

## SURVEY ON ECO-INNOVATIONS IN THE DANUBE REGION



## REPORT ON NATIONAL RESULTS OF SURVEY

2017

<b>WP3</b>	<b>Strategy for eco-knowledge</b>
<b>ACTIVITY 3.1</b>	Stakeholders map and surveying their needs
<b>DELIVERABLE 3.1.3</b>	Report on national results of survey

**Project number** DTP1291-1.1  
**Title of the project** Eco-innovately connected Danube Region (EcoInn Danube)  
**Version** 1  
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**Revised by** Project partners  
**Date** 2017

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# 1. EXECUTIVE SUMMARY

To understand and consider the perspectives, concerns and priorities of relevant stakeholders is the foundation for developing the procedure of engagement focused on bringing about a substantial change in perception and activity which it influences, in this case specifically an improvement of the state of the art of eco innovation in the Danube region. To reach the main objective of the Ecolnn Danube project, that is to enhance the cooperation of innovation actors, it is necessary to gain insight on potential barriers, challenges and opportunities on advancing eco innovation, with respect to the subjective experiences and perspectives of the individuals, organizations according to their type or industry sectors.

Involving key stakeholders (by mapping and analysis, identifying their requirements, level of interest and influence) in the process of designing and structuring a common way forward will be beneficial in terms of facilitating quality data collection, providing perspectives on what can be considered credible, high quality and useful evaluation findings as well as making sense of all the collected data.

The process of stakeholder analysis carried out in the Danube region on the level of 13 project partners, presents the foundation to the development of the common transnational strategy and a transnational action plan for implementing capacity development and advancing market uptake of eco innovation.

# 2. AIM OF THE DOCUMENT

The report documents the results of an international survey carried out across 10 partner countries and 13 partner organizations on the topic of the status on the level of knowledge, experience and other key issues of interest associated with supporting innovation in the field of energy efficiency and renewable energies. In addition to the results of the survey, the report encompasses conclusions and suggestions derived from analysis on the level of project partners (D3.1.4 – Report on national results of survey and D3.1.1 within 24 organized national stakeholder meetings).

### 3. SURVEY METHODOLOGY

#### 3.1 GENERAL INFORMATION ABOUT THE SURVEY

The survey was comprised (not including the opening questions for the categorization of stakeholders and the contact request at the end of each questionnaire) from 91 thematically focused questions in various fields of interest specific to each of the 4 key stakeholder categories, as presented in the figures below.

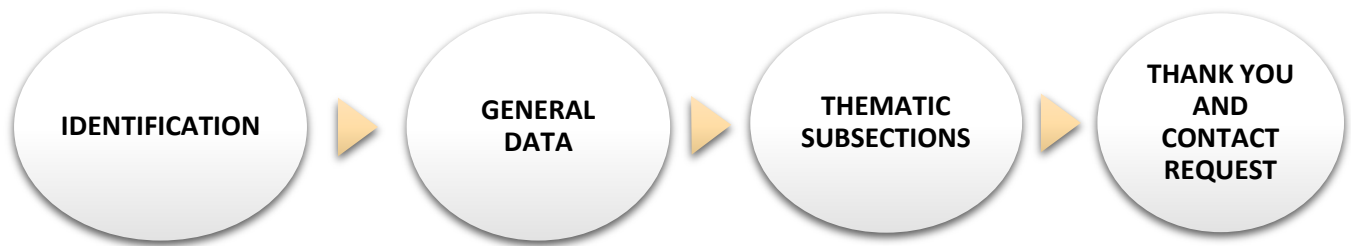
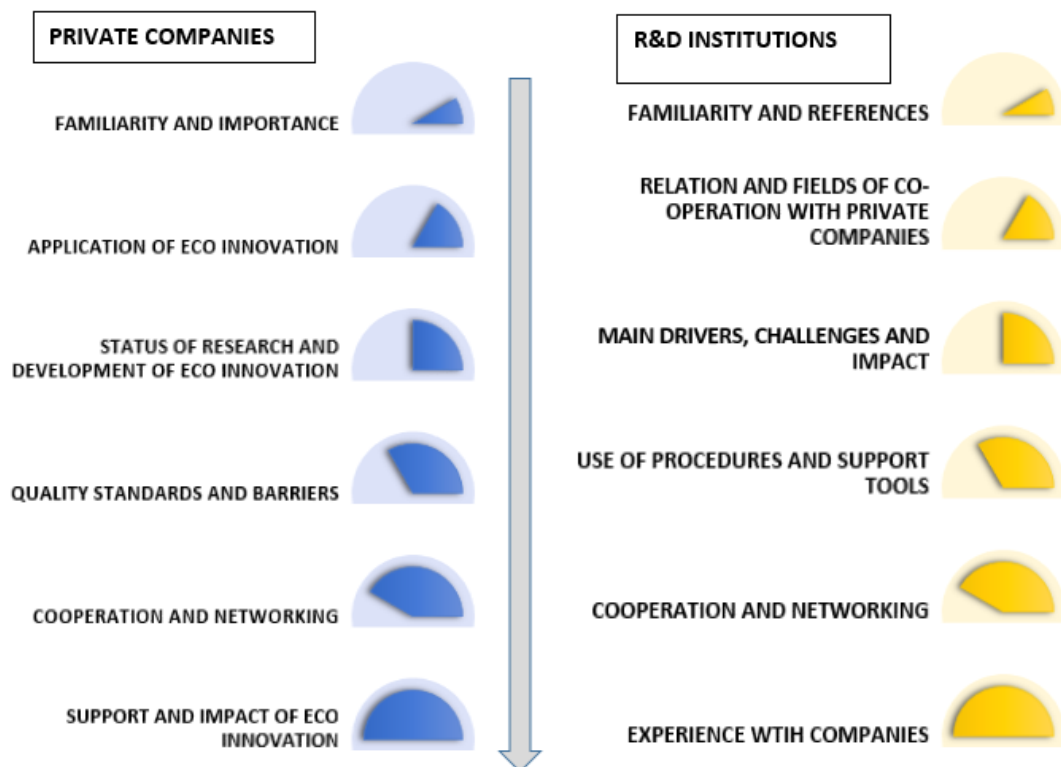
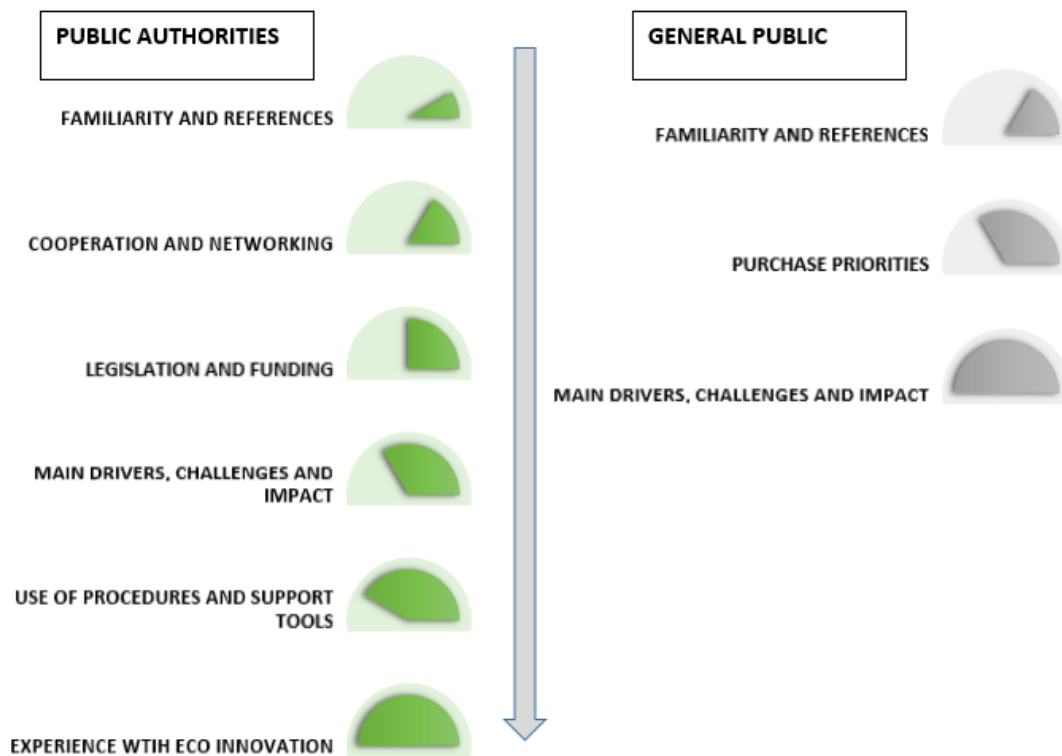


Figure 1: General Structure of the survey

For each of the 4 stakeholder categories, the questions were attributed to several areas of interest and tailored to address aspects specific to them, thus the sub-groups of the survey are not uniform, but rather adapted to actual requirements of stakeholders in each of the four categories. The structure of survey sub-groups of questions is illustrated in the schematic below:





The sub-survey part for the private companies was the most extensive with 27 questions, while sub-surveys for R&D institutions, public authorities and the general public/NGOs comprised from 25, 22 and 17 questions respectively.

By type, the majority of questions (56) were multiple choice questions, that allowed for either single (38) or multiple (14) responses, with an open-ended question added in the form of “Other, please specify” query, to provide additional flexibility to the survey. For example, questions like “In which of the following categories is the need for eco-innovation most evident from your company’ perspective?” (for private companies), “What are the main barriers/obstacles regarding the use of public funds for financing of eco-innovations” (for public institutions) and “What is most important when you choose a product or service?” (for consumers/general public). Overall 21 multiple choice questions allowed a non-standard reply with this option.

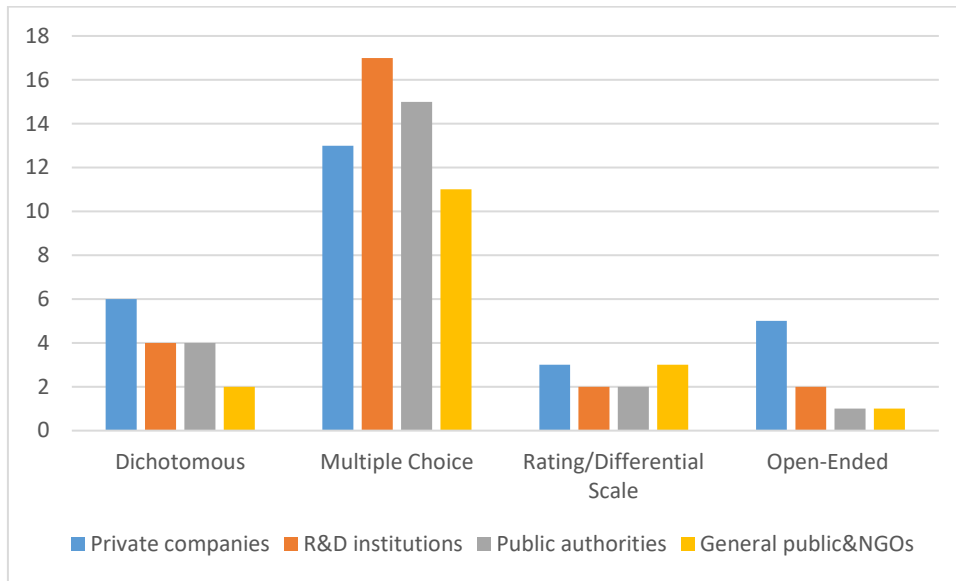
Sixteen dichotomous type questions within the survey allowed only a positive or negative response (for e.g. questions in the form of “Has the company applied an eco-innovation to your business in the last three years?” and “Does your work include transfer of knowledge between experts from other regions”) structured to identify past experience, incentives, affiliation to clusters and other networks, transfer of knowledge and opinions on specific areas relevant to eco innovation. Frequently these were succeeded by sub-questions in the occurrence of a positive response (For e.g. “Does your institution directly provide support in eco innovation?”. If the answer was yes, it was followed up by a multiple-choice question with multiple possible answers inquiring “What type of support do you offer concerning the eco-innovation?”).

10 questions included in the survey allowed for scalable answers, 2 in the form of a standard rating scale and 8 in the form of semantic differential scales. 75 % of semantic differential scales covered more areas of interest (from 8 to 11), which could be considered as sub questions of the survey. All rating scales consisted of 5 grade levels (grade 1 being the least favourable /without positive impact and grade 5 being the preferred choice (for e.g. 1 – least significant effect; 5 – the greatest impact). This included questions like “Evaluate the impact of eco-innovation to your business performance” (for private companies with 11 areas addressed), “Evaluate factors according to their impact on eco-

innovation up-take” (for public authorities with 9 areas addressed) and “How effective are media in increasing awareness on the importance of eco-innovation?” (for the general public with 8 different types of media considered).

Finally, the survey featured 9 open questions, that allowed participants full flexibility of input. This included questions like “Identification of sector: what kind of activities is engaged in the company (indicate which products is the business core)? “What year was the company founded? “, “How many % of working capital is spent on research and development of eco-innovation?” and for example “What is the number of employees?”.

The different types of questions were to a large extent distributed evenly amongst the stakeholder categories, as can be observed in the figure below:



**Figure 2: Share of responses in survey language versions**

The questions were originally developed and finalized in English and translated into 8 national languages of partner countries. Originally the welcome page offered a drop-down selection menu for available languages, however this was removed due to ambiguities (partial overlap in languages among the participating countries) that would prohibit clear assignment of completed surveys to individual project partners. Using a dedicated URL (specific to each language version used by the project partners), survey respondents were redirected straight to a welcome screen as presented in figure 3.



## Ecolnn Danube

Thank you for participating in the survey on innovation of environmentally friendly and sustainable products and services. The questionnaire was developed for needs of the project "Eco-innovatively connected Danube Region - Ecolnn Danube", which is implemented within the Interreg Danube Transnational Programme. The information obtained will be used solely for the purpose of research and your opinions and suggestion will be used to improve the existing status of eco-innovation in the Danube region.

NOTE: Eco-innovation is an innovative creation and commercialization of new environmental technologies, products and services that reduce the overall negative environmental impact and allows that business and innovations together create sustainable solutions

Next page

1KA - web surveys

**Figure 3: Welcome page of the survey**

The survey was not translated into the German language as the start-up and enterprise communities in Austria and Germany host a substantial amount of foreign staff that would also provide beneficial insight into the workings of eco-innovation on their national levels. To reach a broader group of participants, the English version of the survey using the dedicated URL no. 2. was distributed in these two countries. Each other partner circulated their respective language version of the survey with a dedicated URL as presented in Table 1.

No.	Language	URL
Outline	English	<a href="https://www.1ka.si/a/127892">https://www.1ka.si/a/127892</a>
1	Slovenščina	<a href="https://www.1ka.si/a/127892?language=1">https://www.1ka.si/a/127892?language=1</a>
2	English	<a href="https://www.1ka.si/a/127892?language=2">https://www.1ka.si/a/127892?language=2</a>
3	Hrvatski	<a href="https://www.1ka.si/a/127892?language=4">https://www.1ka.si/a/127892?language=4</a>
4	Srpski - latin	<a href="https://www.1ka.si/a/127892?language=13">https://www.1ka.si/a/127892?language=13</a>
5	Czech	<a href="https://www.1ka.si/a/127892?language=14">https://www.1ka.si/a/127892?language=14</a>
6	Bulgarian	<a href="https://www.1ka.si/a/127892?language=26">https://www.1ka.si/a/127892?language=26</a>
7	Bosanski	<a href="https://www.1ka.si/a/127892?language=41">https://www.1ka.si/a/127892?language=41</a>
8	Hungarian	<a href="https://www.1ka.si/a/127892?language=32">https://www.1ka.si/a/127892?language=32</a>
9	Slovak	<a href="https://www.1ka.si/a/127892?language=16">https://www.1ka.si/a/127892?language=16</a>

**Table 1: Circulated URLs of survey language versions**

The survey was designed to require 10-15min for completion in order not to overstretch respondents` patience, i.e. to receive fully completed questionnaires. .

Originally, the identification of participating stakeholder also included a request to provide information (such as name, address, legal form, etc.) , that could be deemed as an intrusion into company, organization or individual privacy These questions were therefore removed from the survey within the finalization process. Thus, the survey was structured as completely anonymous, apart from the final (optional) request for a contact e-mail address. Altogether, 182 survey participants did enter their email address contacts.



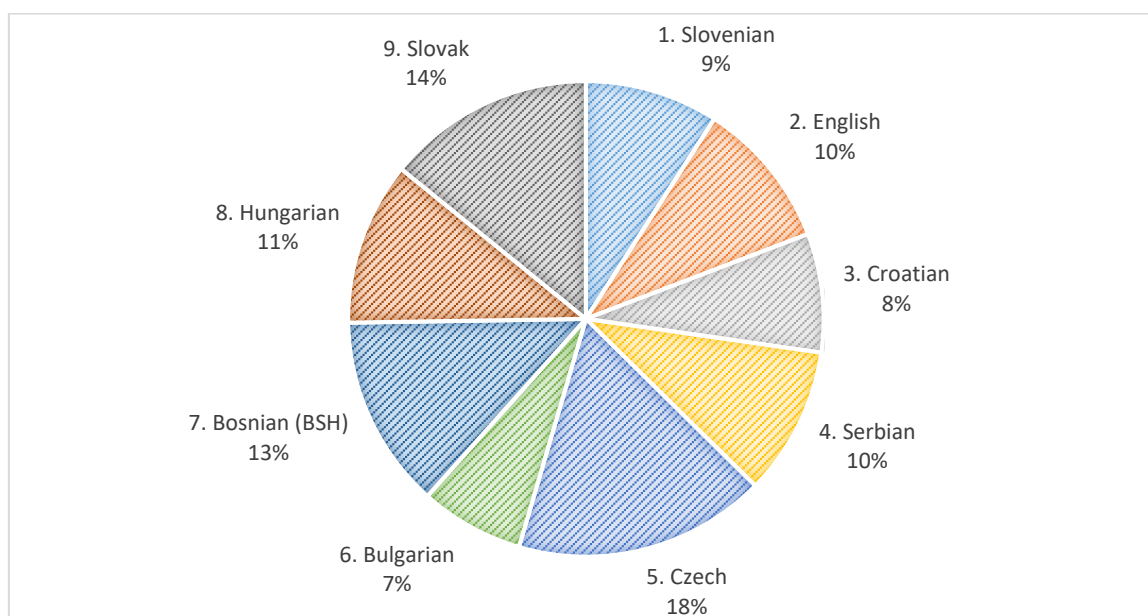
## 3.2 PARTICIPANTS OF THE SURVEY

Overall, 1980 fully or partially completed questionnaires could be collected. To obtain pertinent data for the follow up analysis it was decided to make all the questions within the survey mandatory (eliminating the option to skip questions) and to filter the fulfilled surveys by a 75 % completion threshold (removing blank or partially fulfilled surveys). The result was the removal of data for 1168 invalid surveys from the raw data used for analysis.

Altogether, the survey was completed by 812 participants, as represented in the table and figures below.

Language	Number of responses	Share [%]
1. Slovenian	73	9
2. English	81	10
3. Croatian	69	8
4. Serbian	82	10
5. Czech	137	17
6. Bulgarian	55	7
7. Bosnian (BSH)	109	13
8. Hungarian	90	11
9. Slovak	116	14

*Table 2: Number and share of responses per language version of the surveys*



*Figure 4: Share of responses in survey language versions*

The target defined within the survey methodology was set to an ambitious number of 20 responses per stakeholder category per partner, which was in a large part achieved. The survey was designed for four specific target groups

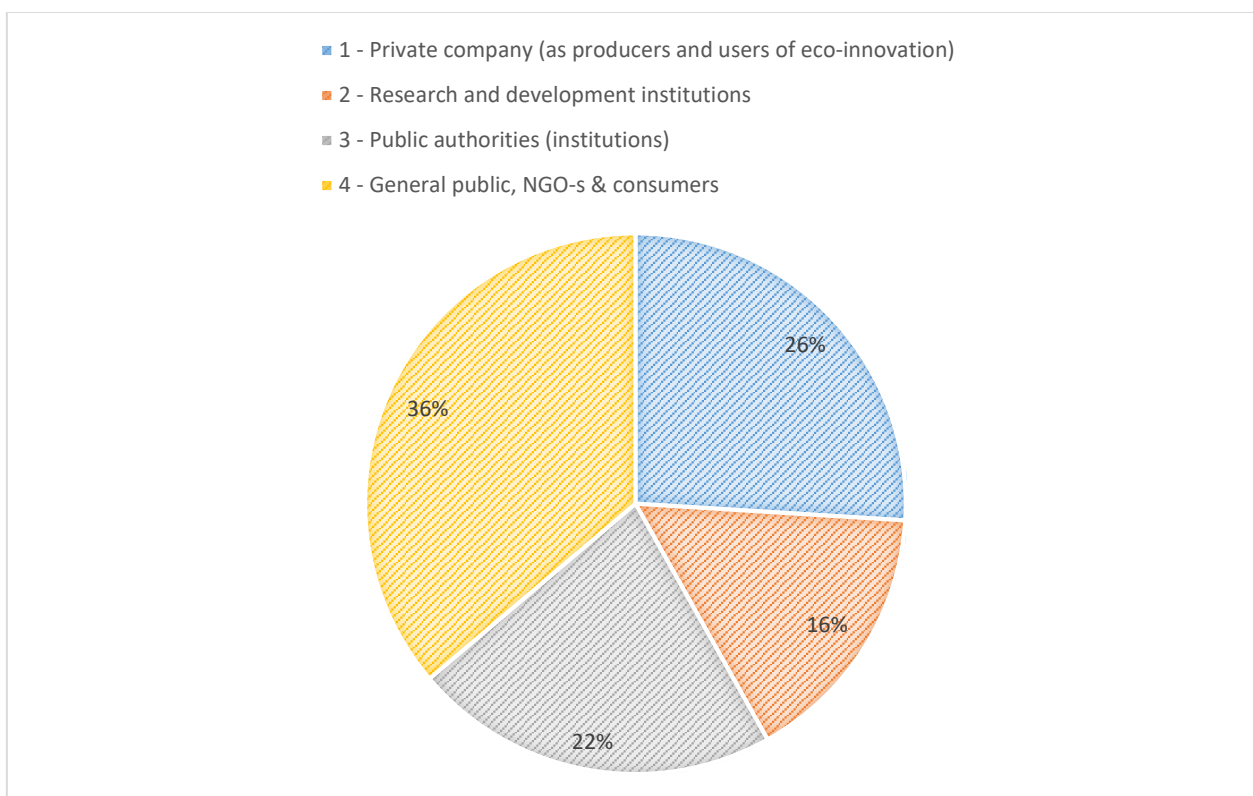
Project co-funded by European Union funds (ERDF and IPA)

[www.interreg-danube.eu/ecoinn-danube](http://www.interreg-danube.eu/ecoinn-danube)  
 ecoinn.danube@cvtisr.sk

representing the quadruple helix. The survey offered the option to choose the category that most appropriately represented the survey participants' role and relationship towards eco-innovation. The responses about predefined stakeholder categories are presented in table 3 and illustrated in figure 5 below.

Type of entity (category)	Number of responses	Share [%]
1 - Private company (as producers and users of eco-innovation)	211	26%
2 - Research and development institutions	129	16%
3 - Public authorities (institutions)	178	22%
4 - General public, NGO-s & consumers	294	36%

**Table 3: Number and share of response per stakeholder category**

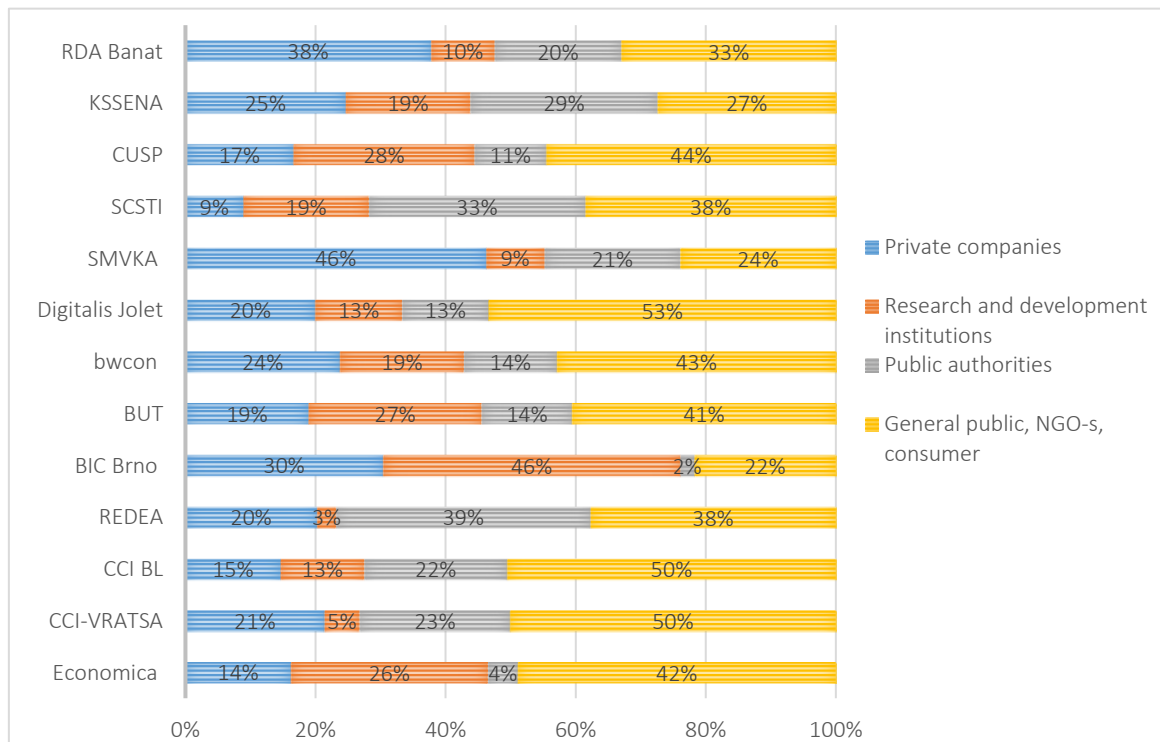


**Figure 5: Number of responses per stakeholder category**

The responses obtained were largely balanced across all four stakeholder categories. The majority (294; i.e. 36 %) of responses derives from the general public as consumers of eco-innovative products and services as well as NGOs as facilitators and promoters. The feedback from both the private companies and public authorities with 211 and 178 replies respectively was also at a high level. Research and development institutions contributed the smallest number of completed questionnaires (129 responses, marking a 16 % overall share).

To unambiguously assign respondents to respective project partners/nations, the question ("Which organization

contacted you for this survey?”) was inserted at the beginning. This was the case with the English version (used by partner organizations Bwcon, Germany and Economica, Austria), the Czech version (used by partner organizations BIC Brno and BUT), the Hungarian version (used by partner organizations Digitalis Jolet and SMVKA) and the Slovak language version (used by the partner organizations SCSTI CUSP). The frequency of responses for each project partner with reference to the stakeholder categories is presented in Annex 2 and illustrated in Figure 6.



**Figure 6: Shares of responses for stakeholder category per partner**

The following sections of the report are divided between each of the 4 stakeholder categories for easier reference to compiled analytical data.

## 4. ANALYSIS AND EVALUATION OF THE RESULTS OF THE SURVEY

### 4.1 ANALYSIS OF THE SURVEY ON CATEGORY: PRIVATE COMPANIES

The first section of the sub-survey for private companies was used to obtain basic information about the participating enterprises, their size, experiences and sector identification and companies' market orientation, either domestic or foreign.

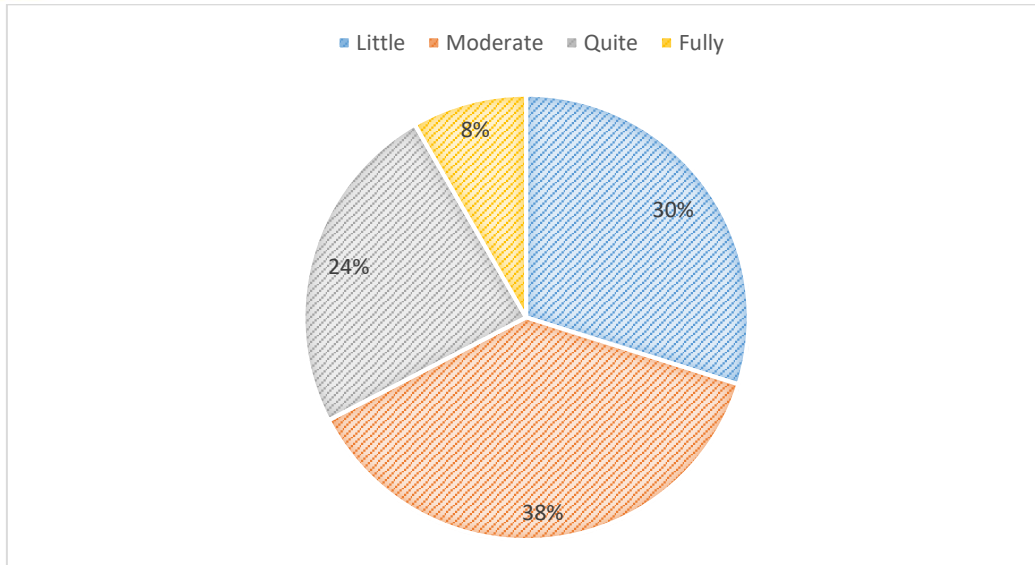
The companies participating in the survey represented a wide variety of industries including energetics, food and beverage industry, IT, construction and architecture, automotive industry, textile industry, graphical design, marketing, biomass and ecology, agriculture, energetic monitoring, consulting, metal industry, business development and education, to name only a few. 211 valid responses of survey participants were documented.

The companies taking part in the survey had **an average of 28 years** of market presence (founded in 1989) with an **average 136 (135.9) employees**, ranging from single-person companies to large companies with 4500 employees.

Most of companies were **focused on domestic markets (56%)** while only a small share (6%) was solely focused on foreign/international markets. The companies present on both domestic and foreign market represented a share of 38% of the total. If this option was selected, then the survey prompted a request for estimation to what extent the company portfolios are present in either domestic or foreign markets. The shares of orientation on domestic and foreign market presence were estimated by survey participants to average about 60.5% and 39.5% (for domestic and foreign presence respectively).

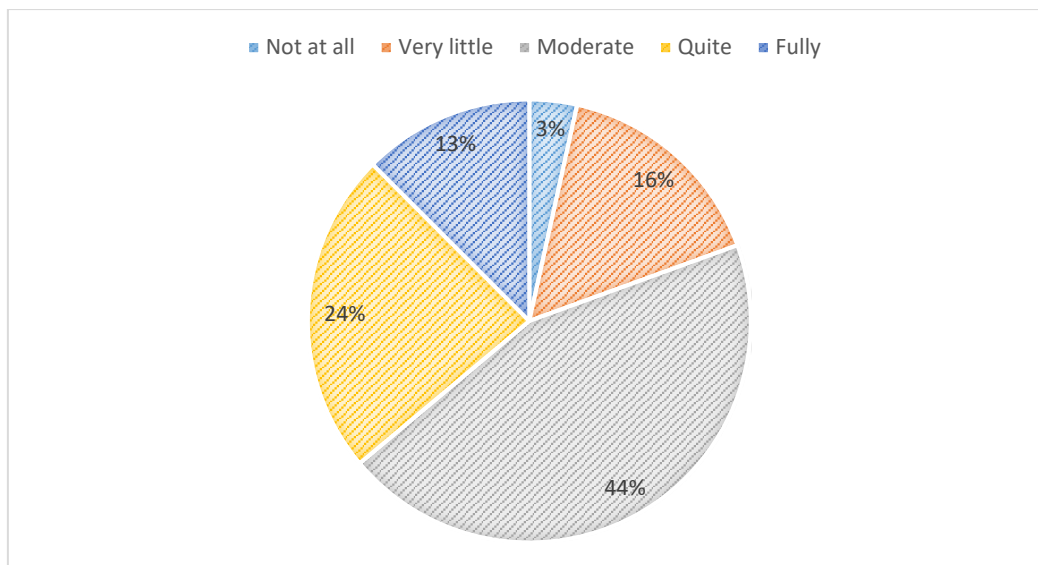
The next section of the questionnaire was designed to gain understanding about companies' familiarity with the concept of eco innovation, the importance and role within their specific business processes and whether the enterprise is developing and producing or using existing products and services derived from eco-innovation.

In this respect, the results were quite positive with at least **70% of participants having at least a moderate understanding and familiarity with eco-innovation**. Less than one third (30%) of respondents stated that they had little to none understanding and knowledge of the term. The results are presented in Figure 7.



**Figure 7: Familiarity of private companies with the concept of eco-innovation**

In response to the question, how eco-innovation could be able to help improve the company’s business, only 3 % of participants stated that it would not be useful at all and 16% stated that it would have very little positive impact. On the other hand, a total of 13% participants recognized the large potential of eco innovation to improve their businesses and **68 % stated that in their opinion eco-innovation could provide a moderate or quite substantial improvement.** Results are illustrated in Figure 8.

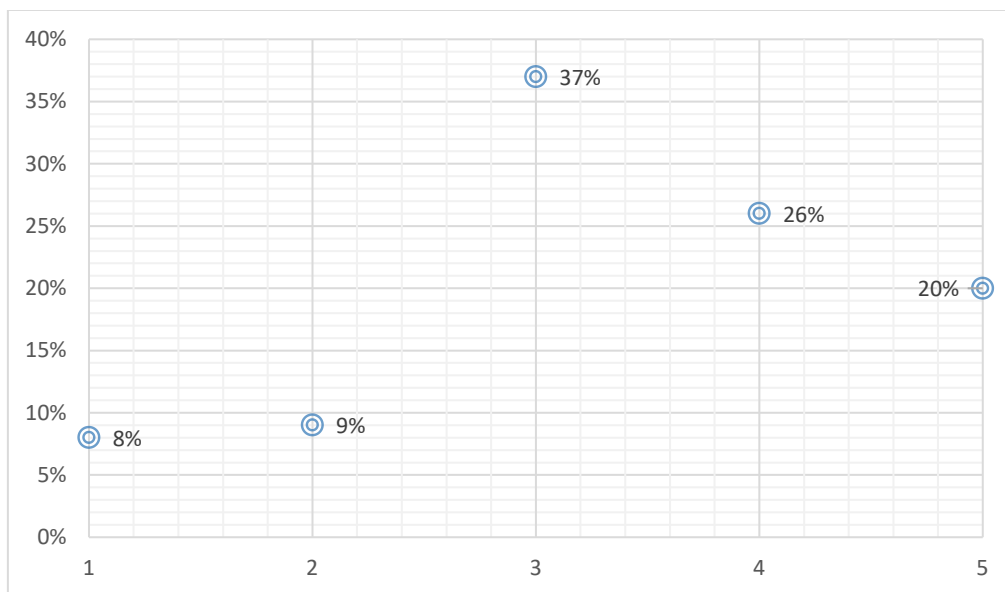


**Figure 8: Opinion on an eco-innovation aid on improvement of business**

Regarding the use or production of eco-innovative products/services, **45%** of companies were active as producers or providers of eco-innovative products and services while **55%** represented beneficiaries (companies that applied eco-innovation to support their business as opposed to revolving the business concept around a eco innovative idea or product).

When estimating the level of innovativeness of their companies, respondents rated their companies on a linear scale

from 1 - Low level of innovativeness and 5 - High level of innovativeness. Most respondents estimated a moderate to high level of innovativeness within their companies ranging from **37%** for **level 3**, **26%** for **level 4** and **20%** for the **highest possible grade**. Only **24** participants had the opinion that their companies don't meet this threshold with **8%** (and 9 for level 2) estimating that their companies have a low level of innovativeness. Results are presented in Figure 9 below.



**Figure 9: Distribution of responses for the self-estimation of the level of innovativeness**

Table 4 represents the responses regarding the most evident need for eco innovation, regarding specific areas of interests/categories. The question allowed multiple answers, which resulted in a combined 327 responses across all seven categories.

Category	Frequency	Share [%]
Improving product needs	51	17%
Improving services	67	22%
Improving technology and processes	86	28%
Improving waste management	48	16%
Improving the relationship with the market	39	13%
Improving logistics and distribution	27	9%
Other:	9	3%

**Table 4: Responses on the needs for eco-innovation in specific categories**

According to respondents from the private sector, the **most prominent demand for eco-innovation exists in the areas of improving technology and processes** (with 86 positive responses) and **improving services offered by companies** (with 67 positive responses) which is representative of half (**50%**) of the total response rate. A less evident need for eco innovation was documented for the areas of improving product needs, improving waste management and

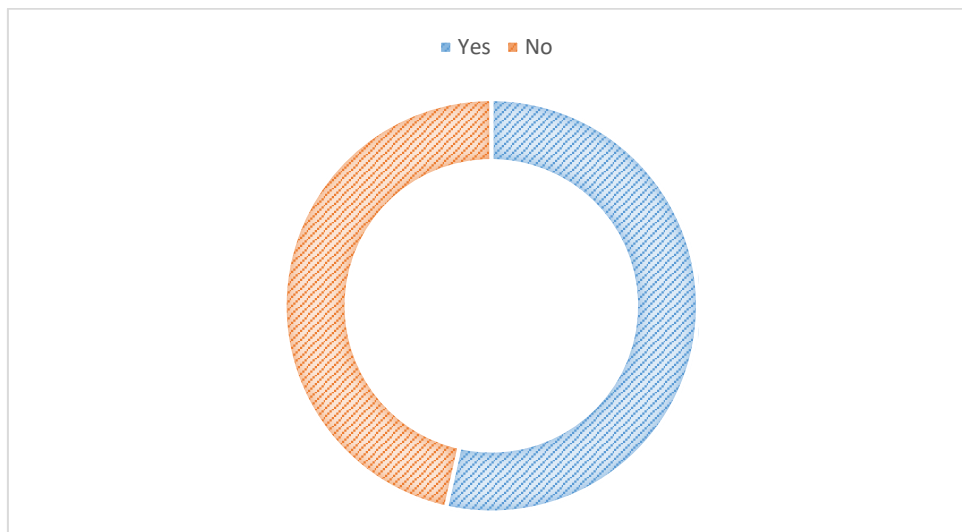
improving the relationships within the market totalling 138 responses with shares of 17%, 16% and 13% respectively.

Respondents did not see the area of improving logistics and distribution amongst the biggest to require eco innovation while only 3% choose the category other. Within this category the areas that were suggested included the improvement of the entire value chain or the products life cycle, improving strategies and plans, public sector awareness raising and introduction of low for recycling and use of recyclable materials and products, presentation of different solutions within information complain, presenting own solutions, alternative energy and implementation of biometry in all areas and eliminate the paper works. The visual representation of the findings is illustrated with the polar chart in Figure 10.



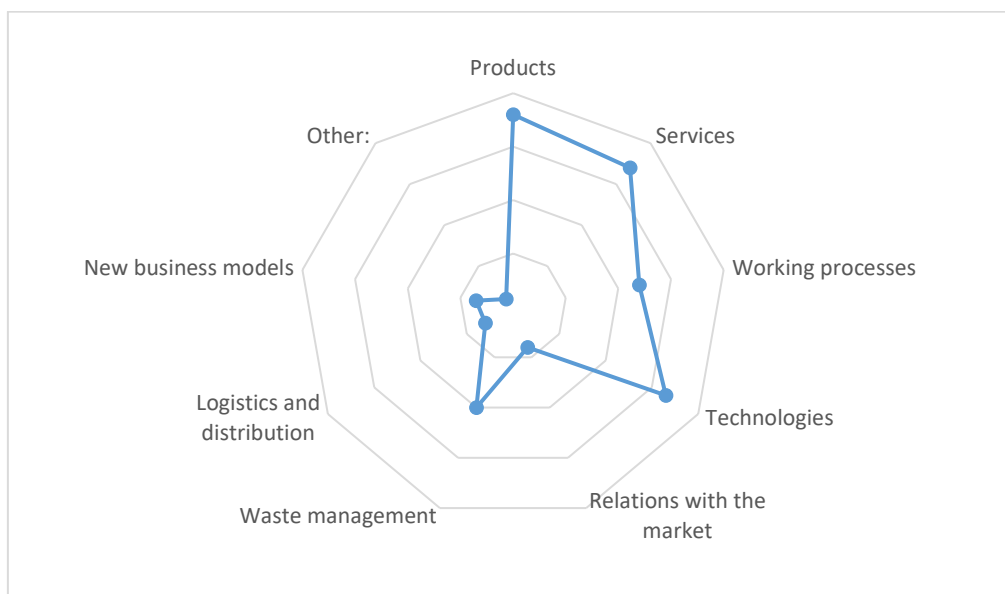
**Figure 10: Areas where respondents see the biggest need for eco-innovation**

With regard to the previous application of eco-innovation, **more than half (54%)** of respondents stated that their companies in which they are employed applied **some form of eco-innovation into their business in a recent (last three years) time frame**. Responses are illustrated in the pie chart within Figure 11.



**Figure 11: Share of actual application of eco innovation in companies in the last three years**

A positive response to the question regarding the previous application of eco innovation within the company prompted two additional multiple-choice questions. The gathered results (number of responses and share) are presented in Table 5 and Table 6 as well as Figure 12 and Figure 13 respectively.



**Figure 12: Areas where respondents previously applied eco-innovation**

Field	Frequency	Share [%]
Products	36	21%
Services	34	20%
Working processes	24	14%
Technologies	33	19%
Relations with the market	8	5%
Waste management	20	12%
Logistics and distribution	6	4%
New business models	7	4%
Other:	2	1%

**Table 5: Responses on the fields of previous application of eco-innovations**

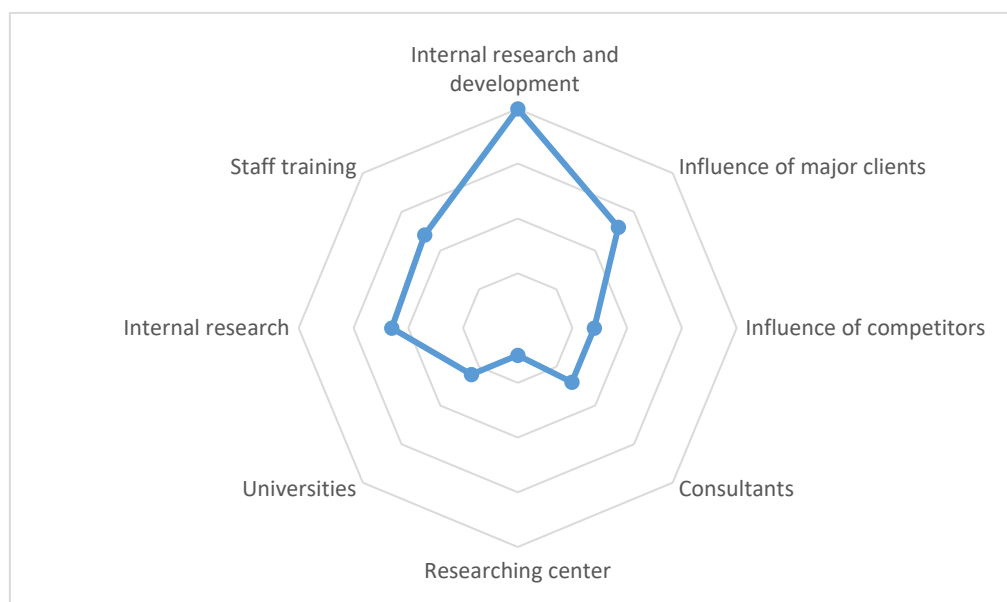
According to respondents, on the fields of previous application of eco-innovations, the majority of innovations were applied in the **fields of products, services and technologies** (with 103 positive responses), which is representative of more than **61%** of the total response rate. A fewer innovations were implemented in the fields of working processes (14%) and waste management (12%). Innovations in the other fields such as relations with the market, logistics and distribution, new business models and other were each represented in 5% or less.



Influence	Frequency	Share [%]
Internal research and development	40	25%
Influence of major clients	26	16%
Influence of competitors	14	9%
Consultants	14	9%
Research centre	5	3%
Universities	12	8%
Internal research	23	15%
Staff training	24	15%

**Table 6: Responses on the influence on previous application of eco-innovations**

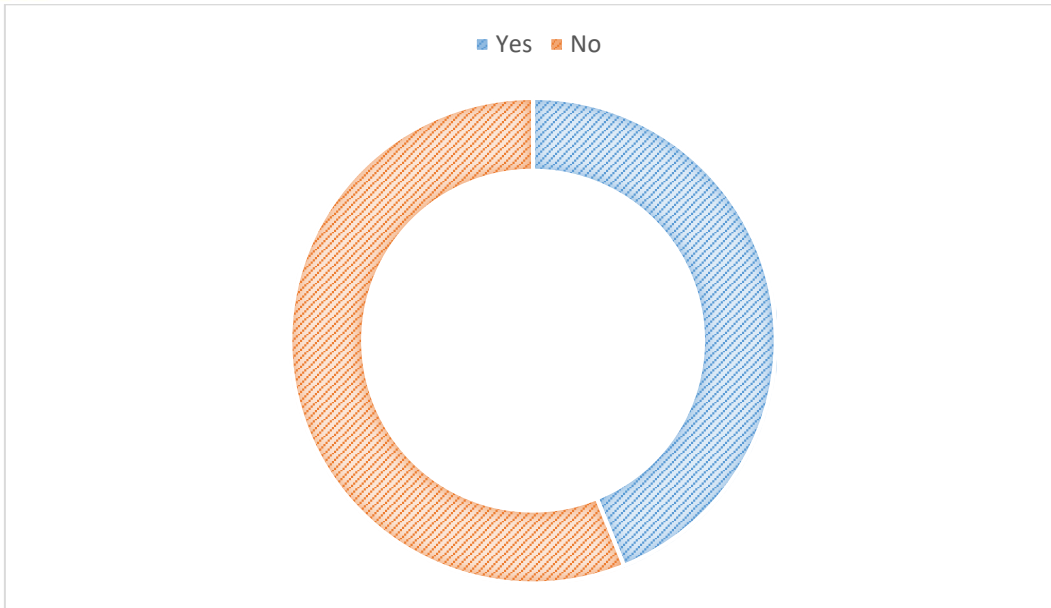
Past application of eco-innovations within the companies was for the most part the result of internal research and development (with 40 positive responses). Fairly big influence in the application also had major clients, internal research and staff training (with 26, 23 and 24 positive responses). A little less than **30%** of innovations were result of influence of competitors (14 positive responses), consultants (14 positive responses), research centres (5 positive responses) and universities (12 positive responses).



**Figure 13: Areas of influence on previously applied eco-innovation**

The last section of the survey covered the area of research and development of eco-innovations to gain understanding how and to what extent companies invest in activities concerning eco-innovations and include their employees.

In response to the question regarding **investment in activities on research and development of eco-innovations, less than half of the respondents (44%) answered positively**. Responses are shown in the pie chart within the Figure 14 below.

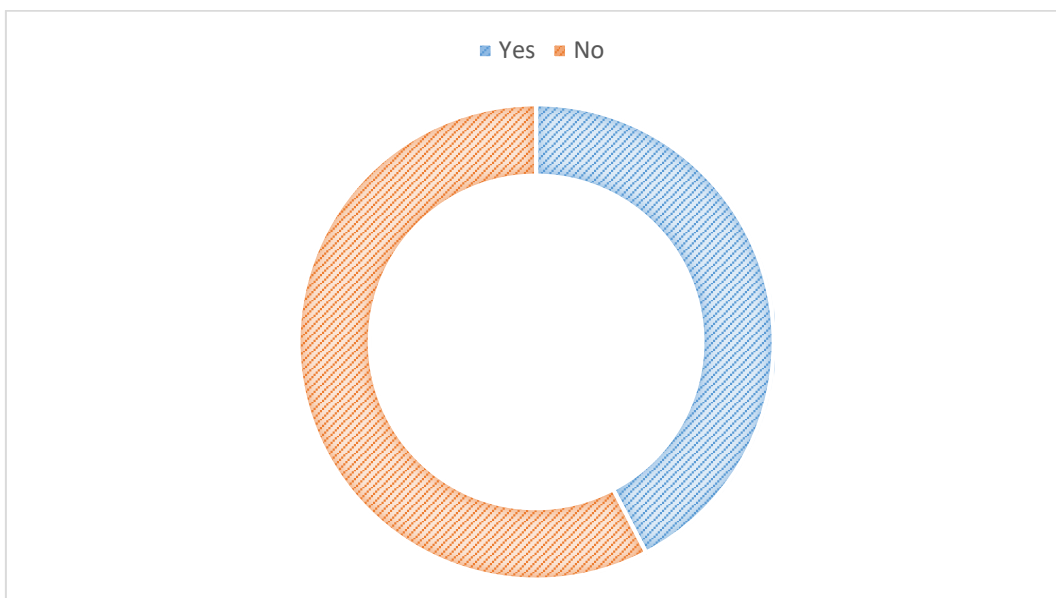


**Figure 14: Share of investment in research and development of eco-innovation**

Participants with a positive response to the question regarding investments in activities were also asked to answer two additional questions concerning working capital (the capital of a business which is used in its day-to-day trading operations, calculated as the current assets minus the current liabilities) and employees.

**On average 16 % of working capital** was spent on research and development of eco-innovation and 15 (14,3) employees were engaged in research and development activities. Percentage range between maximum and minimum investment of working capital was quite wide, the maximum was 80% and the minimum was 1%. Participants of the questionnaire were in mentioned activities involving single person up to 200 employees.

Regarding the provided incentives by companies, less than half (42%) of companies have offered some kind of motivation or encouragement for eco-innovation amongst their employees. Results are illustrated in Figure 15.



**Figure 15: Share of providing incentives for eco-innovation amongst employees**

Participants who have offered incentives had additionally provided information concerning types of incentives through multiple-choice question. The results are presented in Table 7 and Figure 16.

Incentive	Frequency	Share [%]
Financial incentive	29	28%
Direct recognition by superior's managers	36	35%
Established prize for innovation at the enterprise level	9	9%
Providing opportunities for employees to use for free all available capacity of the company to develop and test their own ideas	21	20%
Providing administrative support for funding from external (public) sources	5	5%
Other types of stimulation, please specify:	3	3%

**Table 7: Responses on the types of incentives**

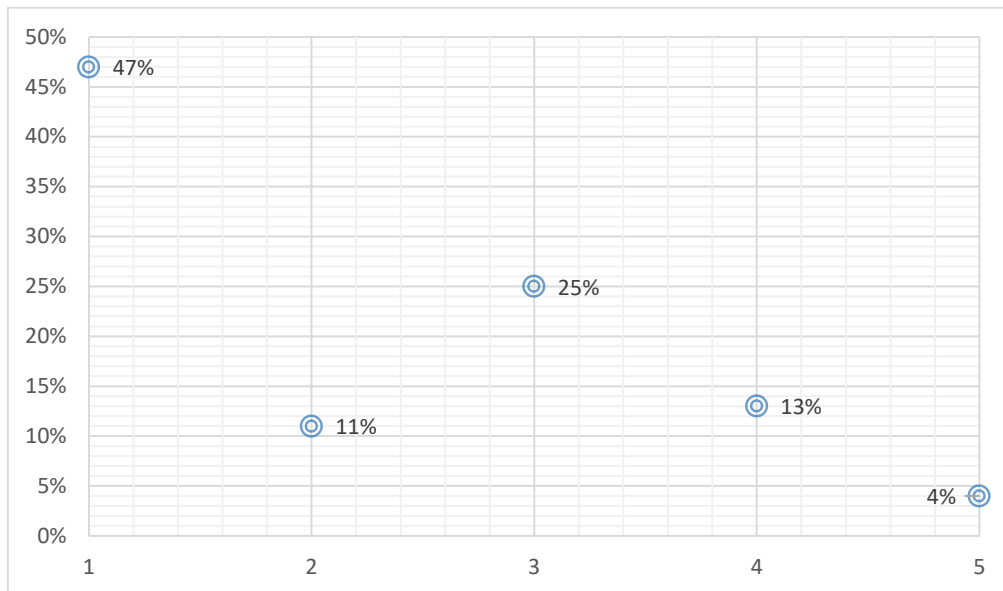
As a good type of incentive companies recognized and offered **direct recognition by superior's managers** (with 36 positive respondents) **and financial incentives** (with 29 respondents), which is representative of almost two thirds (**63%**) of the total response rate. "Providing opportunities for employees to use for free all available capacity of the company to develop and test their own ideas" applied to 21 responses, marking a 20 % overall share. The remaining types of incentives as established prize for innovation at the enterprise level (with 9 positive responds), providing administrative support for funding from external (public) sources (with 5 positive responses) and other types of stimulation (with 3 positive responses) represented 17% of overall share.



**Figure 16: Types of incentives for eco-innovation offered by companies**

When evaluating the level of cooperation between companies and scientific research institutions, respondents were asked to rate on a scale from 1 – Low level of cooperation to 5 – High level of cooperation. About half of the respondents (47%) stated that the level of cooperation with scientific research institutions is low. Results presented

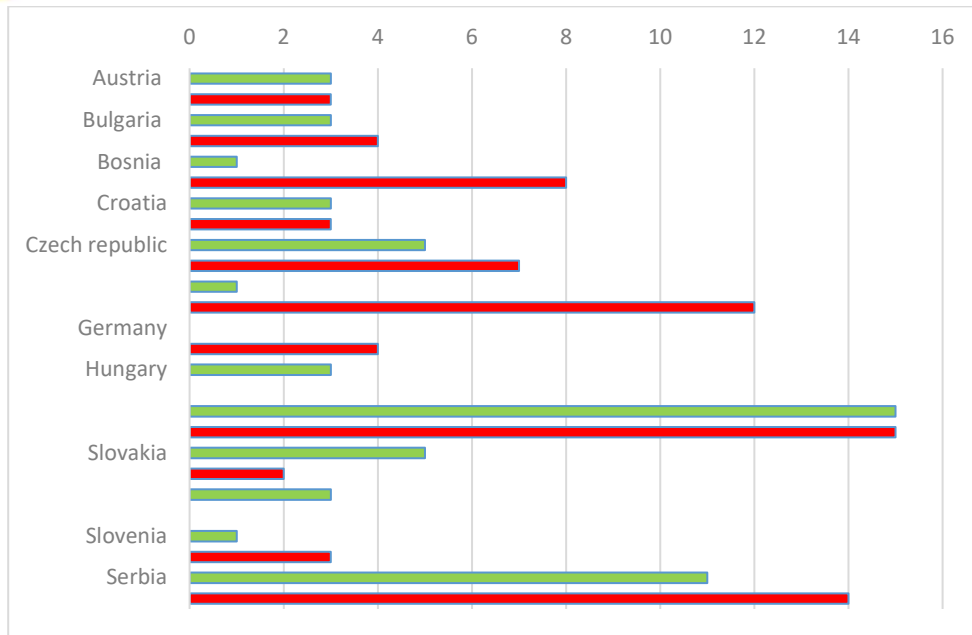
in Figure 17 show that a high share of respondents (49%) felt that associations in terms of eco-innovation were on one of the intermediate levels 2 to 4 with shares 11%, 25% and 13%. **Only 4% of companies had the opinion that their cooperation is on the highest possible level.** The results are presented in Figure 17 below.



**Figure 17: Distribution of responses for the evaluation of companies' association with scientific research institutions**

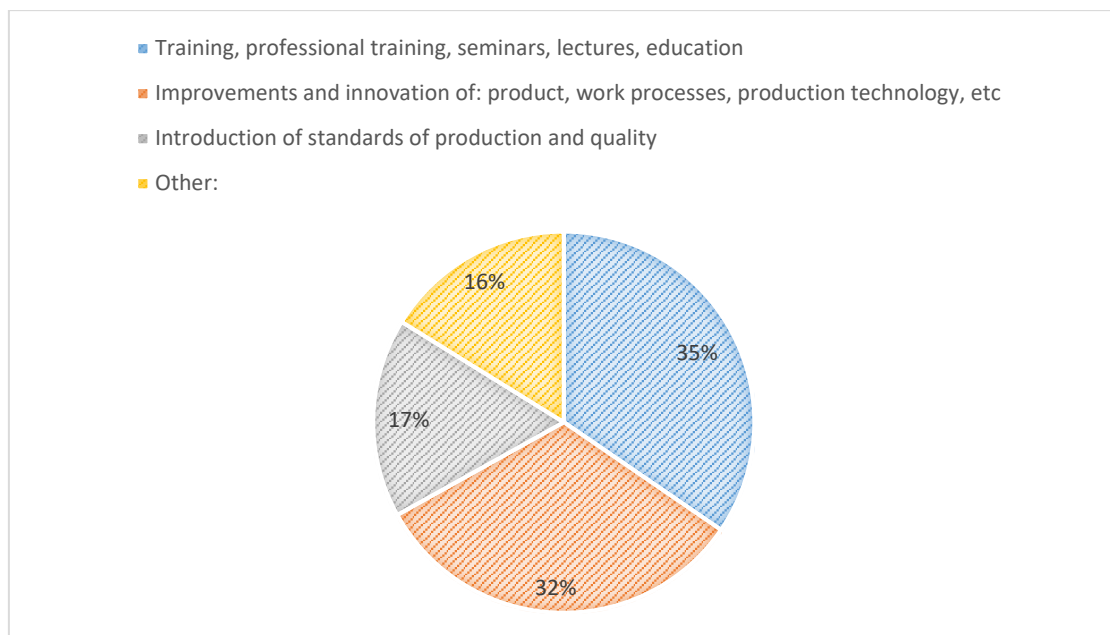
About the area of cooperation, surveyed companies were mainly associated with scientific and research institutions in the areas of training, seminars, education (47 positive responses) and the area of improvements and innovation (44 positive responses), which represents 67% of a total share. Cooperation in the fields of introduction of standards of production and quality was represented with 23 positive responds and 22 companies were cooperating in other areas.

Regarding the situation on country specific responses regarding available internal company incentives for eco-innovation has varied substantially, with best results documented by responses from Slovakia and Hungary. Figure 18 illustrates the responses on company incentives obtained by partner organizations on a national level (the red indicates a negative reply and green a positive reply). Most respondents stated that the main incentives were a direct recognition by superior's managers, with some companies also offering direct financial rewards.



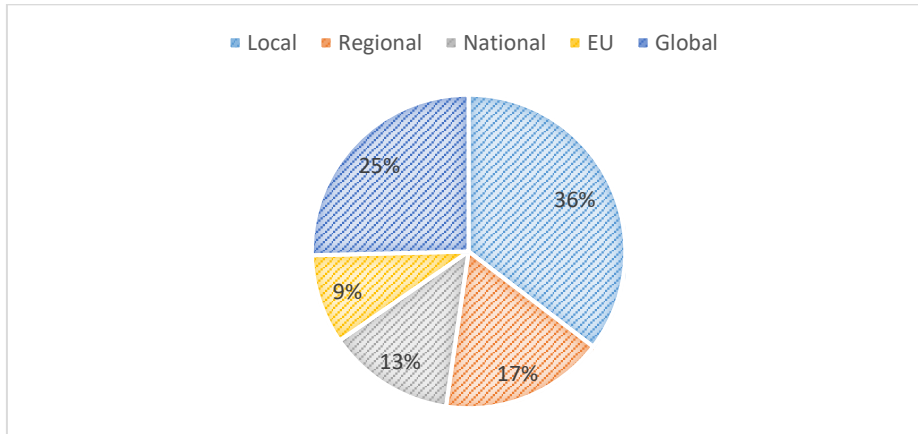
**Figure 18: Incentives for eco-innovation in private companies (country specific replies)**

The next question was used to determine that extent and way companies were associated with scientific research institutions in the area of eco innovation. The affiliation most commonly documented was in the form of trainings, seminars, lectures and other educational activities as illustrated in figure 19.



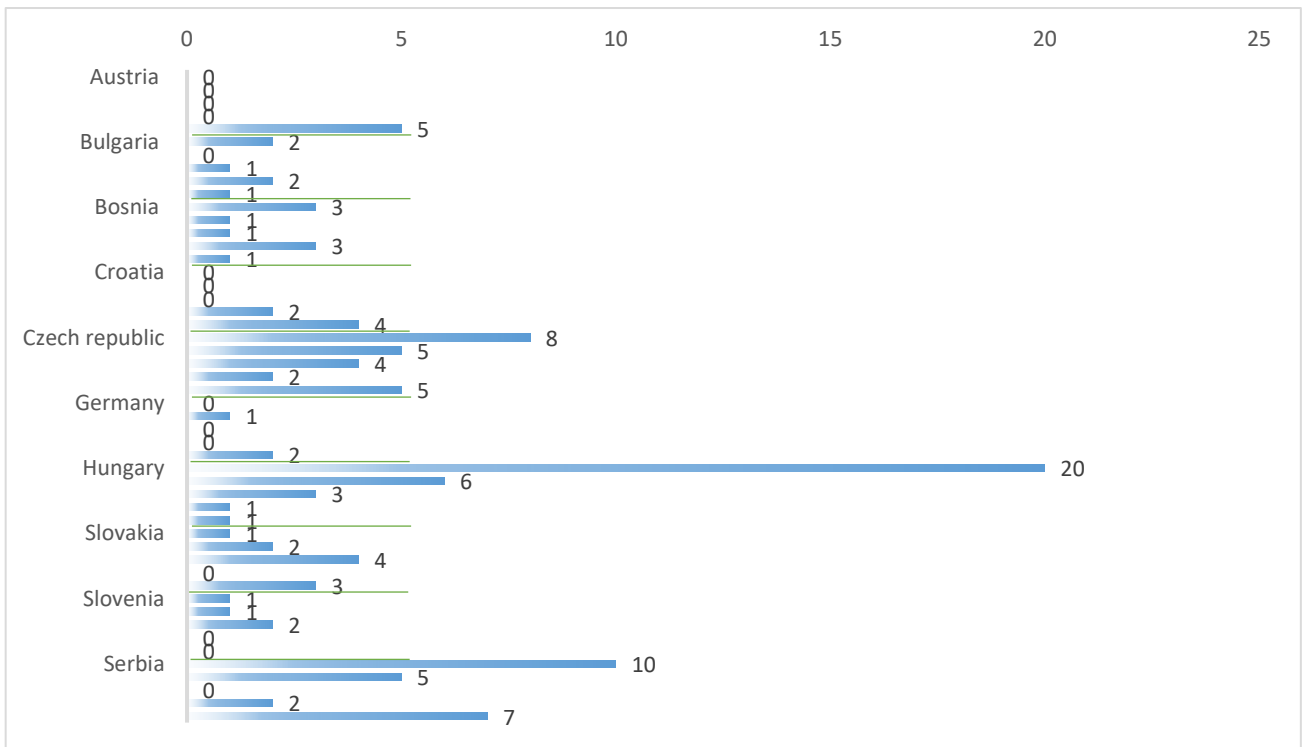
**Figure 19: Areas of cooperation in the field of eco-innovation**

Next part of the survey was analysing the relevance of eco-innovations on different levels and application of quality standards in business practices. The first query in this section was the scope of relevance of the produced or applied eco innovation product, service or method. From the results illustrated in the figure 20, it's evident that a great share of respondents (36%) has assigned a biggest significance of eco-innovations to the local level. On the other hand, companies also recognized importance of eco-innovations on the global level with 25% of total share. Other participants have assigned relevance to the regional 17%, national 13% and EU 9% level.



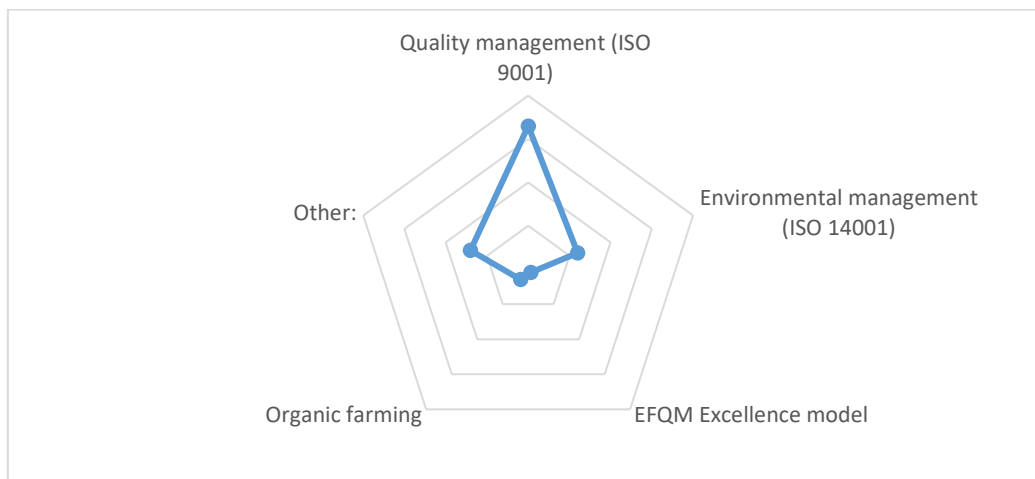
**Figure 20: Relevance of used/produced eco-innovation**

Figure 21 illustrates country specific replies in bars indicating absolute responses (starting from the top-down Local ->Regional>National>EU>Global) in the same order as the proposed answers, where it is clearly shown that companies interviewed by each partner organizations in their respective countries have different views on the relevance of used or produced eco innovations. BUT (Brno University of technology) documented a clear inclination towards the local level, while responses from companies interviewed by BIC Brno (Business and innovation Centre) show that applied eco innovation is relevant more on the national, European and global level. Propensity towards the relevance on the local and national level is evident for Slovakia, Serbian responses are divided between the two extremes and replies from Austria indicate a bias towards global relevance.



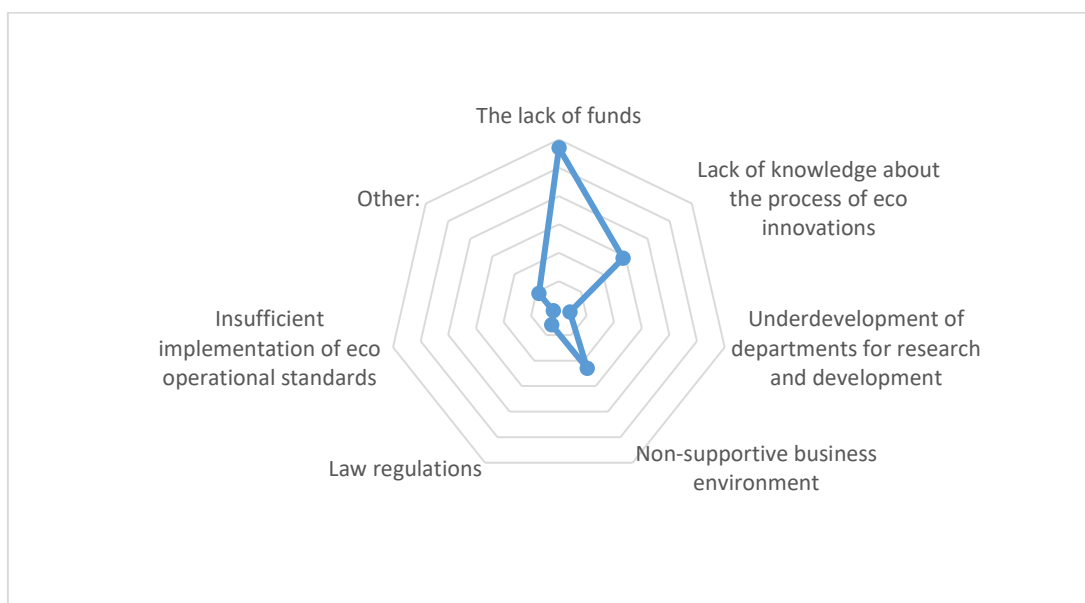
**Figure 21: Relevance of used/produced eco-innovation (country specific replies)**

From the aspect of application of quality standards in companies, **more than a half of participants** (with 33 positive respondents) **have introduced Quality management (ISO 9001) standard** and fair amount of respondents 20% (with 12 positive responds) applied the Environmental management (ISO 14001) standard. On the other hand, a small part of participating companies has introduced EFQM Excellence model (with 1 positive response) and Organic farming standards (with 3 positive responses). Results are shown in a polar chart within Figure 23.



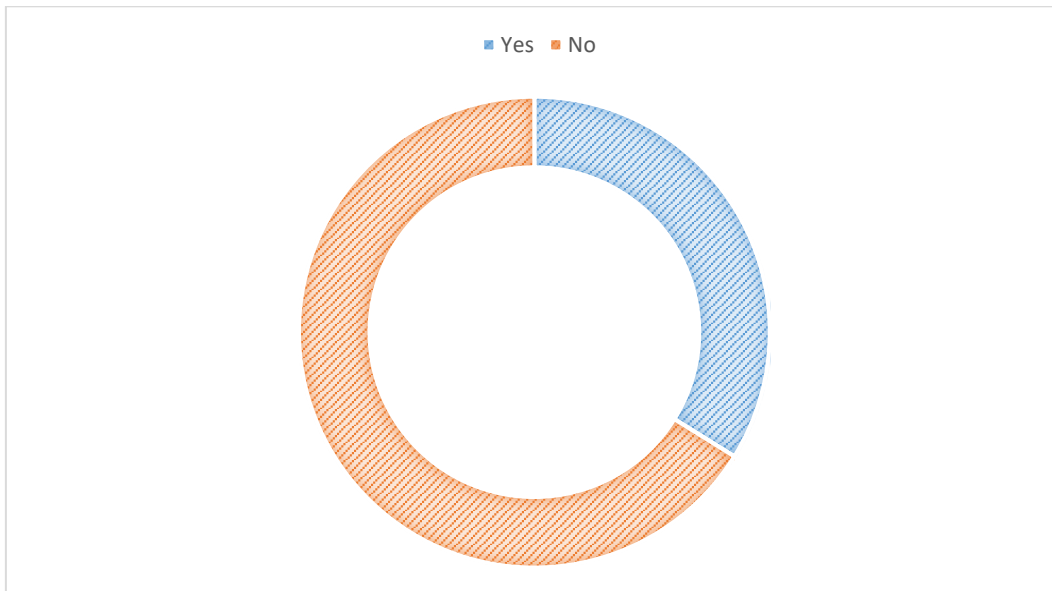
**Figure 22: Applied quality standards in private companies**

The survey also aimed at identifying dominant problems restricting the development of eco-innovations. In this respect, **companies name “lack of funds” as the main obstacle**; with 57 positive responses, which is representative of 44% of the total response rate. Furthermore, there are two additional factors with substantial negative impact: “knowledge about the process of eco innovations” (with 29 positive responses) and “non-supportive business environment” (with 23 positive responds), together representing 40% of responses. “Development of eco-innovation” was not as much restricted with underdevelopment of departments for research and development (3%), law regulations (5%), insufficient implementation of eco operational standards (2%) and other causes (7%).



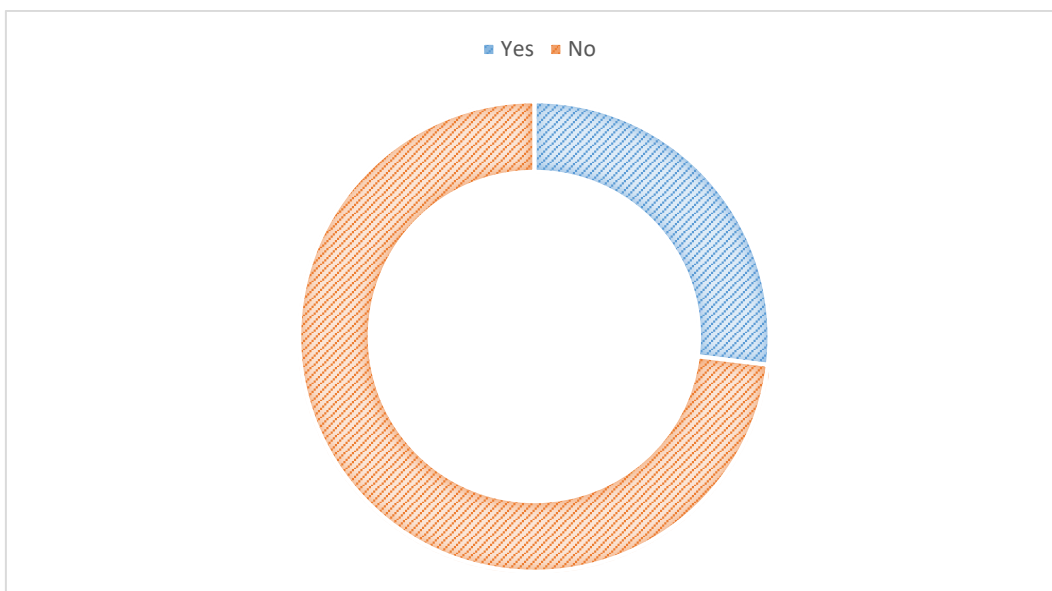
**Figure 23: Responses on problems that dominantly restrict development of eco-innovations**

With regard to the involvement of companies in business associations, major part of respondents (66%) were not a member of any kind of business association, ecological cluster or similar. The results are presented in a chart included in Figure 25



**Figure 24: Share of a company’s membership in business association, ecological cluster or similar**

Regarding the development of cross-border and/or regional cooperation networks with related companies from business associations and similar, 73% of questioned answered negatively. The results are illustrated in Figure 26 below.

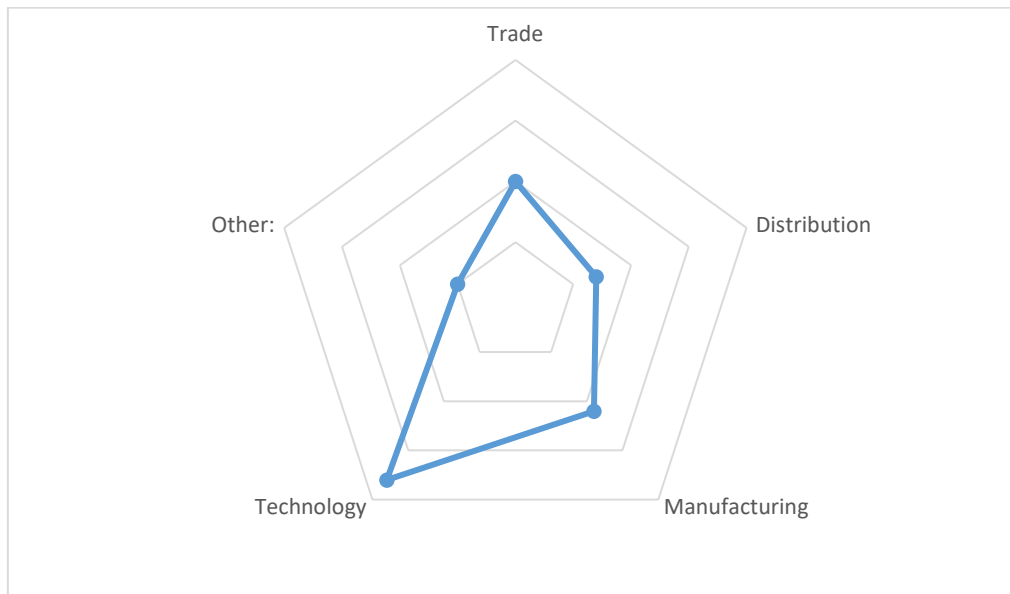


**Figure 25: Share of a developed cross-border and/or regional cooperation network**

Those who responded positively were asked to specify domains of achieved cooperation through multiple-choice question. As illustrated in Figure 27, the majority of cooperation was in the field of technology (with 18 positive responses) marking 38 % of a total share. Less collaboration was in the domain of manufacturing (with 10 positive

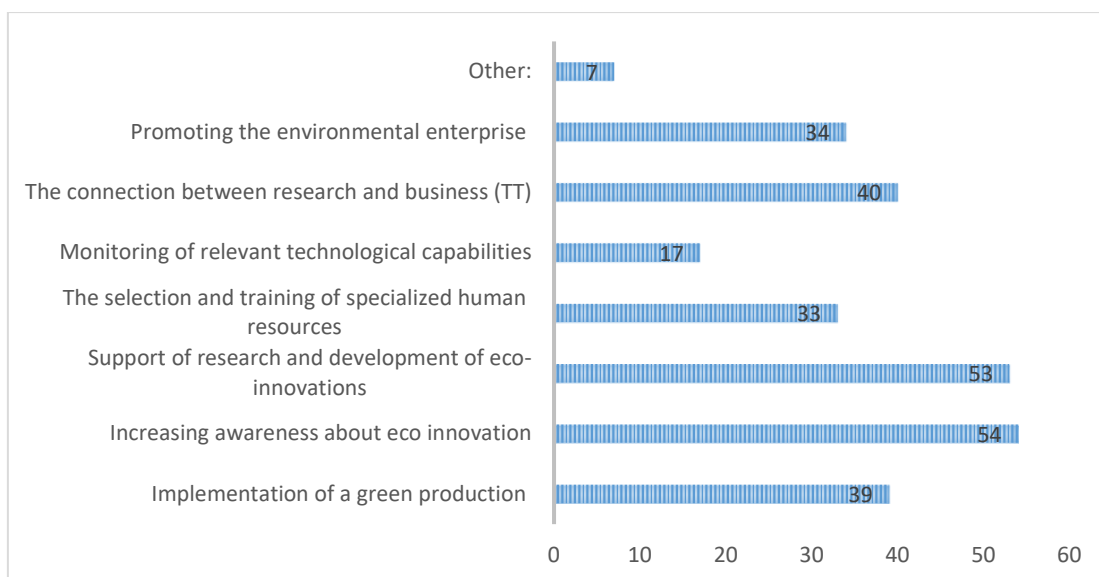


responses) and trade (with 10 positive responses). In the field of distribution was achieved 7 and in other domains only 5 collaborations.



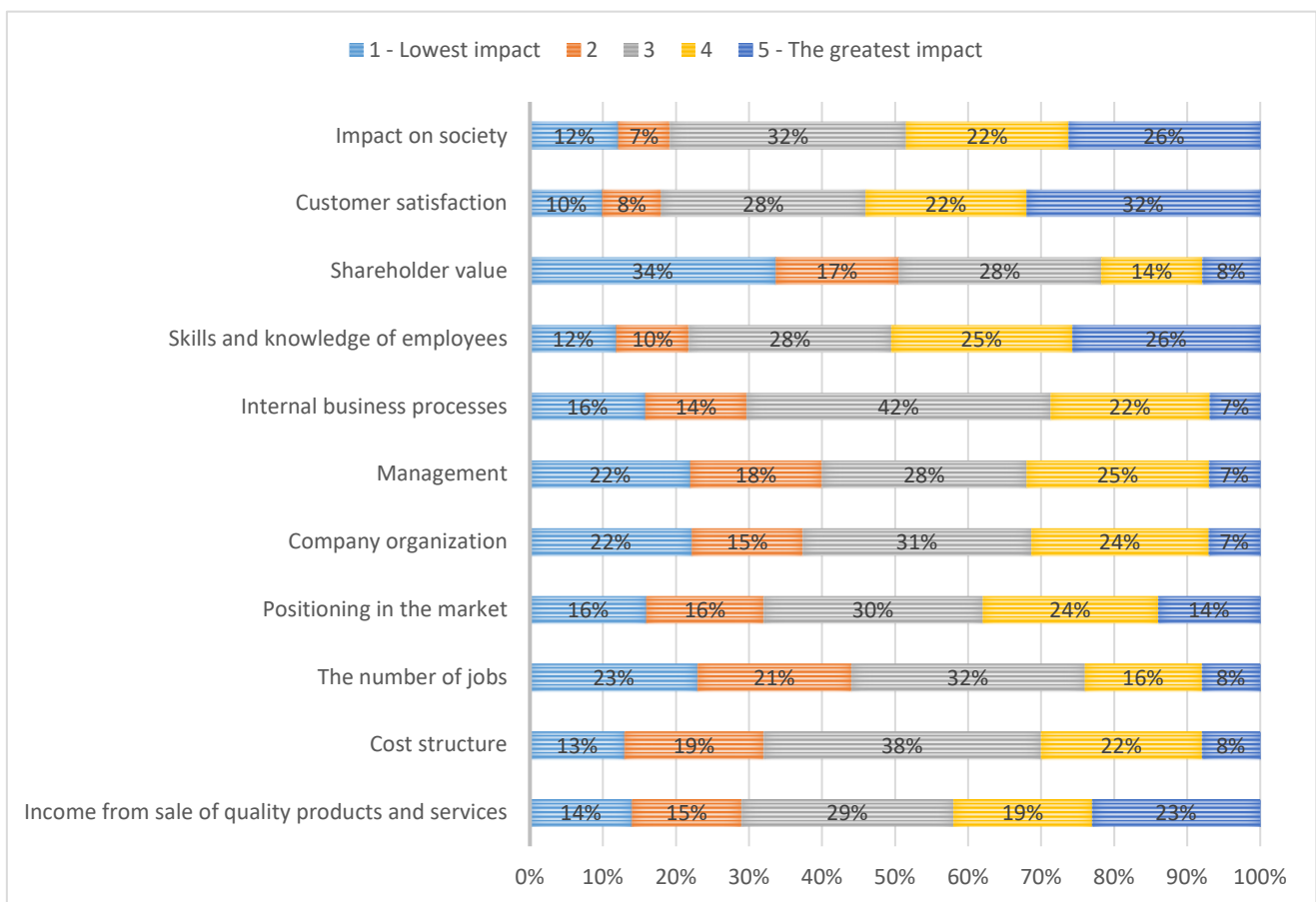
**Figure 26: Domains where respondents achieved cooperation**

The survey version for private companies was completed with showing participants' opinion on importance of public funds in different segments and an evaluation of the impact of eco-innovations to business performances. Figure 28 shows opinion on the importance of support of public funds in different segments. Of total 277 respondents, 54 felt that the **public funds are most needed in segment of increasing awareness about eco innovation**. Similar number of respondents (53) recognized a need for funds in **supporting research and development of eco-innovations**. Other participants assigned importance of funds to segments of the connection between research and business (40), implementation of a green production (39), promoting the environmental enterprise (34) and the selection and training of specialized human resources (33). Just 17 of those questioned felt that resources should go to the segment of monitoring of relevant technological capabilities.



**Figure 27: Importance of the public funds in different segments**

When evaluating impact of eco-innovations to business performances, companies rated level of impact on a scale from 1 – Lowest impact to 5 –The greatest impact. **Figure 29** shows responses on levels of impact of eco-innovations. The majority of respondents mostly recognized modest to high impact of eco-innovation to all business performances. In participants’ opinion, the greatest impact of eco-innovation was acknowledged in business performances as customer satisfaction (32%), skills and knowledge of employees (26%) and society (26%). Eco-innovation had the share of lowest impact on shareholder value (34%). When taking into considerations average values, impact was evaluated as quite similar in all areas. Customer satisfaction with a level of impact 3,6 was most influential and shareholder value with level 2,5 was the least.



**Figure 28: Average distribution of responses for the impact of eco-innovation to business performance**

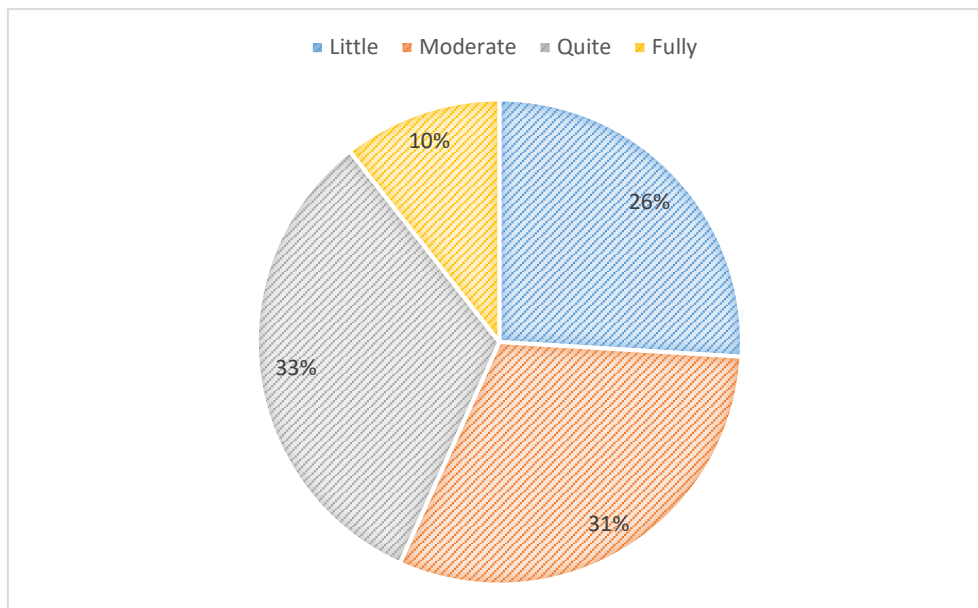
## 4.2 ANALYSIS OF THE SURVEY ON CATEGORY: RESEARCH AND DEVELOPMENT INSTITUTIONS

The first set of questions for category of research and development institutions was similar to survey version for companies used to acquire information about sector identification and size of the participating research and development institutions. 129 valid responses of survey participants were documented. The research and development institutions participating in the survey were dealing with various activities including economic research, education, material flow and resource management, food sector, ecology, energy efficiency, technology, agricultural research, development of SME-s, green energy and mobility, monitoring, environmental protection, to name only a few.

The research and development institutions taking part in the survey had an average of **484 (483,3) employees**, ranging from single-person institutions to institutions with 4000 employees.

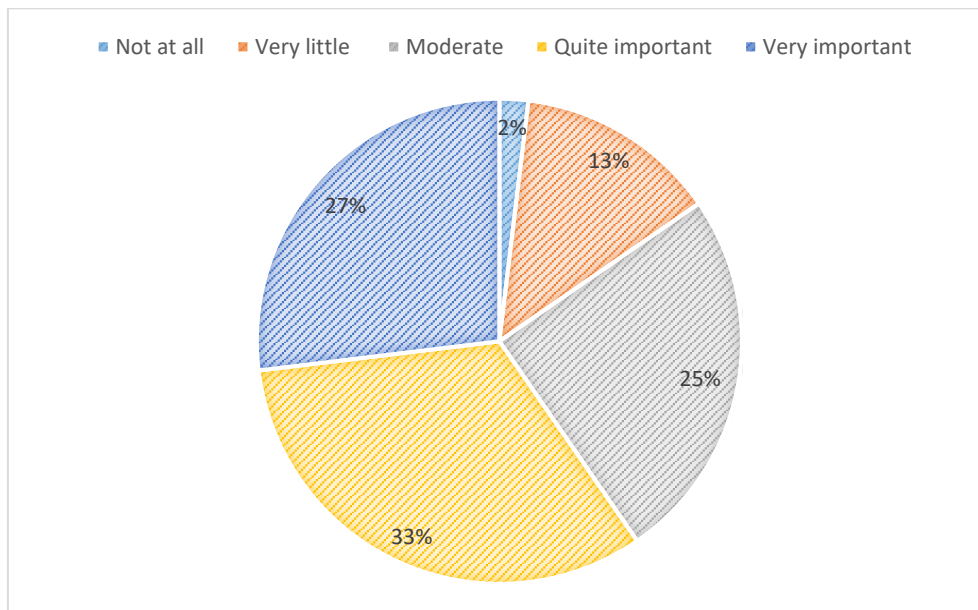
The next part of the survey was designed to obtain understanding about the institutional familiarity with the concept of eco innovation, the importance of sustainable development and ecology as part of their education process and whether the eco-innovations are supported within the institution.

Regarding the participant's familiarity with eco-innovation, approximately two-thirds of the participants (**64%**) had **moderate or quite good understanding**. An estimated 26% of those surveyed considered themselves a little familiar and only 10% indicated a fully understanding of the term. The results are presented in Figure 30.



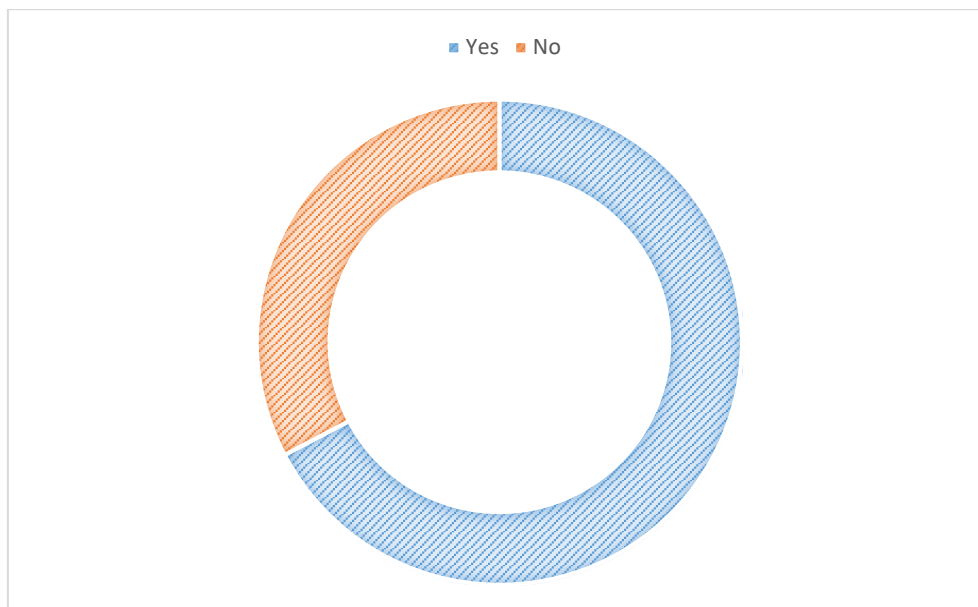
**Figure 29: Familiarity of research and development institutions with the concept of eco-innovation**

When research and development institutions were asked about importance of **sustainable development and ecology as a part of formal education**, most respondents (**85%**) stated that it is at least moderately important. Thirteen per cent of those questioned assigned a little importance and very few participants (2%) have not assigned any importance to the discussed matter. The results are illustrated in Figure 31 below.



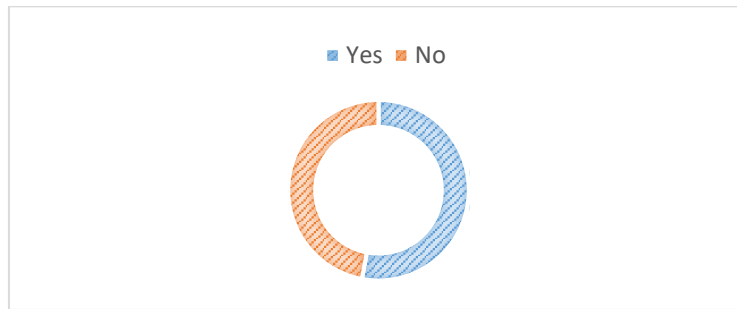
**Figure 30: Responses on importance of sustainable development and ecology as a part of the formal education curricula**

Regarding the experience in supporting eco-innovation, most of the respondents (67%) had already participated in such activities. The results are presented in Figure 32.



**Figure 31: Share of existing experience in supporting eco-innovation**

Results referring to the direct support of eco-innovation are illustrated in the chart within Figure 33 below. Responses were almost evenly distributed with 53% of questioned responding positively and 47% negatively.



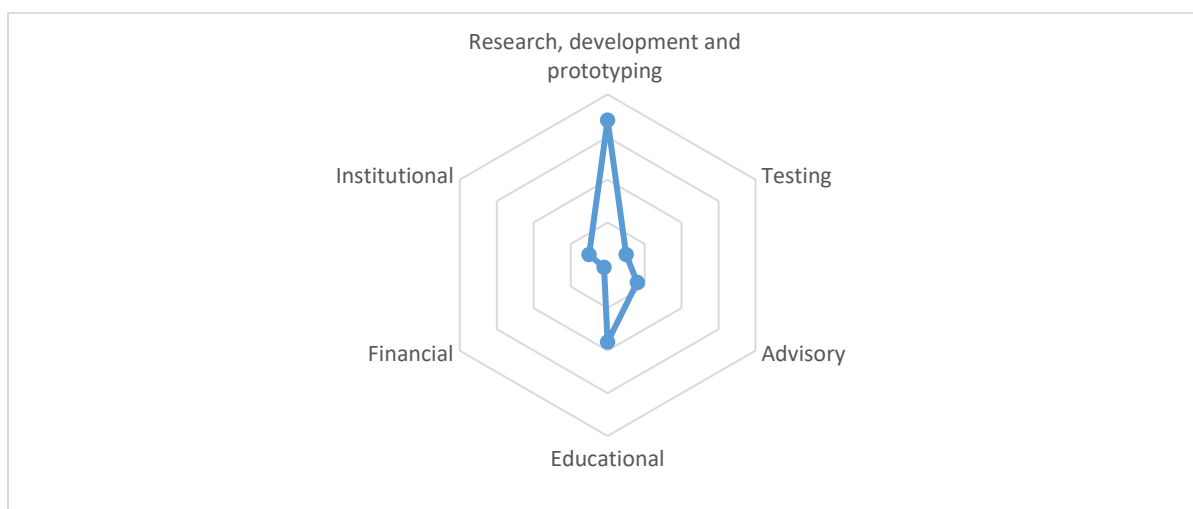
**Figure 32: Share of direct support in eco-innovation**

Table 8 shows responses concerning the type of offered support for eco-innovation. Within 85 acquired responses in 7 different categories, 34 of the respondents felt that when it comes to providing support of eco-innovation, research, development and prototyping is a helpful way and 18 felt that adequate way is education, which is together representative of over a half (61%) of the total response rate. A minority of surveyed prioritized advisory (8 positive responses), testing (5 positive responses) and financial (1 positive responses) type of support as an appropriate way and the rest responded with other (14 positive responses).

<i>Type of support</i>	<b>Frequency</b>	<b>Share [%]</b>
Research, development and prototyping	34	40%
Testing	5	6%
Advisory	8	9%
Educational	18	21%
Financial	1	1%
Institutional	5	6%
Other:	14	16%

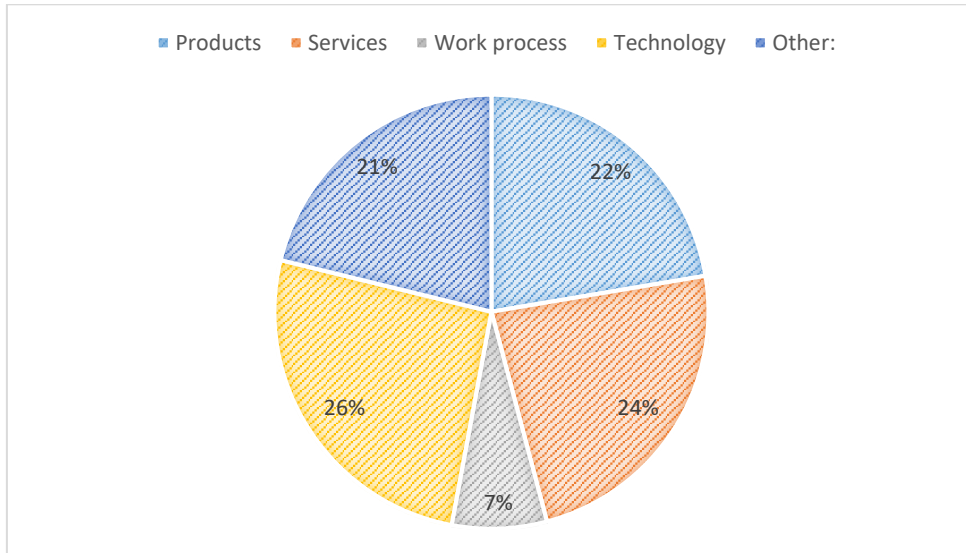
**Table 8: Responses on the types of offered support concerning eco-innovation**

The visual representation of the findings is presented in Figure 34.



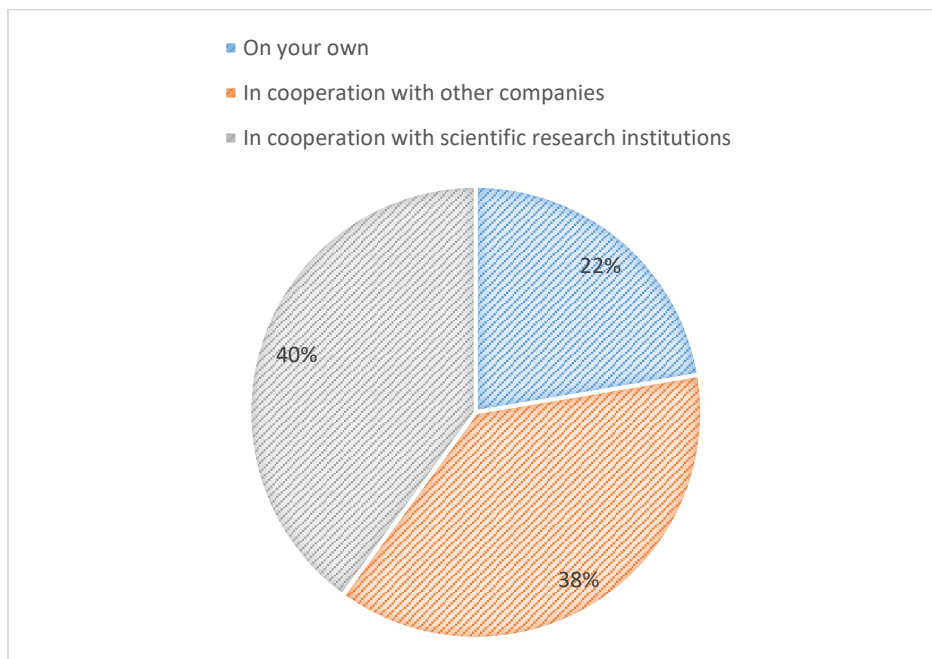
**Figure 33: Types of offered support concerning eco-innovation**

Regarding the past support of application of eco-innovations, the results were pretty much evenly distributed through 4 categories: technology (22 positive responses), services (20 positive responses), products (19 positive responses) and other (18 positive responses). **Only 8 participants supported enterprises or producers in the work process.** Results are presented in Figure 35 below.



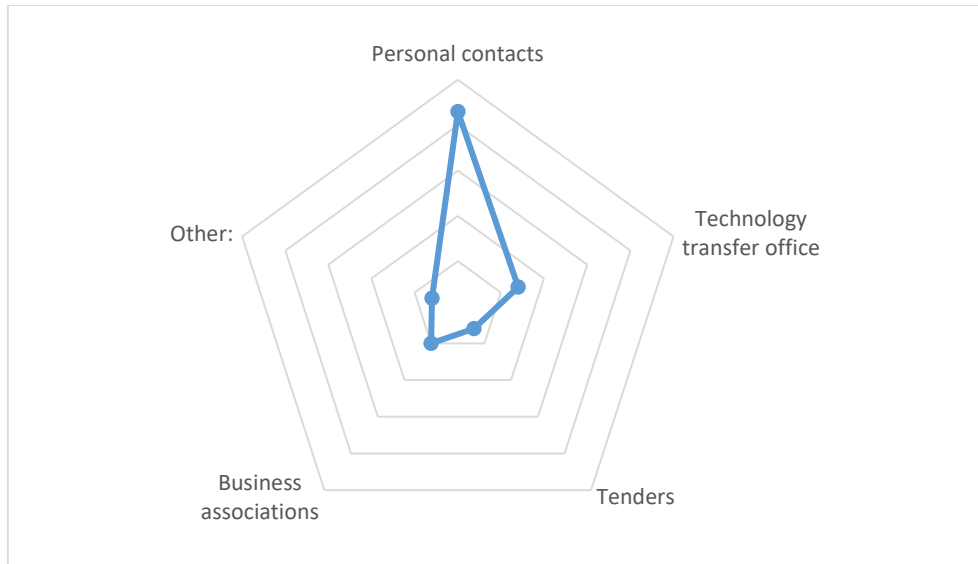
**Figure 34: Shares of the fields of previous application of eco-innovations**

Figure 36 shows that in order to implement eco-innovations, research and development institutions mostly collaborated either with scientific research institutions (34 positive responses) or other companies (32 positive responses), which is representative of 40% and 38% of the total response rate. A little less, 22% of those surveyed (19 participants) provided the support for implementation on their own.



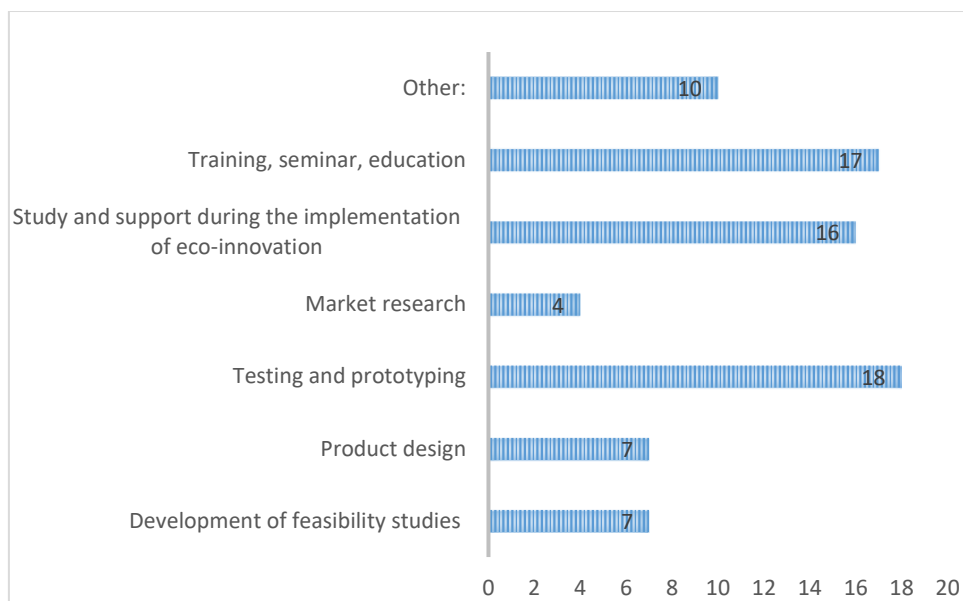
**Figure 35: Responses on support for implementation of eco-innovation**

When locating and establishing first contact with companies or individuals developing eco-innovative products or service, over half of the respondents used personal contacts (43 positive responses). Some of the contacts were formed through technology transfer office (14 positive responses) and small number of contacts through business associations (10 responses), tenders (6 responses) and other (6 responses). The results are illustrated in Figure 37 below.



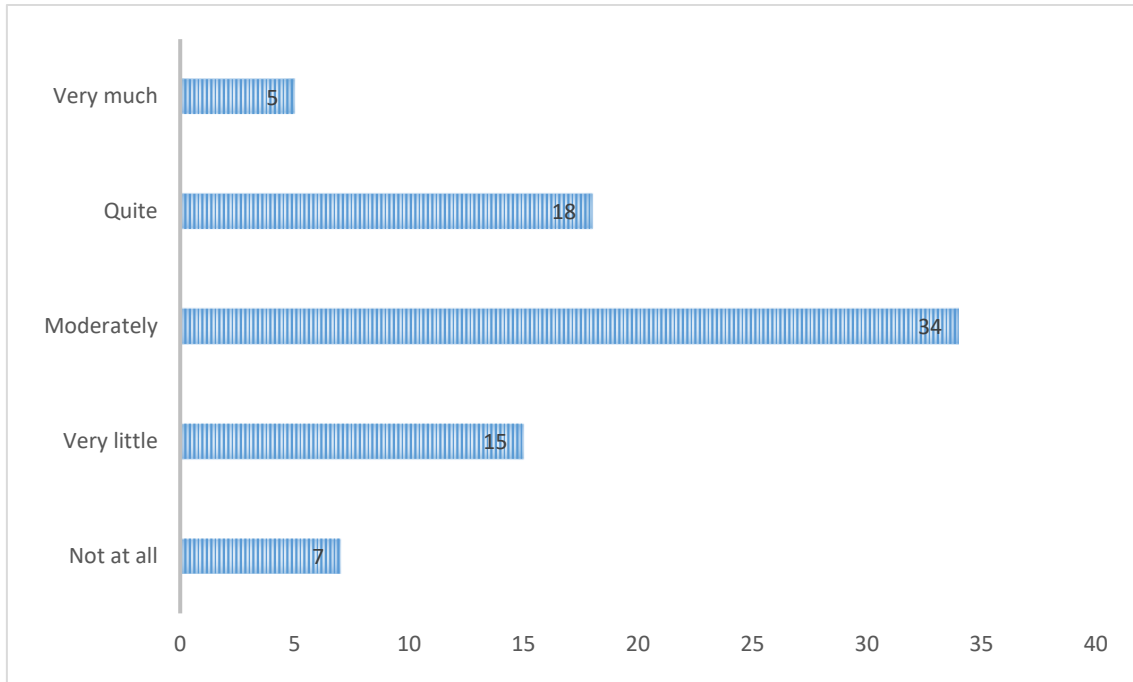
**Figure 36: Ways of locating and establishing first contacts with companies or individuals**

Figure 38 below presents responses regarding institutions' activities included in their work. Of total 79 responses, work was executed in forms of **testing and prototyping by 18 participants; training, seminar and education by 17 participants, and in studying and supporting implementation of eco-innovation by 16 participants**. A same number of participants worked in product design and development of feasibility studies (7 responses for each field) and a very few in market research (4 responses). The rest of the respondents' work included other activities.



**Figure 37: Responses on the research and development part in the work process**

Respondents evaluated their contribution of support on introduction of eco-innovation to their business with one of the five levels as presented in Figure 39 below. A little under three quarters of those questioned (57 responses) evaluated that support on introduction of eco-innovations contributed to their business on at least moderate level. A small number of participants (15) indicated that contribution was very little and a minority with 7 responses recognized no contribution at all.

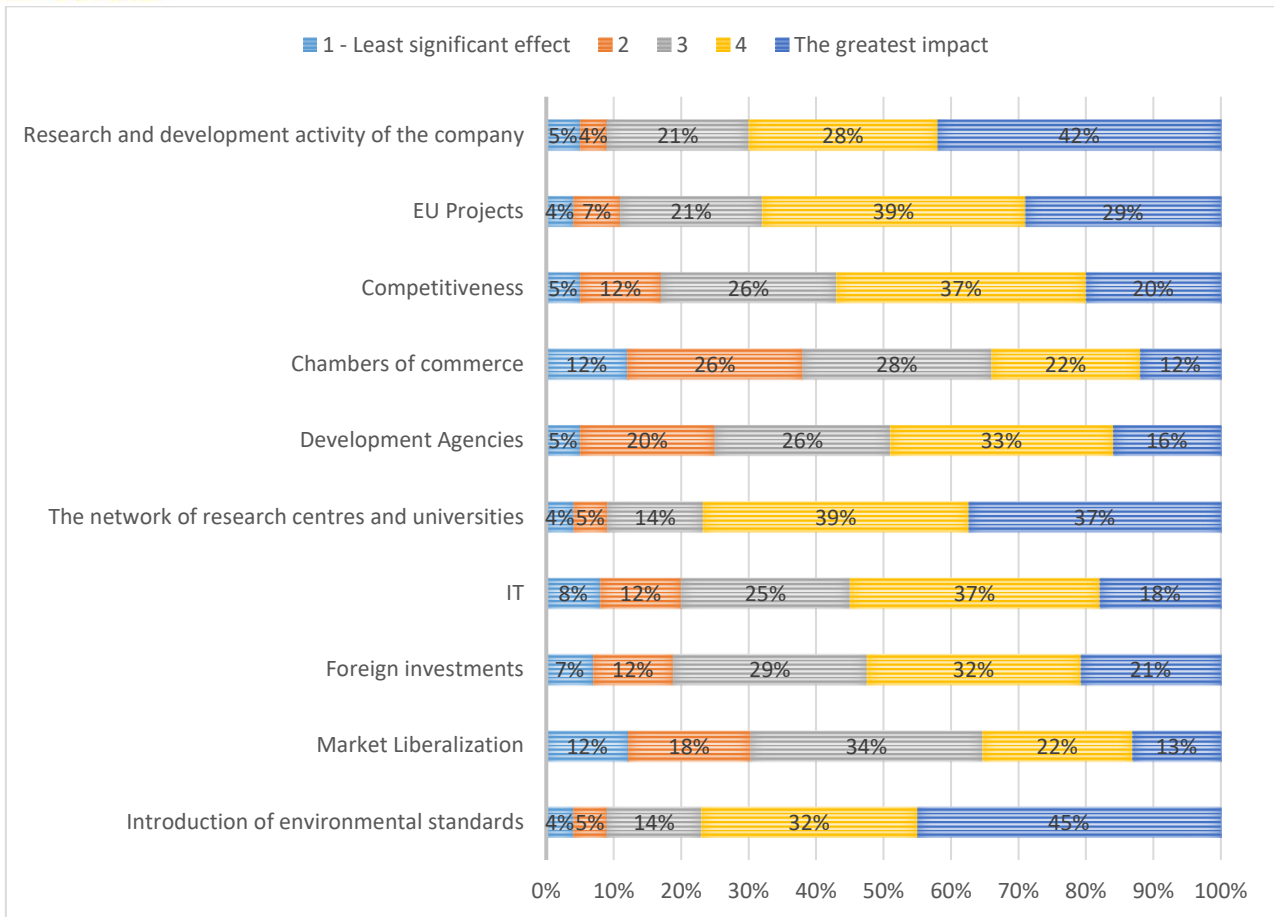


**Figure 38: Distribution of responses for the evaluation of support on introduction of eco-innovation to the companies' improvement of business**

When estimating the effect of various factors on the development of eco-innovation, respondents rated level of impact on a scale from 1 – Least significant effect to 5 – The greatest impact.

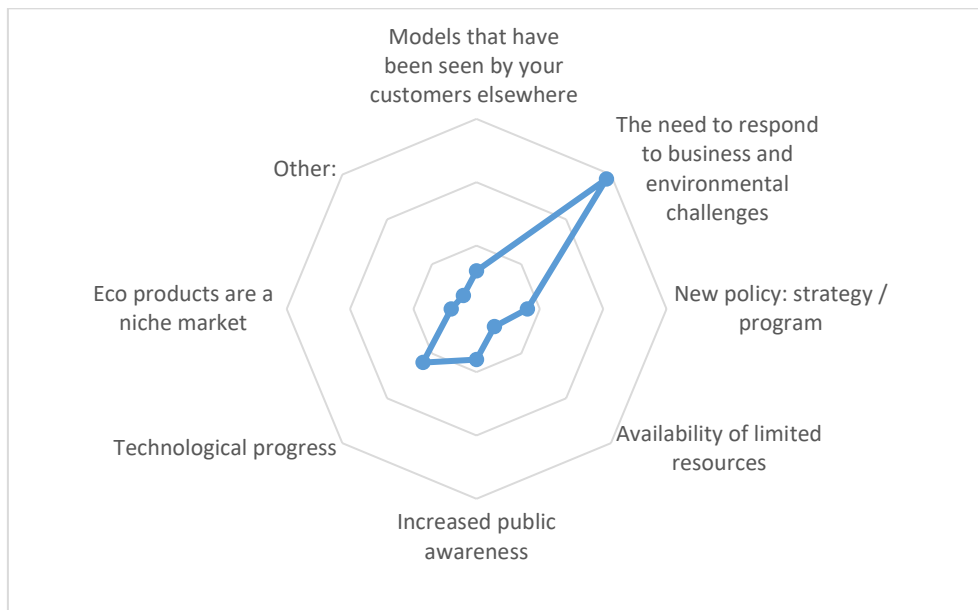
Bar chart within Figure 40 shows participants opinion on an impact of presented factors on progress of eco-innovations. Most of those questioned evaluated that all presented factors mostly had high impact on development of eco-innovation. In respondents' opinion, the greatest impact on development had **introduction of environmental standards (45%)** and **research and development activity of the company (42%)**. The least significant impact on development was represented with lowest shares of total response rates for all factors. When taking into considerations average values, the greatest impact (level 4,1) was caused by an introduction of environmental standards and research and development activity of the company (level 4,0), at the other hand the smallest effect on development (level 3,0) had the chambers of commerce.





**Figure 39: Average distribution of responses for the impact of various factors on the development of eco-innovation**

According to responses presented in Figure 41 below, more than one third of 74 surveyed (with 29 positive responses) felt the need to **respond to business and environmental challenges** was a main encouragement of eco-innovations and some less (with 12 responses) gave the greatest significance to technological progress. A fewer number of participants recognized as the main drivers for eco-innovation remaining options: increased public awareness (8 responses), new policy (8 responses), modes that have been seen by customers elsewhere (6 responses), availability of limited resources (4 responses), eco products are a niche market (4 responses) and other (3 responses).



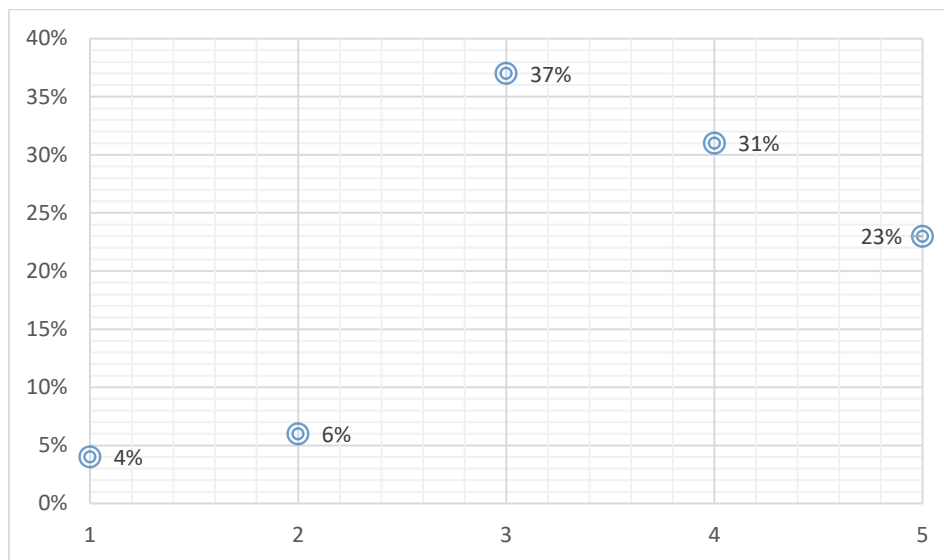
**Figure 40: Responses on the main drivers of eco-innovation amongst R & D's clients**

With respect to the main challenges that occurred when research and development institutions were collaborating with companies in terms of eco-innovation, **one third of respondents (34 responses) recognized lack of knowledge about the role and scope of innovation-supporting and environmental institutions essential**. As quite as challenging was also acknowledged and funding of R & D projects (24 responses) and lack of clients training (19 responses). The rest who answered the question were confronted with problems regarding the low collection rate based on R & D projects (12 responses), poor communication and delivery of internal documents (9 responses) and other (6 responses). Findings are presented in the Figure 42 below.



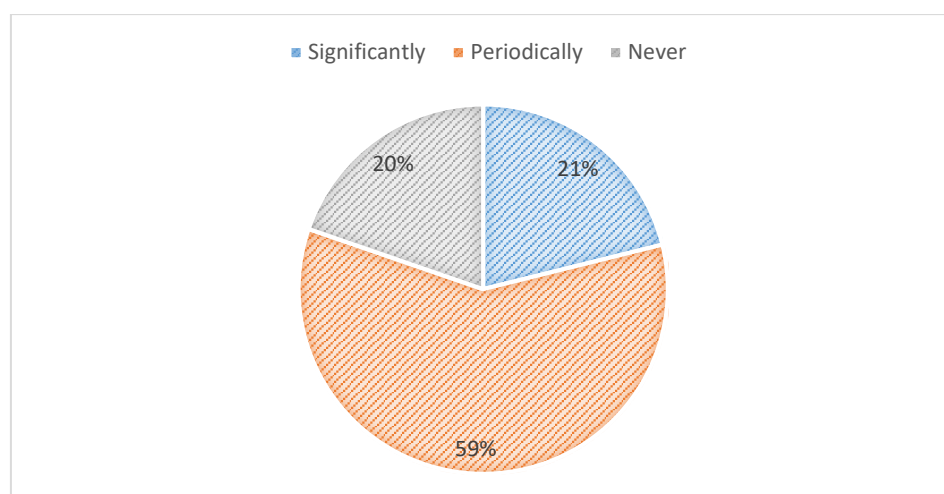
**Figure 41: Responses on the main challenges in R & D's work with companies in terms of eco-innovation**

When evaluating the effect of managements support during work on eco-innovation in companies, respondents rated the impact on a linear scale from 1 – lowest impact and 5 – the greatest impact. Results are presented in Figure 43. The most of respondents (**91%**) felt that managements’ support has a moderate to high impact during work on eco-innovation, ranging from 37% for level 3, 31% for level 4 and 23% for level 5. Only 10% of participants had the opinion that their companies have not met this threshold, with 4% estimating that managements support had a low level of impact.



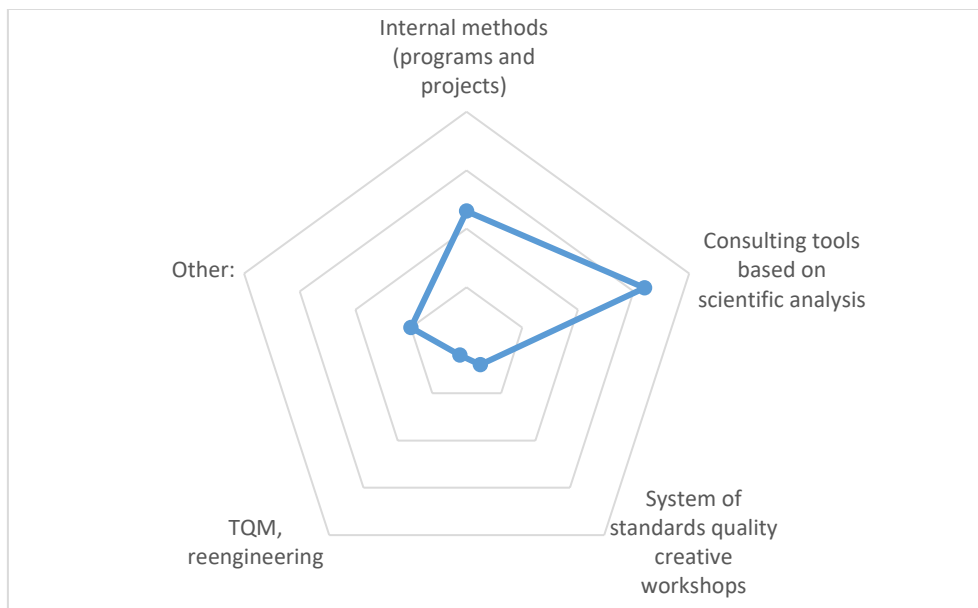
**Figure 42: Distribution of responses for rating the impact of managements support during work on eco-innovation in companies**

With regard to the presence of the consultation processes in the work of research and development institutions, which involves improving the ability of companies and manufacturers to independently create and introduce eco-innovation, less than a quarter of participants (14 responses) had never performed such activities. More than half respondents (42 responses) have periodically executed consultations and 15 of those who answered gave significant mean to a consultation process. Results are illustrated in the pie chart within Figure 44.



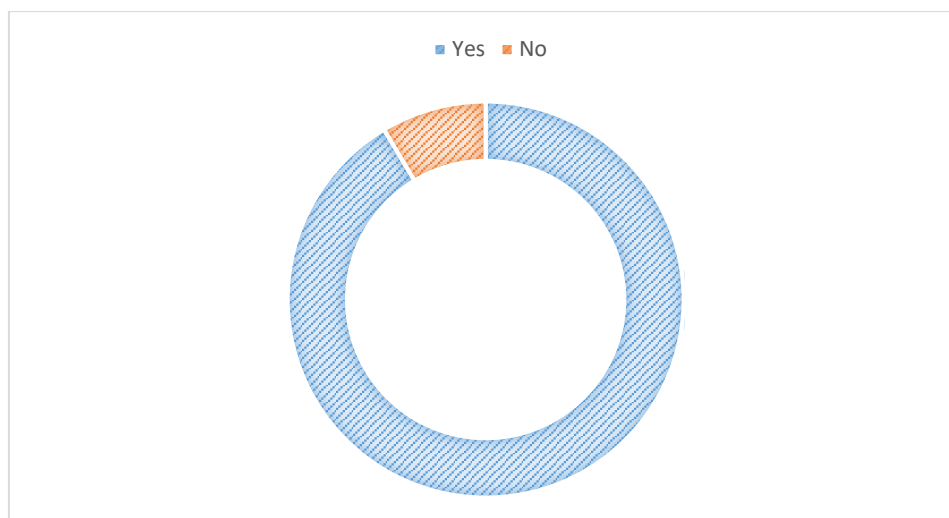
**Figure 43: Frequency of the occurrence of consultation process in work of research and development institutions**

Relating counselling in work process, respondents were offered to choose different support tools and techniques. As shown in a polar chart in a Figure 45, most participants used consulting tools based on scientific analysis (32 responses) or internal methods (23 responses). Just a small number of those surveyed indicated use of system of standards quality creative workshops (4 responses) or TQM, reengineering (2 responses). Others (10 responses) applied different methods. Findings are presented in the Figure 45 below.



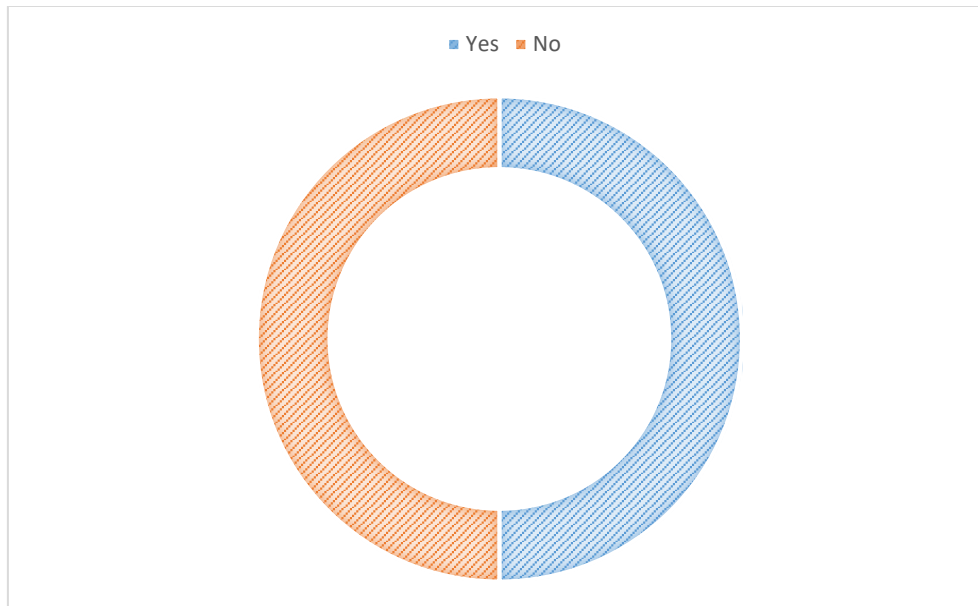
**Figure 44: Basic counselling supporting tools and techniques used by research and development institutions**

With respect to the transfer of knowledge between experts from other regions, most R & D institutions answered positively (64 responses) meaning that work of **91% of those questioned have transferred included some kind of transfer of knowledge**. Remaining participants did not include transfer of knowledge in their work. The results are shown in a Figure 46.



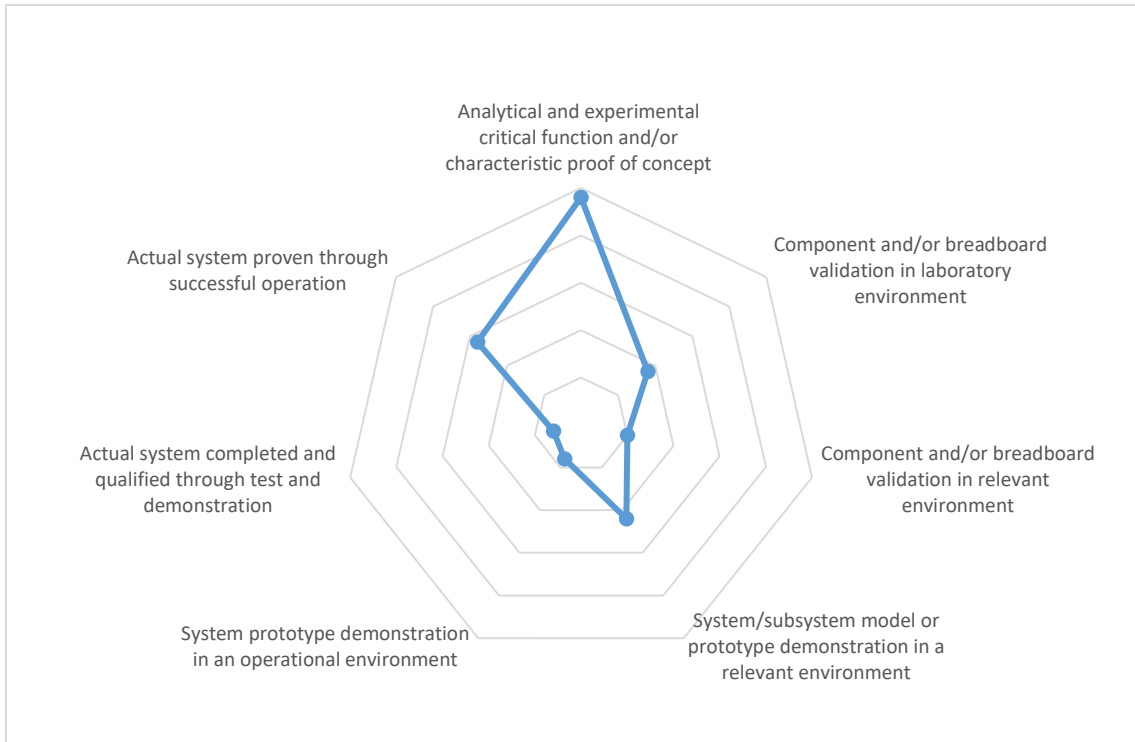
**Figure 45: Share of included transfer of knowledge between experts from other regions**

As presented in a pie chart included in Figure 47, the same number of respondents (35) was either a member of a business association, environmental cluster or similar, and 35 of those questioned was not.



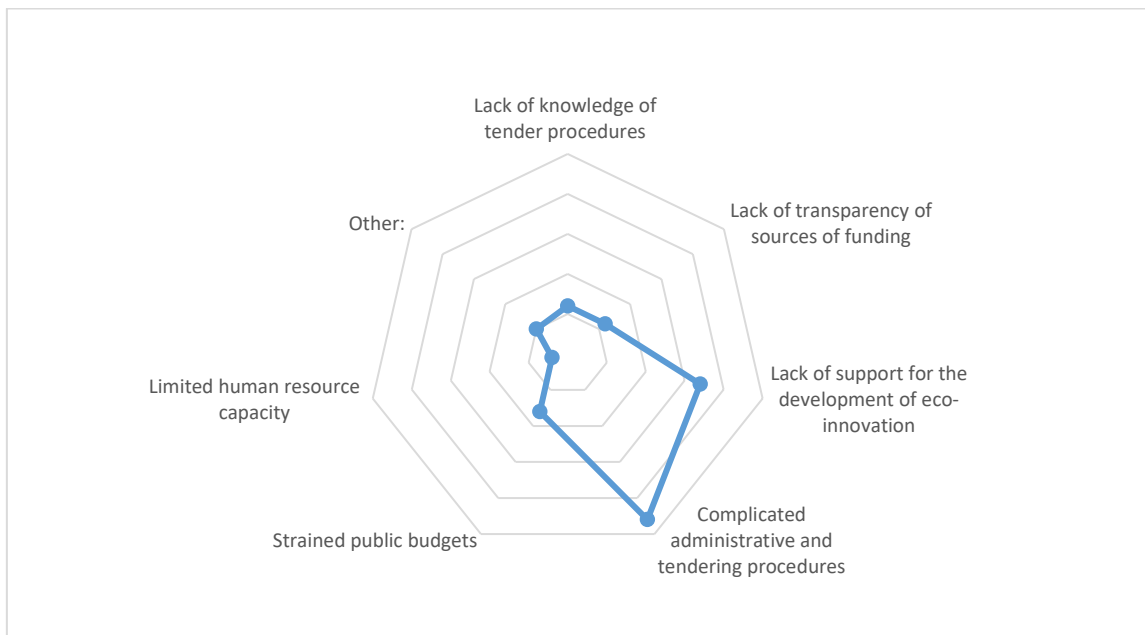
**Figure 46: Share of a R & D's' membership in business association, ecological cluster or similar**

Regarding the current status of ongoing and past projects, participants chose between 7 different phases. Of the total of 70 responses, 24 respondents marked the status of project as analytical and experimental critical function and/or characteristic proof of concept, which is representative of 34% of the total share. Other projects with a fair number of responses had the status of actual system proven through successful operation (14 responses), system/subsystem model or prototype demonstration in a relevant environment (11 responses) and component and/or breadboard validation in laboratory environment (9 responses). Very few participants defined status as component and/or breadboard validation in relevant environment (5 responses), system prototype demonstration in an operational environment (4 responses) and actual system completed and qualified through test and demonstration (3 responses). Results are shown in Figure 48.



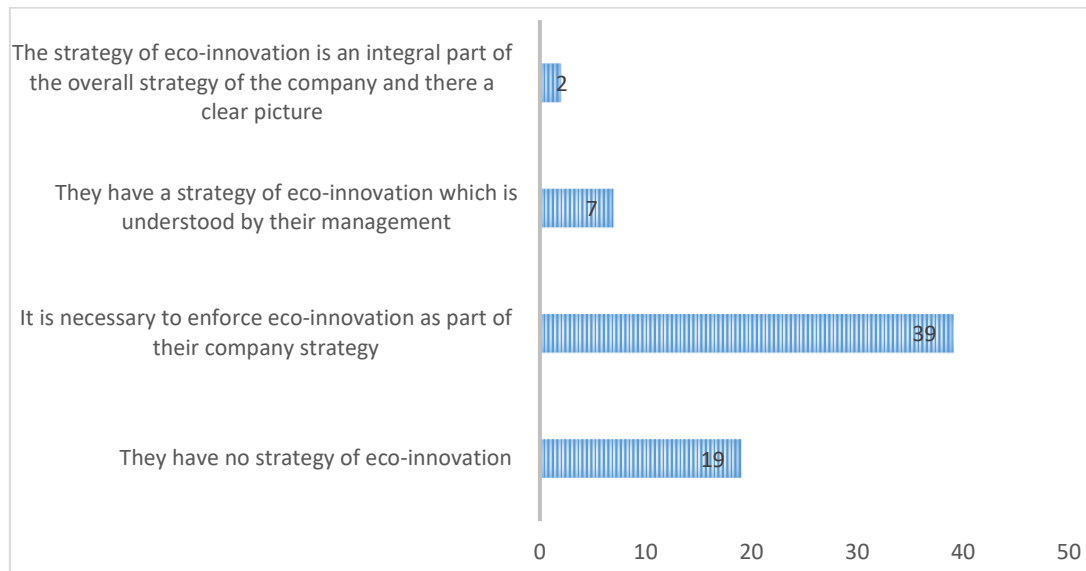
**Figure 47: Responses on the status of eco-innovative projects**

Regarding the financing eco-innovation through public funds, approximately one-third of the participants (34%) with 23 responses had an opinion that **complicated administrative and tendering procedures were the main obstacle**. Another troublesome factor was also lack of support for the development of eco-innovation (17 responses). As not as substantial obstacles, strained public budgets (8 responses), lack of transparency of sources of funding (6 responses), lack of knowledge of tender procedures (6 responses), limited human resource capacity (2 responses) and other obstacles (5 responses) were recognized. Results are presented with polar chart within Figure 49.



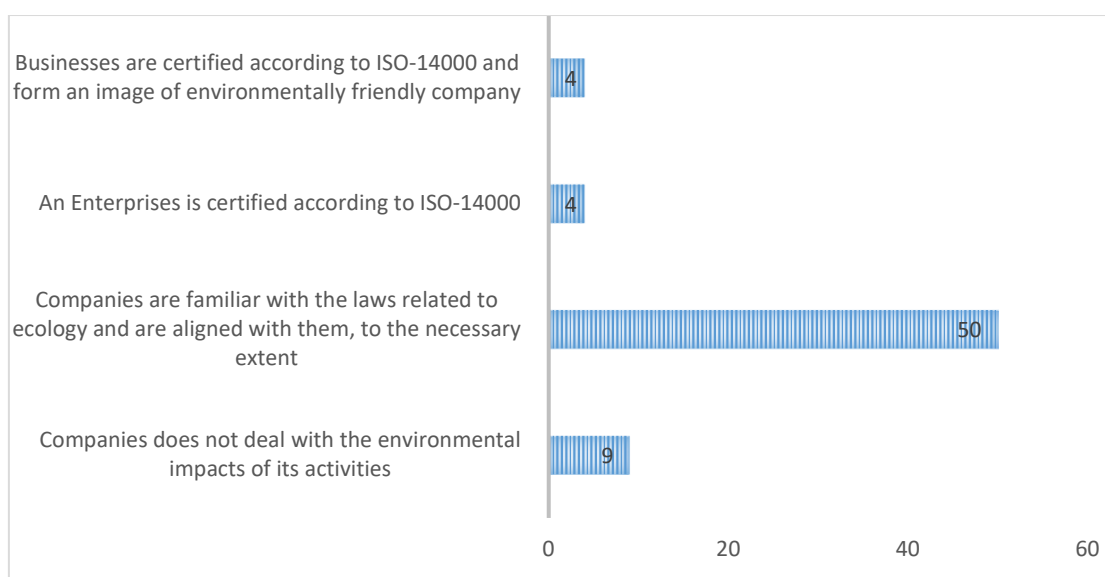
**Figure 48: Main barriers regarding the use public funds for financing eco-innovations**

Participants also provided responses on status of elaboration of strategies on eco-innovation within companies they were cooperating with. Over a half of respondents (58%) felt that it is of great importance to enforce eco-innovation as part of company strategy. On the other hand, only few companies (9 responses) have integrated the strategy, of which **in only 2 instances as an integral part of overall strategy of the company**. A share of companies that have not implemented any kind of policy regarding eco-innovations was 28% (19 responses). The results are presented in Figure 50.



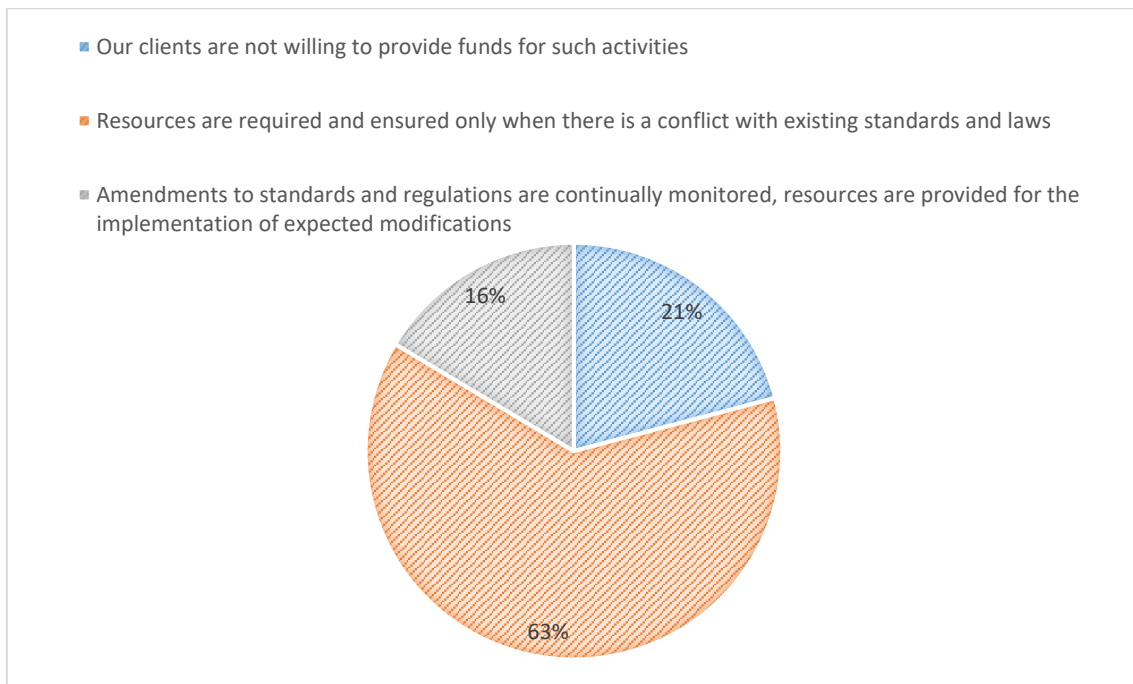
**Figure 49: Response rate regarding elaborating strategies on eco-innovation**

Figure 51 demonstrates respondents' evaluation of affect their clients were causing on the environment. It is obvious that most of the companies were familiar with the laws related to ecology and were aligned with them to the necessary extent (50 responses). Businesses that were certified according to one of the standards were represented with 4 responses each. Only 9 of those questioned stated that their clients did not deal with the environmental impacts of their activities.



**Figure 50: Evaluation of the R & D clients' environmental impact**

When asked, how research and development organizations' clients provided resources for the costs arising from amendments to standards, regulations and laws in the field of quality and environmental protection, the majority (with 42 positive responses) stated that resources were required and ensured only when there was a conflict with existing standards and laws. Amendments to standards and regulations were continually monitored and resources were provided for the implementation of expected modifications by 11 clients. The rest of the participants were collaborating with clients who were not willing to provide funds for mentioned activities (14 responses). Responses are illustrated in a pie chart within Figure 52.



**Figure 51: Responses on clients' providing resources for the cost arising**

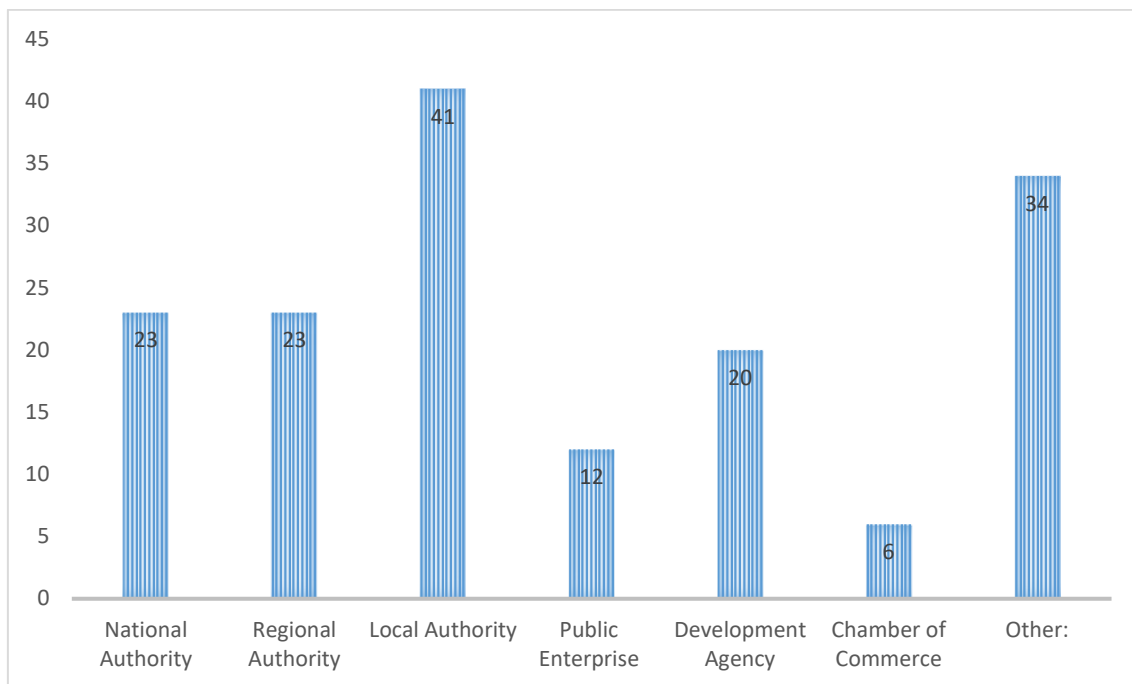


## 4.3 ANALYSIS OF THE SURVEY ON CATEGORY: PUBLIC AUTHORITIES (INSTITUTIONS)

The first set of questions for category of public authorities was used to obtain basic information about the participating institutions, sector identification and their size. 178 valid responses of survey participants were documented.

Figure 53 presents responses on sector identification by the public authorities participating in the survey. Beside offered options, the respondents also identified themselves as university, energy agency, educational institution, business support organization, ministry of culture, magistrate etcetera.

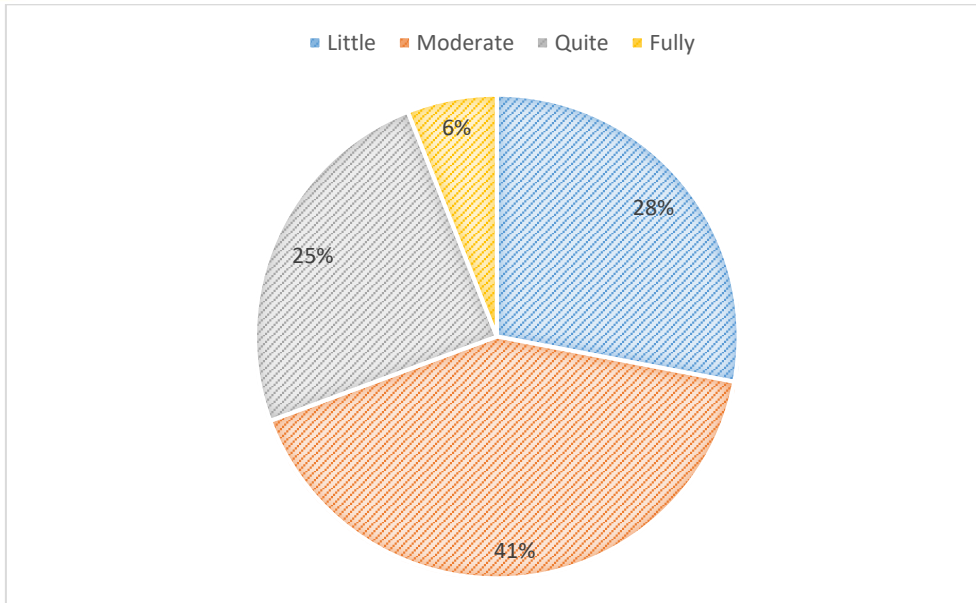
**Public authorities taking part in the survey had an average of 244 (243,7) employees, ranging from smaller institutions with 1 employee to institutions with 6000 employees.**



**Figure 52: Identification of sector for public authorities (institutions)**

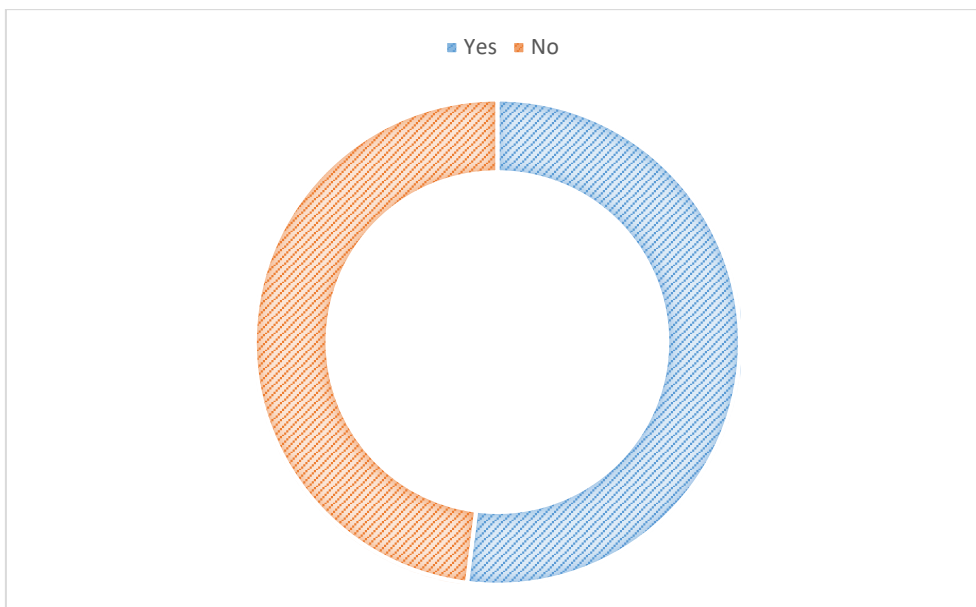
The next section of the questionnaire was designed to obtain information about the familiarity of public authorities with the concept and support of eco innovation.

In this respect, the results were quite positive with at least **72% of those surveyed having at least a moderate understanding and familiarity with eco-innovation**. Respondents who stated that they had little to none understanding and knowledge of the term were representing 28% of total response rate. The results are presented in a pie chart within Figure 54.



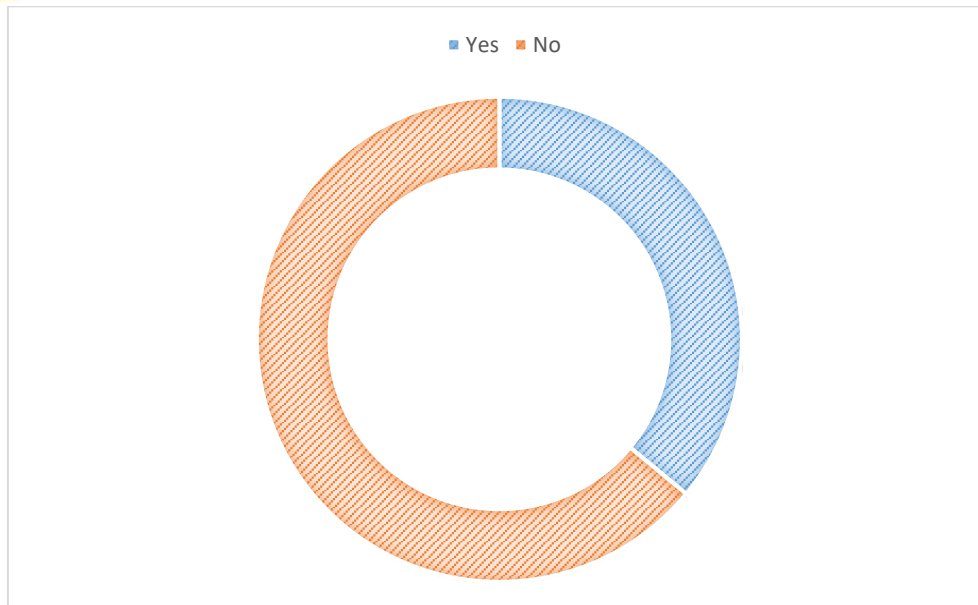
**Figure 53: Familiarity of public authorities (institutions) with the concept of eco-innovation**

Regarding the support of eco-innovations, over a half (52%) of the questioned stated that they had previous experience in supporting eco-innovations. Results are presented in Figure 55 below.



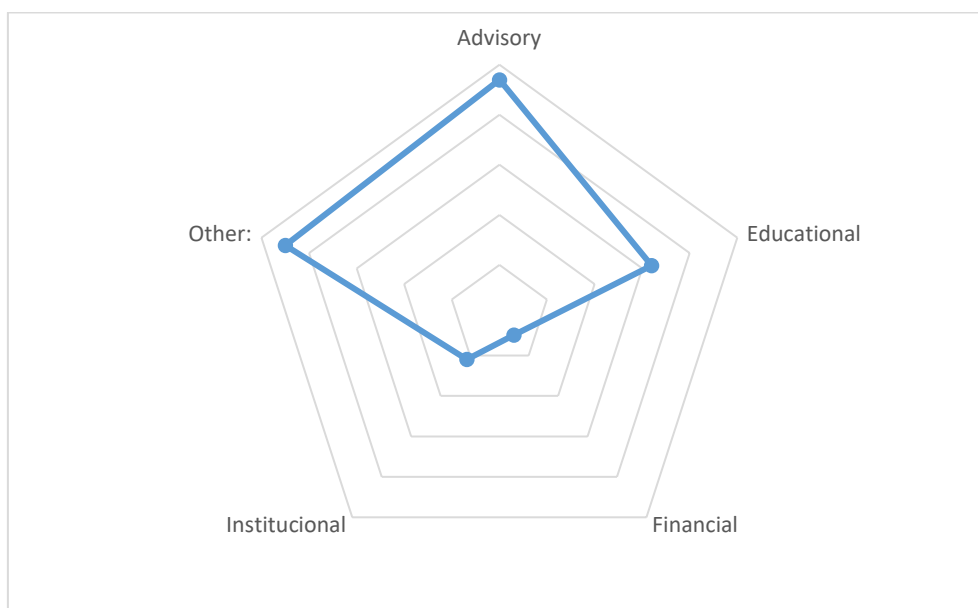
**Figure 54: Share of previous experience in supporting eco-innovation within public authorities (institutions)**

Figure 56 presents responses on the provided direct support in eco-innovation. Most of the surveyed institutions (64%) did not provide direct support in eco-innovation.



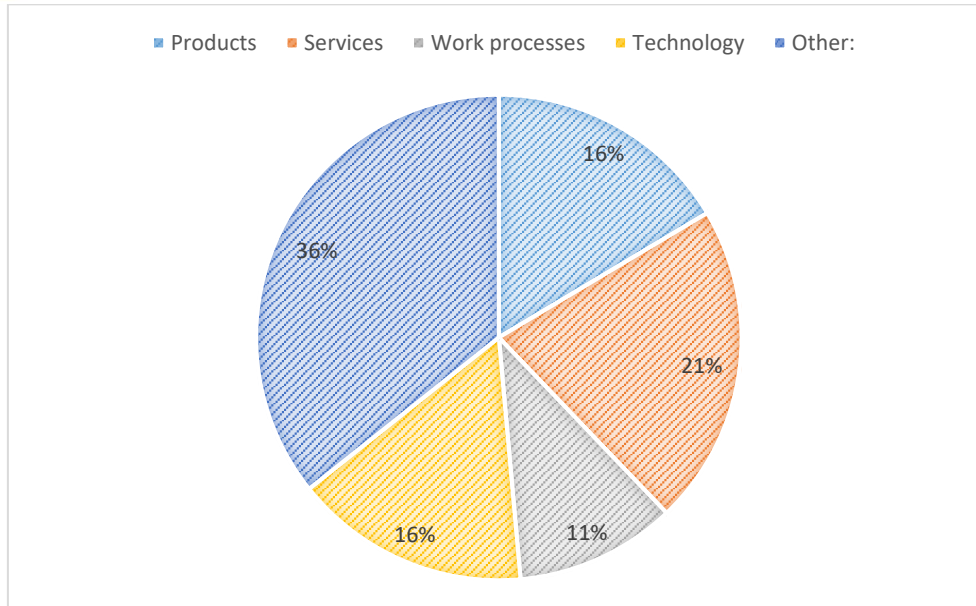
**Figure 55: Share of provided direct support in eco-innovation within public authorities (institutions)**

According to responses on offered types of support concerning the eco-innovation, more than half of participants expressed it through advisory (34%) and education (23%). Very few participants (12%) offered institutional and financial support. The rest of public authorities supported eco-innovation in other ways. Results are presented in Figure 57.



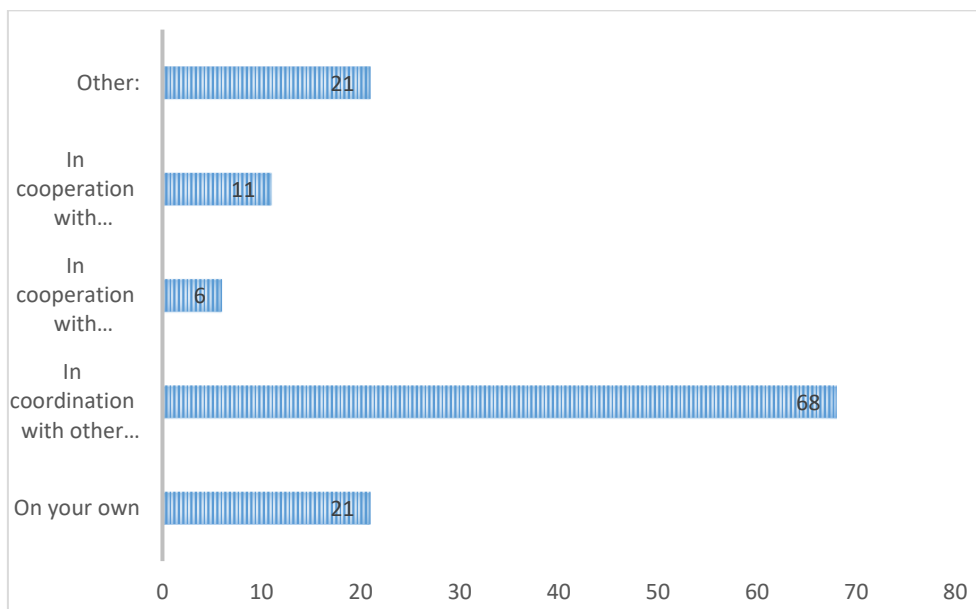
**Figure 56: Types of offered support concerning eco-innovation by public authorities (institutions)**

In response to the question about a support of enterprises and producers of eco-innovation in the last three years, respondents offered support in the fields of services (30 responses), products (23 responses), technology (22 responses), work processes (15 responses) and other (50 responses). Percentage share is presented with a pie chart within Figure 58.



**Figure 57: Shares of the fields of previous application of eco-innovations within public authorities (institutions)**

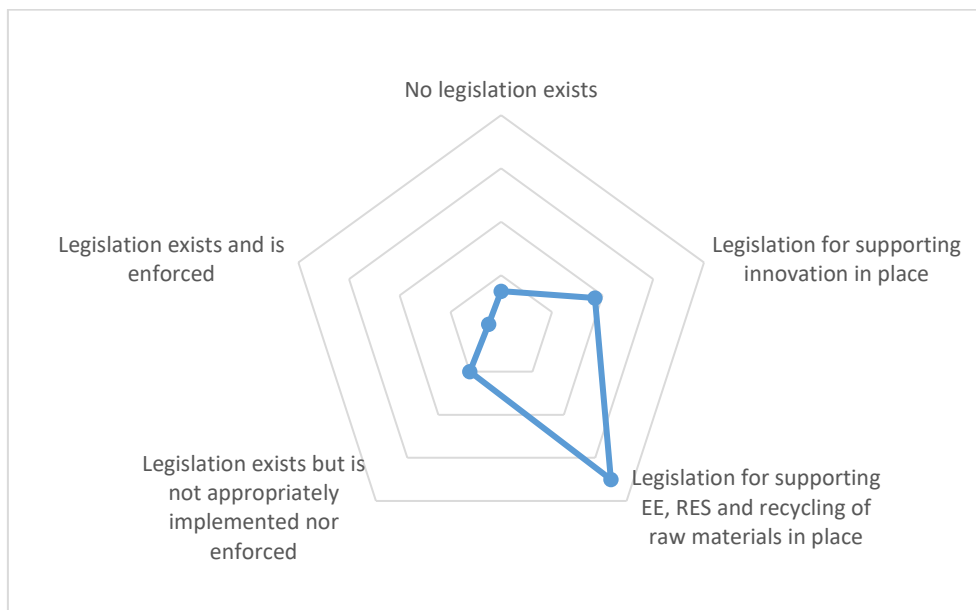
With regard to the provided support for the introduction of eco-innovation, the majority of respondents provided support cooperation. Over half of questioned (**54%**) **encouraged eco-innovation in coordination with other institutions**. The rest of the participants cooperated either with scientific research institutes (9%), business enterprises (5%) or others (17%). Only 17% of surveyed has provided support on their own.



**Figure 58: Responses on support for the introduction of eco-innovation**

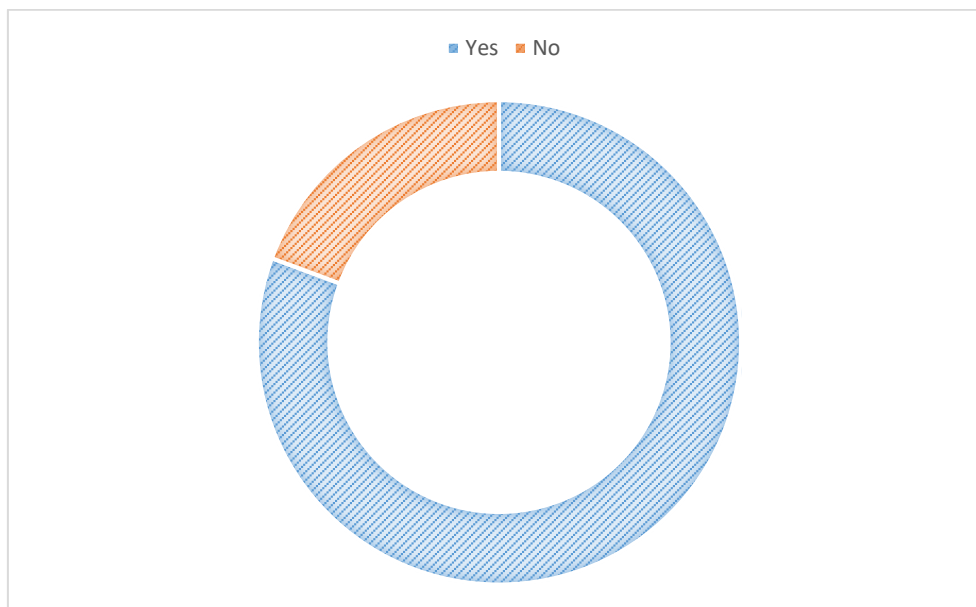
Figure 60 represents the opinion of responses regarding the status of legislation on eco-innovations at national/regional level. The question allowed multiple answers, which resulted in a combined 146 responses across all five categories. In most countries, there was some sort of legislation on eco-innovation, as a matter of fact just under half of the participants (48%) stated that legislation for supporting EE, RES and recycling of raw materials was in place

and 25% of the participants had legislation for supporting innovation in place. Legislation existed and was enforced by just 3% of those surveyed or existed but was not appropriately implemented nor enforced by 14% of those surveyed. Just a small number of those questioned (10%) indicated that no legislation regarding this matter existed.



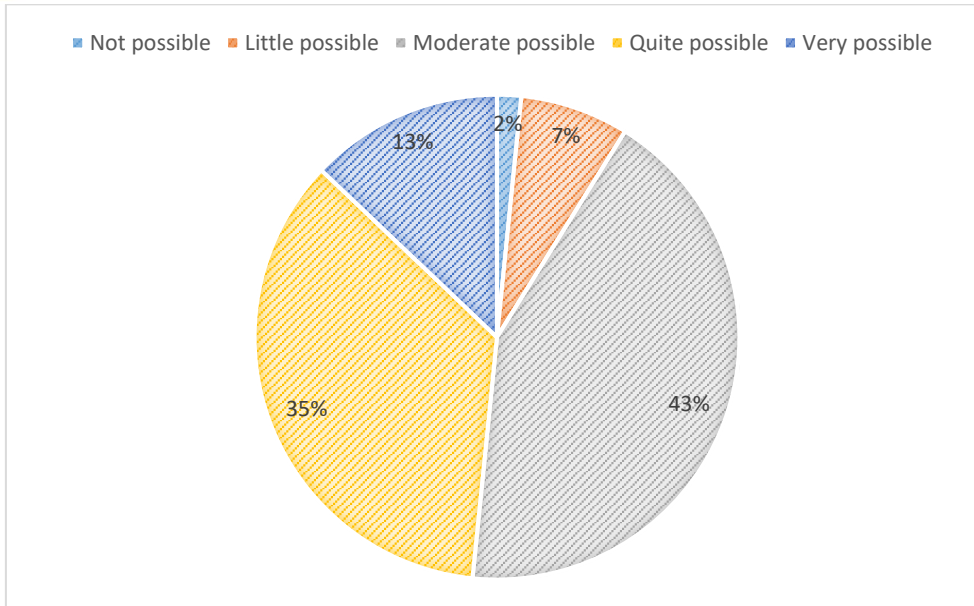
**Figure 59: Status of legislation on eco-innovations at national/regional level**

The majority of questioned public authorities (81%) felt that existing legislation should be modified. The results are presented in Figure 61.



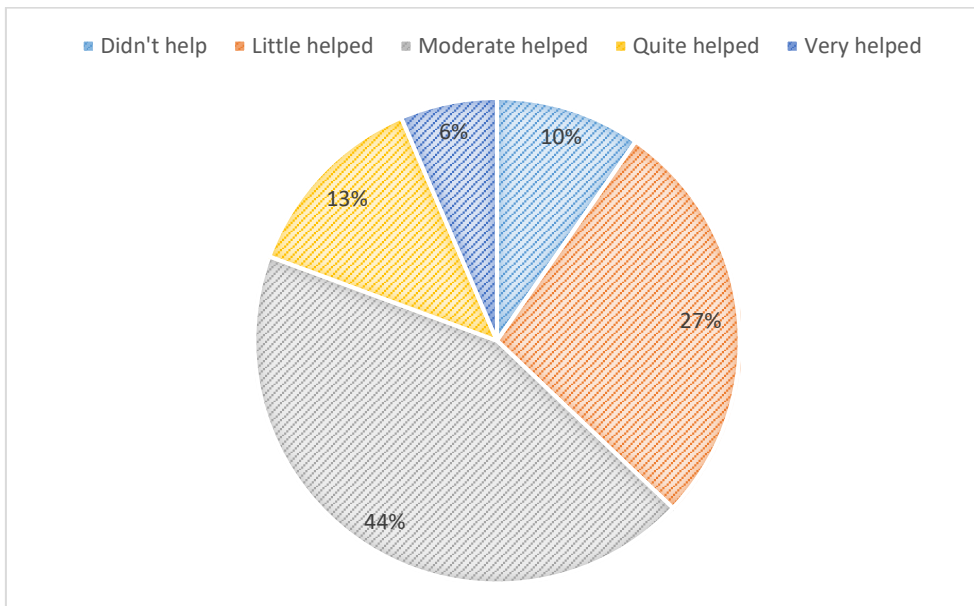
**Figure 60: Share of necessity of amendment of existing legislation**

In response to the question regarding the possibility to simplifying financing of eco-innovation, only 2% of participants stated that it was not possible at all and 7% stated that possibility was little. On the other hand, a total of 91% participants recognized at least moderate possibility to facilitate financing of eco-innovation. Results are illustrated in Figure 62.



**Figure 61: Opinions on simplifying financing of eco-innovation**

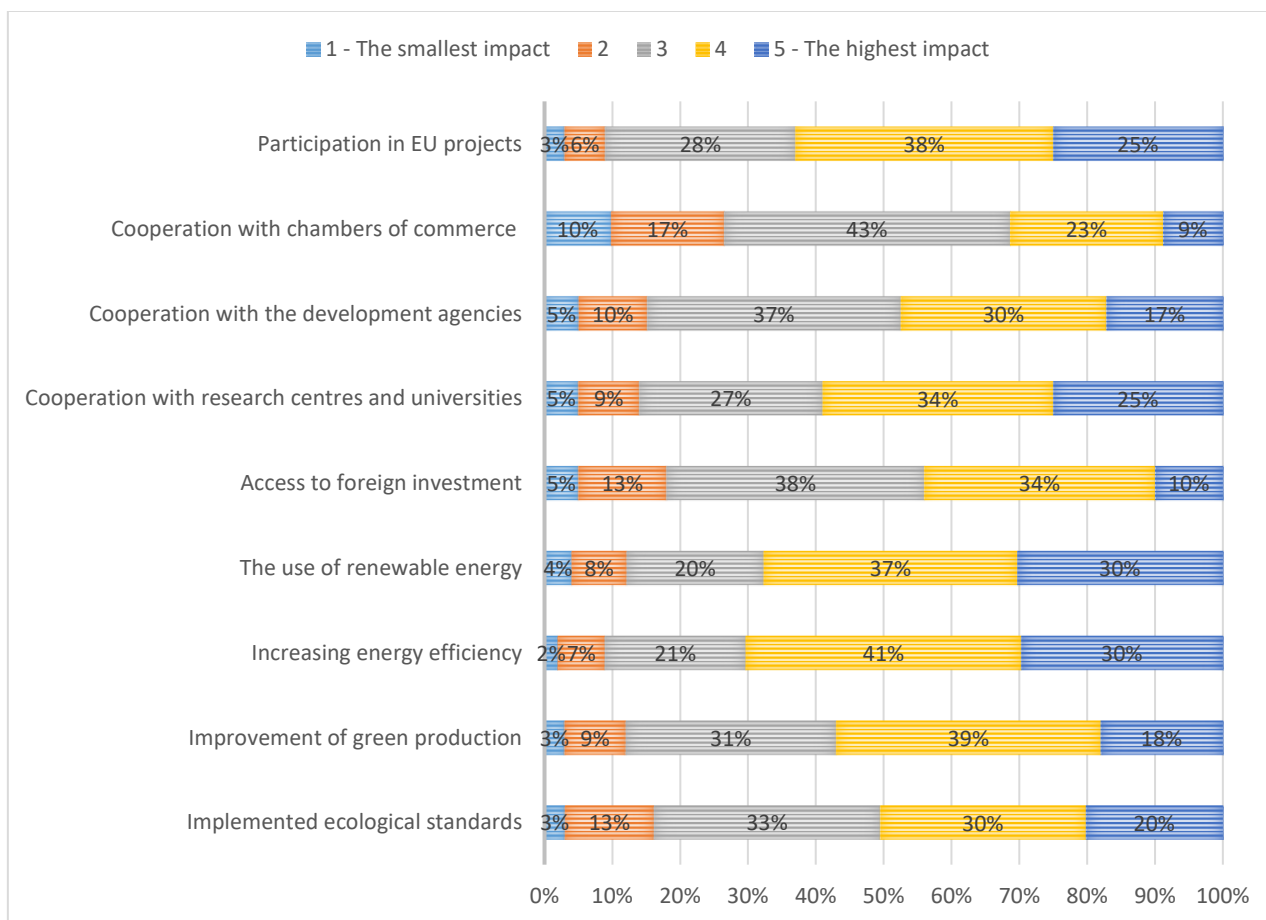
According to respondents' opinion on their support of eco-innovation, the results were quite positive with at least **63% of participants stating they helped on at least moderate level** the advancement of green production, increase the energy efficiency and use of renewable energy. Approximately 37% of respondents stated that they had little helped or didn't help at all. The results are presented within a pie chart in Figure 7.



**Figure 62: Opinions on the help of provided support regarding the advancement of green production, increase the energy efficiency and use of renewable energy**

When evaluating impact of different factors on eco-innovation up-take, public authorities rated level of impact on a scale from 1 – The smallest impact to 5 –The highest impact. Respondents evaluated that all factors mostly had modest to high impact on up-take. Within various factor, the highest impact on eco-innovation up-take was recognized in the use of renewable energy (30%) and increasing energy efficiency (30%). When taking into considerations average values, public authorities recognized increasing energy efficiency, use of renewable energy and participation in EU

projects with levels 3,9; 3,8; and 3,8 as most influential factors according to their impact on eco-innovation. As the least significant factor with average value of 3, cooperation with chambers of commerce was acknowledged.



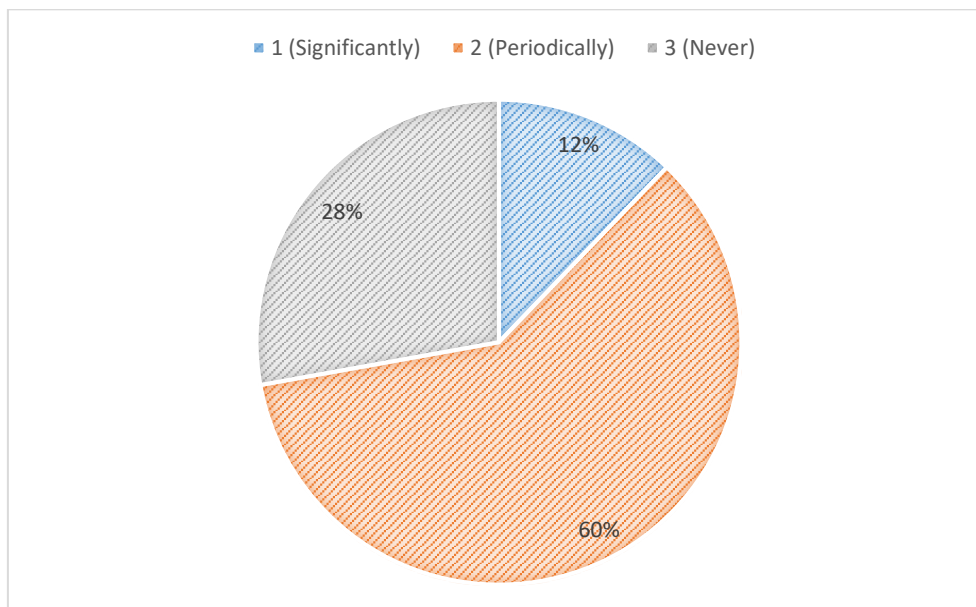
**Figure 63: Average distribution of responses for the impact of various factors on eco-innovation up-take**

In the respect of main challenges that occurred when public authorities were collaborating with companies in terms of eco-innovation, just under one third of respondents (31%) recognized “lack of knowledge about the role and scope of innovation-supporting and environmental institutions” essential. As quite as challenging was also “acknowledged lack of knowledge on competition’s ecological innovations and improvements” with 21% of the total share and “a lack of clients knowledge” marking a 17 % of overall share. The rest of the surveyed were confronted with challenges regarding that ambiguity and misinterpretation of legislation (14%) and poor communication and delivery of internal documents (9%) and other (8%). Findings are presented in the Figure 65 below.



**Figure 64: Responses on the main challenges when working with companies**

With regard to the consultation process in work of public authorities, **approximately 60% of the questioned were periodically improving** the ability of companies and manufacturers to independently create and introduce eco-innovation. Twelve per cent of the respondents felt that consultation process was significant part of their work, however 28 % of those questioned had never worked in this direction. Results are presented in Figure 66.

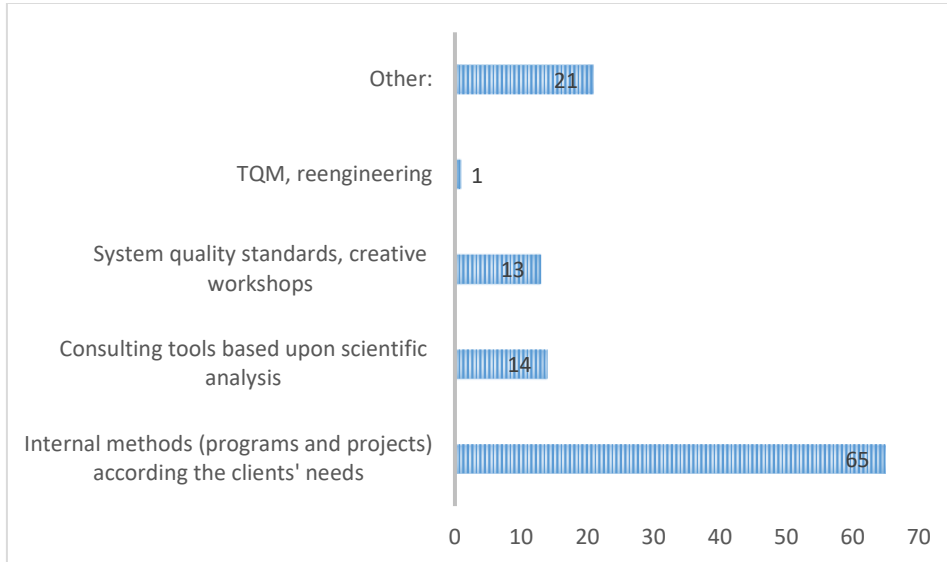


**Figure 65: Frequency of the presence of consultation process in work of public authorities**

The next part of the survey focused on public authorities (institutions) was used to obtain basic information about their cooperation with clients.

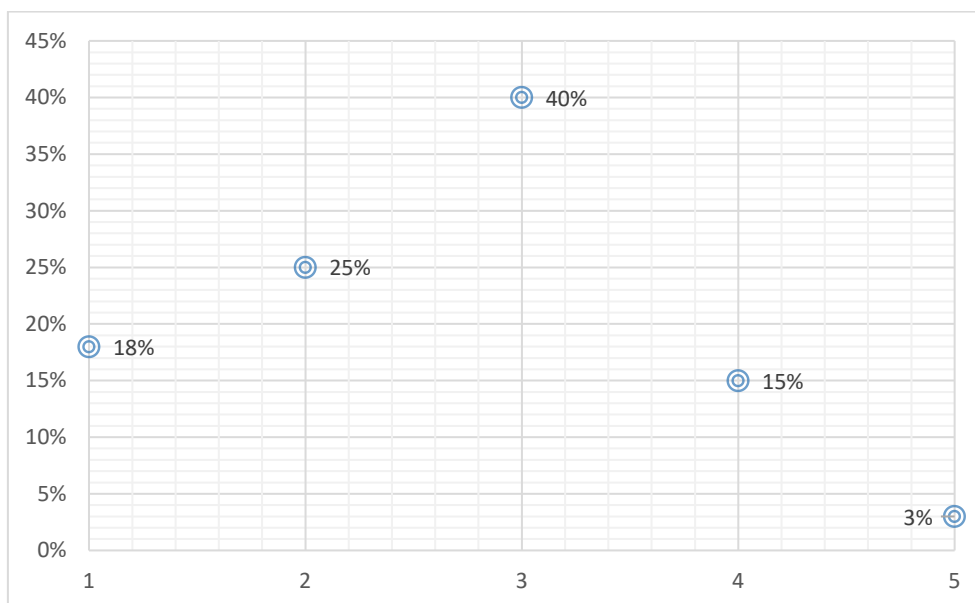


More than a half of those questioned (57%) applied internal methods (programs and projects) according the clients' needs as the basic counselling support tool and technique in their work with clients. A smaller number of those questioned indicated the use the use of consulting tools based upon scientific analysis (12%), system quality standards and creative workshops (11%) and TQM, reengineering (1%). The rest of the participants used other (18%) counselling support tools and techniques. Results are presented in a bar chart within Figure 67.



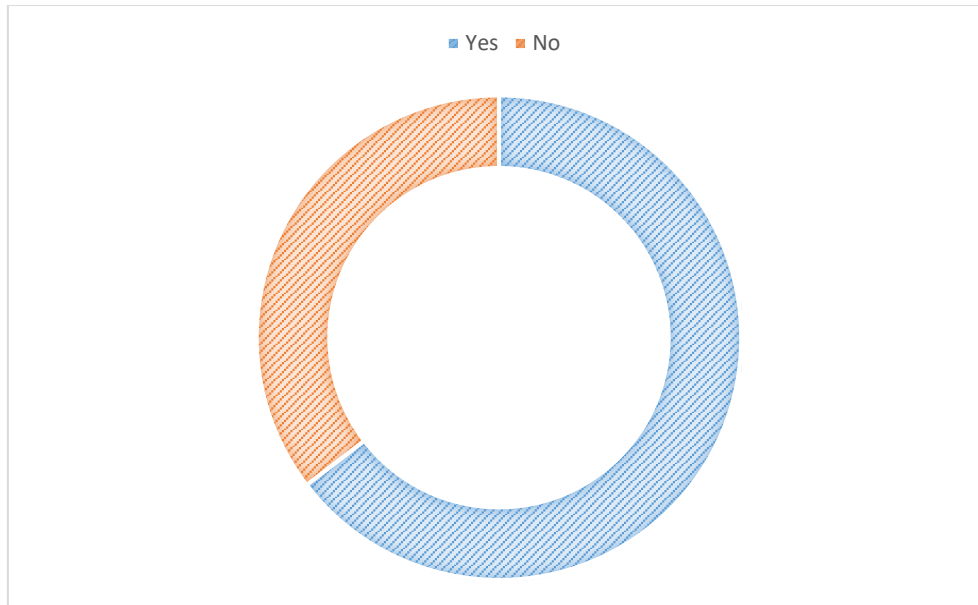
**Figure 66: Responses on basic counselling supporting tools and techniques used by public authorities**

When evaluating the level of interest of client for the work on eco-innovation, respondents rated clients' interest on a linear scale from 1 – smallest interest and 5 - highest interest. Results are illustrated in Figure 68 below. Over a half of respondents (58%) evaluated moderate to high interest for work on eco-innovation within their clients, ranging from 40% for level 3, 15% for level 4 and 3% for the highest possible grade. Approximately 43% of participants had the opinion that their clients don't meet this threshold with 18% evaluating that their clients expressed a smallest level of interest for discussed subject.



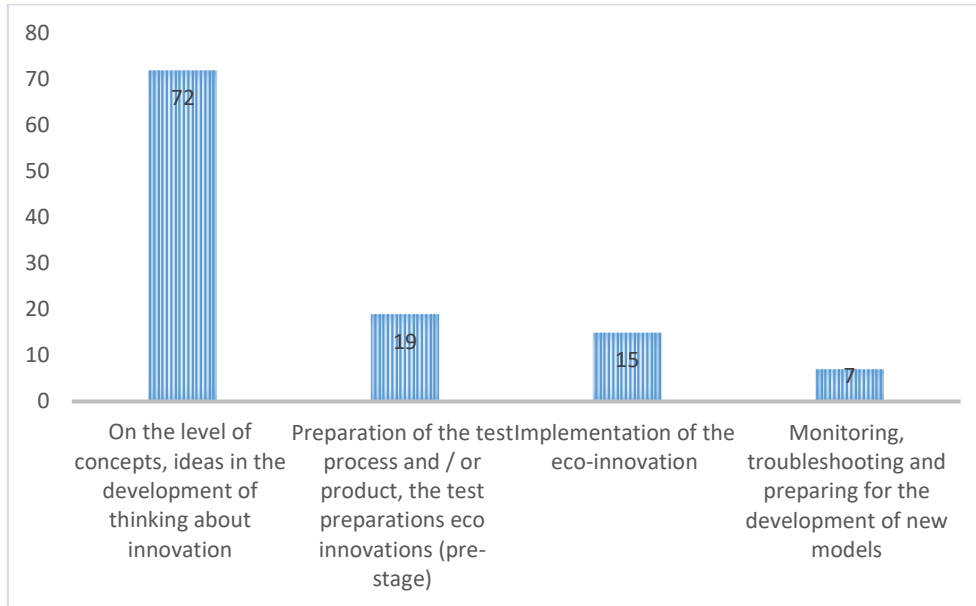
**Figure 67: Responses on interest of public authorities' clients for the work on eco-innovation**

With respect to the transfer of knowledge between experts from other regions, under two thirds (65%) of public authorities' answered negatively. Thirty-five per cent of those surveyed stated that their included transfer of knowledge between experts. The results are shown in a Figure 69.



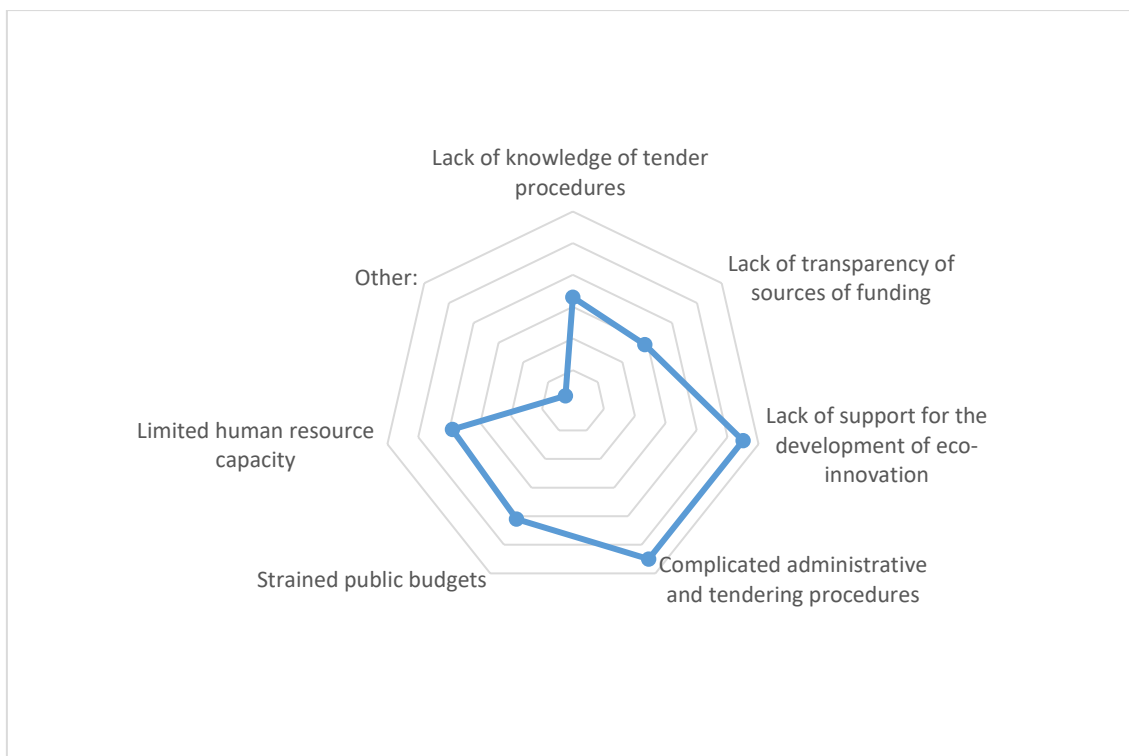
**Figure 68: Share of included transfer of knowledge between experts from other regions in work of public authorities**

Responses regarding current status of eco-innovative project are presented in Figure 70. Of the total 113 of responses, 72 respondents marked the status of project on the level of concepts, ideas in the development of thinking about innovation, which is representative of 64% of the total response rate. Fewer participants marked project stage as preparation of the test process and/or product, the test preparations eco innovations (17%) or implementation of the eco-innovation (13%). The smallest number of projects (6%) was in the stage of monitoring, troubleshooting and preparing for the development of new models.



**Figure 69: Responses on the current status of eco-innovative projects participating in financing**

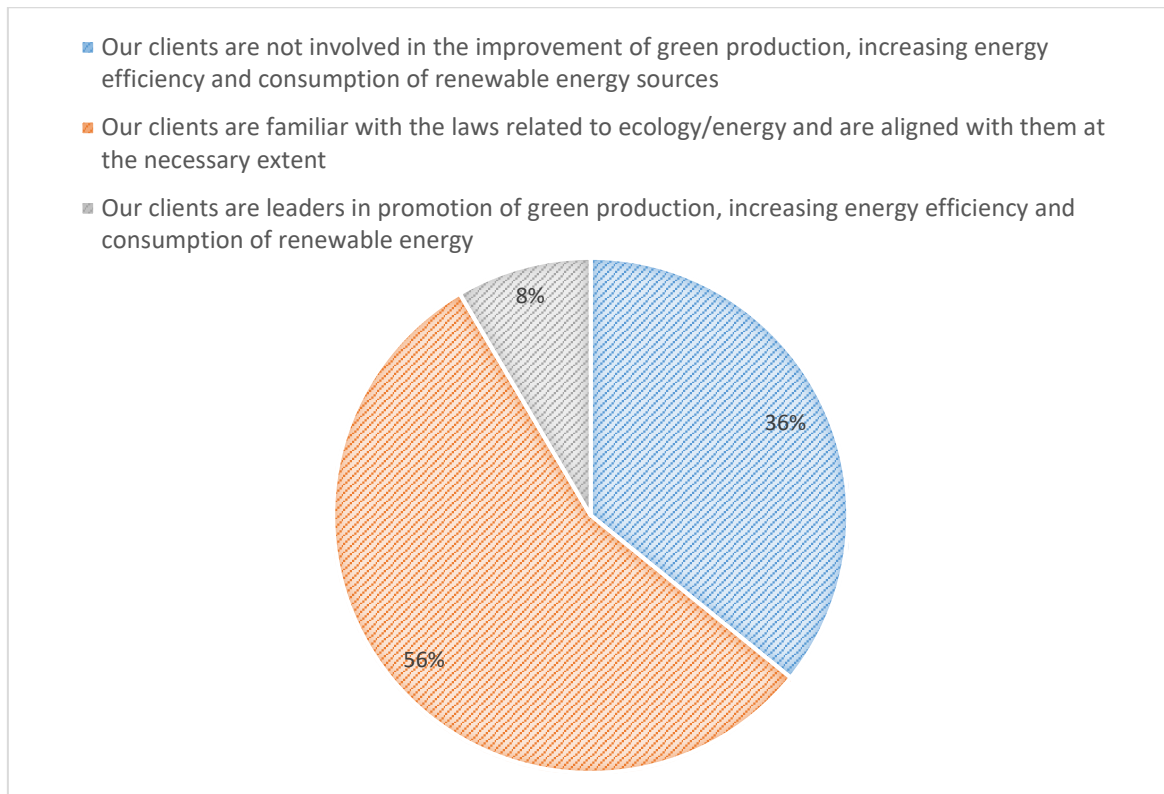
Figure 71 represents the responses regarding the financing eco-innovation through public funds. The question allowed multiple answers, which resulted in a combined 255 responses across all seven categories. A higher number of respondents felt that **main barriers regarding the use of funds were complicated administrative and tendering procedures (22%) and lack of support for the development of eco-innovation (22%)**. Other troublesome factors were also strained public budgets (16%), limited human resource capacity (15%) and lack of knowledge of tender procedures (13%). As the least influential factor participants recognized the lack of transparency of sources of funding (11%). Results are presented with polar chart within Figure 71.



**Figure 70: Main barriers regarding the use public funds for financing eco-innovations**

The final part of the survey aimed at public authorities (institutions) presented questions regarding the activities and resources of their clients.

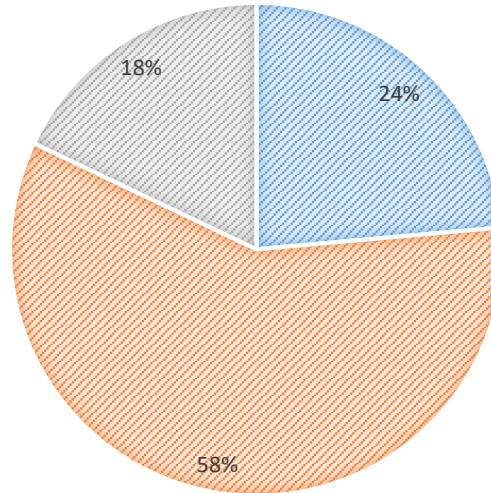
With regard to the activities at the promotion of green production, increasing energy efficiency and consumption of renewable energy, more than a half (56%) of respondents' clients were familiar with the laws related to ecology/energy and were aligned with them at the necessary extent. However, a quite large share of public authorities' clients (36%) were not involved in such activities. **Only 8% of those questioned stated that their clients were leaders in promotion of green production, increasing energy efficiency and consumption of renewable energy.** Results are illustrated in Figure 72.



**Figure 71: Shares of impact of the activities of clients of the public institutions at the promotion of green production, increasing energy efficiency and consumption of renewable energy**

A pie chart within Figure 73 is showing responses regarding a cost increase in the field of quality and environmental protection. The majority of participants (58%) stated that resources for costs arising from amendments to standards, regulations and laws were required and ensured only when there was a conflict with existing standards and laws. Eighteen per cent of clients were continually monitoring the amendments to standards and regulations, therefore the resources for the implementation of expected modifications were provided. Clients that were not willing to provide funds (or to invest finances) for such activities were representing a 24% of the total response rate.

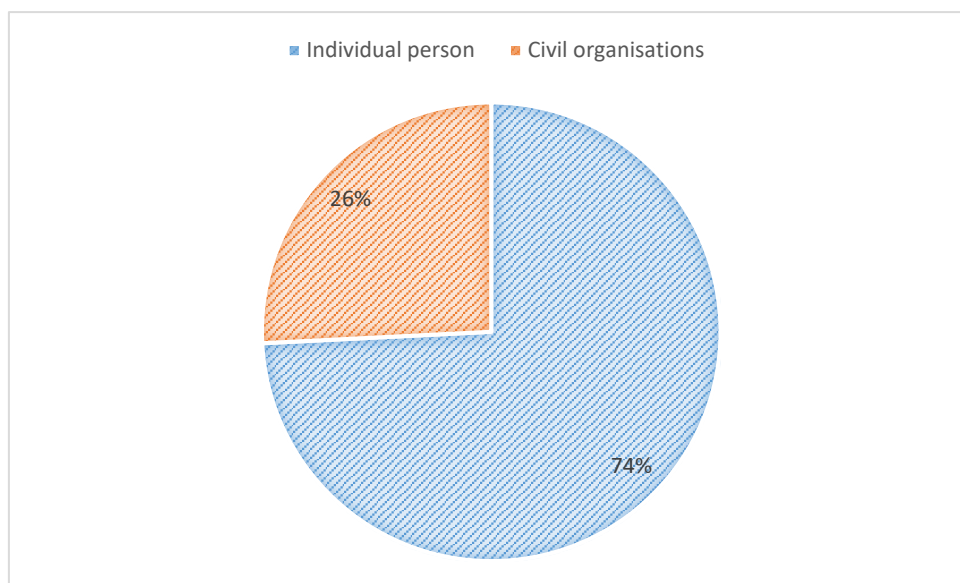
- Our clients are not willing to provide funds (or to invest finances) for such activities
- Resources are required and ensured only when there is a conflict with existing standards and laws
- Amendments to standards and regulations are continually monitored, resources are provided for the implementation of expected modifications



**Figure 72: Shares of responses on providing resources for the costs arising from amendments to standards, regulations and laws in the field of quality and environmental protection**

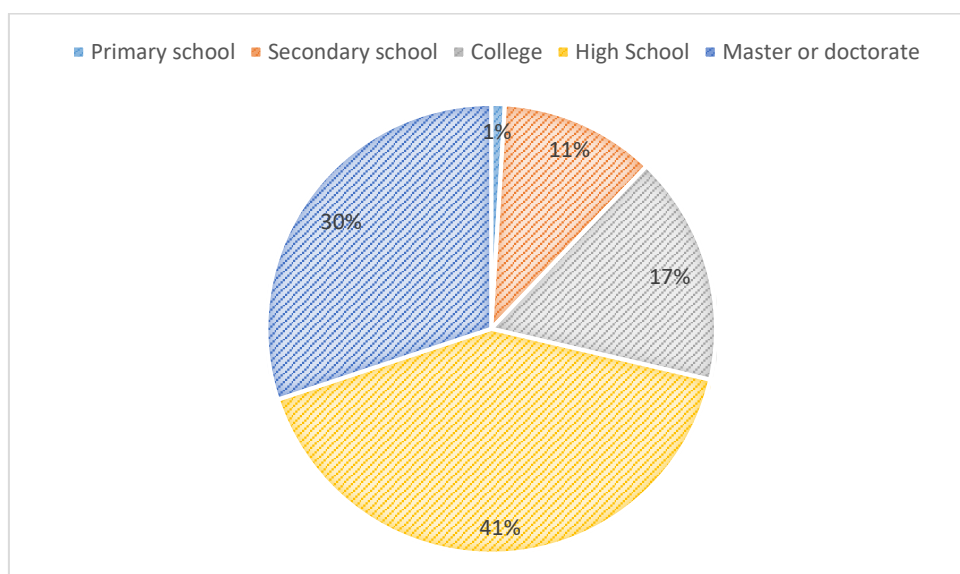
## 4.4 ANALYSIS OF THE SURVEY ON CATEGORY: GENERAL PUBLIC, NGO-S & CONSUMER

The last part of the survey targeting general public, NGO-s & consumers collected the maximum number of responses (294). First, the participants defined themselves as individual person or civil organization. The majority of respondents were **individual persons**, marking a **74%** overall share. Results are illustrated in Figure 74.



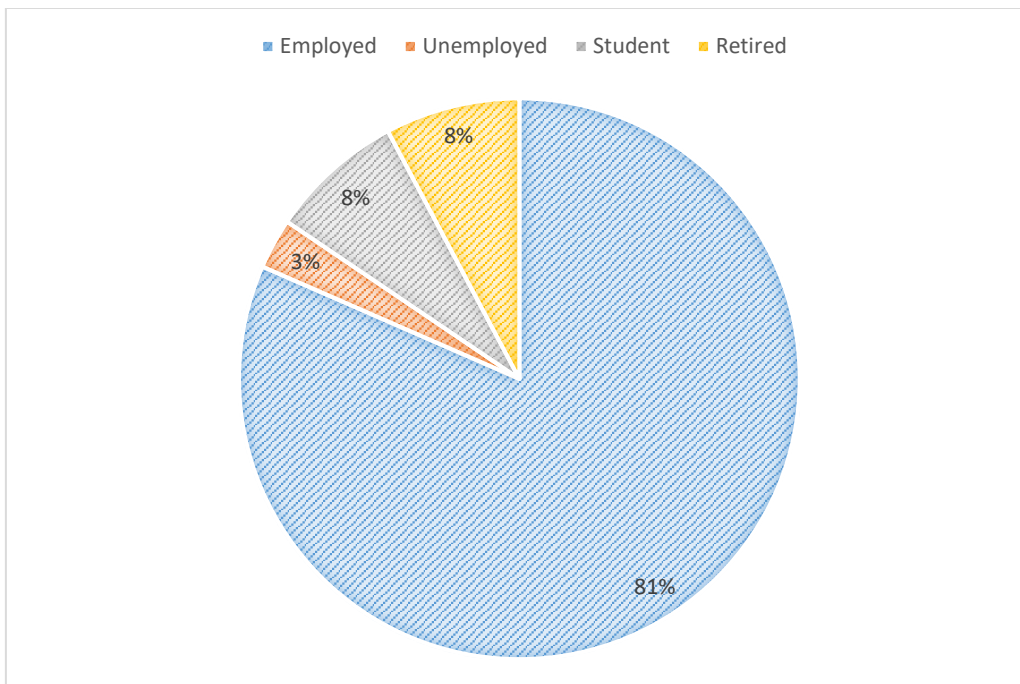
*Figure 73: Shares of individuals and civil organizations in survey*

Figure 75 shows level of education of participating individuals. The majority (41%) of responders finished high school and notable share of respondents (30%) acquired master or doctorate level. The rest of the surveyed finished college (17%) or secondary school (11%). 1 % of the total response rate was represented by those who finished primary school.



*Figure 74: Shares of participants' level of education*

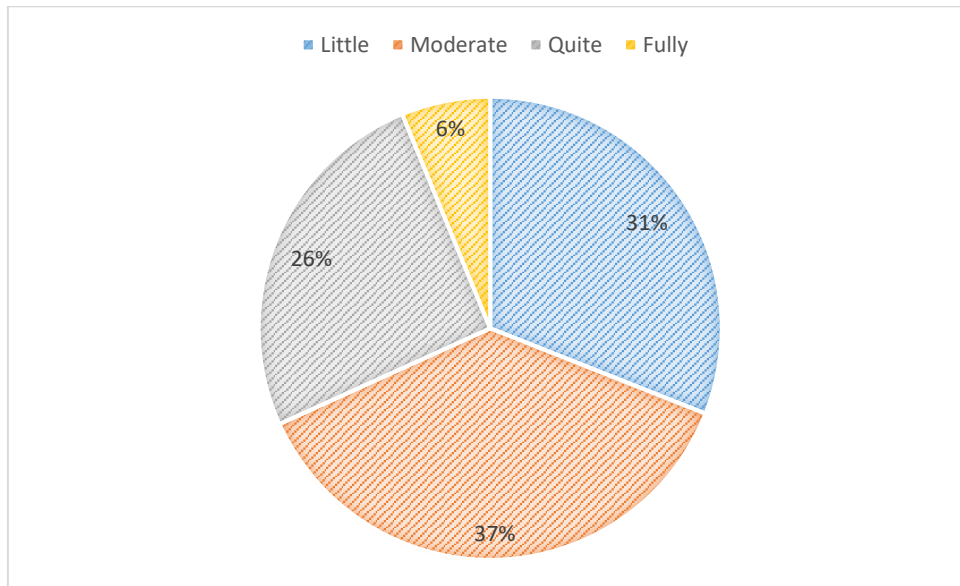
Of the 206 individuals who completed the questionnaire, approximately 82 % were employed and very few participants (3%) unemployed. Students and pensioners were each representing 8% of the total share.



**Figure 75: Shares of participants' employment status**

Civil organizations, which represented a 26% of all questioned participants were asked to define the sector of their operation. Participants in the survey were dealing with various activities including energy, consumer education, innovation, circular economics, agriculture, construction, sustainable development, climate protection, culture, ecoconsulting, environmental protection, services for businesses to name only a few.

The next question of the survey was designed to obtain understanding about the institutional familiarity with the concept of eco innovation, the importance of sustainable development and ecology as part of their education process and whether the eco-innovations are supported within the institution. With regard to the participants' familiarity with eco-innovation, more than two-thirds of the participants (69%) had at least moderate understanding of the expression. On the other hand, an estimated 31% of those questioned considered themselves little familiar with the concept. The results are presented in Figure 77.



**Figure 76: Familiarity of general public, NGO-s & consumer with the concept of eco-innovation**

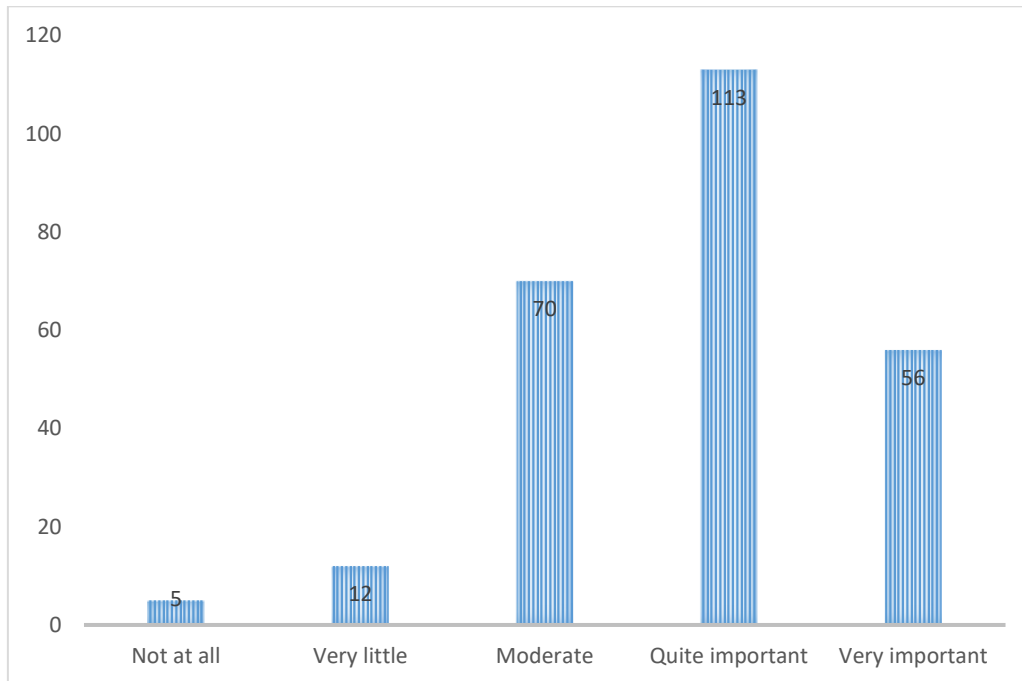
The following part of the survey focused to acquire information regarding the factors that influences the choice of the products and services. Overall quality with 23% of the total response rate was recognized as most important factor when choosing a product or service. As quite influential elements were also acknowledged: functionality, price and environment (product/service is eco-friendly) with shares of 19%, 17% and 16%. Participants felt that origin and after purchase service with 11% and 10% of total share were less significant factors. **Just a few of those questioned (3%) based their decision on a brand of a product or service.** Responses are illustrated with a polar chart within Figure 78 below.



**Figure 77: Responses on importance of various factors when choosing a product or service**

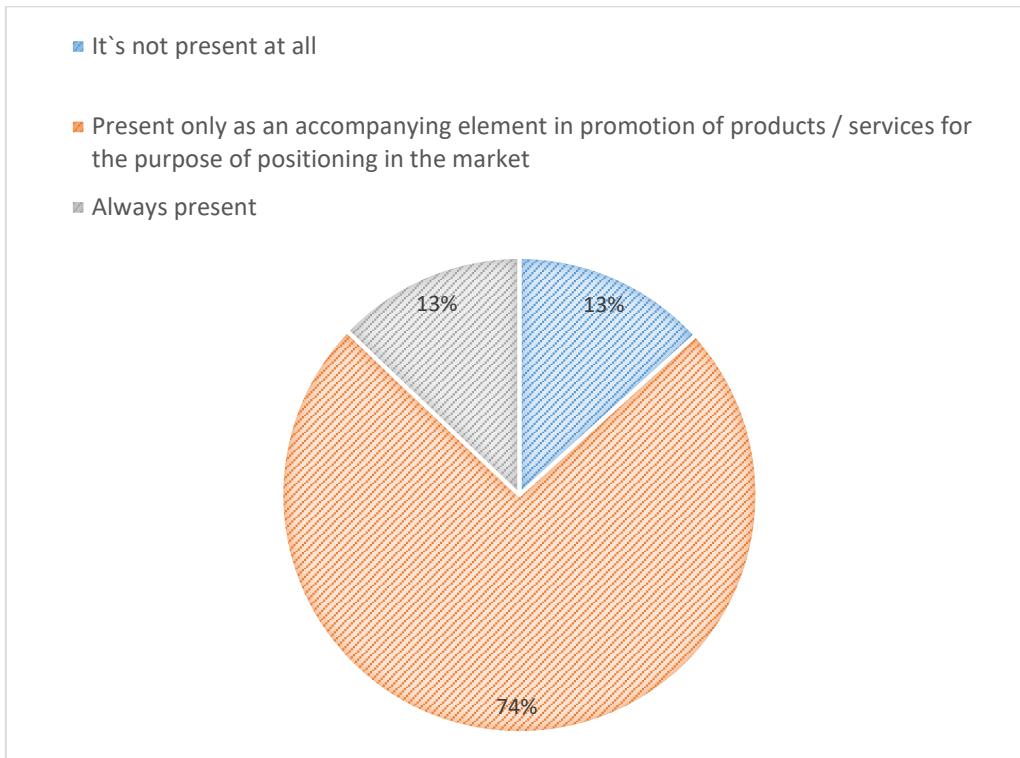


In response to the question, how important is that the product/service is eco-friendly, only 2% of participants stated that it was not important at all and 5% of respondents stated that it was very little important. The majority of 93% evaluated that eco-friendliness of the product or service was of at least a moderate importance. The results are presented in Figure 79.



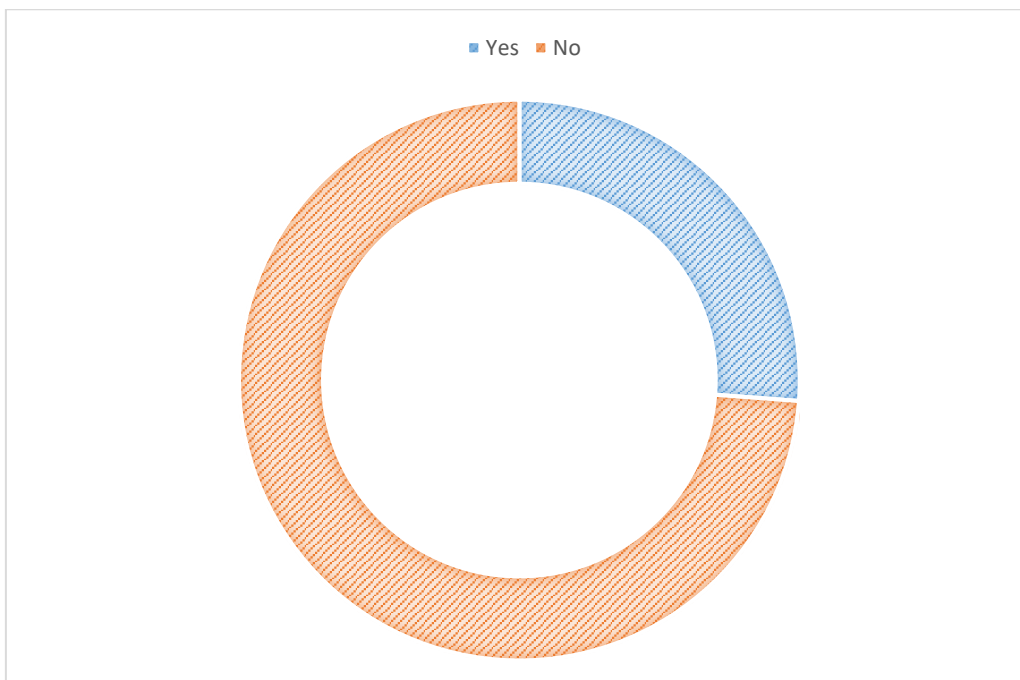
**Figure 78: Importance of eco-friendliness of product/service**

A pie chart within Figure 80 shows responses regarding a presence and frequency of promotion and awareness raising about ecology, energy efficiency, sustainability and similar in the public. Most of the respondents (74%) stated that promotion was present only as an accompanying element in promotion of products/services for the purpose of positioning in the market. Thirteen per cent of those surveyed indicated constant presence of promotion, at the other hand same share of respondents (13%) indicated that was no promotion or awareness raising on a discussed matter.



**Figure 79: Frequency of promotion and awareness raising about ecology, energy efficiency, sustainability and similar**

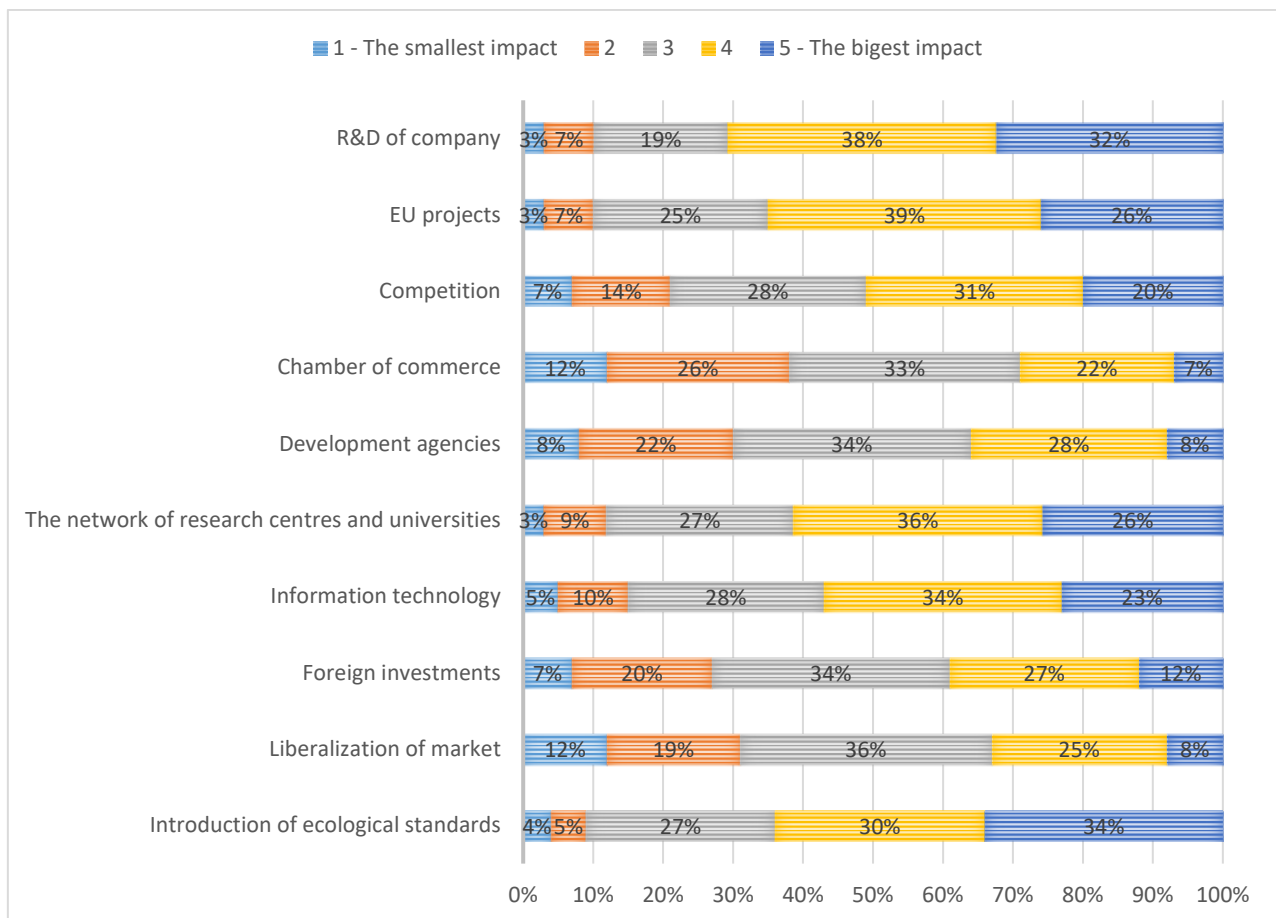
The survey found out that only little less than three quarters (**74%**) of respondents stated that they haven't been involved in any activity concerning innovations. Responses are illustrated in a Figure 81 below.



**Figure 80: Share of involved participants in any activity concerning innovation**

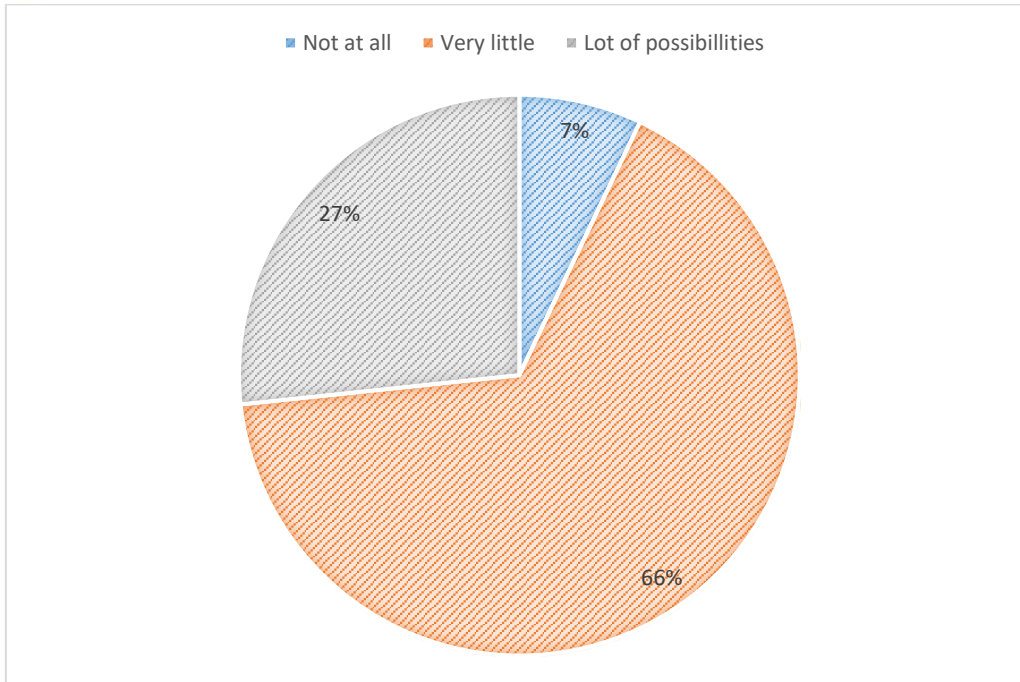
When assessing the impact of incentives that affect the development of eco-innovation, participants rated level of impact on a scale from 1 – the smallest impact to 5 –the biggest impact.

Figure 82 shows responses on levels of impact of various incentives to development of eco-innovation. The majority of participants assessed that all types of incentives had mostly high impact on development of eco-innovation. In participants' opinion, the **greatest impact on development had introduction of ecological standards (34%) and research and development of the company (32%)**. When taking into considerations average values of impact, research and development companies and introduction of ecological standards with average level of impact 3,9 were recognized as most influential within various incentives. Participants decided that the chamber of commerce with impact level 2,9 had the smallest impact to advancement of eco-innovation.



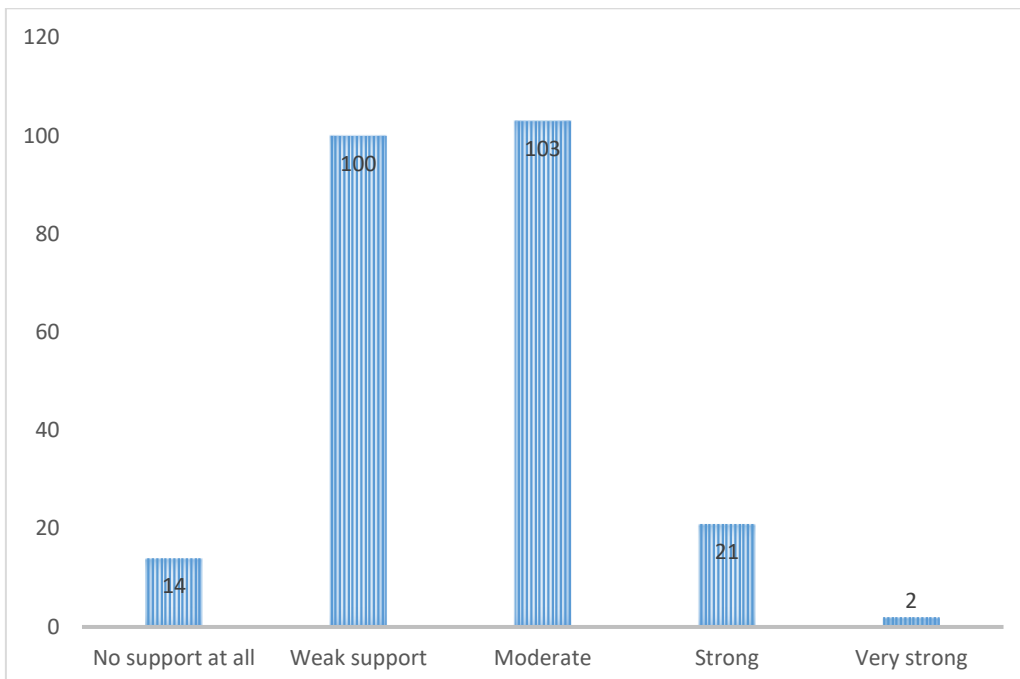
**Figure 81: Average distribution of responses on assessment of the impact of incentives that affect development of eco-innovation**

Respondents were asked about their opinion whether there is demand for eco-innovation in local or national environment and with regard to the demand for eco-innovation in respondents' local/national environment, a significant percentage of those questioned (73%) recognized very little or no demand at all. Approximately 27% of participants felt that there were a lot of possibilities for eco-innovation. Results are presented in a Figure 83 below.



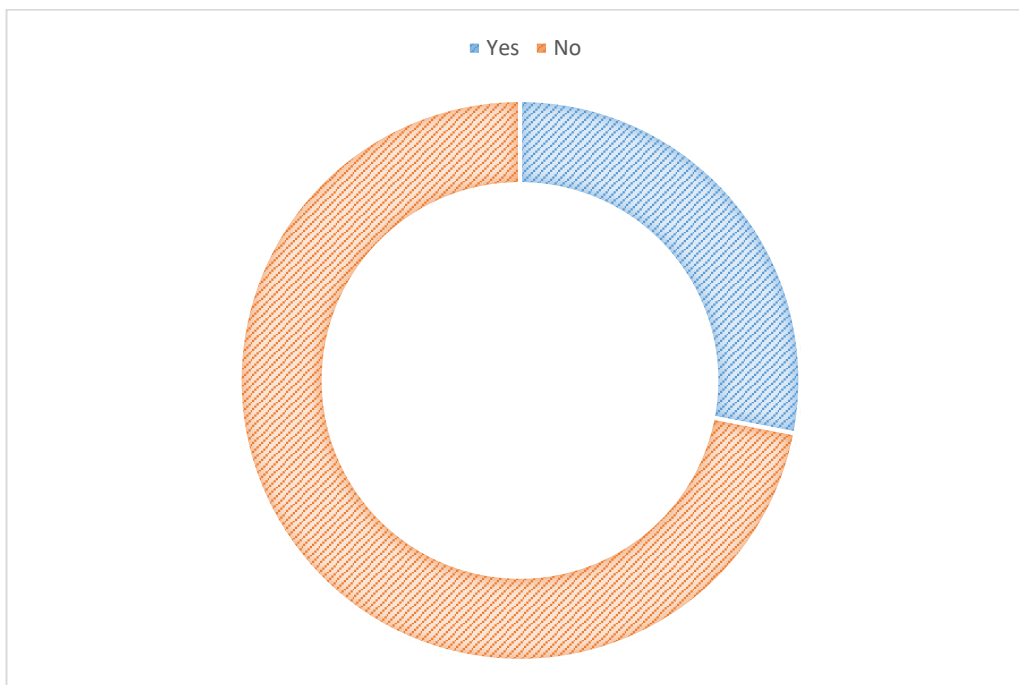
**Figure 82: Shares of demand for eco-innovation in local and regional environment**

According to responses from general public, NGO-s and consumers, governmental support for the development and introduction of eco-innovation was for the **most part (with 85% of the total response rate) weak or moderate**. Furthermore, 6% of those questioned felt complete absence of governmental support. Very few participants (8%) marked support as a strong and only 1% of participants had an opinion that support of eco-innovation was very strong. Results are presented with a bar chart within a Figure 84.



**Figure 83: Responses on governmental support for the development and introduction of eco-innovation**

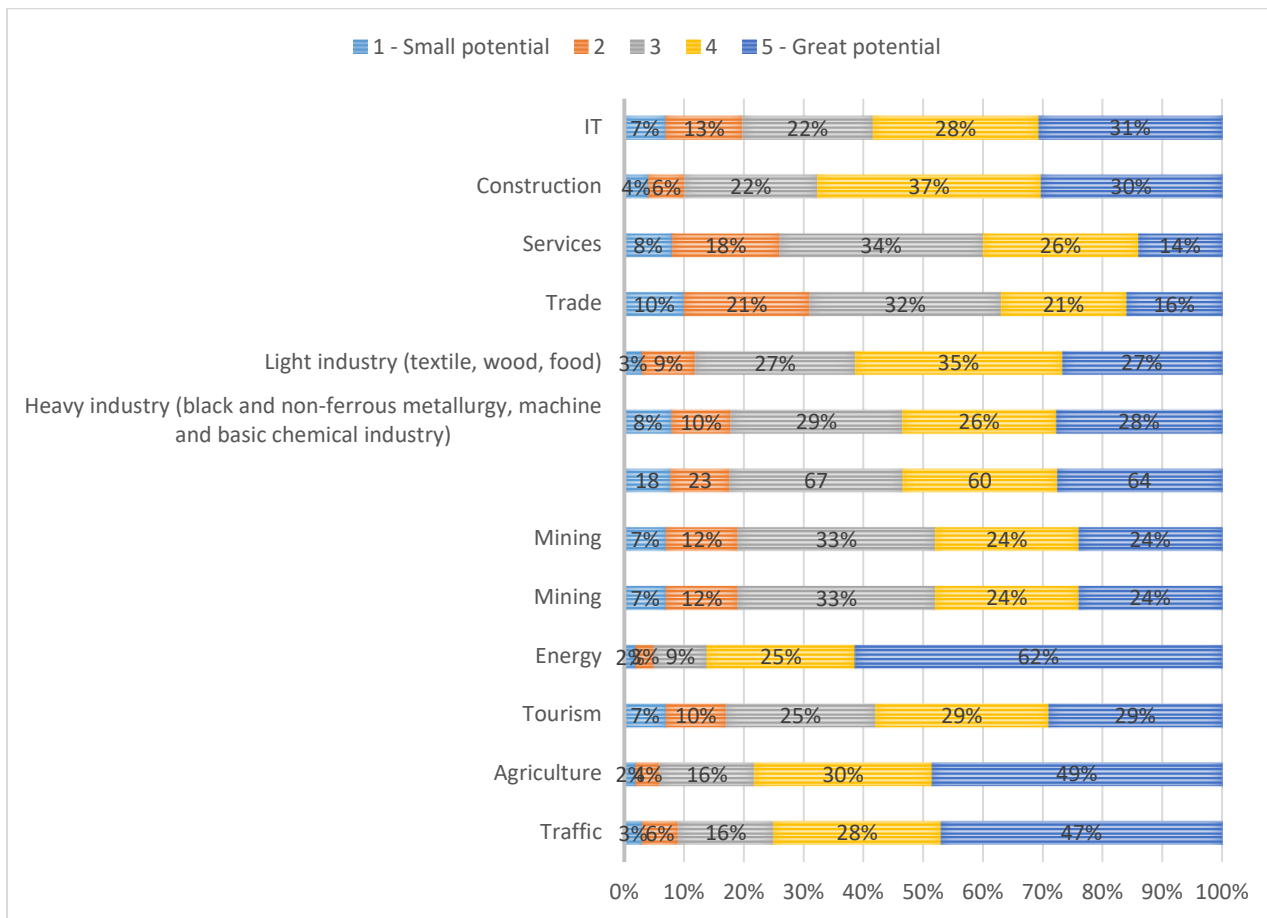
In response to the question regarding companies commercializing an eco-innovative product/service, **the majority of participants (72%) answered negatively** not recognizing such companies in their environment. Responses are illustrated in the Figure 85 below.



**Figure 84: Share of recognition of companies commercializing eco-innovative product/service**

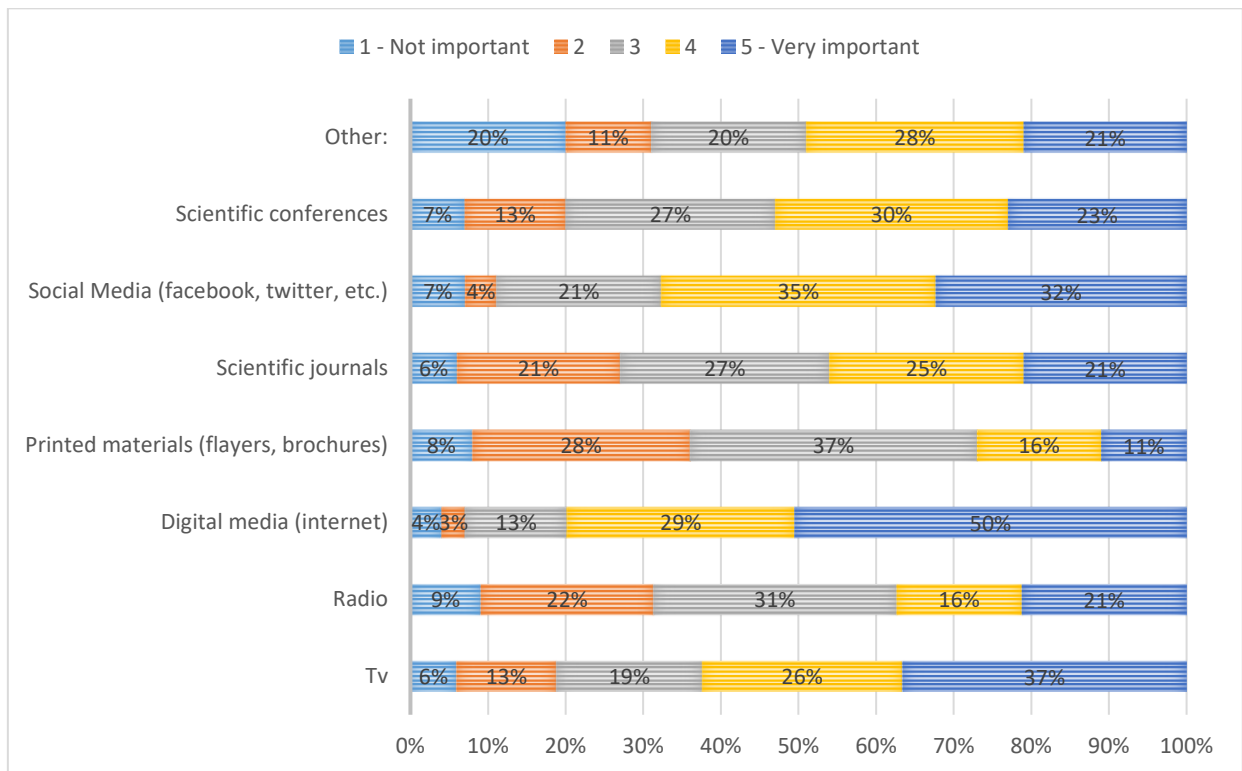
Participants who answered positively were asked to list familiar companies working on the commercialization of eco-innovative products and services, of which survey participants were able to define more than 120 of them

When evaluating the potential to introduce eco innovation in different areas, respondents rated level of potential on a scale from 1 – small potential to 5 – great potential. Bar chart within Figure 86 shows participants’ responses on importance of different areas to introduce eco-innovation, where all the areas were represented with similar shares for modest, high and great potential. **The sector of energy was recognized as most potential to introduce eco-innovation**, with 62% of those who assigned the level of great potential to it. When taking into considerations average values of potential, the fields of energy, agriculture and traffic with average levels 4,4; 4,2 and 4,1 were recognized as most potential. At the other hand, sector of trade reached ed an average value of 3,1, which was marked as the lowest level of potential. The remaining areas’ potential was evaluated with average levels ranging from 3,2 to 3,8.



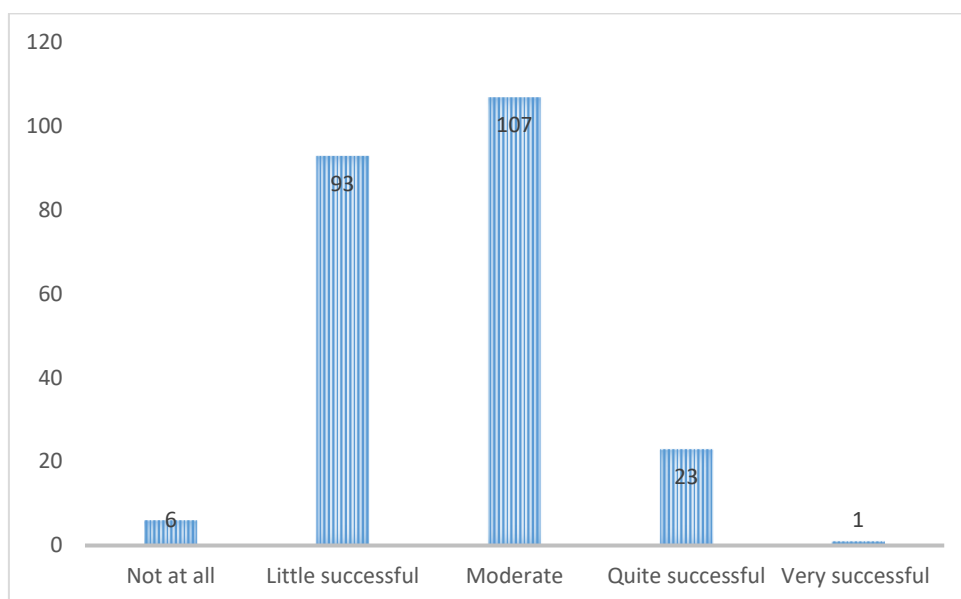
**Figure 85: Average distribution of responses evaluating the potential of areas to introduce eco-innovation**

Evaluation of effectiveness of media in increasing awareness on the importance of eco-innovation was rated with level of impact on a scale from 1 – not important to 5 –The very important. The majority of participants evaluated that all types of media mostly were moderately to very important in increasing awareness. **Digital media (internet) was recognized as most effective with 50%** of those who assigned the greatest importance to it. According to responders, digital media (internet) with highest average level 4,2 had the greatest effect in increasing awareness on the importance of eco-innovation. On the other hand, printed material as flyers and brochures were acknowledged as the least effective media with lowest reached average level 3. The remaining medias’ significance was evaluated with average levels ranging from 3,2 to 3,8. Responses are presented in Figure 87 below.



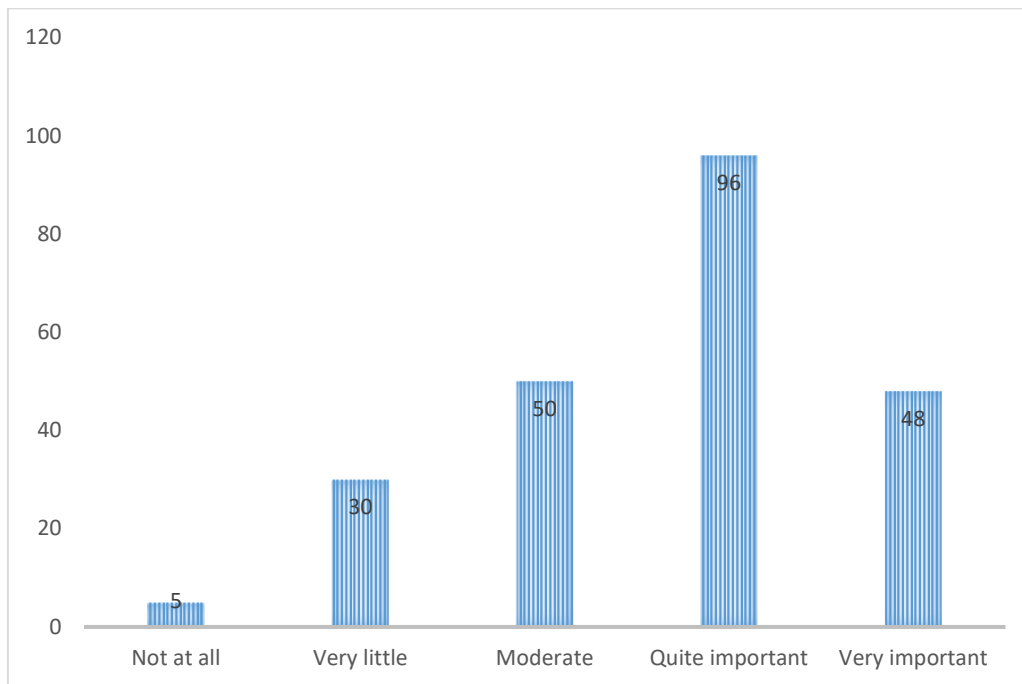
**Figure 86: Average distribution of responses evaluating the effectiveness of media in increasing awareness on the importance of eco-innovation)**

Regarding the success of organizations/companies in implementing eco-innovation, responses were quite negative with only 10% of those surveyed who found the companies quite successful and with no share of participants recognizing companies as very successful. The majority of respondents evaluated organizations as moderate or little successful in the process of implementation. Responses are illustrated with a pie chart within Figure 88.



**Figure 87: Shares of organizations' level of success in implementing eco-innovation**

With regard to the final question of the survey version for general public, NGO-s & consumer, the majority of respondents (85%) felt that branding of eco-innovation was at least moderately important. Only 13% of participants attributed to branding very little significance, furthermore **2% had an opinion that branding of eco-innovation had no importance at all.**



**Figure 88: Responses on importance of branding of eco-innovation**



## 5. CONCLUSIONS

The results of the survey point out that the state of the art on eco innovation varies substantially between areas included in the analysis by each partner and that there are weaknesses specific to each country/region.

**Private companies** demonstrated the highest level of know how and experience, and viewed eco innovation not only in terms of new products and services, but also closely connected to branding, marketing and public image of their respective enterprises.

From the 211 companies included in the survey, an evident bias towards domestic markets was identified, with only 6 % of them stating that their business focused on international markets exclusively. This could be interpreted by the fact that the vast majority of respondents (144 total) stated that they represent companies with fewer than 250 employees, which could be classified as SMEs<sup>1</sup>.

70 % of private enterprise representatives stating at least a moderate understanding of the term and familiarity with the concept, 68 % stating that eco innovation could provide a moderate or substantial improvement and only 17 % estimating that their companies achieve a low level of innovativeness. This is confirmed by a high share of companies' active as producers/providers of eco innovative products and services, while 55 % were beneficiaries.

According to the survey, the common transnational strategy should focus on areas where the most notable demand for eco innovation has been demonstrated. Fields of interest presented by a 50 % positive response rate include improving technology and processes as well as improving services offered by companies. In addition, a high level of potential is documented in the field of improving product needs, improving waste management and improving the relationships within the market.

A positive trend is observed by previous applications of eco innovations with 54 % of companies participating in the survey stating that they applied some form of eco-innovation into their business in a recent time frame. These practical applications of eco innovations, mostly in the fields of products, services and technologies were in a large extent the result of internal research and development. In contrast, research and development centres as well as universities had very little impact on practical applications within companies, indicating that the level of cooperation is very low. The level of cooperation that does exist is mostly carried out through professional trainings, seminars and other forms of informal educational activities. There is a clear shortfall of joint ventures of private companies and R&D institutions on actually developing new products/services/business cases based on applied science and/or practical implementation of concrete research findings. Considering that on average, 16 % of working capital was spent on research, engaging on average 14,3 company employees, it seems evident that development of eco innovations in the surveyed pool of respondents is mostly dependent on internal efforts of the companies, although the range between maximum and minimum investment of working capital allocated to developing eco innovation was substantial. This is supported by the fact that as much as 42 % of companies offered incentives for eco innovation amongst their staff, albeit mostly in the form of direct recognition by superior's managers and financial incentives. Furthermore, not only is there a very low share of private companies that obtained membership status in business associations, ecological cluster or similar organizations, but a vast majority (73 %) are also not cooperating with any regional cooperation networks and have not developed any cross-border cooperation thus far. Considering

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<sup>1</sup> Information about annual turnover and companies balance sheets was excluded from the survey because of privacy concerns.

the amount of available resources, both from a financial and capacity development perspective, this is a particularly negative finding, especially considering the size of companies participating in the survey. For the companies that were able to establish cooperation networks and cross-border cooperation the majority identified technology, manufacturing and trade as the key areas of interest.

Companies see the greatest impact of public funds if used for increasing awareness about eco innovation amongst the general public and industry (potential clientel) and in the field of supporting targeted research and development of eco innovation. The majority of respondents mostly recognized modest to high impact of eco-innovation to all business performances, with the greatest impact of eco-innovation acknowledged in business performances as customer satisfaction, as well as skills and knowledge of their employees. Surprisingly, eco-innovation was identified as having low impact on shareholder value as opposed to the foreseen high impact from sales income and customer satisfaction.

With respect to the 2nd stakeholder category, **research and development institutions**, the survey included a wide variety of interest sectors, ranging from economic research, agriculture and food, ecology and environmental protection, education, business development and even medicine. However, the largest representation was documented from R&D institutions working in the field of energy efficiency, renewable energy sources, energetics and sustainable mobility. The majority of institutions represented in the survey (70 %) had under 250 available personnel (55 % under 100 personnel), while about one fifth (18 %) of participants were assigned to institutions with more than 950 personnel. 11 organizations were documented as having more than 2500 available personnel. The level of familiarity with the eco innovation concept was comparable to results by private companies with 44 % stating that they are quite or fully familiar (compared to 33 %). From the perspective of R&D institutions, sustainable development and ecology present (should present) an important part of the formal education curricula, with 85 % of respondents choosing at least a moderate and 60 % a high level of relevance. However, only 53 % of surveyed organizations claimed that they provide direct support to eco innovation. For institutions providing direct support it was mainly in the field of research, development, and prototyping, as well as education and consultancy. Some replies also indicated patenting and organizational measures as the primary form of direct support.

From the perspective of this stakeholder category, the primary drivers of eco-innovation amongst private enterprises remains the need to respond to business and environmental challenges, which can be considered a positive, however does not align with some other conclusion of the survey (as presented below). The majority of surveyed R&D institutions integrate consultation processes for improving the ability of companies to independently develop and introduce eco innovation on a periodical basis, which are mostly build upon internal methods and programs as well as consulting tools based on scientific analysis. Half of the respondents stated that their institutions is a member in a business organization or environmental cluster. The common denominator for organizations from surveyed countries or regions is cooperation amongst research institutions, academia and private enterprise that is not sufficient, particularly in the field of bankable projects that demonstrate strong business cases. Internal research and development of private companies is limited by high CAPEX, that would in the final stages of commercialization result in substantial elevated cost of the developed product or service. The main challenge of research and development institutions is to support companies in lowering the cost for developing products/services in question to a technology readiness level that can already demonstrate technical, operational and above all economic feasibility. There is also a clear indication of a general (present in all areas covered by the partner organizations) inefficient use of funds in research and development, where projects are often supported because of their value in terms of public relations, political backing and/or excellent return on investment (from the perspective of the research institutions – low initial investment and good coverage of funds from public entities, framework programmes, etc.) and not actual value in terms of potential application, that finally do not yield expected results with respect to relevant socio-economic factors such as employment, value added and market outreach.

The third stakeholder category included **public authorities** on various decision-making levels. The majority of respondents represented national, regional and local authorities, but also included public enterprises (such as public utilities), development agencies (also energy agencies, business support organisations), chambers of commerce and other forms of public institutions. The majority of respondents were moderately familiar with the concept, which indicates a somewhat lower level compared to other categories. In terms of experience in supporting eco innovation, the result were not conclusive with about half claiming a certain level of experience but only 36 % that could identify it as direct support. The bulk of direct support was provided in the form of advisory and educational activities, while only 4 % was in the form of financial support. A frequently monitored source of support (for types described above) were European funds. Only 19 % of respondents had the opinion, that the support provided from public authorities in the field of sustainable energy production, had a strong desirable impact.

In terms of legislation, it was documented that in particular for energy efficiency, renewable energy sources and resource efficiency (recycling of raw materials) there is pertinent legislation in place (55 % response rate), however despite this, 81 % of respondents deemed it necessary to amend the existing legislation. Accordingly, these areas of interest (energy efficiency, green production, use of renewable energy as well as participation in EU projects) were recognized as administrating the most impact on up take of eco innovations. Financing was recognized as an essential aspect of supporting eco innovation that could be simplified and improved.

Furthermore, respondents from public authorities were largely of the opinion that the low level of knowledge (in terms of both the role and scope of support these institutions should provide as well as on the level of potential clients and existing ecological innovations and improvements) was the main challenge in carrying out successful joint activities with companies. This indicates a clear requirement to expand existing training, organization and networking activities to increase the level of knowledge and improve communication between these stakeholder categories. With respect to the main barriers and obstacles prohibiting or limiting the use of public funds for financing eco innovation, it was clearly indicated that lack of political support, complicated administrative and tendering procedures in addition to strained public budgets and consequently limited capacity of human resources.

Amongst the final stakeholder category, the **general public and NGOs**, almost three quarters of respondent were individual persons (of which the majority were highly educated and employed) and 26 % represented civil organizations working in the field of energetics, circular economies, agriculture, tourism, education, environmental protection and innovation to name the most prominent. The familiarity with the concept of eco innovation was lower than the one documented in other categories with 31 % choosing the lowest possible level of familiarity.

From the perspective of interviewed consumers, it was found that environmental considerations and local/national origin of products and/or services with reference to standardly relevant factors such as price, quality and functionality, is considered very important. It was found that promotion and awareness raising efforts are usually only present as accompanying elements in the promotional campaigns of products/services, and a such not adequate to mobilize a critical mass of consumers that would support the wider uptake of eco innovation.

The biggest impact to support the development of eco innovation was identified as the introduction and tightening of ecological standards, internal R&D activities of private companies and advances in information technology. The actual demand for eco innovation within the respondents' local and/or national environments was estimated as being too low by a large part of respondents. In addition, governmental support for development and introduction of eco innovations was evaluated as very weak to moderate by more than 90 % of survey participants.

Less than a third of respondents could name a single company commercializing an eco innovative product or

service, however, from this group of replies (altogether 67 documented) there were more than 120 such companies

identified from respondents, displaying that on average the visibility of these enterprises was still on a high level amongst the general public. Respondents were to a large extent unanimous in determining areas with the greatest potential to introduce eco-innovation, with energy, transport and agriculture as the predominant sectors. Not surprisingly digital media were recognized as by far the most effective media source to increase awareness and importance of eco innovation amongst the public, with social media totalling 82 % of responses. Standard media sources such as television and radio remain relevant, albeit in a lesser extent, totalling about 58 % of responses. Additional responses to the open-ended subcategory *Other* also included communication between peers, educational system, civil initiatives, promotional projects and direct contact with residents.

## 6 MAIN FINDINGS AND RECOMMENDATIONS

The findings from the international survey, documented in the *Report on national results of the survey* and *Report on the evaluation of joint results of the survey*, together with results from partners national stakeholder meetings (based mostly on plenary sessions and personal discussion with relevant stakeholders) provide the foundation of key aspects relevant to the development of the common transnational strategy and action plan for supporting eco innovation in the Danube region.

The list (non-exhaustive) of key findings and recommendations to be considered within the next steps of strategy and action plan development include:

Private companies have identified eco innovations as a worthwhile endeavour in their long term business.

Private companies are aware of and somewhat experienced with supporting eco innovation

Companies are applying eco innovation on a satisfactory basis

- Private companies are key drivers for eco innovation; legislative and administrative measures must be adapted accordingly

Although a large portion of surveyed companies is focused on domestic markets, eco innovation is seen as having global potential and appeal – this depends on the specific business model applied

The need for eco innovation is most evident in improving technology and processes, improving products and needs Uptake of eco innovation is heavily dependant on internal research and development carried out by companies

- Companies should be supported through innovative financing mechanisms to decrease CAPEX and mitigate their risk exposure (role of public authorities and R&D institutions)
- Eco innovation is heavily dependant on internal research and development carried out by companies

Companies are willing to support eco innovations internally, even through financial incentives

- Further legislation development should consider the prohibitive nature of rewarding employees financially and adopt the tax laws accordingly.
- Restructure income tax categories to make employment attractive for international talent (high wages).

Level of cooperation between companies and scientific research institutions is very low. A substantial share of training and education activities in which companies cooperate with R&D institutions has low positive impact

- Improve training and education activities with knowledge and skills relevant to eco innovation

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The extent of cooperation that is present is too focused on training and education

- Cooperation should be in a large extent focused on co-creation, joint development, problem solving and focusing on specific tasks associated with prototyping, manufacturing processes, to the level of scaling up production to an economically viable scope of production
- R&D institutions founded by companies operating as individual entities within the scope of the company's business activities are a good example of how similar organizations where funding is mostly provided from the public budget should target results on concrete tasks and optimize the level of cooperation with companies and their productive output.

International standards on quality management (ISO 9001) and environmental management (ISO 14001) are frequently applied in larger companies from the Danube region.

- The support in application of these standards is in the best interest of the residents and community and should be extended by decision makers on local and national levels.

Lack of funds is identified as the most predominant factor prohibiting wider uptake of eco innovation development opportunities

- Improve the absorption of structural funds
- Make use of alternative financing mechanism and Special Purpose Vehicles (SPV)

Large share of companies are not members of business associations and ecological clusters

- Examine, re-evaluate and adapt the positive impacts (for the company) of being a member of such an organization

Besides creating revenues and profit, companies view customer satisfaction and society impact as an important factor in their long-term horizon

- Focus on changing behavioural aspects of the average consumer (companies only supply that for which exists demand)

Research and development institutions view personal contacts as a key approach to locating and establishing first contacts with companies and individuals developing eco-innovative products and services

- Local authorities should facilitate topical networking events. Companies should proactively seek for institutions with capacity to address their specific (engineering, design, production, etc.) problems (outsource some of the burden of carrying out research and development in-house).

Research and development institutions believe that introduction of environmental standards have the largest impact on the development of eco-innovation

- Unify, transpose and tighten legislation on environmental protection
- Improve systems that support environmental friendliness (for e.g. the "cap and trade" or EU ETS - Emissions trading system)

Research and development institutions (aside from the lack of funding) identify the lack of knowledge about the role

and scope of innovation supporting institutions as the main challenge in their work with companies

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Only half of surveyed institutions are member of cluster or business organizations.

- Establish/join clusters of organizations as a united player on the R&D market.

A relatively large share of current eco-innovative projects is focused on the analytical and experimental proof of concept

- A large share of R&D institutions operational capacity and expenditure should be focused on commercialization of products (where it is much easier to acquire funding by private investors)

Only 36 % of surveyed public institutions (only 2 % in the form of institutional or financial aid) provide direct support to eco-innovation

- Dedicate more public funds (also for personnel capacity) to support eco innovation

Legislation for supporting innovation is inadequate. Legislation for the areas of EE, RES and re-use of raw materials is in place, but should be more thoroughly enforced. According to 81 % of surveyed respondents from public institutions, the amendment of legislation is necessary. 91 % of respondents had the opinion that there is considerable potential to simplify the financing of eco innovation.

- Amend legislation. Secure funds for inspection and auditing services

Only 65 % of respondent from public institutions stated that their work includes the transfer of knowledge between experts from other regions

- Carry out capacity development and organizational activities that will increase the interregional transfer of knowledge

According to the 64 % of respondents, the status of eco-innovative project being implemented is on the level of concepts and ideas

- Focus on supporting only marketable eco innovations that can be commercialized in a relatively short time frame to attract investors, secure funds and expand activities

Complicated administrative and tendering procedures are seen as the main barrier for using public funds to support eco innovation. Strained public budgets are also identified.

- Simplify tendering procedures.
- Carry out training of personnel (public officers) on the topic
- Research the availability to finance eco innovation by non-standard financing mechanisms (crowdfunding initiatives, green bonds, etc.)

According to the majority of respondents from the general public stakeholder category, environmental friendliness of products/services is very important. Branding of eco innovative products and services is important to 85 % of surveyed respondents.

- Work on the image of the company. Improve marketing campaigns to acquire widespread visibility.
- Optimize branding, address the "individual"

Digital media and social media are considered the most relevant media sources

- Reallocate funds for marketing and awareness raising on television and radio to build a digital media campaign that is more cost-effective

For more in-depth country specific info please examine D3.1.3 and reports from the national stakeholder meetings carried out within D3.1.1

# ANNEXES

## A 1. Template of questionnaires

Pretext of the questionnaire.

Thank you for participating in the survey on innovation of environmentally friendly and sustainable products and services. The questionnaire was developed for needs of the project "Eco-innovatively connected Danube Region - EcoInn Danube", which is implemented within the Interreg Danube Transnational Programme. The information obtained will be used solely for the purpose of research and your opinions and suggestion will be used to improve the existing status of eco-innovation in the Danube region.

*NOTE: Eco-innovation is an innovative creation and commercialization of new environmental technologies, products and services that reduce the overall negative environmental impact and allows that business and innovations together create sustainable solutions*

### Type of entity:

#### Private company (as producers and users of eco-innovation)

Research and development institutions

Public authorities (institutions)

General public, NGO-s & consumer

• What year was the company founded?

• What is the number of employees?

### In what markets are focused products of the company (*how significant is export activity*)?

1.	Placement of the company is focused on the domestic market
2.	Placement of the company is focused solely on the international market
3.	Placement of the company is focused on the domestic and foreign markets: ____% indicate orientation on domestic and ____% on foreign markets

### To what extent are you familiar with the concept of "eco-innovation".

- a) Little
- b) Moderate
- c) Quite
- d) Fully

### In your opinion, how can eco-innovation help improve your business?

- a) Not at all
- b) Very little
- c) Moderate
- d) Quite
- e) Fully

### Is your company a beneficiary (user of eco-innovative products/services) or producer/provider?

- a) Beneficiary
- b) Producer/provider



**How innovative is your company?**

Low level of innovativeness

High level of innovativeness

1	2	3	4	5
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**In which of the following categories is the need for eco-innovation most evident from your company perspective? (You can choose more than one answer)**

1.	Improving product needs
2.	Improving services
3.	Improving technology and processes
4.	Improving waste management
4.	Improving the relationship with the market
5.	Improving logistics and distribution
6.	Other, please specify: _____

**Has the company applied an eco-innovation to your business in the last three years?**

- a) Yes
- b) No

*Note: If the answer is "Yes" please go to the question 8, otherwise move to the question 10.*

**They were in the field of: (You can choose more than one answer)**

1.	Products
2.	Services
3.	Working processes
4.	Technologies
5.	Relations with the market
6.	Waste management
7.	Logistics and distribution
8.	New business models
9.	Other, please specify: _____

**They were the result of: (You can choose more than one answer)**

1.	Internal research and development
2.	Influence of major clients
3.	Influence of competitors
4.	Consultants
5.	Researching centers
6.	Universities
7.	Internal research
8.	Staff training

**To what extent the company carry out research and development of eco-innovations internally?**

Research and development of eco-innovations	Answers	
Does the company invest in these activities?	Yes	No
How many % of working capital ( <i>the capital of a business which is used in its day-to-day trading operations, calculated as the current assets minus the current liabilities</i> ) is spent on research and development of eco-innovation?		
How many employees are engaged in these activities?		

**Does your company provide some kind of incentives for eco-innovation amongst employees?**

- a) Yes
- b) No

If the answer is "YES", what types of incentives do you offer? (You can choose more than one answer)

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1.	Financial incentive
2.	Direct recognition by superior's managers
3.	Established prize for innovation at the enterprise level
4.	Providing opportunities for employees to use for free all available capacity of the company to develop and test their own ideas
5.	Providing administrative support for funding from external (public) sources
6.	Other types of stimulation, please specify: _____

**To what extent and how the company is associated with scientific research institutions in terms of eco-innovation?**

Low level of cooperation

High level of cooperation

1	2	3	4	5
---	---	---	---	---

Cooperation is (for the most part) in the area of:

Answer	Aspect / domain of cooperation
1.	Training, professional training, seminars, lectures, education;
2.	Improvements and innovation of: product, work processes, production technology, etc.
3.	Introduction of standards of production and quality;
4.	Other, please specify: _____

**The relevance of eco-innovation used/ produced?**

- a) Local
- b) Regional
- c) National
- d) EU
- e) Global

**Did you apply quality standards and which ones? Certification (quality, environmental management, organic farming, etc.)**

- a) Quality management (ISO 9001)
- b) Environmental management (ISO 14001)
- c) EFQM Excellence model
- d) Organic farming
- e) Other, please specify: \_\_\_\_\_
- f) No quality standard applied

**Which problems dominantly restrict the development of eco-innovations?**

- a) The lack of funds
- b) Lack of knowledge about the process of eco innovations
- c) Underdevelopment of departments for research and development
- d) Non-supportive business environment
- e) Law regulations
- f) Insufficient implementation of eco operational standards
- g) Other, please specify: \_\_\_\_\_

**Is the company a member of a business association, ecological cluster or similar?**

- a) Yes
- b) No

Is there a developed cross-border and/or regional cooperation network with related companies mentioned in previous question?

- a) Yes
- b) No

If the answer is "Yes", please specify domain in which cooperation is achieved? (You can choose more than one answer)

1.	Trade
2.	Distribution
3.	Manufacturing
4.	Technology
6.	Other, please specify: _____

In which segment is the support of public funds most needed? (You can choose more than one answer)

- a) Implementation of a green production;
- b) Increasing awareness about eco innovation;
- c) Support of research and development of eco-innovations;
- d) The selection and training of specialized human resources;
- e) Monitoring of relevant technological capabilities;
- f) The connection between research and business (TT);
- g) Promoting the environmental enterprise;
- h) Other, please specify: \_\_\_\_\_

Evaluate the impact of eco-innovation to your business performances (1-lowest impact; 5 - the greatest impact):

	1	2	3	4	5
income from sale of quality products and services					
cost structure					
the number of jobs					
positioning in the market					
company organization					
management					
internal business processes					
skills and knowledge of employees					
shareholder value					
customer satisfaction					
impact on society					

Thank you for taking the time to participate in the survey. Would you like to receive notifications about on-going and future project activities?

- a) Yes, please insert your e-mail: \_\_\_\_\_
- b) No

We appreciate your feedback.

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Private company (as producers and users of eco-innovation)

**Research and development institutions**

Public authorities (institutions)

General public, NGO-s & consumer

- **Identification of sector: what kind of activities is your institutions dealing with?**
- **What is the number of employees?**

**To what extent are you familiar with the concept of "eco-innovation".**

- a) Little
- b) Moderate
- c) Quite
- d) Fully

**Does sustainable development and ecology present an important part of the formal education curricula?**

- a) Not at all
- b) Very little
- c) Moderate
- d) Quite important
- e) Very important

**Does your institution have experience in supporting eco-innovation?**

- a) Yes
- b) No

**Does your institution directly provide support in eco-innovation**

- a) Yes
- b) No

**What type of support do you offer concerning the eco-innovation?**

- a) Research, development and prototyping
- b) Testing
- c) Advisory
- d) Educational
- e) Financial
- f) Institutional
- g) Other, please specify: \_\_\_\_\_

**In the last three years, you were supporting enterprises and producers of eco-innovation in:**

- a) Products
- b) Services
- c) Work process
- d) Technology
- e) Other, please specify: \_\_\_\_\_

**Your institution provides support for the implementation of eco-innovation:**

- a) On your own
- b) In cooperation with other companies
- c) In cooperation with scientific research institutions

**How do you locate and establish first contact with companies or individuals developing eco-innovative products or service?**

- a) Personal contacts
- b) Technology transfer office
- c) Tenders
- d) Business associations
- e) Other, please specify: \_\_\_\_\_

**Your work includes:**

- a) Development of feasibility studies
- b) Product design
- c) Testing and prototyping
- d) Market research
- e) Study and support during the implementation of eco-innovation
- f) Training, seminar, education
- g) Other, please specify: \_\_\_\_\_

**How much your support on introduction of eco-innovation contributes to companies and manufacturers to the improvement of their business?**

- a) Not at all
- b) Very little
- c) Moderately
- d) Quite
- e) Very much

**Evaluate factors by their impact on the development of eco-innovation: (1-least significant effect; 5 - the greatest impact)**

- 1. Introduction of environmental standards
- 2. Market Liberalization
- 3. Foreign investments
- 4. IT
- 5. The network of research centres and universities
- 6. Development Agencies
- 7. Chambers of commerce
- 8. Competitiveness
- 9. EU Projects
- 10. Research and development activity of the company

1	2	3	4	5

**What are the main drivers of eco-innovation amongst your clients (companies)?**

- a) Models that have been seen by your customers elsewhere
- b) The need to respond to business and environmental challenges
- c) New policy: strategy / program
- d) Availability of limited resources
- e) Increased public awareness
- f) Technological progress
- g) Eco products are a niche market
- h) Other, please specify: \_\_\_\_\_

**What are the main challenges in your work with companies in terms of eco-innovation: (You can choose more than one answer)**

- a) Lack of knowledge about the role and scope of innovation-supporting and environmental institutions
- b) Poor communication and delivery of internal documents
- c) Lack of clients training (companies and manufacturers)
- d) The low collection rate on the basis of "R & D" projects
- e) Funding of "R & D" projects
- f) Other, please specify: \_\_\_\_\_

1	2	3	4	5

**Rate the impact of managements support during work on eco-innovation in companies? (1-lowest impact; 5 - the greatest impact)**

**How often is present the so-called consultation process in your work, which involves improving the ability of companies and manufacturers to independently create and introduce eco-innovation:**

- a) Significantly
- b) Periodically
- c) Never

**What are the basic counselling support tools and techniques that you use in your work with clients:**

- a) Internal methods (programs and projects)
- b) Consulting tools based on scientific analysis
- c) System of standards quality creative workshops
- d) TQM, reengineering
- e) Other, please specify: \_\_\_\_\_

**Does your work include transfer of knowledge between experts from other regions?**

- a) Yes
- b) No

**Is your institution a member of a business association, Environmental Cluster, etc.?**

- a) Yes
- b) No

**What is the current status of eco-innovative projects you're working on or have worked on in the past?**

- a) Analytical and experimental critical function and/or characteristic proof of concept
- b) Component and/or breadboard validation in laboratory environment
- c) Component and/or breadboard validation in relevant environment
- d) System/subsystem model or prototype demonstration in a relevant environment
- e) System prototype demonstration in an operational environment
- f) Actual system completed and qualified through test and demonstration
- g) Actual system proven through successful operation

**What are the main barriers/obstacles regarding the use of public funds for financing of eco-innovations (multiple)?**

- a) Lack of knowledge of tender procedures
- b) Lack of transparency of sources of funding
- c) Lack of support for the development of eco-innovation
- d) Complicated administrative and tendering procedures
- e) Strained public budgets
- f) Limited human resource capacity
- g) Other, please specify: \_\_\_\_\_

**Do companies you work with usually elaborate strategies on eco-innovation and do you provide support in this regard?**

- a) They have no strategy of eco-innovation
- b) It is necessary to enforce eco-innovation as part of their company strategy
- c) They have a strategy of eco-innovation which is understood by their management
- d) The strategy of eco-innovation is an integral part of the overall strategy of the company and there a clear picture

**Evaluate the environmental impact of the company's (your clients) activities**

- a) Companies does not deal with the environmental impacts of its activities
- b) Companies are familiar with the laws related to ecology and are aligned with them, to the necessary extent
- c) An Enterprises is certified according to ISO-14000
- d) Businesses are certified according to ISO-14000 and form an image of environmentally friendly company

**How your clients provide resources for the costs arising from amendments to standards, regulations and laws in the field of quality and environmental protection?**

- a) Our clients are not willing to provide funds for such activities
- b) Resources are required and ensured only when there is a conflict with existing standards and laws
- c) Amendments to standards and regulations are continually monitored, resources are provided for the implementation of expected modifications

Thank you for taking the time to participate in the survey. Would you like to receive notifications about on-going and future project activities?

- c) Yes, please insert your e-mail: \_\_\_\_\_
- d) No

We appreciate your feedback.

Private company (as producers and users of eco-innovation)

Research and development institutions

**Public authorities (institutions)**

General public, NGO-s & consumer

- **Sector identification:**
  - a) National Authority
  - b) Regional Authority
  - c) Local Authority
  - d) Public Enterprise
  - e) Development Agency
  - f) Chamber of Commerce
  - g) Other, please specify: \_\_\_\_\_

- **What is the number of employees?**

**To what extent are you familiar with the concept of "eco-innovation".**

- a) Little
- b) Moderate
- c) Quite
- d) Fully

**Does your institution have experience in supporting eco-innovation?**

- c) Yes
- d) No

**Does your institution directly provide support in eco-innovation**

- c) Yes
- d) No

**What type of support do you offer concerning the eco-innovation?**

- a) Advisory
- b) Educational
- c) Financial
- d) Institutional
- e) Other, please specify: \_\_\_\_\_

**In the last three years, you were supporting enterprises and producers of eco-innovation in:**

- a) Products
- b) Services
- c) Work processes
- d) Technology
- e) Other: \_\_\_\_\_

**Your institution provides support for the introduction of eco-innovation:**

- a) On your own
- b) In coordination with other institutions
- c) In cooperation with business enterprises
- d) In cooperation with scientific institutes
- e) Other, please specify: \_\_\_\_\_

**What is the status of legislation on eco-innovation in your country/region? (You can choose more than one answer)**

- a) No legislation exists
- b) Legislation for supporting innovation in place
- c) Legislation for supporting EE, RES and recycling of raw materials in place
- d) Legislation exists but is not appropriately implemented nor enforced
- e) Legislation exists and is enforced

Is an amendment of existing legislation necessary?

- a) Yes
- b) No

In your opinion is it possible to simplify financing of eco-innovation?

- a) Not possible
- b) Little possible
- c) Moderate possible
- d) Quite possible
- e) Very possible

In your opinion, did the support you provide help the advancement of green production, increase the energy efficiency and use of renewable energy?

- a) Didn't help
- b) Little helped
- c) Moderate helped
- d) Quite helped
- e) Very helped

Evaluate factors according to their impact on eco-innovation up-take (1-the smallest impact; 5 – the highest impact):

- 11. Implemented ecological standards
- 12. Improvement of green production
- 13. Increasing energy efficiency
- 14. The use of renewable energy
- 15. Access to foreign investment
- 16. Cooperation with research centres and universities
- 17. Cooperation with the development agencies
- 18. Cooperation with chambers of commerce
- 19. Participation in EU projects

1	2	3	4	5

What are the main challenges in your work with companies in terms of eco-innovation: (You can choose more than one answer)

- a) Lack of knowledge about the role and scope of innovation-support and environmental institutions
- b) Poor communication and delivery of internal documents
- c) Lack of clients knowledge
- d) Relevant legislation unconscionability
- e) Lack of knowledge on competition's ecological innovations and improvements
- f) Other, please specify: \_\_\_\_\_

How often is present the so-called consultation process in your work, which involves improving the ability of companies and manufacturers to independently create and introduce eco-innovation?

- a) Significantly
- b) Periodically
- c) Never

What are the basic counselling support tools and techniques that you use in your work with clients?

- a) Internal methods (programs and projects) according the clients' needs
- a) Consulting tools based upon scientific analysis
- b) System quality standards, creative workshops
- c) TQM, reengineering
- d) Other\_\_\_\_\_

Evaluate the interest of your client for the work on eco-innovation? (1-smallest interest; 5 – highest interest)

1	2	3	4	5



**Does your work include transfer of knowledge between experts from other regions?**

- a) Yes
- b) No

**What is to you the current status of eco-innovative projects participating in the financing? (or What is to you the current status of eco-innovative projects currently under implementation?)**

- a) On the level of concepts, ideas in the development of thinking about innovation
- b) Preparation of the test process and / or product, the test preparations eco innovations (pre-stage)
- c) Implementation of the eco-innovation
- d) Monitoring, troubleshooting and preparing for the development of new models

**What are the main barriers/obstacles regarding the use of public funds for financing of eco-innovations (multiple)?**

- h) Lack of knowledge of tender procedures
- i) Lack of transparency of sources of funding
- j) Lack of support for the development of eco-innovation
- k) Complicated administrative and tendering procedures
- l) Strained public budgets
- m) Limited human resource capacity
- n) Other, please specify: \_\_\_\_\_

**Evaluate the impact of the activities of your clients at the promotion of green production, increasing energy efficiency and consumption of renewable energy:**

- a) Our clients are not involved in the improvement of green production, increasing energy efficiency and consumption of renewable energy sources
- b) Our clients are familiar with the laws related to ecology/energy and are aligned with them at the necessary extent
- c) Our clients are leaders in promotion of green production, increasing energy efficiency and consumption of renewable energy

**How your clients provide resources for the costs arising from amendments to standards, regulations and laws in the field of quality and environmental protection?**

- d) Our clients are not willing to provide funds (or to invest finances) for such activities
- e) Resources are required and ensured only when there is a conflict with existing standards and laws
- f) Amendments to standards and regulations are continually monitored, resources are provided for the implementation of expected modifications

Thank you for taking the time to participate in the survey. Would you like to receive notifications about on-going and future project activities?

- e) Yes, please insert your e-mail: \_\_\_\_\_
- f) No

We appreciate your feedback.

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**Type of entity:**

Private company (as producers and users of eco-innovation)

Research and development institutions

Public authorities (institutions)

**General public, NGO-s & consumers**

**You are:**

- a) Individual person
- b) Civil organisations

**If the answer is "a)"**

• **Level of education**

- a) Primary school
- b) Secondary school
- c) College
- d) High School
- e) Master or doctorate

• **Employment status:**

- a) Employed
- b) Unemployed
- c) Student
- d) Retired

**If the answer is "b)"**

- **Identification of sector: what kind of activities is your institutions dealing with?**

**To what extent are you familiar with the concept of "eco-innovation".**

- a) Little
- b) Moderate
- c) Quite
- d) Fully

**What is most important when you choose a product or service? (You can choose more than one answer)**

- a) Price
- b) Functionality
- c) Brand
- d) Overall quality
- e) After purchase service (warranty, repair, customer service etc.)
- f) Origin (local, national product/service)
- g) Environment (product/service is eco-friendly)

**How important is that the product/service is eco-friendly?**

- a) Not at all
- b) Very little
- c) Moderate
- d) Quite important
- e) Very important

**Is promotion and awareness raising about ecology, energy efficiency, sustainability and similar present and frequent in the public?**

- a) It's not present at all
- b) Present only as an accompanying element in promotion of products / services for the purpose of positioning in the market
- c) Always present

Have you ever been, or are presently involved in any activity concerning innovation?

- a) Yes, I am involved in \_\_\_\_\_
- b) No

Assess the impact of incentives that affect the development of eco-innovation (1-the smallest impact; 5-the biggest impact)

- 20. Introduction of ecological standards
- 21. Liberalization of market
- 22. Foreign investments
- 23. Information technology
- 24. The network of research centres and universities
- 25. Development agencies
- 26. Chamber of commerce
- 27. Competition
- 28. EU projects
- 29. R&D of company

1	2	3	4	5

Is there any demand for eco-innovation in your local/national environment?

- a) Not at all
- b) Very little
- c) Lot of possibilities

How strong is governmental support (national, regional and local) for the development and introduction of eco-innovation?

- a) No support at all
- b) Weak support
- c) Moderate
- d) Strong
- e) Very strong

Do you know any company in your environment commercializing an eco-innovative product/service?

- a) Yes, that is \_\_\_\_\_
- b) No

Which areas have the greatest potential to introduce eco innovation (1 – small potential; 5 - great potential)

- 1. Traffic
- 2. Agriculture
- 3. Tourism
- 4. Energy
- 5. Mining
- 6. Heavy industry (black and non-ferrous metallurgy, machine and basic chemical industry)
- 7. Light industry (textile, wood, food)
- 8. Trade
- 9. Services
- 10. Construction
- 11. Information technology

1	2	3	4	5

How effective are media in increasing awareness on the importance of eco-innovation (1-not important at all; 5-very important)

- 1. TV
- 2. Radio
- 3. Digital media (internet)
- 4. Printed materials (flyers, brochures)
- 5. Scientific journals

1	2	3	4	5

6. Social Media (facebook, twitter, etc.)
7. Scientific conferences
8. Other, please specify: \_\_\_\_\_


**How much are organizations/companies in country successful in implementing of eco-innovation?**

- a) Not at all
- b) Little successful
- c) Moderate
- d) Quite successful
- e) Very successful

**Have you recently participated in any other survey about the innovation of eco products/services?**

- a) I have never been contacted
- b) They contact me from time to time
- c) Yes, they contact me regularly

**How much is branding of eco-innovation important?**

- a) Not at all
- b) Very little
- c) Moderate
- d) Quite important
- e) Very important

Thank you for taking the time to participate in the survey. Would you like to receive notifications about on-going and future project activities?

- a) Yes, please insert your e-mail: \_\_\_\_\_
- b) No

We appreciate your feedback.

A 2. Frequency of responses per project partner and stakeholder category

No.	Country	Partner	Surveys completed:	Stakeholder category:	
1	Austria	Economica	7%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	14% 26% 4% 42%
2	Bulgaria	CCI-VRATSA	7%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	21% 5% 23% 50%
3	Bosnia and Herzegovina	CCI BL	14%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	15% 13% 22% 50%
4	Croatia	REDEA	9%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	20% 3% 39% 38%
5	Czech republic	BIC Brno	6%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	30% 46% 2% 22%
6		BUT	10%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	19% 27% 14% 41%
7	Germany	bwcon	3%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	24% 19% 14% 43%
8	Hungary	Digitalis Jolet	2%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	20% 13% 13% 53%
9		SMVKA	9%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	46% 9% 21% 24%
10	Slovakia	SCSTI	10%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	9% 19% 33% 38%

No.	Country	Partner	Surveys completed:	Stakeholder category:	
11		CUSP	2%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	17% 28% 11% 44%
12	Slovenia	KSSENA	10%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	25% 19% 29% 27%
13	Serbia	RDA Banat	11%	Cat. 1 Cat. 2 Cat. 3 Cat. 4	38% 10% 20% 33%