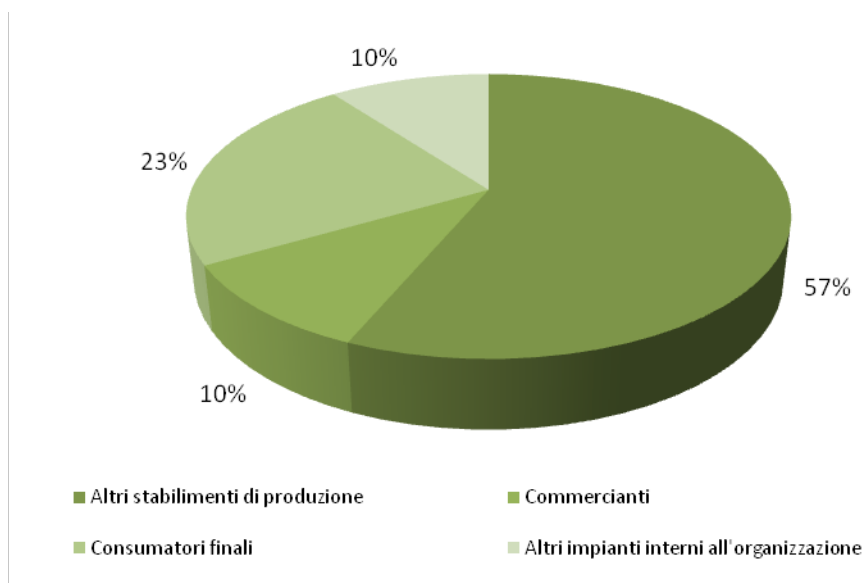
Regarding the size of the enterprises that comprised the sample, more than 50% of the companies that responded to the survey are small, 30% are about medium-sized, and 13% have more than 250 employees, and lastly 3% is made up of very small business. With respect to the composition of the size distribution of Tuscan companies in general, the sample is more oriented towards large enterprises, confirming the difficulty, or of the lack of need, of very small enterprises in implementing a “non-formalized” environmental management system.

Figure 4, Number of full-time employees



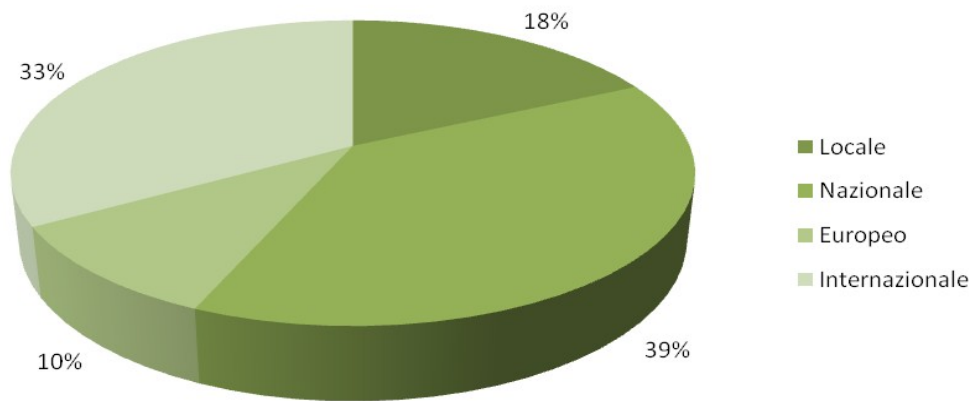
Relative to the position on the supply chain, 57% of the enterprises that were interviewed work in a business to business market, supplying “other manufacturing companies,” 23.7% produce goods for the retail sector, while 10% produce goods for consumers and finally for other facilities within the organization.

Figure 5, Classification of main clients



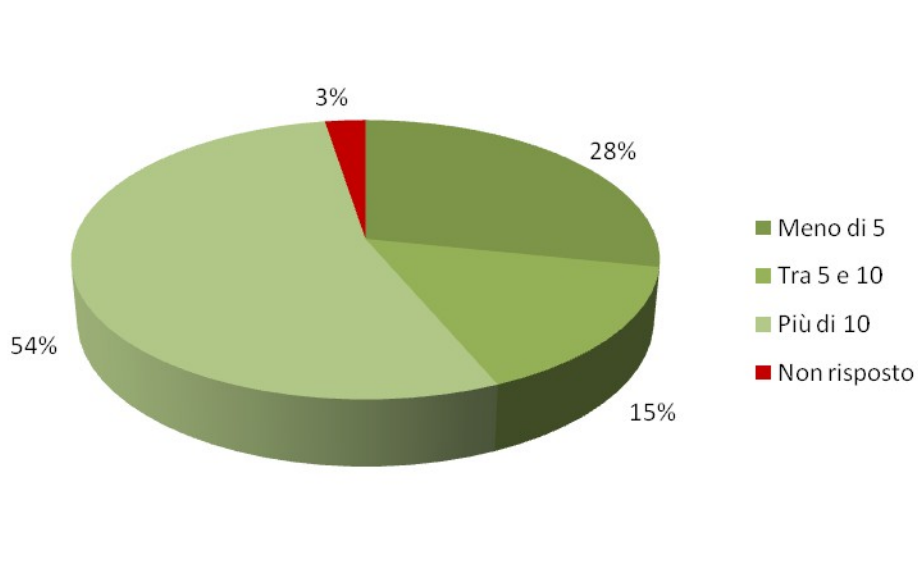
With reference to the geographic scope of competition, the majority of the enterprises works within the national market (39%), a slightly lower percentage (33%), on the other hand, operates in the international market. Lastly, 18% operate mainly locally, while 10% offer their products primarily on the European market.

Figure 6, Market size



Still with the aim of characterizing the market of the interviewed companies, the number of commercially important enterprises with which the organization competes on the market for its product was investigated. More than half of the responding companies (54%) compete with more than 10 other businesses, a significant percentage (28%) competes with less than 5 other companies, and 15% compete with 5 to 10 other enterprises.

Figure 7, Competing enterprises for the principle product



In order to analyze the strategic approach of the companies, the research attempted to individuate the most important competitive factor of each company's most important product on the market. This was investigated by asking the company to express an evaluation of the following factors (from "unimportant" to "very important"):

- Price;
- Quality;

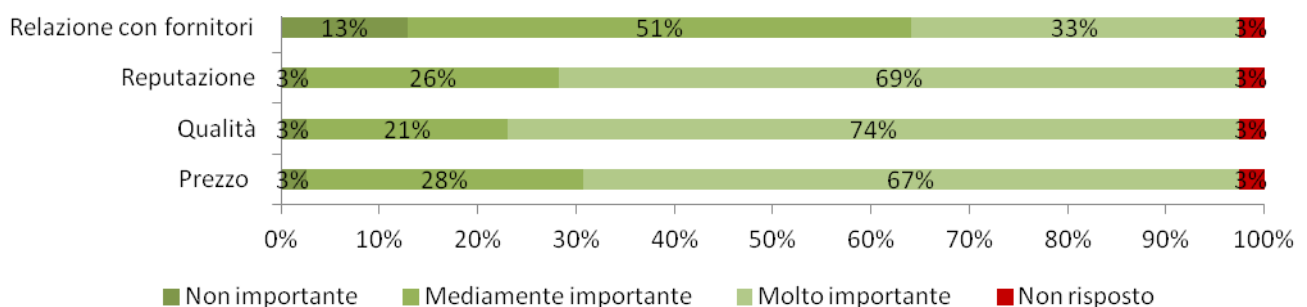
- Reputation;
- Relationships with suppliers.

The results showed that more than two out of three companies consider quality (74%), reputation (69%), and price (67%) to be very important competitive factors, while only 33% had the same opinion about relationships with suppliers.

More specifically, it is possible to put the frequency of responses for each factor in order in the following three levels of importance:

- “very important”: 1.quality, 2.reputation, 3.price, 4.relationships with suppliers;
- “important”: 1.relationships with suppliers, 2.price, 3.reputation, 4.quality;
- “unimportant”: 1.relationships with suppliers, and the other three factors were each considered unimportant by only one responder

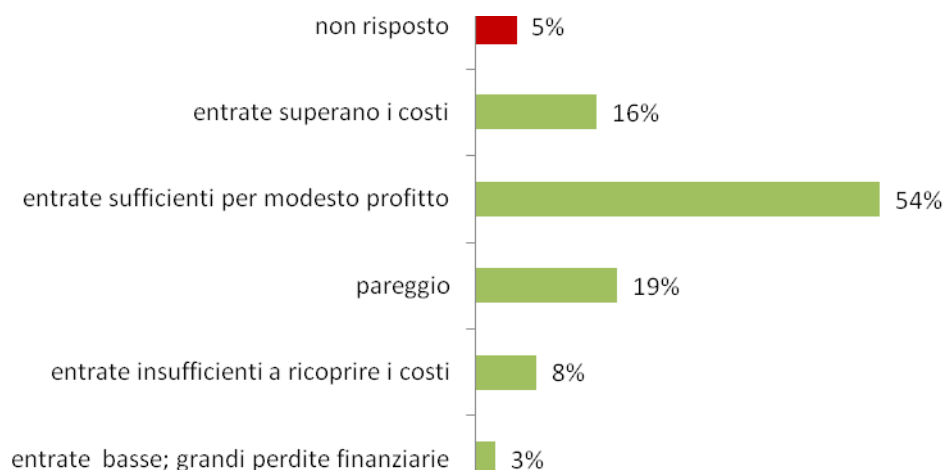
Figure 8, Competitive factors most commonly used to enhance the main product on the market



In a fairly turbulent economic context, like the current one, it is important for any type of analysis of productive enterprises to have an indication of the economic performance of the businesses that comprise the sample.

More than half of the companies that responded (37 out of 39) declared that “the income is sufficient for a modest profit” (54.1%), less than 20% of the responses made the judgment of “balance” and that “the income is higher than the expenses,” and even fewer, less than 10% declared that “the income is insufficient to cover the costs” and that “the income has been low with significant financial losses.” Therefore, it’s possible to confirm that, even in a generally difficult situation, the majority of Tuscan EMAS registered productive companies seem to be managing the economic crisis effectively.

Figure 9, Economic performance of the last three years



2 The simplification measure

2.1 Description of the measure

The regional tax on productive activities (IRAP) was introduced in 1997 (legislative Decree n446 of 15/12/1997) effecting business revenues of 1998, in order to financially support regional health care. The organizations subject to the IRAP produce services and goods and include individual enterprises, large enterprises, and commercial and non-commercial enterprises, merchants and independent contractors, and some public entities. In Italy this tax is the net value added to the product. All Italian companies pay the IRAP and each region can define the percentage to apply to production, within a range defined by the legislative Decree 446/1997.

The calculation of the IRAP taxation follows the laws of Legislative Decree 446/97 and of the Civil Code. Article 2425 of the Civil Code explains the processes for definition of the amount on which to calculate the IRAP: the difference between the value and the cost of production (A-B)

- A) “Value of production” is made up of the following:
1. proceeds from sales and from performance
 2. changes in inventories of work in progress and finished goods;
 3. changes in works in progress and on orders
 4. increase of constructed assets
 5. other proceeds and income
- B) “Cost of production” is made up of the following:
1. raw materials, consumables, and goods

2. services
3. leases from third parties
4. salaries for personnel
5. depreciation and amortization
6. changes in inventories of raw materials, consumables and goods
7. provisions for risks
8. other provisions
9. various management charges

In Tuscany the IRAP percentage is 3.90% (2010) for companies that do not have environmental or ethical certifications. Since 2004 Tuscany's regional administration has adopted measures to reduce the IRAP for businesses that have EMAS, ISO 14001 or SA8000 certifications.

Regional law n.58 of 19/12/2003 provides a reduction of the IRAP percentage of 3.50% rather than 4.25% for EMAS organizations. This percentage was further reduced for the 2008 fiscal year and, as a consequence, the IRAP for all EMAS and ISO 14001 organizations was reduced to 3.21% and 3.53% respectively. Financial law 27/12/2011 n.66 extended the fiscal incentive to enterprises with environmental and ethical certifications until 2013.

The IRAP reduction is classified as a fiscal benefit for "better regulation." This classification is connected with the categories applied in research on the existent simplifications conducted under action 3.1 and in the "report on incentives for EMAS registered organization," COM (2004) 745 final.

Table 2, Typologies of simplification measures

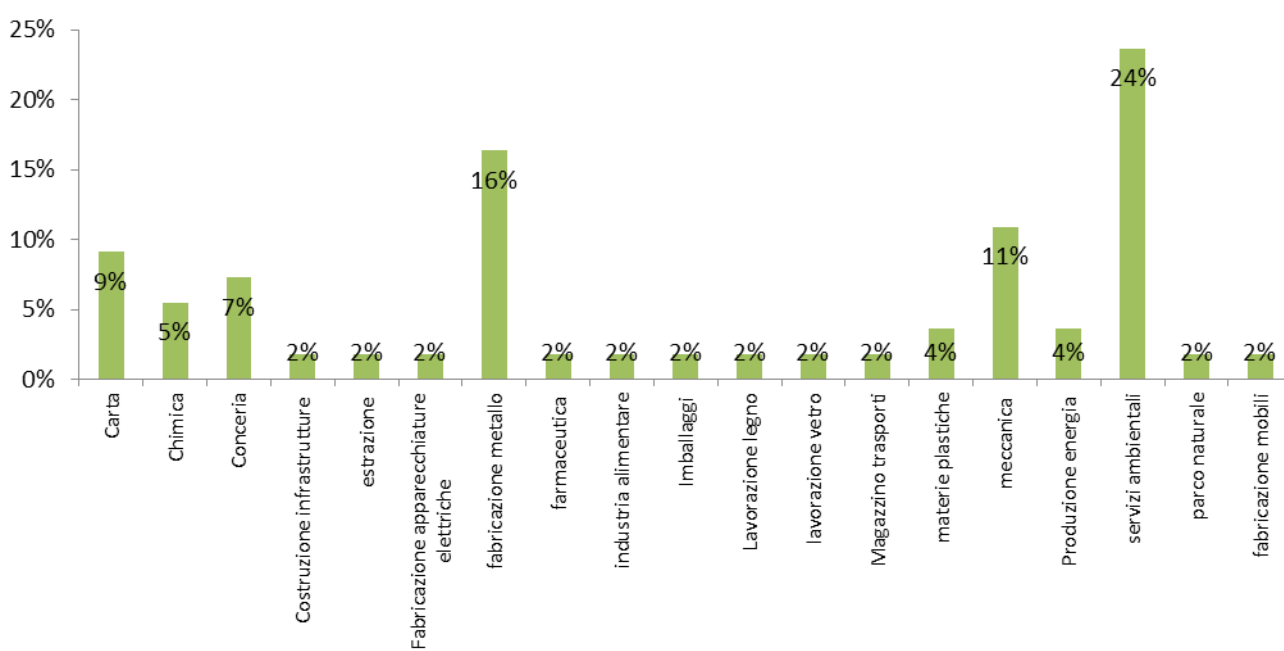
I livello	II livello	Tipo di misura selezionata nel caso studio
Semplificazioni normative	Autodichiarazione nella procedura di proroga di un permesso	
	Autodichiarazione nella procedura di ottenimento di un permesso	
	Allungamento di un periodo di autorizzazione	
	Permessi con trattamento preferenziale	
	Variatione dell'obiettivo dell'applicazione	
	Informazione richieste per i permessi	
	Riduzione della necessità di fare report e di monitoraggio	
	Diminuzione delle ispezioni	
	Altre proposte di deregolamentazione	
	Garanzie finanziarie richieste per specifiche attività	
Riduzione di imposte amministrative (legge ambientale)		
Migliore regolamentazione	Benefici fiscali	X
	Acquisti pubblici	
	Accesso al credito	
	Finanziamento	
	Supporto tecnico e informazione	
	Altri incentivi promozionali per superare gli ostacoli alla partecipazione	

2.2 Description of the characteristics of the regional sectors

As previously anticipated, one of the motives that determined the choice of the present case study on the IRAP was the breadth of the field of application. Being, in fact, a tax that is applicable to all productive sectors and enterprises dealing with services, the reduction of the IRAP rate for EMAS registered companies represents a stimulus for the spread of such instruments in all productive sectors.

The figure below shows the EMAS registered businesses in Tuscany, organized by business sector, that have been a part of the investigation and that have potentially benefited from the simplification measure. These enterprises operate above all in the mechanical sector, metal and paper manufacturing, and in the sector of environmental services, especially waste treatment.

Figure 10, EMAS registered businesses that participated in the research



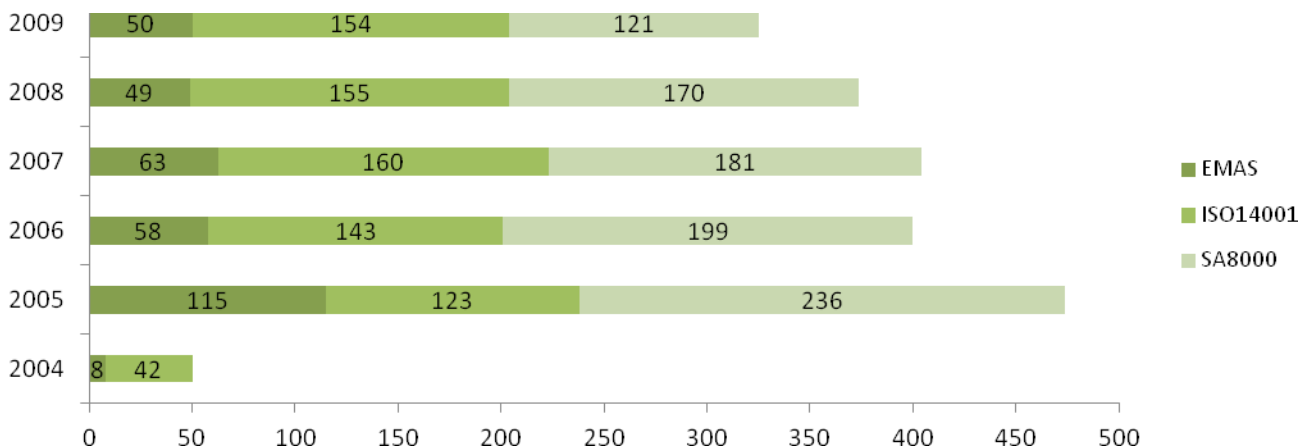
3 Analysis

3.1 Analysis of “application level” of the measure

The analysis of the level of application of the IRAP reduction for EMAS registered companies was done by utilizing two types of data. Initially, data provided by the Region of Tuscany was analyzed. These data covered the number of companies that benefited from the IRAP reduction from 2004 to 2009, the taxable value, the value of the tax, and the revenue lost. Then, data from the responses to the questions in section 5 of the survey were utilized (see paragraph 1.3 for a brief description of the structure of the questionnaire).

From the first data source it was concluded that the total number of companies that benefited from the IRAP simplification from 2004 to 2009 (including not only the EMAS registered organizations, but also those in possession of ISO 14001 and SA8000 certifications) had significantly increased, starting from an initial 50 business units to 325 (in 2009). In 2005 a peak of accessions was recorded, quantifiable as 474 companies in total. Considering specifically EMAS registered companies, the number increased from 8 units in 2004, to reach its maximum (115) in 2005, later arriving at a total of 50 in 2009, with trends of both ups and downs in the period examined.

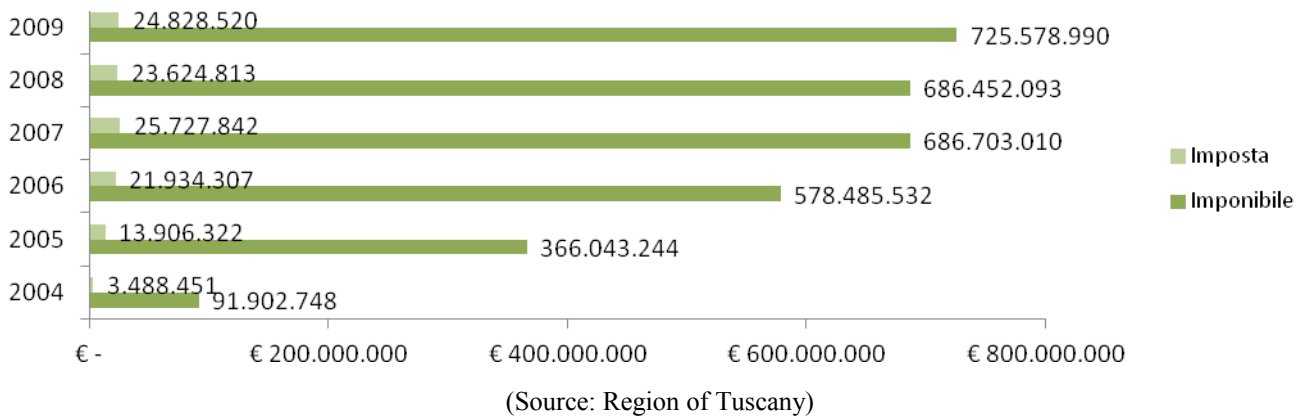
Figure 11, Number of companies that benefited from the IRAP reduction (2004-2009)



(Source: Region of Tuscany)

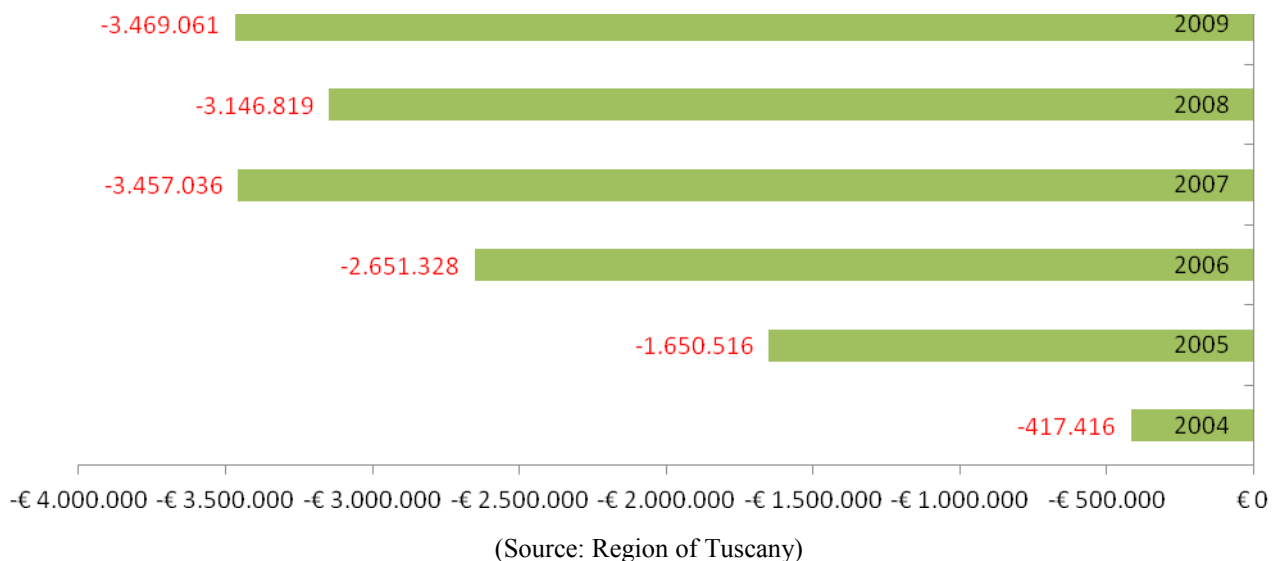
The graph below, on the other hand, shows the trend of taxable value and of the value of the IRAP tax. The taxable value grew more than 87% in the years considered, and the value of the tax grew more than 85%.

Figure 12, Taxable value and value of the IRAP



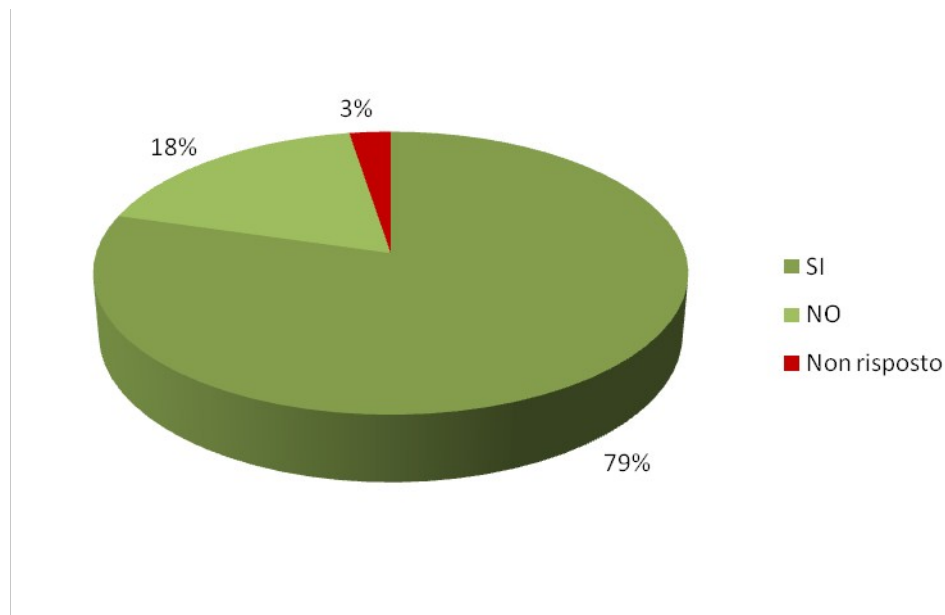
And therefore, it is possible to calculate the fiscal revenue loss for the Region of Tuscany as a result of the IRAP rate reduction. This value, according to the increase in the number of benefiting companies grew about 700% in total from 2004 to 2009 (from 417k€ to 3469k€) and about 1200% because of the benefit recognized for the EMAS registered companies (from 106 k€ to 1400 k€). The corresponding fiscal revenue loss for the regional budget is compensated for by the increase in levy rates for waste disposal in landfills.

Figure 13, Fiscal revenue loss generated by the IRAP rate reduction



Further information on the level of use of the benefit of the IRAP rate reduction and of other simplifications offered by national and regional regulations were provided by the analysis of the results of the survey. A very high percentage, 79% of the sample, declares that it is aware of the simplifications of regulations that exist on the national and regional levels for the companies that are certified or registered, and 90% of those have also declared that they have benefited from them. This percentage, although quite high, demonstrates a gap in awareness, though small, of the presence of the concessions in favor of the registered companies.

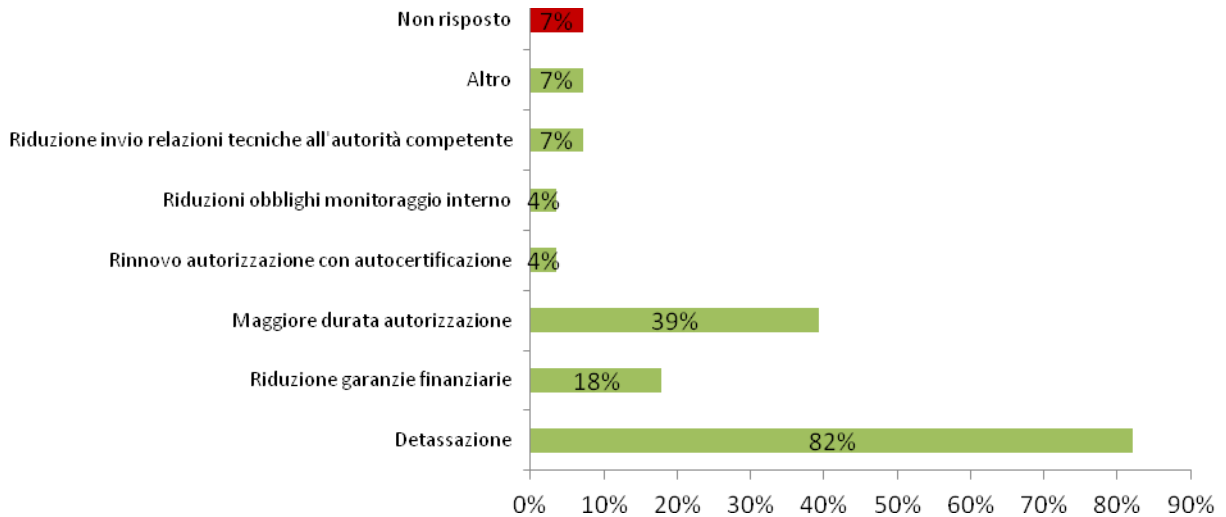
Figure 14, Awareness of the simplifications of regulations



Focusing exclusively on the percentage of those who responded that they currently benefit from or have benefited from the simplifications of the regulations, 82% indicated that they had benefited from the tax reduction, and 40% benefited from the extended duration of their authorizations. This second case refers to the integrated environmental authorization governed by Part II of d.lgs. 152/06 whose five-year term was prolonged to 8 years for EMAS registered companies. The lowest percentage regarding benefit from the tax reduction is therefore due to the fact that not all the organizations that responded fall within the scope of the integrated environmental authorization. 18.5% of the responding companies, that operate in the waste management sector, benefited from the reduction in percentage of the value that must be presented when applying for authorization to operate a waste treatment plant. Other types of simplifications that were used, although by a very low percentage, were the reduction of transmission of technical reports to the competent authority (7.4%), the use of reporting in the certification path (7.4%), the renewal of a permission by a self-certification (3.7 %) and reductions in required internal monitoring procedures.

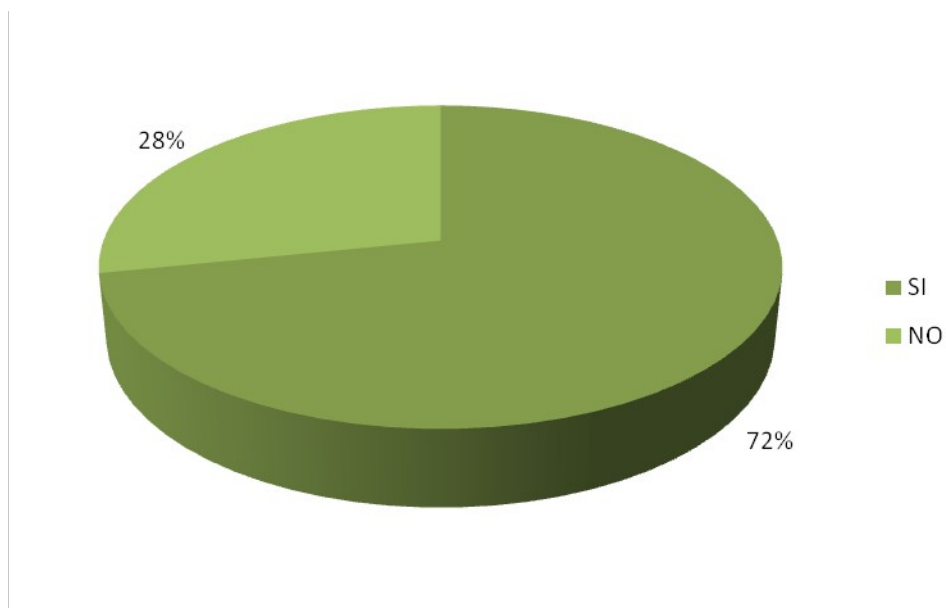
Use of other types of simplifications was also indicated, including the following: advantages in entering into contracts for the supply of and/or work with the public administration (Green Public Procurement), reductions in inspections by the competent bodies, and finally, public funding to cover a part of the costs incurred to obtain the EMAS registration and/or its continuation.

Figure 15, Typology of the simplifications utilized



The following graph shows that a high percentage of companies that responded to the questionnaire (72%) benefited from the IRAP reduction.

Figure 16: companies that benefited from the IRAP simplification



The figure summarizes the trend of the number of enterprises that have benefited from the IRAP simplification from 2004 to 2011 (24 out of 27 responding companies declared that they had benefited from the simplification). It is possible to show that the trend tends to grow, being obviously connected with the responding companies' obtainment of EMAS registration.

Figure 17, Years of benefits from the IRAP rate reduction



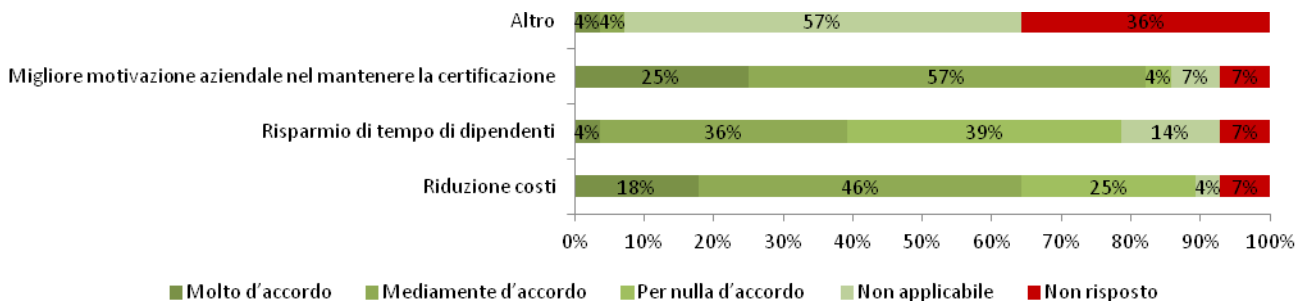
3.2 Analysis of the resulting benefits

The goal of the simplifications that favor EMAS registered companies is to provide concrete advantages to companies that actively work toward reducing their environmental impact beyond what is required by law. The type of advantage is obviously connected to the type of simplification that generates it and may be a direct or indirect cost savings (cost reduction or time saving), or a market opportunity (increased demand, better internal organization). Therefore the organizations were asked to give a judgment on a few types of advantages obtained thanks to the simplifications they utilized.

In addition to increased company motivation to maintain the certification, on which there was a certain convergence on responses, but which in fact does not represent a concrete advantage, but rather a consequence, the responses are fairly diverse with regard to the type of advantage. In particular 26% do not detect a cost reduction and 40% did not detect any time saving of employees.

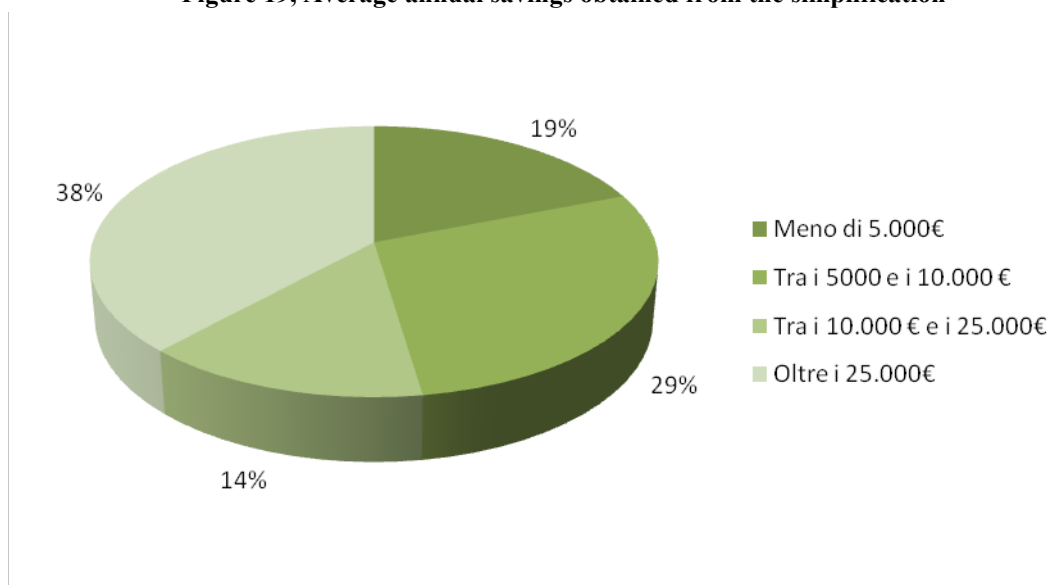
Two organizations have specified further advantages besides those that were listed. The first indicated that in its experience, the improvement of its national image of credibility was important, bringing about better internal organization and better relations with external entities. The second, on the other hand, emphasized the improvement in managing the flow of data and environmental information and in process control and regulatory compliance.

Figure 18, Advantages of utilizing the simplifications



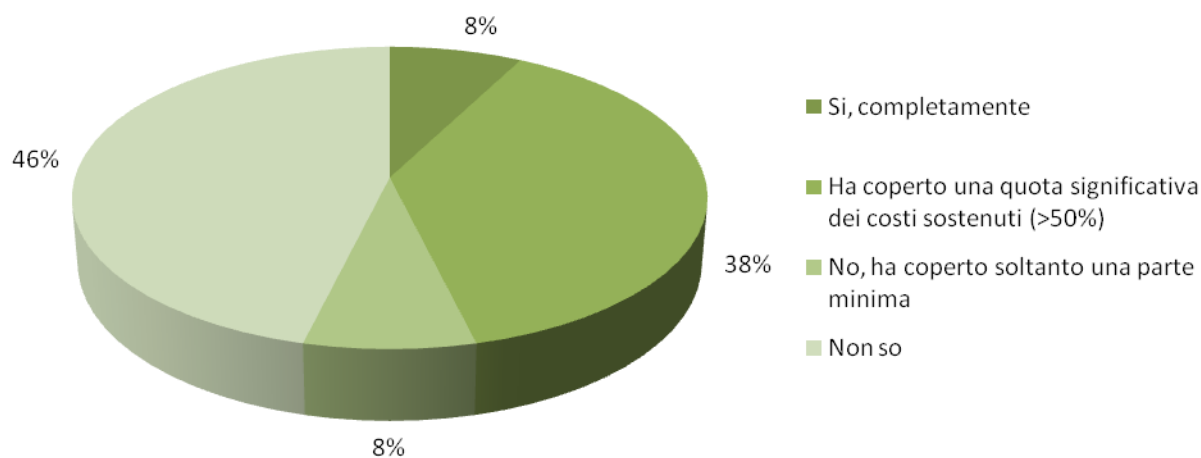
In general it can be said, on the basis of aggregate data provided by the Region of Tuscany, that the reduction of the IRAP saves the EMAS certified companies about 20% of the value of taxation before the expected reduction. In absolute terms, if we consider the latest available year, the reduction of the IRAP has produced an average savings of € 18,000. This finding is consistent with the data collected by the survey: 38% of those responding claimed to have had an average savings of more than € 25,000, 29% between € 5,000 and € 10,000, 19% of organizations had a savings of less than €5,000, and those whose savings were between € 10,000 and € 25,000 amounted to 14%.

Figure 19, Average annual savings obtained from the simplification



These savings should partly or completely compensate for the major costs necessary for the functioning of an environmental management system that conforms with the EMAS regulation (for example the costs of verifying environmental accreditation). 38% declare that with the savings obtained they were able to cover a significant part of the costs, while the same percentage (8%) was registered of those who declared that they were able to cover these costs completely and those who were able to cover only a minimal part of the costs. Finally, almost half of those who responded (46%) were unable to give any opinion.

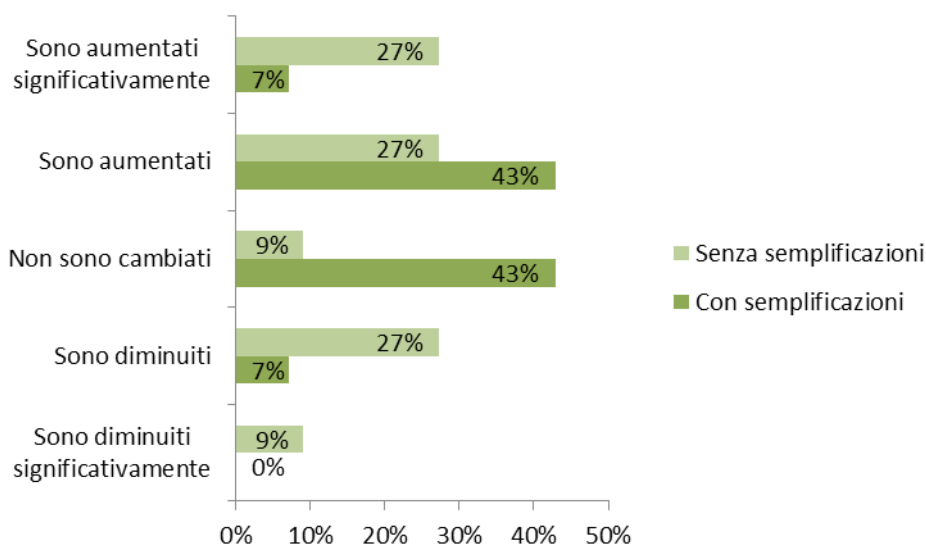
Figure 20, Savings and covering of costs to maintain EMAS certification



The savings generated by the IRAP reduction could also be utilized to finance investment programs for more ambitious improvements on environmental performance. For this reason, the range of the investments made by the organization to reach environmental improvement goals was analyzed.

Analysis of the following graph shows that although the companies that have benefited from the IRAP reduction have not increased their investments in environmental improvements significantly more than those that have not benefited from the same reduction, nearly none of them have reduced their investments in the last three years.

Figure 21, Variation of investments for environmental improvements

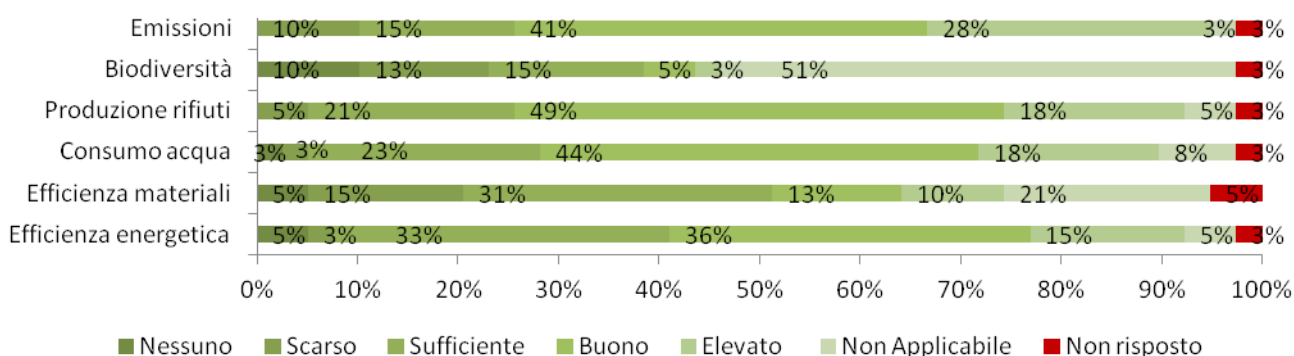


3.3 Analysis of environmental benefits

As mentioned previously, the IRAP rate reduction does not have a direct effect on the functioning of the management system, and therefore, on the environmental performance. However the economic savings generated by it could be “invested” in the environmental management system in order to improve its efficiency.

The analysis of environmental performance has been carried out by investigating the environmental improvement achieved for the main environmental aspects related to the production unit. In general, on average for about 31% of the sample, the improvement is considered good; it is high for 15% of those interviewed. Specifically emissions have been improved more than the other aspects; biodiversity and efficiency of materials, on the other hand, improved the least significantly.

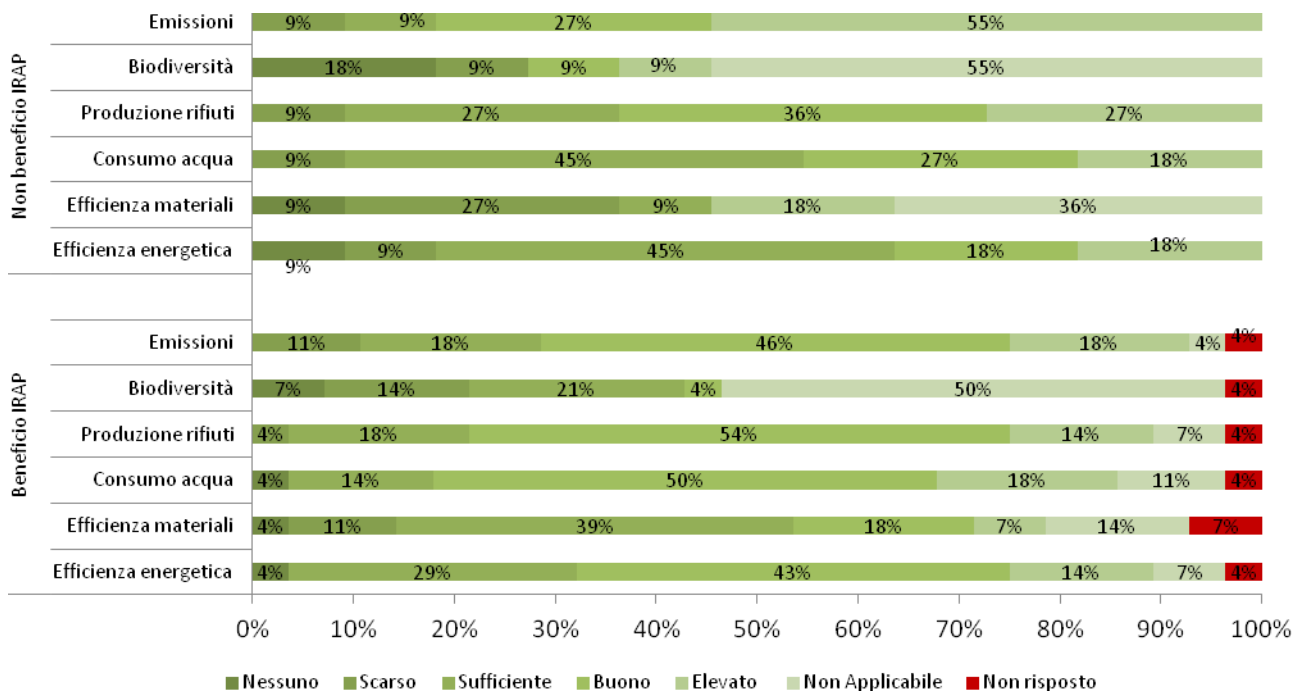
Figure 22, Environmental improvement—general



The following graph shows in detail the comparison between the responses of the companies that have benefited from the IRAP reduction and those who did not utilize it.

- Energy efficiency: the majority of those who benefited from the simplification (43%) confirm a good improvement, while 45% of those who did not utilize the simplification deemed it as sufficient.
- Water consumption: 50% of the IRAP beneficiaries (the majority) evaluated their improvement in this aspect as good, while the majority of those who did not use the simplification (45%) evaluated it as sufficient.
- Production of waste: the majority of both categories (54% for those who benefited from the reduction and 36% for those who did not) states that they experienced a good improvement.
- Emissions: for the majority of the beneficiaries of the simplification (about 46%) the improvement was good, while improvement in this area was judged as high for 55% of those who did not benefit from the IRAP reduction.

Figure 23, Environmental improvement



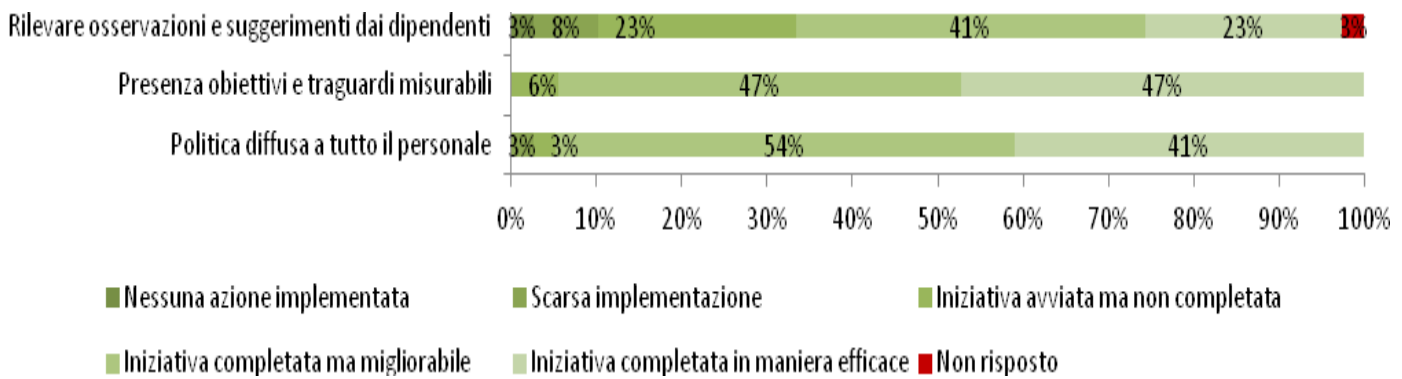
To verify the effectiveness of the environmental management system, 4 areas of analysis were distinguished that correspond to the phases of the PDCA cycle on which the logic of management systems is founded:

- Planning of activities related to the environment;
- Training and involvement of employees in environmental matters;
- Implementation of initiatives for the management of environmental aspects;
- Activities of measurement, monitoring and internal control.

Regarding the planning phase, the aspects considered are the following:

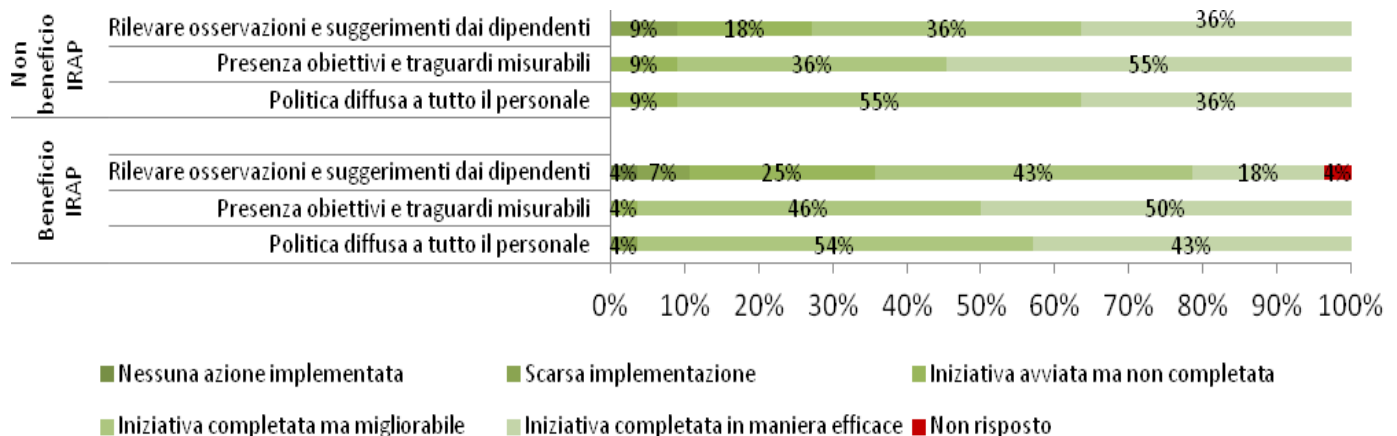
1. Policy shared with all employees. More than 53% of the interviewed companies declared that the task was completed, but could be improved, more than one third defined the activity as completed effectively, and the remaining part (a small percentage just over 2%) states that the task was not completed or was poorly implemented.
2. Presence of measurable objectives and targets. This aspect for over 47% of the respondents is complete, but can be improved, or effectively completed, the remainder (5.6%) said that it has not been completed.
3. Gathering of comments and suggestions from employees. The majority of respondents (41%) said that this task is complete but can be improved, for over 23% this is effectively completed, while for another 23% this activity has been started but is not complete. The residual percentages are defined by those who answered that the task was implemented a little or not at all.

Figure 24, Planning phase—general



Considering in detail the responses of those who benefited from the simplification and those who did not utilize the IRAP reduction, one can see that both categories agree with respect to the implementation of the planning phases of the management systems.

Figure 25, Planning phase

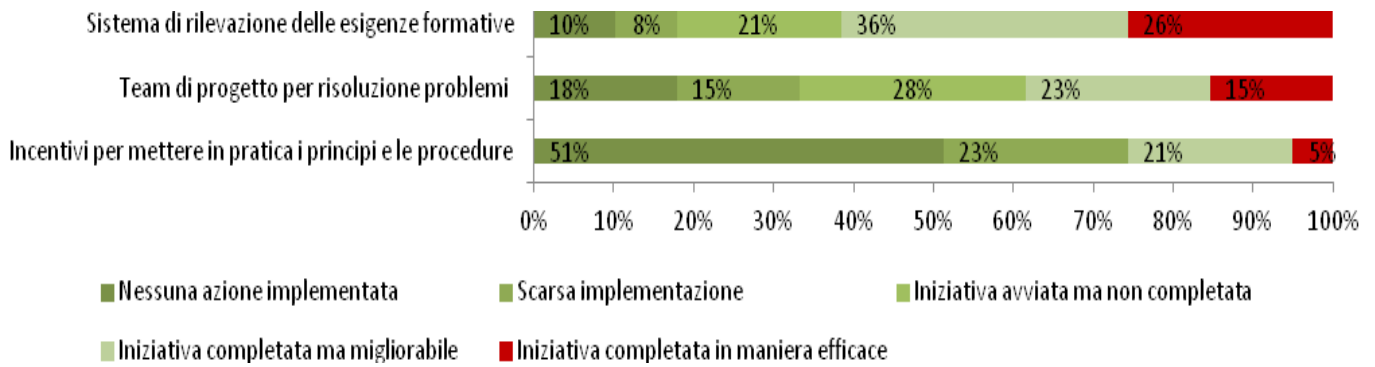


For training activities and involvement of employees, the following aspects were considered:

1. Incentives to put the principles and procedures into practice. These were not implemented in more than half of the enterprises that responded, were scarcely implemented or implemented improvably 23% of the responding companies. Only a small percentage declared that the incentives were completed effectively.
2. The design team for problem resolution. The initiative was effectively completed for 15% of the companies. 28% of the enterprises declared that this initiative has been initiated, but not completed, 23% stated that this activity is complete, but could be improved. The team has not been activated in more than 15% of the organizations, and the remaining percentage declared poor implementation.
3. System to observe training needs. For more than one third of the participants this initiative is complete but could be improved. 25% declare that the activity has been

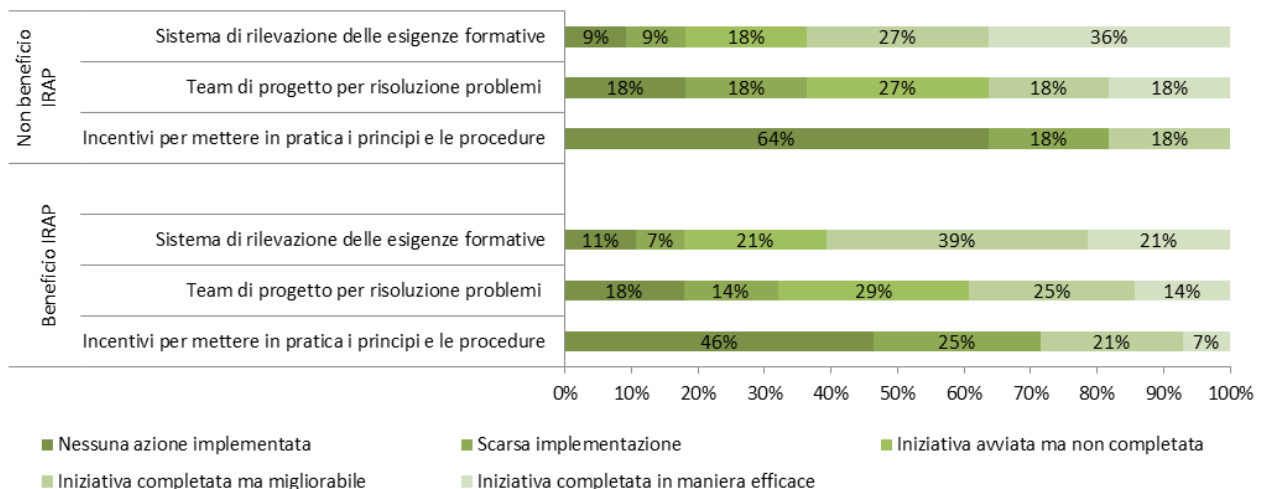
completed effectively and 20% state that it has been started, but not finished. It has not been implemented by 10% of the cases analyzed and for the rest it has been only slightly implemented.

Figure 26, Training activities and employment involvement—general



For training activities and involvement of employees, the businesses surveyed are in agreement on the degree of implementation. In general it is possible to confirm that only the system of observation of the training needs has had an effective implementation or one that could be improved.

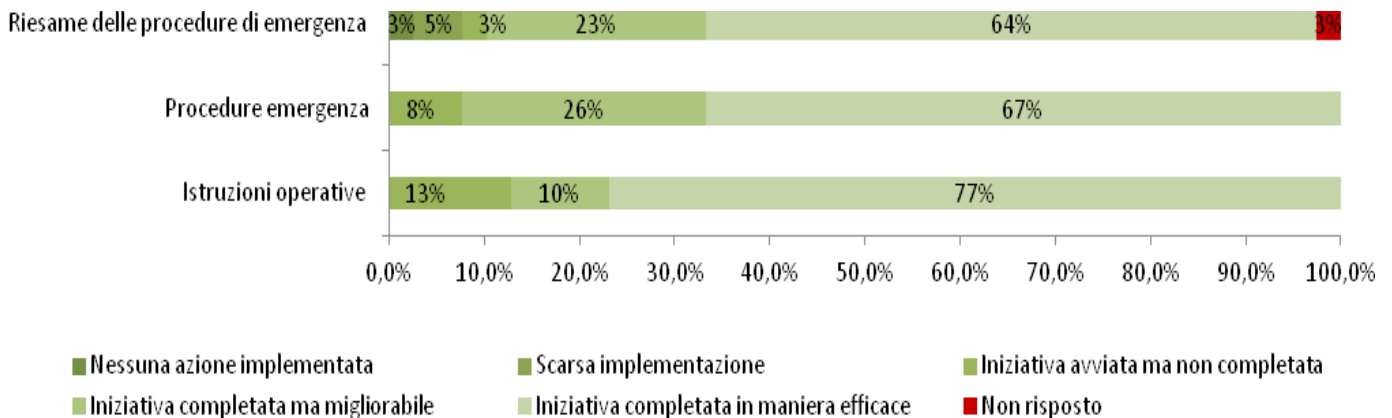
Figure 27, Training activities and employment involvement



For the task of implementation of environmental management initiatives the following issues were taken into account:

1. Operating instructions. These were completed effectively by more than 76% of the firms, just over 10% of respondents declared that the initiative has been started but not completed, and another 10% responded that it was completed but improvable.
2. Emergency procedures were activated effectively by more than 66% of the companies analyzed. 25% of respondents stated that the initiative was started, but improvable, and the rest stated they have begun the initiative but not completed it.
3. Review of emergency procedures. The activity has been implemented effectively in 64% of enterprises, more than 20% have launched the initiative, and at the moment it can be completed. For about 5% of the respondents, the initiative has a poor implementation. Only 2% of respondents said they had not carried out any such activities.

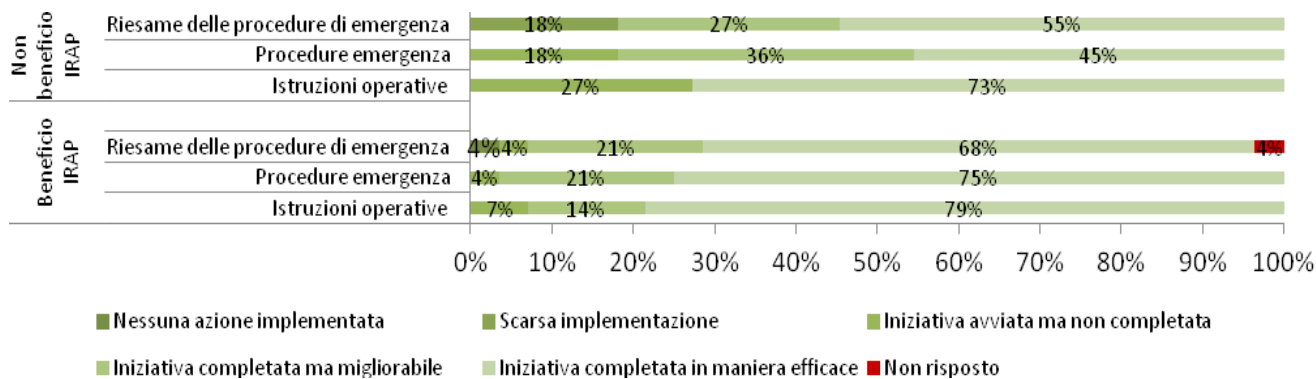
Figure 28, Activities in implementing the environmental management initiatives



Examining separately the categories of those who benefited from the IRAP simplification and those who did not, one can deduce the following:

- Operative instructions. These are completed effectively by most companies from both of the categories, specifically 79% of those who benefited from the simplification and 73% of the other category.
- Emergency procedures were activated effectively by more than 75% of the companies that utilized the IRAP reduction and by 45% of those who did not.
- Review of emergency procedures. The activity was implemented effectively by 68% of the companies with the IRAP benefit and by more than 55% of those without it.

Figure 29, Activities in implementation of the environmental management initiatives

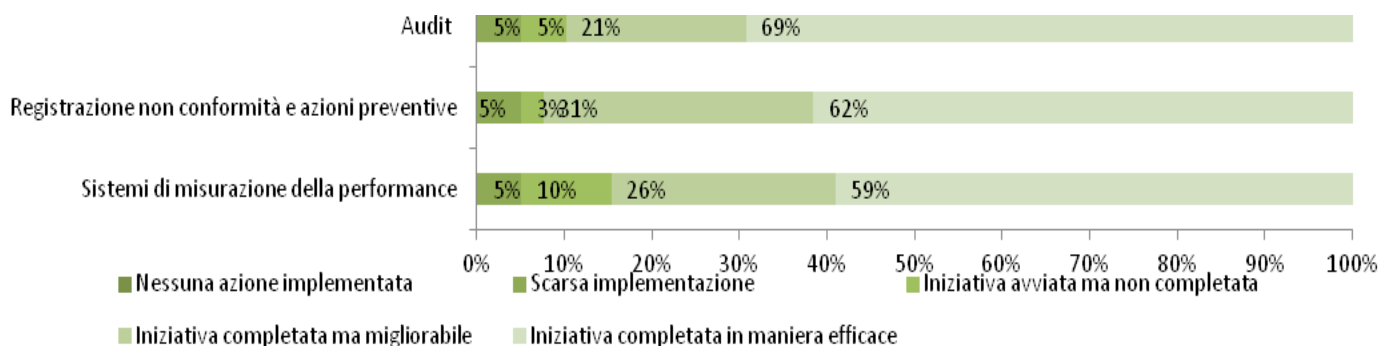


The last aspect examined in this section regards the measurement activities, surveillance and internal control. The actions analyzed are the following:

1. Performance measurement systems activated effectively by almost 60% of the sample analyzed, complete but improvable for more than 25% of the enterprises. Slightly more than 10% declare that they have launched them, but have not completed them, and 5% of cases registered poor implementation.
2. Registration of non-compliance and corrective action was carried out effectively by more than 60% of the companies surveyed, almost a third said that the task is complete but can be improved. The remainder claimed that the action was started but not completed (about 2%) or has been poorly implemented (just over 5%).
3. Audits. Activated effectively by almost 70% of companies, 20% completed the audits but can improve on them, and 5% of the sample did not complete the audits or completed them poorly.

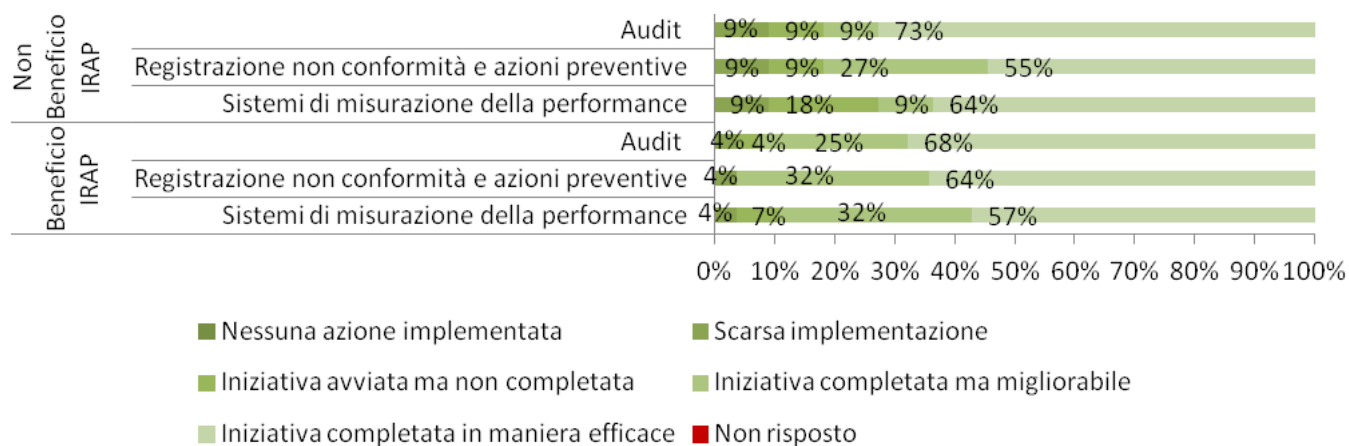
In general, activities of measurement, monitoring and control are completed effectively for more than 63% of those surveyed, and a poor implementation occurs in 4.3% of cases.

Figure 30, Activities of measurement, monitoring, and internal control—general



In reference to the two subcategories defined by whether or not they benefited from the IRAP rate reduction, it is possible to confirm that there are no substantial differences.

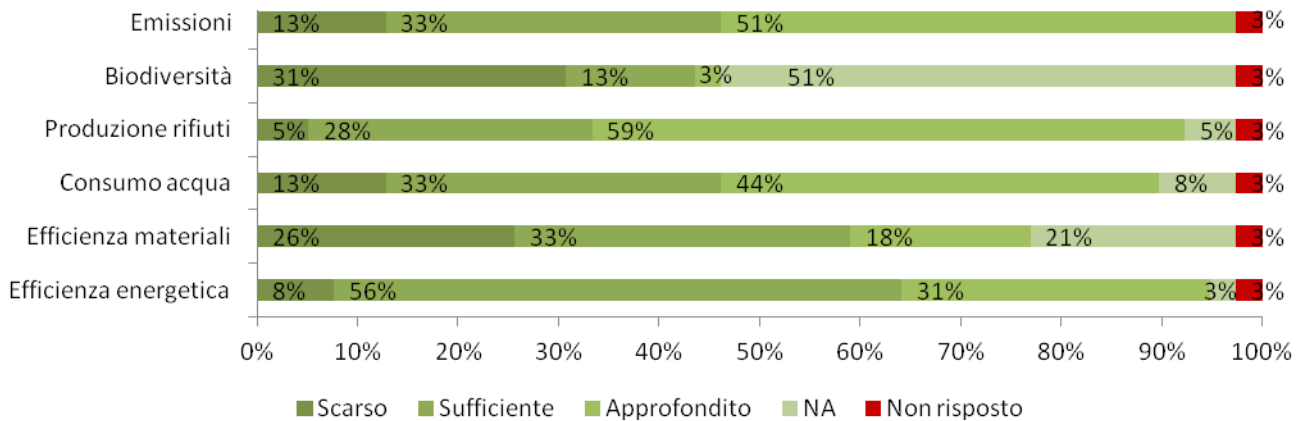
Figure 31, Activities of measurement, monitoring, and internal control



Still in the area of monitoring, the number of indicators used to monitor individual environmental aspects was analyzed in detail.

- Energy efficiency: more than half of the sample maintains that it is monitored sufficiently, 30% are thoroughly monitored, and 7% only scarcely.
- Material efficiency: this aspect is monitored thoroughly in 17% of cases, while there were more companies that reported scarce or sufficient inspections (28% and 33% respectively).
- Water consumption: more than 40% of those surveyed report that this aspect is monitored thoroughly, about one third of the enterprises inspects sufficiently, and more than 12% only scarcely.
- Waste production: this aspect is monitored thoroughly by almost 60% of enterprises, by a significant number (about 28%) sufficiently, and finally scarcely by 5% of those interviewed.
- Biodiversity: half of the enterprises maintained that this aspect cannot be monitored, and about 30% reported scarce monitoring, while only 2% reported thorough monitoring of this aspect.
- Atmospheric emissions: this aspect is monitored thoroughly by more than 50% of the sample, one third maintains that its monitoring is sufficient, and 12% scarce.

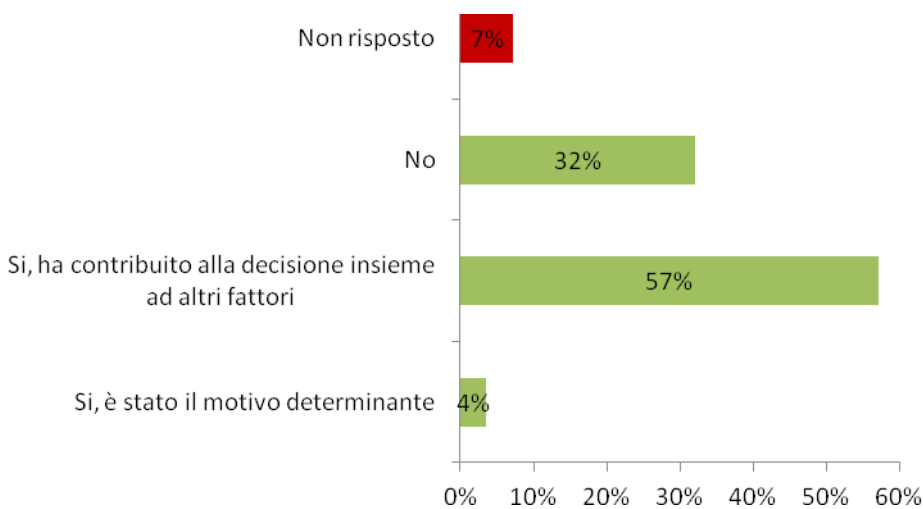
Figure 32, Environmental aspects monitored



3.4 Analysis of results obtained at the macro level

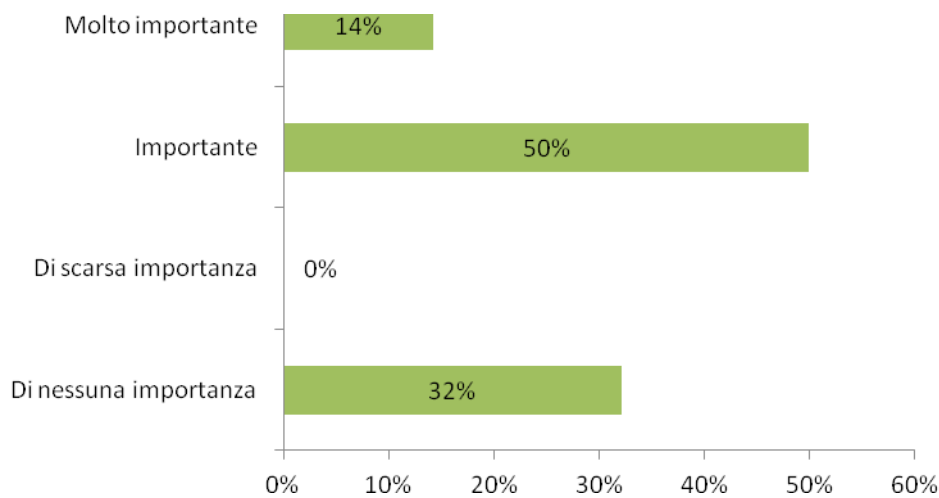
To determine if the simplifications had an effect on the increase in newly registered Tuscan companies, the companies were asked to express if the possibility to utilize the simplifications was one of the motives for implementing SGA compliance in regulation with EMAS. 3% emphasized that the measures were the determining reason, while 63% maintain that all the simplifications contributed, but together with other factors, as shown in the following graph. Almost 30% of those surveyed maintain, on the other hand, that the simplifications were a real incentive to follow through on the certification.

Figure 33, Simplifications and certifications



It was then asked what the role of the regulatory simplifications was with respect to other motivations that pushed the organization to obtain the EMAS registration (reputation, better relationships with public entities, better internal organization, etc.). More than 66% of those surveyed maintain that the role of the simplifications was relevant (about 50% considered it important and 15% considered it very important. One third of the sample, lastly, maintains that the simplifications were not important for their initiating the path of registration.

Figure 34, Role of the regulatory simplifications in implementation of the EMAS registration



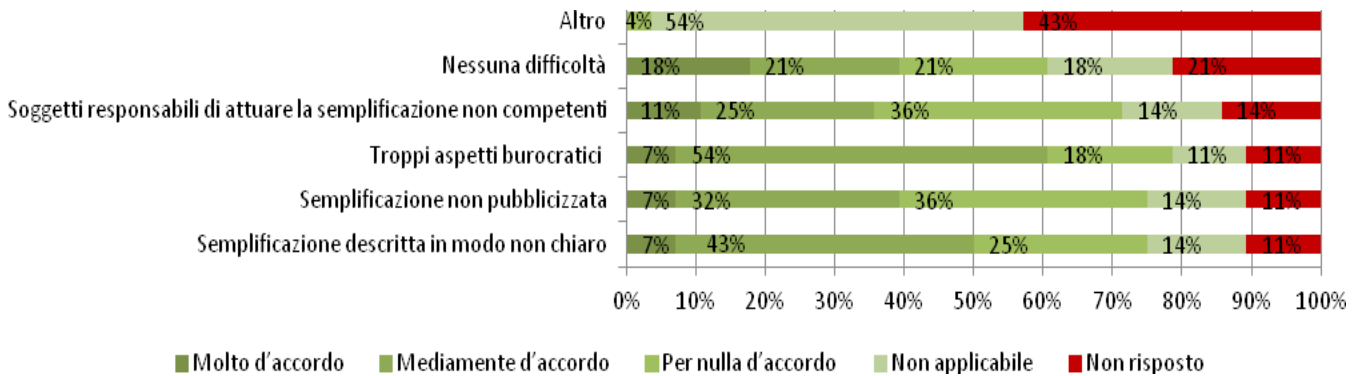
3.5 Analysis of satisfaction

A further element of this investigation was to understand the difficulties that companies met in utilizing the simplifications. The difficulties faced by most companies (about 63%) were the presence of many bureaucratic aspects and the lack of clarity about the simplification (about 51%). Specifically, the difficulties about which the survey requested an opinion from the businesses were the following:

- *Simplification described unclearly*: more than half of those who responded to the survey agree (44% medium, 7.4% strongly), more than 25% on the other hand do not agree.
- *Simplification not publicized*: about 40% agree (33% medium, 7% strongly) while 37% of organizations do not agree with the statement.
- *Too many bureaucratic aspects*: a high percentage (63%) agree about this difficulty (55% medium, 7% strongly), while 18% of those surveyed do not agree.
- *Individuals responsible for implementing the simplification not competent*: about 37% of the sample do not agree with this statement, while more than one third do agree (25% medium, 11% strongly)

- *No difficulties* were reported by about 40% of those surveyed, while about 22% did find some difficulties

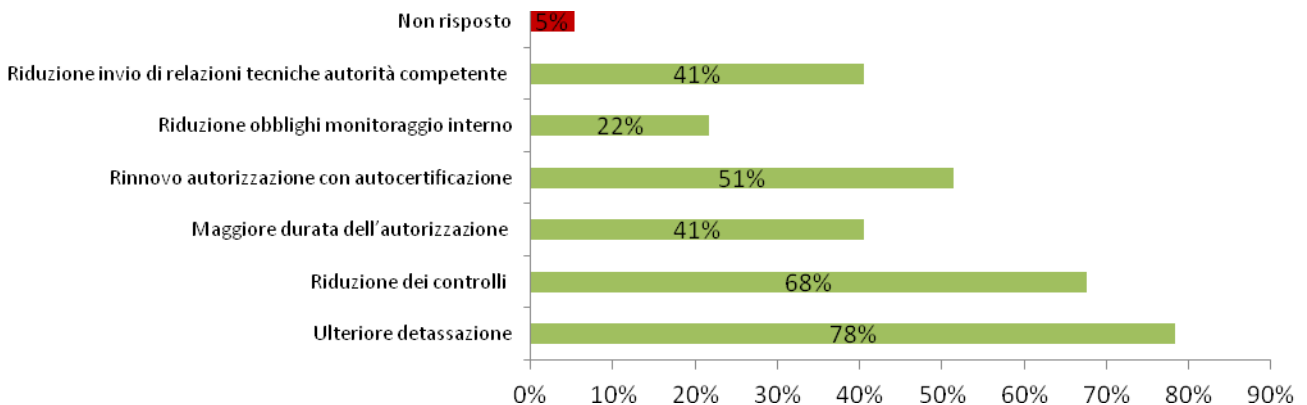
Figure 35, Difficulties in utilizing the simplification



In order to obtain indications about eventual future choices, the companies were asked to indicate what type of simplifications (besides those that currently exist) the organization would appreciate. A very high percentage of those who responded (more than 78%) indicated further tax reductions as a welcome simplification, followed by about 67% of the businesses that would like a reduction in inspections by the appropriate authorities. Half of the organizations (51.4%) would like to be able to renew the authorization by self-certification; reduced reporting of technical relations to the appropriate authorities or rather the use of documents from the own EMS in the permit issuing, has been signaled as useful by more than 40% of those who responded. The same percentage would like to see a longer duration of the certification, and lastly, about 27% would like reduced internal monitoring obligations.

In addition, other possibilities were listed including more rewards from institutions and public administrations, for example, in the designing of public tenders.

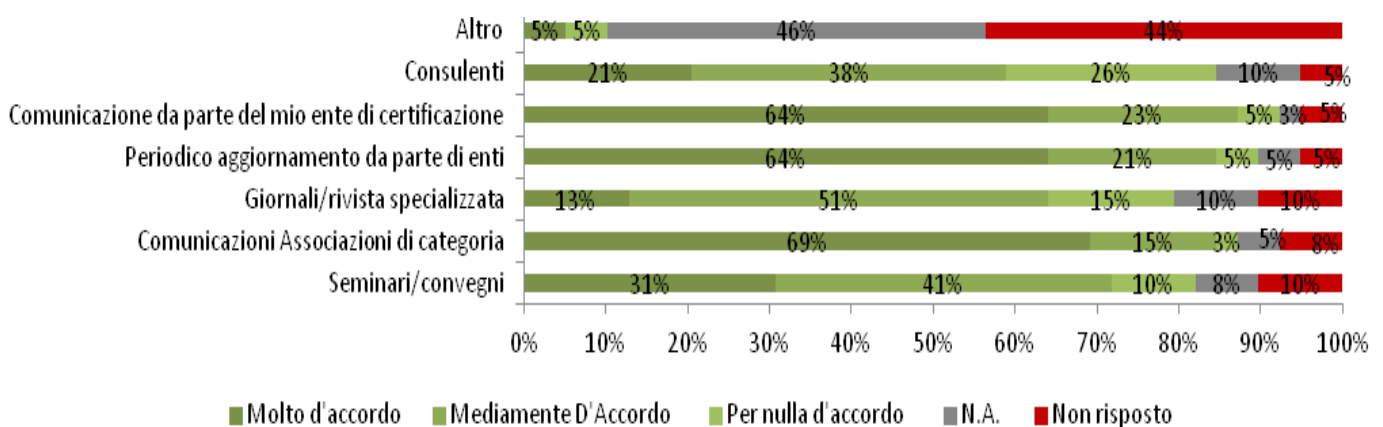
Figure 36, Indications for further forms of simplification



With respect to the various possibilities for communicating the simplifications to the companies, the companies were asked to give a judgment from “completely agree” to “completely disagree” on the alternatives. In general, more than 69% of the organizations responded as completely in agreement on the necessity of communication by the associations, followed by the bodies of certification and by periodical updates by the entities. From the other side, the mode of communication for which there was most disagreement was that of consultants, newspapers and magazines. All the means of communications suggested are examined individually below:

- Workshops / conferences: the majority moderately agree (41%), 30% strongly agree, and over 10% of respondents disagree.
- Communication from associations: a very high percentage (69%) strongly agrees on the use of this methodology, approximately 15% moderately agree, and a small percentage (2.6%) disagree.
- Newspaper / magazine: half of the organizations (51%) moderately agree with use of this method, 15% do not agree, and lastly about 13% strongly agree.
- Periodic updating by the institutions: 64% of those surveyed strongly agree with use of this medium, about 20% moderately agree, and finally 5% do not agree.
- Communication by the certifying body: 64.1% of the sample strongly agree, about 23% moderately agree, and finally 5% disagree.
- Consultants: the majority of respondents (38%) moderately agree to use this methodology, 25% of the organizations do not agree, and slightly more than 20% strongly agree.

Figure 37, Communication of the simplifications to the businesses



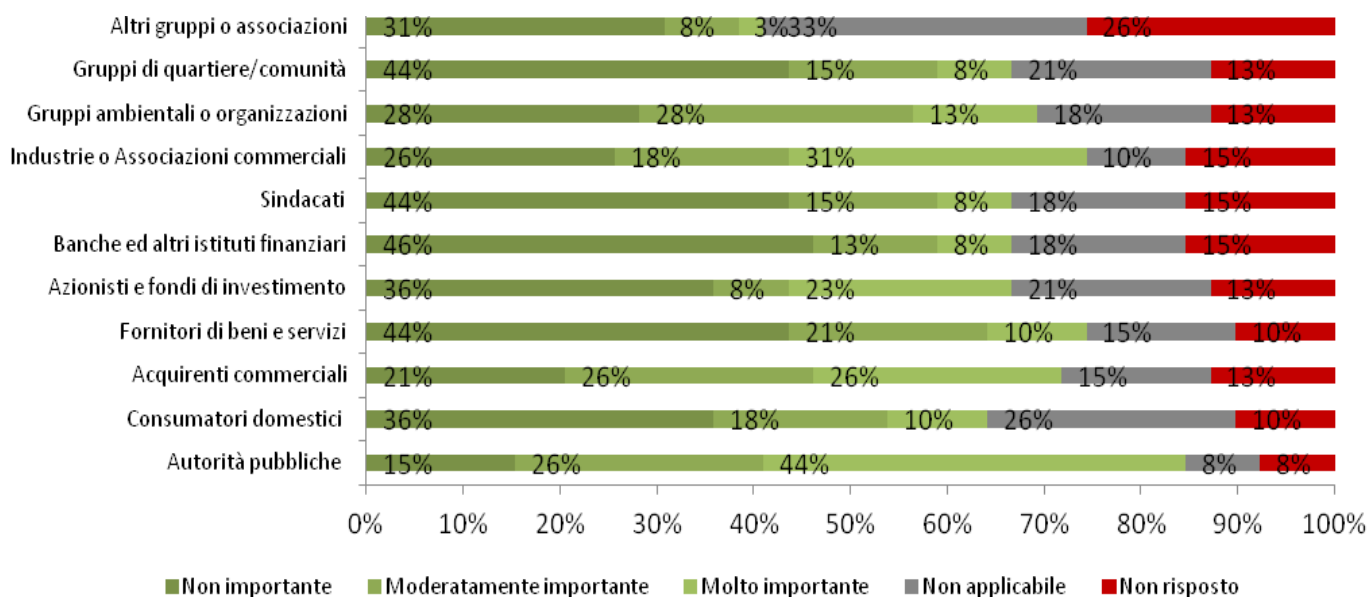
The last part of the investigation, although not directly connected to the forms of simplifications, has the objective of investigating what the stakeholders were that pushed the organization to adopt behaviors to reduce the environmental impact of their activities and the barriers and difficulties that they confronted in implementing a SGA that conforms to the EMAS Regulation.

As shown in the figure below, the stakeholders that have most significantly influenced these positive behaviors are the public authorities (for 43%), the commercial associations (30%), and the commercial buyers (for about 25%). On the other hand, one notes that banks and other financial institutions and neighborhood groups did not influence the majority of those who responded at all

(for 46% of those surveyed), suppliers and labor unions (about 43%), domestic consumers, shareholders and investors (about 36%). In detail:

- *Public authority*: for 43% this stakeholder is very important, for 25% it is moderately important, and finally for about 15% it is irrelevant.
- *Domestic consumers*: for most (about 35%) they were not important regarding this choice, while 17% stated that they were moderately important and 10% that they were very important.
- *Commercial buyers*: 25% maintain that this group was very important for these decisions, and the same percentage was moderately influenced by it, while 20% were not influenced at all.
- *Suppliers of goods and services*: most of those who responded (46%) defined this group as unimportant for the choices, 20% maintained that it is moderately important while 10% reported that it is very important.
- *Shareholders and investors*: these were irrelevant for 35% of those who responded, while on the contrary, 23% considered them very important, and 7% said that they are moderately important.
- *Banks and other financial institutions*: these were considered unimportant by about 46% of organizations, while lower percentages considered them relevant (12% moderately, 7% very)
- *Workers unions*: this category, like the preceding one, was not considered important by 43% of those who responded, moderately important by 15%, and very important by 7%.
- *Commercial industries and associations*: these stakeholders are very important for 30% of those interviewed and moderately for 17%, while they are unimportant for 25%.
- *Environmental groups and organizations*: the same percentage of organizations (28%) considers this category unimportant as that who considers it moderately important, and 12% consider it highly relevant.
- *Neighborhood and community groups*: a rather consistent percentage (43%) of those surveyed declared that these groups did not influence their choices, 15% said that they influenced them moderately, and 7% were very influenced.
- *Other groups and associations*: these groups were also unimportant for a significant percentage of companies (30%), while much lower numbers considered them important (7% moderately, 2% very).

Figure 38, Stakeholders that influence actions to reduce environmental impact



Finally, the last question intends to investigate the eventual barriers and difficulties faced in the adoption of the environmental management system.

The businesses maintain that the major difficulties met in implementing EMAS (for about 34%) were involvement, motivation and achievement of employees, a slightly lower percentage (33.3%) found difficulties in continuous environmental performance achievements, and about 30% experienced problems with the costs of implementation.

On the contrary, the barriers that were considered unimportant were for more than half of the organizations (about 51.3%) the role of verifier. For more than 43% of those surveyed, the problems fit into the following three categories: the role of the competent body, the difficulties in EMAS operation, and finally the preparation of the Environmental Statement. Another category, which was not considered important by 41% of those surveyed, was the difficulty to achieve and maintain legal compliance.

Figure 39, Barriers and challenges in EMAS implementation

