



Setting up the innovation support mechanisms and increasing awareness on the potential of Food Innovation and RTD in the South- East Europe area

**Project Code:** SEE/B/0028/1.3/X

**WORK PACKAGE 3: ANALYSIS OF POLICIES AND STRATEGIES FOR FOOD INNOVATION**

## D3.2b- Technology Audits for the Agrofood SMEs

**Version:** 2.0  
**Date:** 06/06/13  
**Pages:** 146

**Author:** Constantinos Styliaras  
**Partner:** FING

**For further information please contact:**  
**Email:** k.styliaras@sbbe.gr

**Dissemination Level:** Public

Partner	Official name (in English)	Abbreviation	Country
LP	Centre for Research and Technology Hellas- Institute of Applied Biosciences	EKETA- IAB	Greece
ERDF PP1	Federation of Industries of Northern Greece	FING	Greece
ERDF PP2	National Research Council- Institute of Sciences of Food Production	CNR/ISPA	Italy
ERDF PP3	Agricultural University of Plovdiv	AUP	Bulgaria
ERDF PP4	Pazardzhik Regional Administration	OAP	Bulgaria
ERDF PP5	National Institute of Research & Development for Food Bioresources	IBA	Romania
ERDF PP6	Constanta Chamber of Commerce, Industry, Shipping And Agriculture	CCINA	Romania
ERDF PP7	Development Agency of Idrija and Cerkno	ICRA	Slovenia
ERDF PP8	European Food Chain Parliament-Foodlawment	EEPF	Hungary
10% PP1	Odessa National Academy of Food Technologies	ONAFI	Ukraine
10% PP2	Chamber of Commerce and Industry of the Republic of Moldova	CCIRM	Republic of Moldova
10% PP3	Institute for Food Technology	FINS	Serbia

### Contents:

#### D3.2b- Technology Audits for the Agrofood SMEs

### Abstract:

The report presents the results of the technology audits of the Agrofood SMEs of the participating regions.

**Project Document Information**

<b>Project acronym:</b>	Inno- Food SEE
<b>Project full title:</b>	Setting up the innovation support mechanisms and increasing awareness on the potential of Food Innovation and RTD in the South- East Europe area
<b>Project Code:</b>	SEE/B/0028/1.3/X
<b>Project start date:</b>	1 <sup>st</sup> April 2011
<b>Project duration:</b>	30 months
<b>Deliverable number:</b>	
<b>Deliverable title:</b>	
<b>Due period of deliverable:</b>	
<b>Actual submission period:</b>	
<b>Authors:</b>	
<b>Editors:</b>	
<b>Reviewers:</b>	
<b>Work Package no.:</b>	
<b>Work Package title:</b>	
<b>Work Package leader:</b>	
<b>Work Package participants:</b>	
<b>Nature:</b>	
<b>Version:</b>	
<b>Draft/Final:</b>	
<b>No of pages (including cover):</b>	
<b>Keywords:</b>	

**List of Acronyms and Abbreviations**

<b>Acronym/abbreviation</b>	<b>Resolution</b>

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>6</b>
<b>1. INTRODUCTION, SCOPE AND METHODOLOGY .....</b>	<b>8</b>
1.1. Introduction.....	8
1.2. Geographical Scope .....	8
1.3. Role of each partner .....	9
1.4. Methodological approach.....	9
<b>2. REGION OF CENTRAL MACEDONIA, GREECE.....</b>	<b>10</b>
2.1 Short profile of the region, the agricultural production and the food industry ...	10
2.2 Profiled Agrofood SMEs.....	11
2.3 Key information from the Technology Audits.....	15
2.3.1 SECTION A - COMPANY GENERAL INFORMATION.....	15
2.3.2 SECTION B - INNOVATION STRATEGY .....	17
2.3.3 SECTION C - COMMITMENT TO TECHNOLOGY .....	20
2.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	21
2.3.5 SECTION E - POLITICAL CONTEXT .....	22
2.4 Preliminary SWOT results.....	23
2.5 Concluding Remarks.....	23
<b>3. REGION OF APULIA, ITALY .....</b>	<b>25</b>
3.1 Short profile of the region, the agricultural production and the food industry ...	25
3.2 Profiled Agrofood SMEs.....	27
3.3 Key information from the Technology Audits.....	29
3.3.1 SECTION A - COMPANY GENERAL INFORMATION.....	29
3.3.2 SECTION B - INNOVATION STRATEGY .....	31
3.3.3 SECTION C - COMMITMENT TO TECHNOLOGY .....	34
3.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	39
3.3.5 SECTION E - POLITICAL CONTEXT .....	41
3.4 Preliminary SWOT results.....	42
3.4 Concluding remarks .....	48
<b>4. REGION OF PAZARDZHIK, BULGARIA.....</b>	<b>50</b>
4.1 Short profile of the region, the agricultural production and the food industry ...	50
4.2 Profiled Agrofood SMEs.....	51
4.3 Key information from the Technology Audits.....	53
4.3.1 SECTION A - COMPANY GENERAL INFORMATION.....	53
4.3.2 SECTION B - INNOVATION STRATEGY .....	54
4.3.3 SECTION C - COMMITMENT TO TECHNOLOGY .....	55
4.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	56
4.3.5 SECTION E - POLITICAL CONTEXT .....	57
4.4 Preliminary SWOT results.....	58

<b>4.4</b>	<b>Concluding remarks .....</b>	<b>60</b>
<b>5.</b>	<b>SOUTH-EAST DEVELOPMENT REGION AND BUCHAREST-ILFOV DEVELOPMENT REGION, ROMANIA .....</b>	<b>61</b>
<b>5.1</b>	<b>Short profile of the region, the agricultural production and the food industry ...</b>	<b>61</b>
<b>5.2</b>	<b>Profiled Agrofood SMEs.....</b>	<b>65</b>
<b>5.3</b>	<b>Key information from the Technology Audits.....</b>	<b>67</b>
5.3.1	SECTION A - COMPANY GENERAL INFORMATION.....	67
5.3.2	SECTION B - INNOVATION STRATEGY .....	68
5.3.3	SECTION C - COMMITMENT TO TECHNOLOGY .....	69
5.3.4	SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	70
5.3.5	SECTION E - POLITICAL CONTEXT .....	72
<b>5.4</b>	<b>Preliminary SWOT results .....</b>	<b>73</b>
<b>5.5</b>	<b>Concluding remarks .....</b>	<b>74</b>
<b>6.</b>	<b>REPUBLIC OF SLOVENIA .....</b>	<b>76</b>
<b>6.1</b>	<b>Short profile of the Country, the agricultural production and the food industry</b>	<b>76</b>
<b>6.2</b>	<b>Profiled Agrofood SMEs.....</b>	<b>78</b>
<b>6.3</b>	<b>Key information from the Technology Audits.....</b>	<b>79</b>
6.3.1	SECTION A - COMPANY GENERAL INFORMATION.....	79
6.3.2	SECTION B - INNOVATION STRATEGY .....	80
6.3.3	SECTION C - COMMITMENT TO TECHNOLOGY .....	84
6.3.4	SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	86
6.3.5	SECTION E - POLITICAL CONTEXT .....	87
<b>6.4</b>	<b>Preliminary SWOT results .....</b>	<b>88</b>
<b>7.</b>	<b>HUNGARY .....</b>	<b>89</b>
<b>7.1</b>	<b>Short profile of the region, the agricultural production and the food industry ...</b>	<b>89</b>
<b>7.2</b>	<b>PROFILED AGROFOOD SMES.....</b>	<b>90</b>
<b>7.3</b>	<b>Key information from the Technology Audits.....</b>	<b>92</b>
<b>7.4</b>	<b>General considerations on technology commitments .....</b>	<b>95</b>
<b>8.</b>	<b>REGION OF ODESSA, UKRAINE .....</b>	<b>96</b>
<b>8.1</b>	<b>Short profile of the region, the agricultural production and the food industry ...</b>	<b>96</b>
8.1.1	Introduction.....	96
8.1.2	Agriculture .....	96
8.1.3	Food Industry.....	97
<b>8.2</b>	<b>Profiled Agro food SMEs.....</b>	<b>97</b>
<b>8.3</b>	<b>Key information from the Technology Audits.....</b>	<b>99</b>
8.3.1	SECTION A - COMPANY GENERAL INFORMATION.....	99
8.3.3	SECTION C - COMMITMENT TO TECHNOLOGY .....	105
8.3.4	SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	108
8.3.5	SECTION E - POLITICAL CONTEXT .....	109
<b>8.4</b>	<b>Preliminary SWOT results .....</b>	<b>109</b>

<b>9. REPUBLIC OF MOLDOVA.....</b>	<b>111</b>
<b>9.1 Short profile of the region, the agricultural production and the food industry .111</b>	
9.1.1 Introduction.....	111
9.1.2 Agriculture .....	111
9.1.3 Food Industry.....	112
<b>9.2 Profiled Agro food SMEs.....</b>	<b>112</b>
<b>9.3 Key information from the Technology Audits.....</b>	<b>113</b>
9.3.1 SECTION A - COMPANY GENERAL INFORMATION.....	113
9.3.2 SECTION B - INNOVATION STRATEGY .....	114
9.3.3 SECTION C - COMMITMENT TO TECHNOLOGY .....	118
9.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	119
9.3.5 SECTION E - POLITICAL CONTEXT .....	120
<b>9.4 Preliminary SWOT results .....</b>	<b>121</b>
<b>10. VOJVODINA DEVELOPMENT REGION, SERBIA .....</b>	<b>122</b>
<b>10.1 Short profile of the region, the agricultural production and the food industry .122</b>	
<b>10.2 Profiled Agrofood SMEs.....</b>	<b>126</b>
<b>10.3 Key information from the Technology Audits.....</b>	<b>127</b>
10.3.1 SECTION A - COMPANY GENERAL INFORMATION.....	127
10.3.2 SECTION B - INNOVATION STRATEGY .....	127
10.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS .....	129
10.3.5 SECTION E - POLITICAL CONTEXT .....	130
<b>10.4 Preliminary SWOT results .....</b>	<b>131</b>
<b>10.5 Concluding remarks .....</b>	<b>132</b>
<b>11. ANNEX- QUESTIONNAIRE TEMPLATE USED FOR AGROFOOD SMES TECHNOLOGY AUDITS.....</b>	<b>133</b>
<b>SECTION A - COMPANY GENERAL INFORMATION .....</b>	<b>134</b>
<b>SECTION B - INNOVATION STRATEGY .....</b>	<b>136</b>
<b>SECTION C - COMMITMENT TO TECHNOLOGY .....</b>	<b>139</b>
<b>SECTION D - INNOVATION &amp; TECHNOLOGY PROJECTS .....</b>	<b>142</b>
<b>SECTION E – POLICY CONTEXT .....</b>	<b>144</b>
<b>SECTION F - STRATEGIC POSITIONING .....</b>	<b>145</b>
<b>SECTION G - COMMENTS.....</b>	<b>146</b>

## EXECUTIVE SUMMARY

The current report presents the results of the technology audits performed for the Agrofood SMEs of the participating regions and countries. The objective of the survey was to examine the overall framework in which the food companies in each region and country operate; to investigate how they perceive, commit to and manage innovation; and to identify the needs for technology and research solutions that may increase their competitiveness.

A total of 288 food companies were surveyed in the participating regions and countries. This profiling exercise will continue until at least the end of the project. The partners used a standard technology audit methodology and template questionnaire developed by FING. The results of the technology audits are presented in an as much as possible unified form.

Based on the various reports elaborated by the partners, the following key findings and conclusions were identified as common in the participating regions and countries:

- The majority of the investigated food companies are either small or medium- sized. They are in business for a significant number of years; many are family- owned possibly have a rather traditional approach in their decision making, operation and approach to innovation;
- Their customer base is primarily regional and national, however a significant part is also directed to sell beyond the national borders;
- A significant portion- but not the majority- have some type of quality or food safety certification (usually HACCP and ISO9001; less frequently ISO22000, BRC, IFS, etc.);
- The majority (>80%) report that they include some reference to innovation in the company's "mission" or "vision" (with the notable exception of C. Macedonia where only 18% report such a reference);
- The main business areas where companies consider that innovation can have a significant impact are their production processes, followed by marketing and company organisation;
- Most companies consider that their own products score rather favourably in terms of their innovative characteristics in comparison to the market competition;
- The main source of innovation for companies is the acquisition of new process equipments that enhance their production capacities and allow them to develop new products. Patent acquisition, the operation of the internal RTD department and the development of external partnerships are also important sources of innovation;
- The majority of companies does not have a dedicated RTD department; the responsibility for innovation represents an additional task of existing departments, usually that of quality control;
- The companies consider themselves to be moderately depended on external technical expertise, while they consider to have an adequate level of skilled personnel to manage innovation (with the notable exception of C. Macedonia where the majority reports lack of skilled personnel);

- In most regions and countries, the majority of companies have been involved in some type of research/ innovation project relevant to their food products primarily in key areas such as product quality and process efficiency;
- In certain regions and countries the available public policies, initiatives and incentives were considered adequate for innovation support by a significant proportion of the surveyed companies; in other countries however, the majority were sceptical about their effectiveness.

The results of the preliminary SWOT analysis are particularly interesting and they are analysed on a regional/ national level; it is not feasible or recommended to aggregate them. In any case the SWOT analysis will be subject to a complete analysis in the dedicated deliverables D3.3 and D3.4.

# 1. INTRODUCTION, SCOPE AND METHODOLOGY

## 1.1. Introduction

In accordance to the Technical Annex of the Inno- Food SEE project, under activity 3.2 of WP3- “Analysis of policies and strategies for food innovation” the partners undertook the profiling of a significant number of Food SMEs with the scope of identifying their needs for technology and research solutions that would increase their competitiveness. The SME profiles and technology needs will be included in the database developed in WP2 and a methodology and tools for matching the R&D needs with the technology offer will be laid out.

## 1.2. Geographical Scope

The geographical scope of the food companies profiling and analysis is regional, i.e. the region of Central Macedonia in Greece, the region of Puglia in Italy, etc. However in certain cases it proved more realistic to address these issues on a wider level (NUTS 1 level or NUTS 0) because of the small size of one country (Slovenia and Moldova) or the significant agrofood activity that an adjacent region may present. Therefore, it was suggested that the partners undertook their mapping and analysis on a regional scale moving up to a wider scale if and when necessary.

The target for number of food SMEs to be profiled until the end of the project according to the original Application Form was 400. An indicative allocation of the number of food SMEs by region/ country is presented in the table. The target value of 400 companies needs to be reassessed given the following changes in the synthesis and character of the consortium:

- 2 Serbian partners were included as IBA partners in the Application stage, with a full budget and set of responsibilities; however in the contracting process only 1 partner from Serbia was included *as an associated partner* having no budget or adequate resources to undertake a full mapping;
- The number of food companies that the partners could approach in Slovenia and Moldova was overestimated- the countries are particularly small with a rather restricted food production base;
- By the time the overall report had to be compiled, the Hungarian partners did not provide their report and questionnaires.

**A total of 288 food companies were profiled in the process of the technology audits. The partners are committed to continue with the mapping exercise at least until the end of the project by utilizing the online facility/ database.**



Country	Target number of SMEs to be profiled by the end of the project	SMEs profiled so far (February 2013)
Greece	70	76
Italy	75	64
Bulgaria	50	50
Romania	50	39
Slovenia	50	22
Hungary	60	-
Ukraine	15	16
Moldova	15	6
Serbia	15	15
<b>TOTAL</b>	<b>400</b>	<b>288</b>

### 1.3. Role of each partner

Each partner contributed to the development of the deliverables- outputs that refer in its country. In countries which are represented with 2 partners (e.g. a University plus an SME association) the roles will be distributed depending on the institutional role and the connection/ relation of each partner. More specifically the profiling of food SMEs in Greece will be the task of FING; in Bulgaria of DoP; in Romania of CCINA.

FING was responsible for setting up the appropriate methodology and tools for the implementation of the activities and for monitoring, integrating and homogenizing the deliverable.

### 1.4. Methodological approach

The partners were encouraged to utilise their networks, databases and other sources of information in order to make a first list of the food SMEs at a regional and wider level (see note above about the geographical scope). They then identified key persons in the SMEs to undertake the profiling. This person was either from the research/ technological development or the marketing or the production department. In most cases, it was necessary to involve more than one person to elicit the necessary information.

The profiled SMEs were asked to fill in their own questionnaires and the project partners helped them by clarifying certain issues. However, the partners were encouraged to establish direct contacts and interviews with the most important food companies in order to prepare for their more active engagement and involvement in the future project activities.

The information that was selected from the companies was processed using simple statistical tools. These data and information will be assessed in conjunction with overall statistical data extracted from Eurostat, <http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>. Key conclusions and comments from the partners were provided.

In the next sections the profiling of the food SMEs in each region/ country is presented.

## 2. REGION OF CENTRAL MACEDONIA, GREECE

### 2.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

The Region of Central Macedonia is characterised by a particularly advanced agrofood sector, both in terms of primary agricultural production, and with regards to the manufacturing sector of the food industry. A significant number of companies with intense exporting character- mainly towards the EU- are active in the region. Among the main challenges the AgroFood sector of Central Macedonia faces is the valid assessment of the technology and know- how needs of the SMEs with regard to the introduction of agro-biotechnologies in the production process. SMEs face competition from foreign companies that have already introduced both biotechnological methods and products. In order to keep up with the competition, SMEs need to proceed with significant investments in technology, keeping close cooperative ties with research institutes and technology providers.



The restructuring of the production processes of the AgroFood industry by exploiting the results of new technology will contribute to the reduction of production costs in the primary agricultural and the secondary manufacturing AgroFood sector; the rationalization of the production processes, the transportation of goods, the critical point control; and the standardization of products and the improvement of the quality of products through the implementation of innovative techniques, diversification of products according to consumer needs, control and standardization.

The AgroFood industries constitute around 20% of the total number of industries in the region of Central Macedonia; they provide 28% of the employment and approximately 30% of the gross and value added production of the overall regional industry.

## 2.2 PROFILED AGROFOOD SMEs

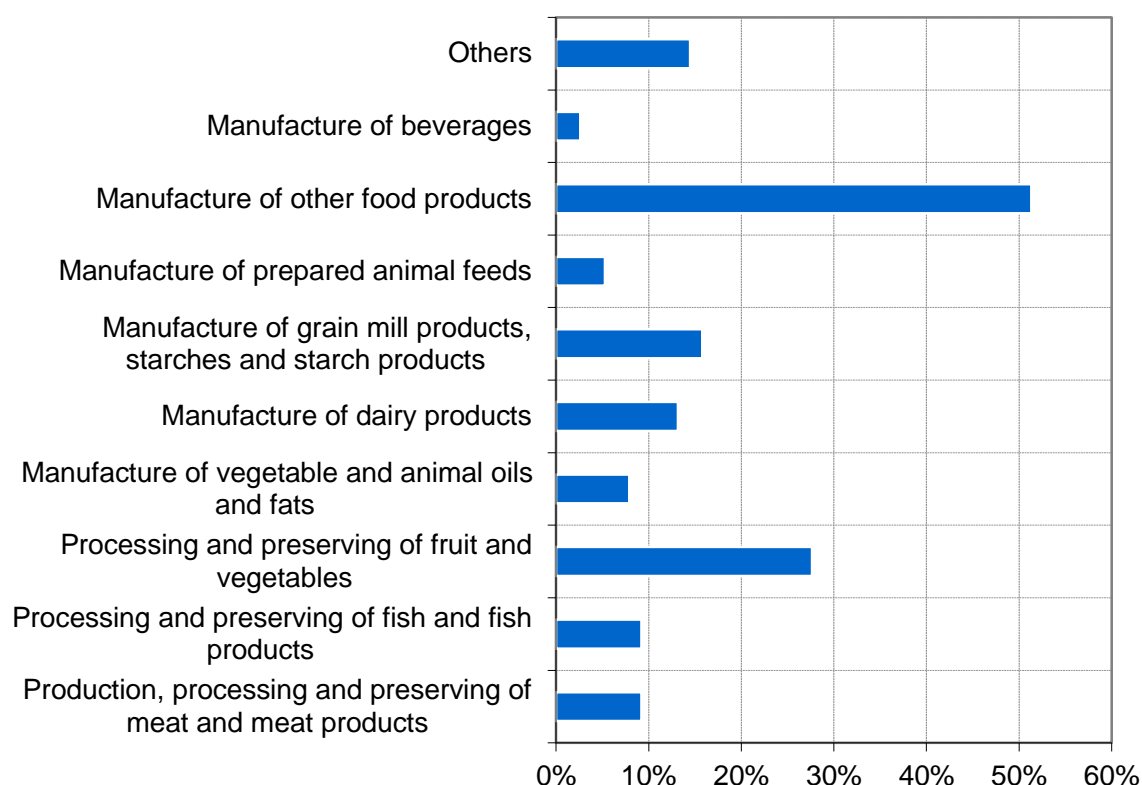
Seventy six (76) Agrofood SMEs based in the Region of Central Macedonia participated in the Technology audits; they are listed in the following table:

	Full official name of company	Productive sectors the company is active in
1.	AGRIFREDA SA	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> </ul>
2.	AGRO THOMAS Th. VOGIATZIS & Co.	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
3.	AGROINVEST SA	<ul style="list-style-type: none"> <li>Manufacture of prepared animal feeds</li> <li>Manufacture of other food products</li> <li>Manufacture of beverages</li> </ul>
4.	AHN SUNG HO	<ul style="list-style-type: none"> <li>Manufacture of vegetable and animal oils and fats</li> <li>Manufacture of other food products</li> </ul>
5.	ANTONIO FOODS P. & A. KONSTANTINIDIS & Co.	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of beverages</li> </ul>
6.	ARI SA	<ul style="list-style-type: none"> <li>Processing and preserving of fish, crustaceans and mollusks</li> <li>Processing and preserving of fruit and vegetables</li> </ul>
7.	ARTO SA	<ul style="list-style-type: none"> <li>Manufacture of grain mill products, starches and starch products</li> <li>Manufacture of other food products</li> </ul>
8.	CACAO LAMBERT Ltd.	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
9.	CONDITO SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
10.	COVITA HELLENIC SA	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> </ul>
11.	DELIFISH SA	<ul style="list-style-type: none"> <li>Processing and preserving of fish, crustaceans and mollusks</li> </ul>
12.	ECOFOOD SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> <li>Manufacture of beverages</li> </ul>
13.	ELMAR CRETE SA	<ul style="list-style-type: none"> <li>Manufacture of vegetable and animal oils and fats</li> </ul>
14.	ESCARCOM SA	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
15.	EURICOM HELLAS SA	<ul style="list-style-type: none"> <li>Manufacture of grain mill products, starches and starch products</li> </ul>
16.	EUROPA OLIVES Ltd.	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of vegetable and animal oils and fats</li> </ul>

	Full official name of company	Productive sectors the company is active in
17.	EV.GE. PISTIOLAS SA	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
18.	F.S.N. - FARM SERVICE NUTRITION Ltd.	<ul style="list-style-type: none"> <li>• Manufacture of prepared animal feeds</li> </ul>
19.	FOCCACIA Ltd.	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> <li>• Manufacture of other food products</li> </ul>
20.	NUTRIART SA	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> <li>• Manufacture of other food products</li> </ul>
21.	PELOPAC SA	<ul style="list-style-type: none"> <li>• Manufacture of vegetable and animal oils and fats</li> <li>• Manufacture of other food products</li> </ul>
22.	PLAISIR ΠΑΡΑΓΩΓΙΚΗ S.A.	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
23.	U & S UNISMACK A.B.E.E.	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> <li>• Manufacture of other food products</li> </ul>
24.	AGNO MILK INDUSTRY S.A.	<ul style="list-style-type: none"> <li>• Manufacture of dairy products</li> </ul>
25.	AΛ.M.ME. SYNDICATE AGRICULTURAL COOPERATIVES	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> </ul>
26.	ALMI SA	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> </ul>
27.	ALTERRA SA	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> </ul>
28.	AMVROSIADIS CHICKENS COUNTRYSIDE SA	<ul style="list-style-type: none"> <li>• Processing and preserving of meat and production of meat products</li> </ul>
29.	AMPELOURGIKOS OIKOS KAZAKI - KAZAKIS LTD	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
30.	ANTONIOU BROS & CO PICCOLINO ABEE	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
31.	APOSTOLOU GEORGIOS SA*	<ul style="list-style-type: none"> <li>• Processing and preserving of fish, crustaceans and mollusks</li> </ul>
32.	BROS G. LALIOTI Co	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> <li>• Manufacture of other food products</li> </ul>
33.	VIOZOKAT SA*	<ul style="list-style-type: none"> <li>• Manufacture of prepared animal feeds</li> </ul>
34.	VIOTROS SA	<ul style="list-style-type: none"> <li>• Manufacture of dairy products</li> </ul>
35.	GAVANAS FILIPPOS Ltd.	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
36.	GATIDIS SA	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
37.	GIOURIMAK SA	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> </ul>
38.	EDESMA SA	<ul style="list-style-type: none"> <li>• Processing and preserving of meat and production of meat products</li> <li>• Processing and preserving of fish, crustaceans and mollusks</li> </ul>
39.	ELVIZ GREEK FEED INDUSTRY SA	<ul style="list-style-type: none"> <li>• Manufacture of prepared animal feeds</li> </ul>
40.	EV.GE. PISTIOLAS SA	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> </ul>

	Full official name of company	Productive sectors the company is active in
		<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
41.	ZANAE ZIMAI BAKERY NIKOGLLOU S.A.	<ul style="list-style-type: none"> <li>Processing and preserving of fish, crustaceans and mollusks</li> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
42.	ZELIALIDIS AEBEK	<ul style="list-style-type: none"> <li>Processing and preserving of meat and production of meat products</li> </ul>
43.	IONIKI SFOLIATA SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
44.	KOLIOS SA	<ul style="list-style-type: none"> <li>Manufacture of dairy products</li> </ul>
45.	KONΣEPBOΠOIIA BOPEIOY AIGAIΟΥ A.B.E.E.	<ul style="list-style-type: none"> <li>Processing and preserving of fish, crustaceans and mollusks</li> </ul>
46.	KOUFOS NIKOS & SONS SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
47.	KRI - KRI SA	<ul style="list-style-type: none"> <li>Manufacture of dairy products</li> <li>Manufacture of other food products</li> </ul>
48.	KRONOS SA *	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
49.	KRYSTALLIDIS P. PANAGIOTIS SA- SKO	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> </ul>
50.	KONSTANTOPOULOS SA	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of vegetable and animal oils and fats</li> </ul>
51.	M.VIDALI-FOURNARAKIS E. Co	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
52.	MARTAVALTZOGLLOU D. & SONS CO	<ul style="list-style-type: none"> <li>Manufacture of grain mill products, starches and starch products</li> <li>Manufacture of other food products</li> </ul>
53.	MEVGAL SA - MACEDONIAN DAIRY INDUSTRY	<ul style="list-style-type: none"> <li>Manufacture of dairy products</li> </ul>
54.	MICHAIL ARABATZIS SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
55.	BELLAS FIL. & SON SA	<ul style="list-style-type: none"> <li>Manufacture of dairy products</li> </ul>
56.	MILLS KAPLANIDIS SA	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
57.	N. ONASIS SA	<ul style="list-style-type: none"> <li>Processing and preserving of meat and production of meat products</li> <li>Processing and preserving of fish, crustaceans and mollusks</li> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of other food products</li> </ul>
58.	NENDOS STAVROS SA BAKERY PRODUCTS	<ul style="list-style-type: none"> <li>Manufacture of other food products</li> </ul>
59.	Rice mills ANAGENNISIS SA	<ul style="list-style-type: none"> <li>Manufacture of grain mill products, starches and starch products</li> </ul>
60.	PAMI SA	<ul style="list-style-type: none"> <li>Processing and preserving of fruit and vegetables</li> <li>Manufacture of dairy products</li> <li>Manufacture of other food products</li> </ul>

	Full official name of company	Productive sectors the company is active in
61.	PAPADOPOULOS G. S. ΕΜΠ/BIOM. S.A. "DIMITRA"	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
62.	PAPADOPOULOS E. I.A.E.	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
63.	PASSIAS SA	<ul style="list-style-type: none"> <li>• Processing and preserving of meat and production of meat products</li> </ul>
64.	ΠΡΙΣΝΑΛΗΣ Α.Β.Ε.Ε.	<ul style="list-style-type: none"> <li>• Processing and preserving of meat and production of meat products</li> <li>• Manufacture of other food products</li> </ul>
65.	PROIKAS STAMATIS SA	<ul style="list-style-type: none"> <li>• Manufacture of dairy products</li> </ul>
66.	SERKO SERRAIKI CANNED FRUITS A.E. *	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> </ul>
67.	SOUMELIDIS SA"ESPET"	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> <li>• Manufacture of beverages</li> </ul>
68.	SPANOS A.V.E.E.T.	<ul style="list-style-type: none"> <li>• Manufacture of grain mill products, starches and starch products</li> </ul>
69.	TERKENLIS SA	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
70.	TROFOTECHNIKI SA	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
71.	TSAKIRAKIS D. TILEMACHOS	<ul style="list-style-type: none"> <li>• Manufacture of other food products</li> </ul>
72.	FAIDON SA	<ul style="list-style-type: none"> <li>• Manufacture of dairy products</li> <li>• Manufacture of other food products</li> </ul>
73.	FARMA KOUKAKI SA	<ul style="list-style-type: none"> <li>• Manufacture of dairy products</li> </ul>
74.	FRESKOT SA - COMMERCIAL ENTERPRISES	<ul style="list-style-type: none"> <li>• Processing and preserving of meat and production of meat products</li> </ul>
75.	FROZITA SA	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> </ul>
76.	HAITOGLOU BROS SA	<ul style="list-style-type: none"> <li>• Processing and preserving of fruit and vegetables</li> <li>• Manufacture of vegetable and animal oils and fats</li> <li>• Manufacture of other food products</li> </ul>

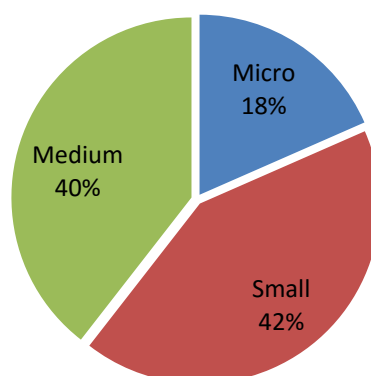


**Graph 1 – Subsectors the food companies are active in**

## 2.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

### 2.3.1 SECTION A - COMPANY GENERAL INFORMATION

The 76 companies participating at the Inno- Food SEE Technology audits are rather representative of the agrofood sector in the region of Central Macedonia, which in its majority is composed of small and medium enterprises.

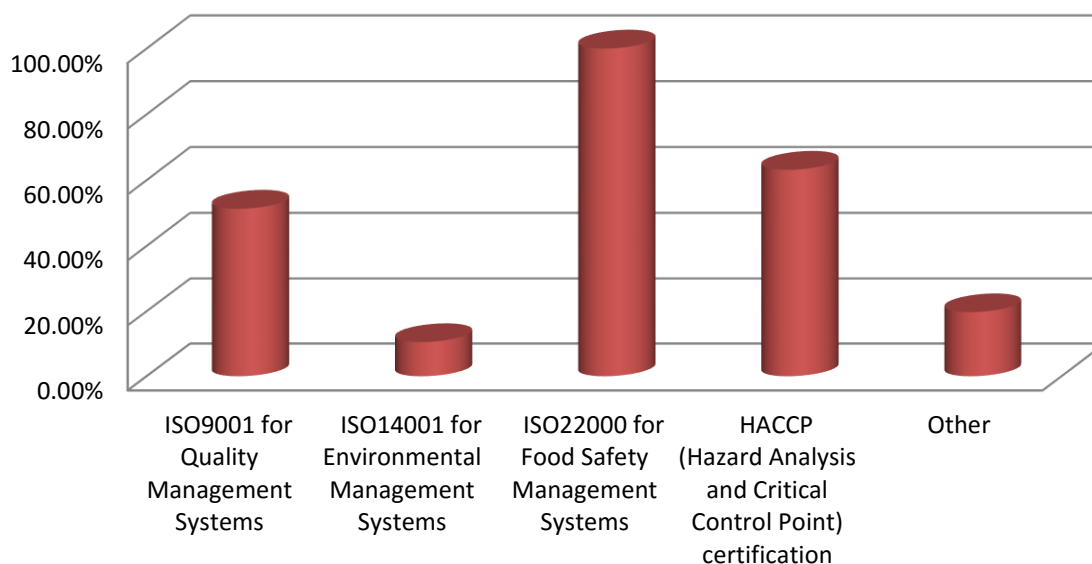


**Graph 2 – Size of Companies<sup>1</sup>**

<sup>1</sup> micro [ < 10 employees and annual turnover <= EUR 2 million or annual balance-sheet total <= EUR 2 million ]  
small [ < 50 employees and annual turnover <= EUR 10 million or annual balance-sheet total < EUR 10 million ]  
medium [ < 250 employees and annual turnover <= EUR 50 million or annual balance-sheet total < EUR 43 million ]

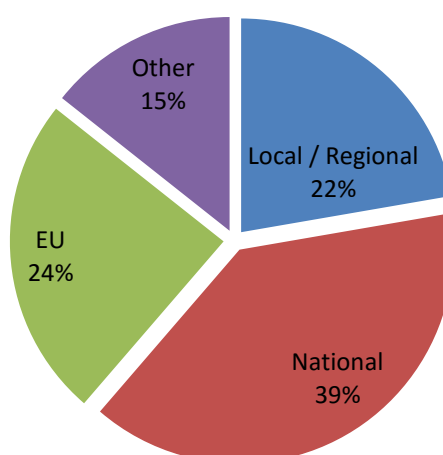


Concerning their quality certification, the entirety of the companies reported being certified by ISO22000 (a standard developed by the International Organization for Standardization focusing on food quality and safety), while 63% have reported having the HACCP (Hazard Analysis and Critical Control Point) standard certification.



**Graph 3 – Type of Quality Certification reported by interviewed companies**

The localization of Central Macedonia's food companies was also examined. The majority (61%) of sales are regional and national, while approximately 39% of sales are directed abroad (24% in the EU markets).

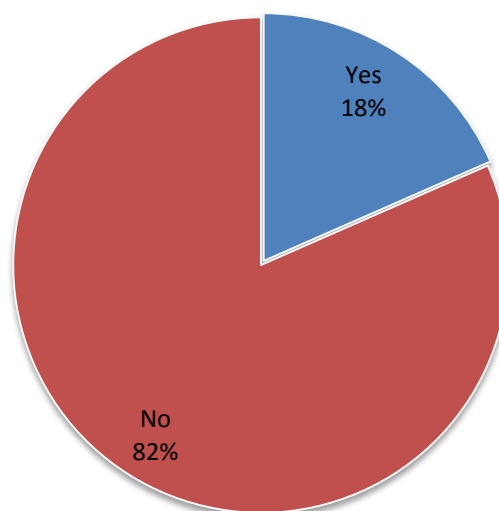


**Graph 4 - Geographical distribution of customers  
(average sales shares reported by the participating companies)**



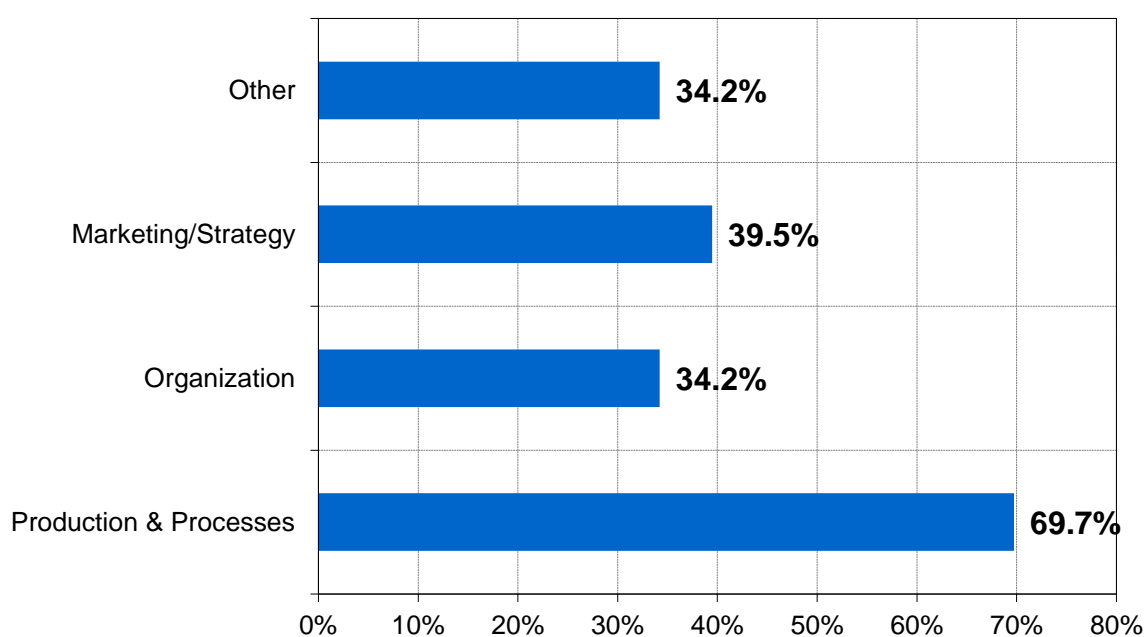
### 2.3.2 SECTION B - INNOVATION STRATEGY

The second section of the technological audit had the aim to investigate the innovation strategy deployed by the regional agrofood enterprises. Only 18% of the interviewed companies declared that their company's "mission" or "vision" includes some type of reference to innovation.



**Graph 5 - Company's "mission" or "vision" including reference to innovation**

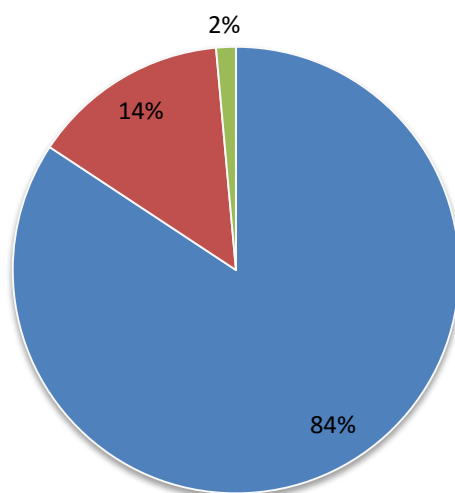
The examined companies reported that during the past five years they have investigated the development and acquisition of innovation primarily in the business area of "Production & Processes", while "Marketing/Strategy" and "Organisation" received equally significant attention:



**Graph 6 – Business Areas investigated for innovation in the past 5 years**

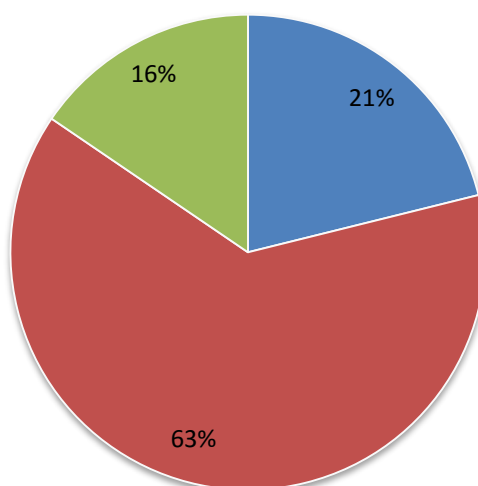
The majority of companies consider that their products and processes are innovative both in terms of the company's standards as well as in comparison with their main competitors:

■ Highly innovative ■ Innovative ■ Less innovative



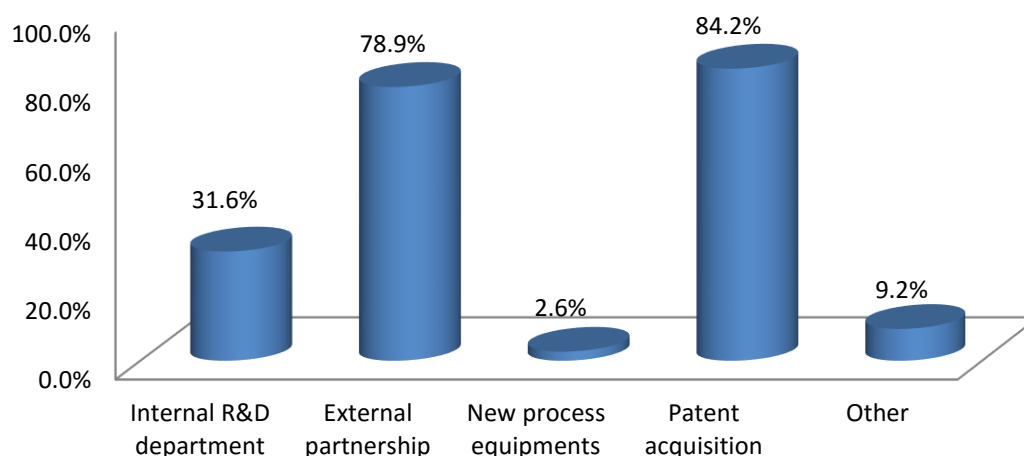
**Graph 7 – Innovation of products & processes for the company's standards**

■ Highly innovative ■ Innovative ■ Less innovative



**Graph 8 - Innovation of products & processes in comparison to main competitors**

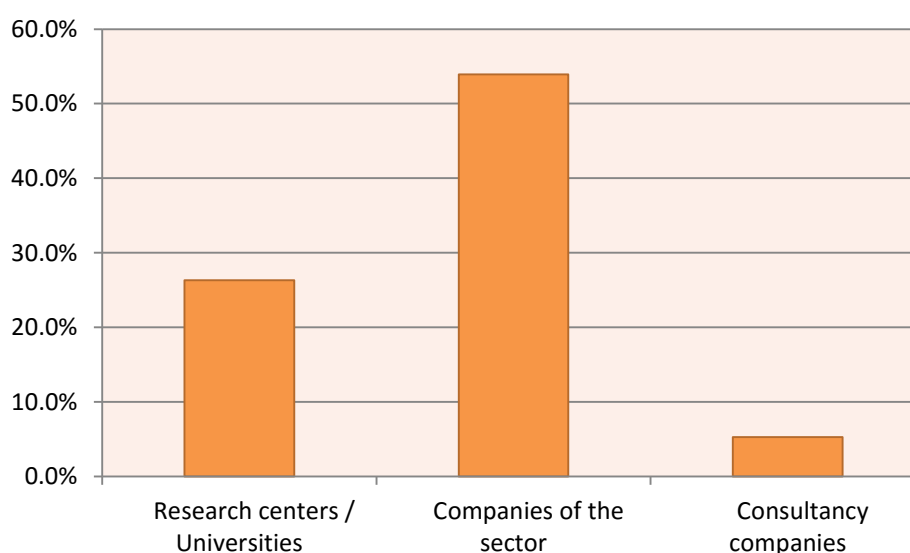
The main sources of innovation reported by the interviewed companies are presented in the following graph. "Patent Acquisition" (84%) and "External Partnership" (79%) were the most frequent responses.



**Graph 9 – Main sources of Innovation**

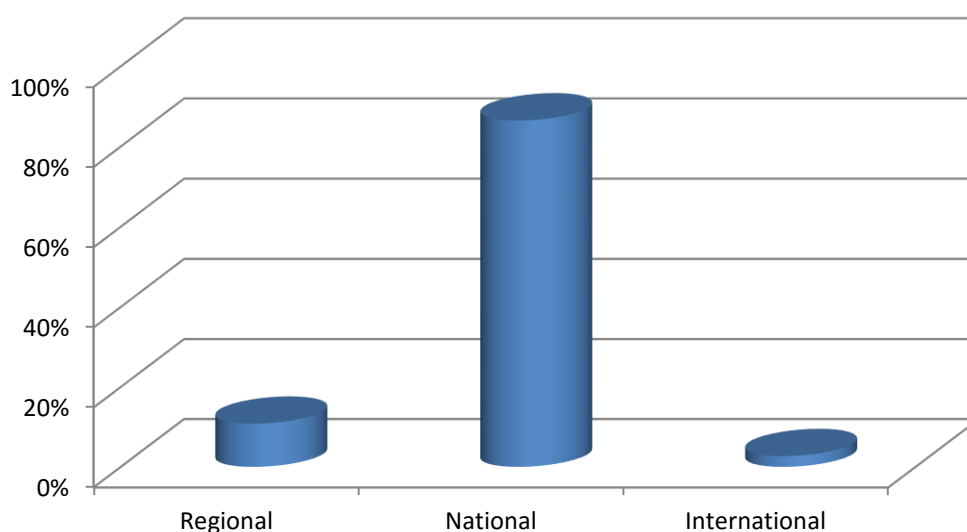
26 companies responded to questions regarding the internal organization of innovation activities. The majority (62%) report that the responsibility for innovation represents an additional task, not continuously foreseen in the organizational structure while the rest 38% reports that the responsibility is embedded within the organizational structure.

Concerning their externally organized innovation activities, the majority reports collaboration with other companies of the sector (54%); less with research centers / universities (26%) or consultancy companies (5%)



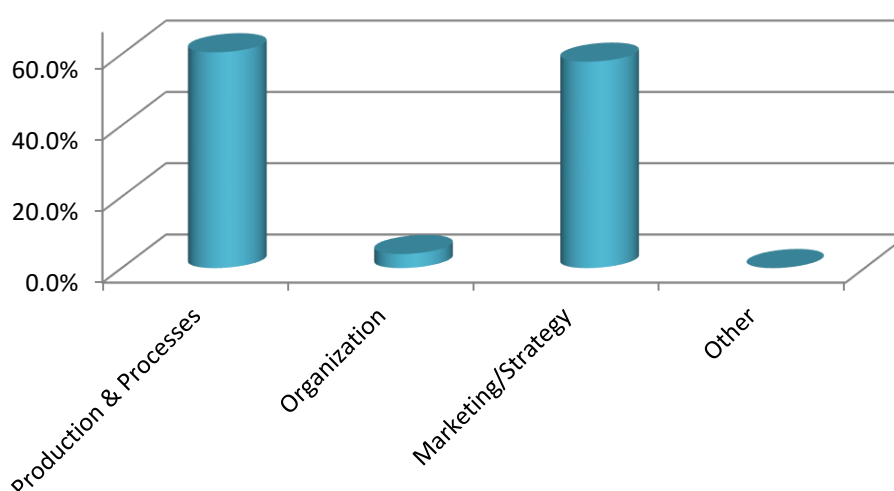
**Graph 10 – Type of Innovation actor for externally organised innovation activities**

The majority of companies collaborate with national entities for their externally organised innovation activities as the following graph represents; only one has reported an international collaboration:



**Graph 11 – Geographical dimension of entities with which companies collaborate for their externally organised innovation activities**

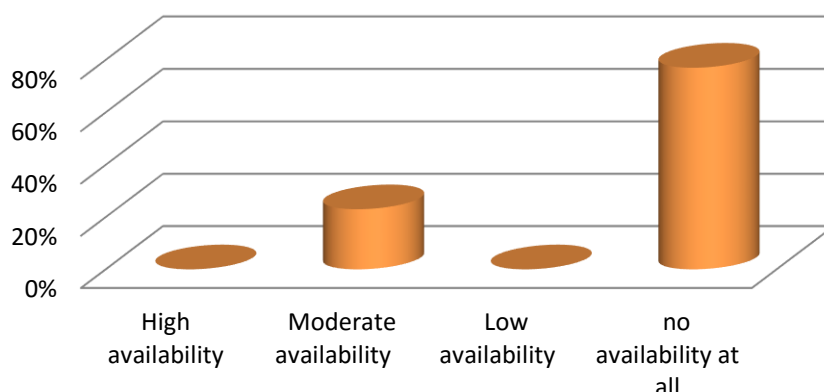
Finally, the companies were asked about their interest to innovate or purchase innovation and research results in certain areas of activity in the future. All the interviewed expressed a positive interest towards purchasing research results or carrying on innovation. The most promising areas are the “Production & Processes” (60%) and the “Marketing/ strategy” (58%) as shown at the next graph.



**Graph 12 – Business Areas of Interest to innovate or purchase innovation in the future**

### 2.3.3 SECTION C - COMMITMENT TO TECHNOLOGY

The majority of the interviewed companies reported lack of skilled labor for the promotion of innovation.

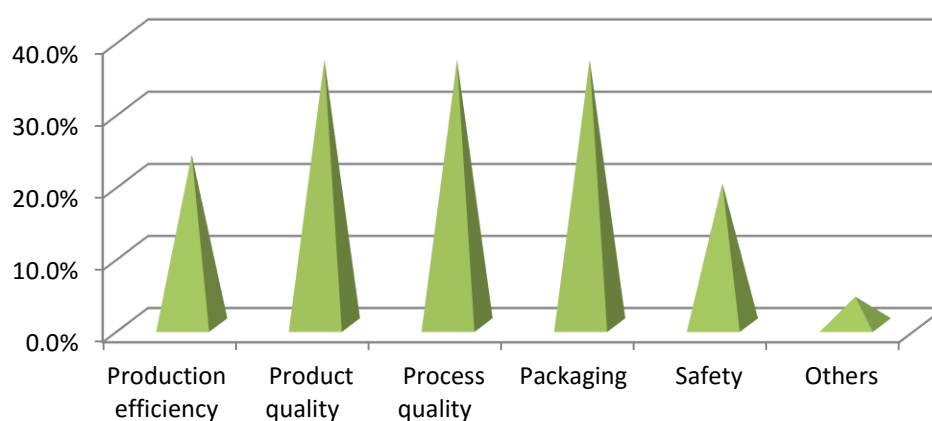


**Graph 13 – Availability of skilled labour**

#### 2.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS

This part of the questionnaire focuses on innovation and technology projects. 22% of the companies that responded stated that they currently implement some type of innovation and technology projects.

Only 14% of the companies were positive to the prospect of promoting an innovation project in the short to medium term. The most interesting project objectives were “packaging” (37%), “product quality” (37%) and “process quality” (37%).



**Graph 14 – Objectives for the promotion of an innovation project**

Moreover, only 7% of the companies reported having a particular idea for the development of an innovation project related to new or improved products. As main obstacles for the participation in innovation projects were reported bureaucracy (38%); lack of information about funding opportunities at national and European level (37%); lack of resources (37%); project financing (20%); and insufficient knowledge of the capabilities and opportunities of the innovation (15%).

### **2.3.5 SECTION E - POLITICAL CONTEXT**

This section relates to the wider political and regulatory framework in which companies operate. The vast majority (93%) of the interviewed companies consider that existing policies at regional, national and European level are not favorable and supportive for harnessing innovation in the Food sector.

The policy measures/ incentives that the companies expect from the political side for the agrofood sector are, as reported, incentives to employ research personnel (42%); tax incentives for investment in innovation (34%); support in intellectual properties and patents (27%); other policy measures/ incentives (25%); increase funding and improve processes of national research programs (21%); and support networking with national and international research institutions (18%).

## 2.4 PRELIMINARY SWOT RESULTS

The preliminary results of SWOT analysis are presented in the table below, listing the first 5 factors per each area indicated by companies and the number of answers received:

### Strengths

### Weaknesses

1. Strong networking with private actors  
(SMEs, large companies) (17)

1. Poor networking with private actors  
(SMEs, large ) (21)

2. Strong networking with public actors (univ.,  
research centres) (17)

2. No dedicated R&D Unit (19)

3. Financial capacity (17)

3. Low technology level companies (17)

4. Highly skilled personnel (16)

4. Lack of time ( (17)

5. Others (18)

5. Poor networking with public actors (univ.,  
research centres) (16)

### Opportunities

### Threats

1. Availability of R&D funds for research and  
innovation (18)

1. Lack of market information (19)

2. Research technology offer (17)

2. Bureaucracy / Regulation barriers (18)

3. Networking possibilities (associations,  
technology platforms, fora, etc (15)

3. Need of adaptation to new regulations,  
normatives and priorities (18)

4. High quality infrastructures (14)

4. Scarce funding resources for R&D  
available (18)

5. Others (14)

5. Expensive IPR (16)

## 2.5 CONCLUDING REMARKS

76 companies from the Region of Central Macedonia were profiled. The main findings are summarized below:

- The majority of the surveyed food companies are small and medium sized;
- The majority are certified by ISO22000, HACCP food quality and safety systems;

- They exhibit significant extroversion directing on an average 39% of their sales to EU and other international markets
- The majority of companies do not have a clear reference of commitment to innovation in their mission statement; however they consider that their products and processes are innovative both in terms of the company's standards as well as in comparison with their main competitors;
- Production and processes is the main target for innovation, followed by marketing and organisation; companies usually seek innovation through patent Acquisition and external partnership; they preferably cooperate with other companies of the sector and research centres/ universities, primarily national ones;
- The majority of the interviewed companies reported lack of skilled labor for the promotion of innovation;
- Relatively little part of the companies stated that they currently implement some type of innovation and technology projects; moreover they seemed rather reluctant to become involved in such projects because of the bureaucracy involved; lack of information about funding; lack of resources, etc. For those that were positive to become involved the most interesting project objectives were packaging, product quality and process quality.
- The vast majority considers that existing policies are not favorable and supportive for harnessing innovation in the Food sector; they would expect more incentives to employ research personnel; tax incentives for investment in innovation; support in intellectual properties and patents, etc.
- As main strengths in pursuit of innovation the companies consider strong networking with private and public actors; their financial capacity and highly skilled personnel; the main reported weaknesses are the lack of dedicated R&D unit, lack of time and poor networking with private and public actors;
- They key opportunities are according to the respondents the available R&D funds, the offered technology, networking opportunities, etc., while the key threats were lack of market information; bureaucracy and the need to adapt to new regulations, normatives and priorities, etc.
- Some of the responses especially in the SWOT analysis require particular attention as they seem contradicting; for this reason these information will be examined and normalized in the SWOT analysis exercise according to the adopted methodology.



### 3. REGION OF APULIA, ITALY

#### 3.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

The region of Apulia is the Italian most south-eastern region, with a territorial extension of 19.366 km<sup>2</sup>, bordered by both the Adriatic and Ionian Seas, giving it one of the longest coastlines of any region in Italy, extending for about 800 km. The region is widely accessible by the sea and it seems a natural equipped wharf of the European community stretching over the Mediterranean that from centuries is in fruitful geographical economic cultural and religious relations with the Balkan area, the Middle-East, Northern Africa and East Europe. The Apulia is a **Region of Convergence**, representing the most dynamic region in the South Italy, having a moderate ratio of development compared to other EU regions. The Apulia has a population of **4,076,546** inhabitants, generating a **GDP** of about 68.9 million (in 2009).

The per capita GDP is about the 66% of the national average and represents about 72% of the EU27 average. Apulia manages for the period 2007-2013 about 2,7 M€ of the FESR programme and 640 K€ of the FSE programme plus other funds coming from interregional and national programmes.



In the recent period, while the **GDP** in the South over the previous year grew by 0.2% (in north-central than 1.7%), in Apulia it decreased in 2010 of 0,2% to **16,932** euros per capita. The situation is not good even if one looks at annual average 2000-2010: Apulia, which was to be the motor production of southern mainland, has recorded a minus 0.3%. For the second consecutive year, therefore, the Apulian economy has performed the best performance in the South. In 2009 the GDP of Apulia fell by 2.3% compared to 4.6% of South Italy (SVIMEZ Annual report 2010).

**Agriculture** in Apulia is largely modern and intensive, allowing the region to be at the first places in Italy for the production of many products, like “hard” grain and tomatoes in the Foggia province, besides table grapes and oil, with around 50 millions olive trees. Also important is the production of salad, artichokes, fennel, cabbage, celery and oats. In specific areas fruit cultivation is also relevant, like peaches and kiwi. The primary sector, equal to 5%, produces considerable quantities of valuable produce as wheat, olives, fruit and vegetable, beets, milk, flowers, tobacco and, in some areas of the Salento, medicinal herbs that give rise to an intense activity of food processing and agroindustry one. These industries are distributed in various territorial points and often represent local branches of large industries from the North of Italy.

The **agrofood sector** represents one of the key economic sector of the region, with a multi variety of products, including the fermented ones (i.e. bakery products, fermented cheese).

The main agro-food chains present in Apulia are:

- Dairy products;
- wheat and bakery;
- meat products;
- olive oil;
- grapes and wine;
- vegetable and fruits (olive, almonds, figs), and livestock (sheep, pigs, cattle and goats).

In addition to the traditional sectors of wine and oil, also the mill industry and pasta production have a big role in the sector, also being Italian leader in the heavy wheat production (21 % of national total, Istat 2011), while the Apulia is the third Italian region for the pasta production. Significant roles are covered also in the dairy industry, coffee and meat transformation (Bank of Italy 2011).

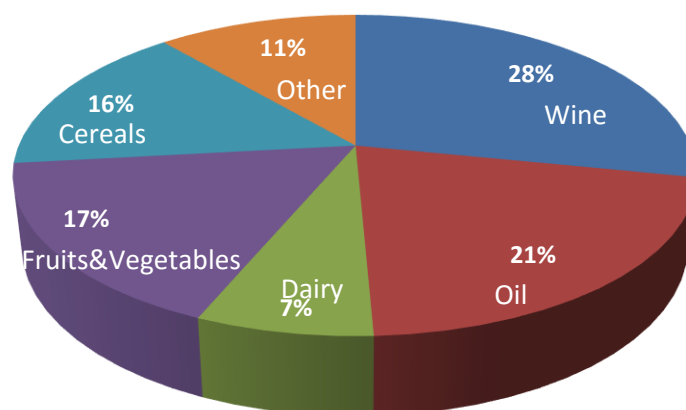
### 3.2 PROFILED AGROFOOD SMEs

The list of Apulian agrofood SMEs which participated to the Technology audits is indicated in the following table:

	Full official name of company link	Productive sectors the company is active in
1.	Azienda Agricola "Conti Zecca"	Grapes and wine
2.	Azienda Agricola Spagnoletti Zeuli	Grapes and wine - Olive oil
3.	Azienda Agricola Valle dell'Asso	Grapes and wine
4.	Cantina Coop. Salice Salentino s.c.a.	Grapes and wine
5.	Cantina "Crifo"	Grapes and wine
6.	Cantina Sociale di Barletta	Grapes and wine - Olive oil
7.	Cantina Sociale di San Severo	Grapes and wine
8.	Cantine della Bardulia	Grapes and wine - Olive oil
9.	Cantine Due Palme	Grapes and wine
10.	Cantolio s.c.a.	Grapes and wine
11.	Castello Monaci s.r.l.	Grapes and wine
12.	San Martino s.r.l.	Grapes and wine
13.	Soc. Coop. "Terra Maiorum"	Grapes and wine
14.	Terra Apuliae s.c.r.l.	Grapes and wine
15.	Tormaresca s.a.a.r.l.	Grapes and wine - Olive oil
16.	Torrevento s.r.l.	Grapes and wine
17.	Vigne di Rasciatano s.r.l.	Grapes and wine
18.	Vinicola Cantele	Grapes and wine
19.	Vinicola Rivera s.p.a.	Grapes and wine
20.	Grapes and wine Ventura s.r.l.	Grapes and wine
21.	Agrinatura s.r.l.	Olive oil - Vegetable and fruits (Bio products)
22.	Antico Frantoio Ametta	Olive oil
23.	COVAN	Olive oil
24.	Frantoio Galantino s.n.c.	Olive oil
25.	La Bella di Cerignola s.c.a.	Olive oil – Table olives
26.	Masseria Cusmai s.a.s.	Olive oil - Vegetable and fruits
27.	Oleificio Cima di Bitonto s.c.a.r.l.	Olive oil
28.	Oleificio Goccia di Sole s.a.r.l.	Olive oil
29.	Oliveti d'Italia	Olive oil
30.	Paparella Salvatore e F.sco s.n.c.	Olive oil
31.	Tenuta Rasciatano s.r.l.	Olive oil
32.	Ciemme Alimentari s.r.l.	Cereals
33.	Divella s.p.a.	Cereals
34.	Fiore di Puglia S.p.a.	Cereals
35.	Il Pastaio Maffei s.n.c.	Cereals
36.	Laboratorio Dolciario Ester	Cereals
37.	Molini Tandoi s.p.a.	Cereals – Animal breedings animal feed stuffs
38.	Molino Andriani s.r.l.	Cereals
39.	Molino Loiudice s.a.s.	Cereals - Animal feedstuffs
40.	Pastificio La Contadina s.a.s.	Cereals
41.	Pastificio Riscossa s.p.a.	Cereals

	Full official name of company link	Productive sectors the company is active in
42.	Valle Fiorita Catering s.r.l.	Cereals
43.	Assodaunia s.c.a.r.l.	Vegetable and fruits
44.	Cantatore Antonio&Figli s.r.l.	Vegetable and fruits - Table grape
45.	Dimonte Ruggiero&C s.a.s.	Vegetable and fruits - Table grape
46.	Farris s.r.l.	Vegetable and fruits
47.	Futuragri s.c.a.r.l.	Vegetable and fruits
48.	Giardinetto s.c.a.r.l.	Vegetable and fruits
49.	La Preferita O.P. Pugliese	Vegetable and fruits
50.	Perché ci credo s.a.s.	Vegetable and fruits
51.	PR.ALI.NA. s.r.l.	Vegetable and fruits - Sauces and dressings
52.	Caseificio Andriese s.r.l.	Dairy products
53.	Centro Latte Stasi s.r.l.	Dairy products
54.	Cooperativa Allevatori Putignano	Dairy products
55.	Delizia s.p.a.	Dairy products
56.	Fattoria Chiarappa	Dairy products
57.	Siciliani s.p.a.	Animal feedstuffs and breedings
58.	Torrefazione Caffè Battista s.r.l.	Coffee
59.	Innovative Solution s.r.l.	Quality Control – Audit and Certification
60.	Integra s.r.l.	Traceability services for agrofood sector
61.	M.G. di Narducci Lucia	Industry Plants – development and trade
62.	Matrix s.p.a.	Research and development services
63.	STC s.r.l.	Engineering services
64.	TERA s.r.l.	Innovative products consulting

The total number of enterprises involved in this technical survey has been **64**, representing the main food chains developed in the Apulian region, as shown in the Graph below.



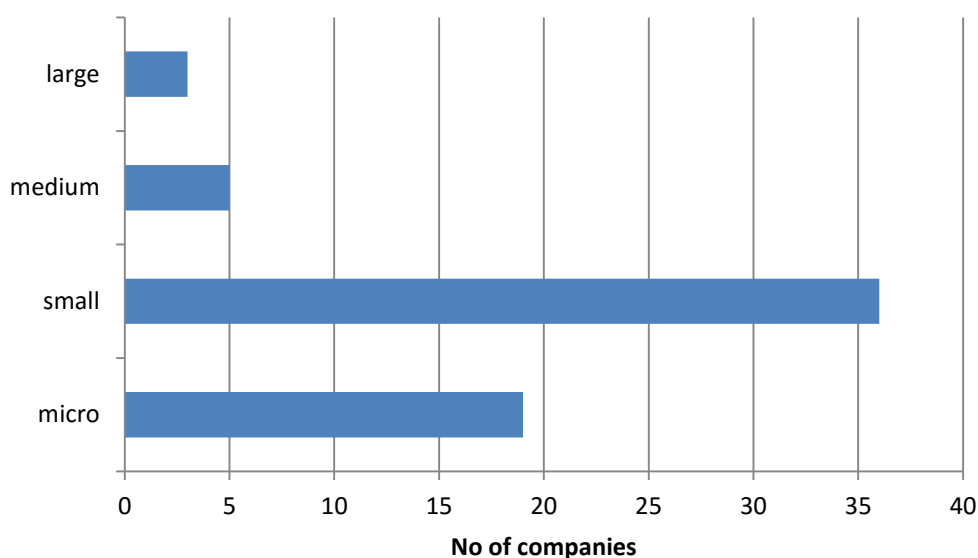
*Graph 1: Companies by food chains*

It should be underlined that about 300 SMEs have been contacted, introducing the project and the scope of the questionnaire by an official letter and questionnaire. Many of these enterprises were contacted or involved in other projects and gave often their cooperation again. In this case, the most of 64 SMEs answering to the audit have been directly interviewed by experts and introduced in the main concerns.

### **3.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS**

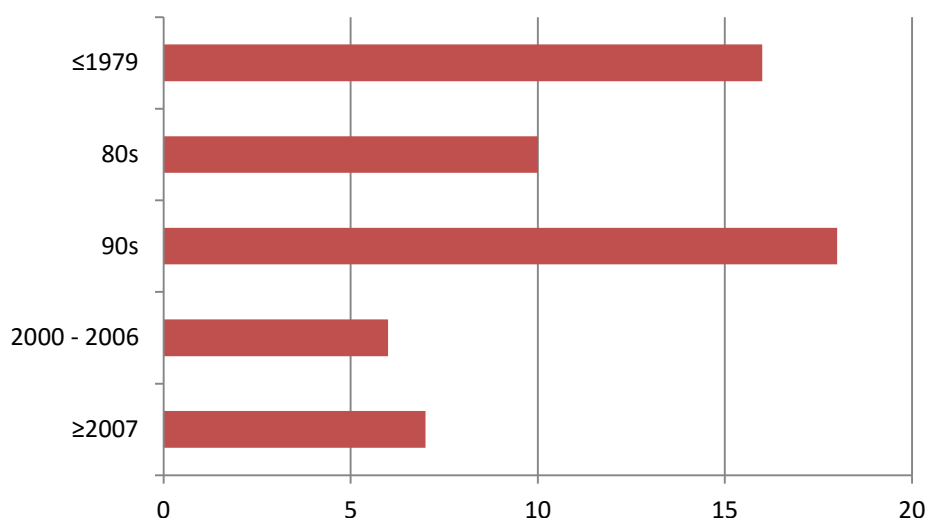
#### **3.3.1 SECTION A - COMPANY GENERAL INFORMATION**

The companies participating at the Inno- Food SEE Technology audits well represent the Apulian agrofood sector, which is mainly composed by small enterprises and family management driven enterprises, better known and classified as micro-enterprises.



*Graph 2: Companies by dimension  
(Regulation CE n°70/2001)*

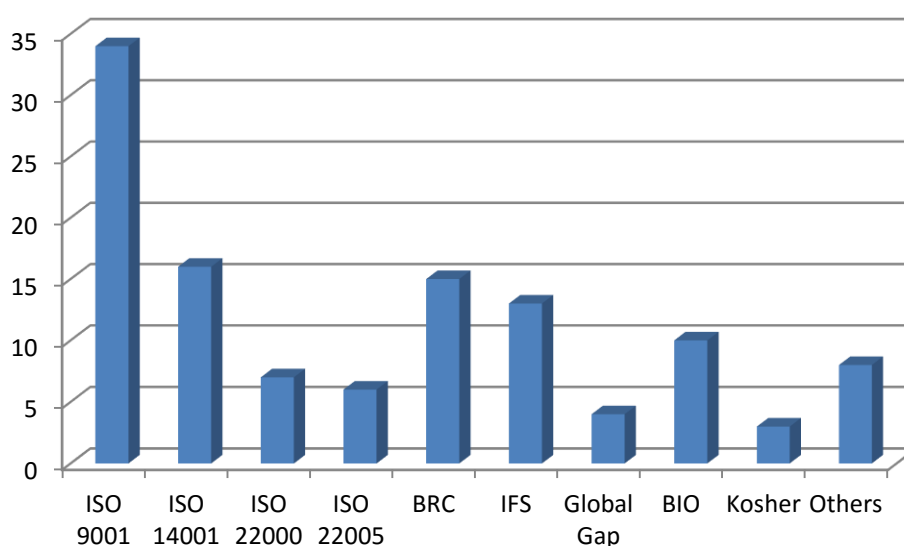
Regarding the establishment year, the majority of companies were created starting from 80s and 90s, performing a process of industrialization of agriculture, by transformation and creation of final products for national and international markets. 16 companies (25% of the total interviewed) were established more than 30 years ago, the ancient one is the Frantoio Galantino of 1925. This data is representative of traditional sector in this region.



*Graph 3: Companies ordered by year of establishment*

All the manufacturing industries having an internal food processing cycle are certified according to HACCP system, while those companies focused on research and services are not provided with this type of certification.

In the graph below the main relevant quality certificates released by third parties organizations reached by companies are indicated, excluding the HACCP ones, that are present in the totality of firms as before explained.



*Graph 4: Quality certifications owned by interviewed enterprises*

Regarding the customers profile of agrofood enterprises (question A7), the interviewers give major value to “small/medium enterprises” or to “large enterprise”, while minor percentages are addressed to the remaining typologies, such as retailers and consumers.

In this analysis another aspect considered is related to the position/localization of customers targeted by Apulian producers. The major share of sales is represented by national channels, while a consistent representative percentage of products sales is at local/regional level, while low sales are addressed abroad. This general phenomenon could be a direct consequence of the previous consideration regarding the enterprises small dimensions, that do not really allow the growth towards skilled organizations able to develop an international trade. Anyway, in Apulia some significant enterprises fortunately grew in the past years, developing international markets: Farris srl sales are addressed to European Union countries for 65%, San Martino srl for 75%, two other enterprises have extra-UE customers, mainly in USA and Canada, for more than 60% of their total sales.

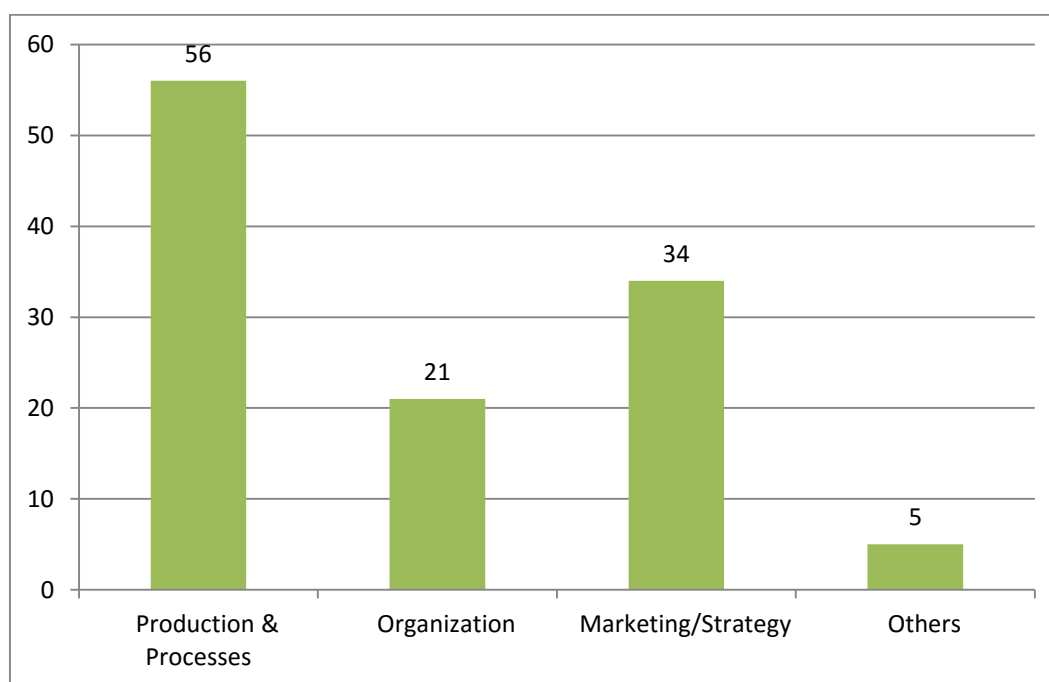
### 3.3.2 SECTION B - INNOVATION STRATEGY

The second section of the Technological audit aims to investigate the effort and actions to apply an innovation strategy in the agrofood enterprises.

The main part of the interviewed companies declare to have a mission/vision including some reference to innovation (60 yes, only 3 No), while 9 companies declare not to have concrete objectives for their innovation.

These answers seem almost contradictory in front of others inserted in the questionnaire regarding real operating innovation.

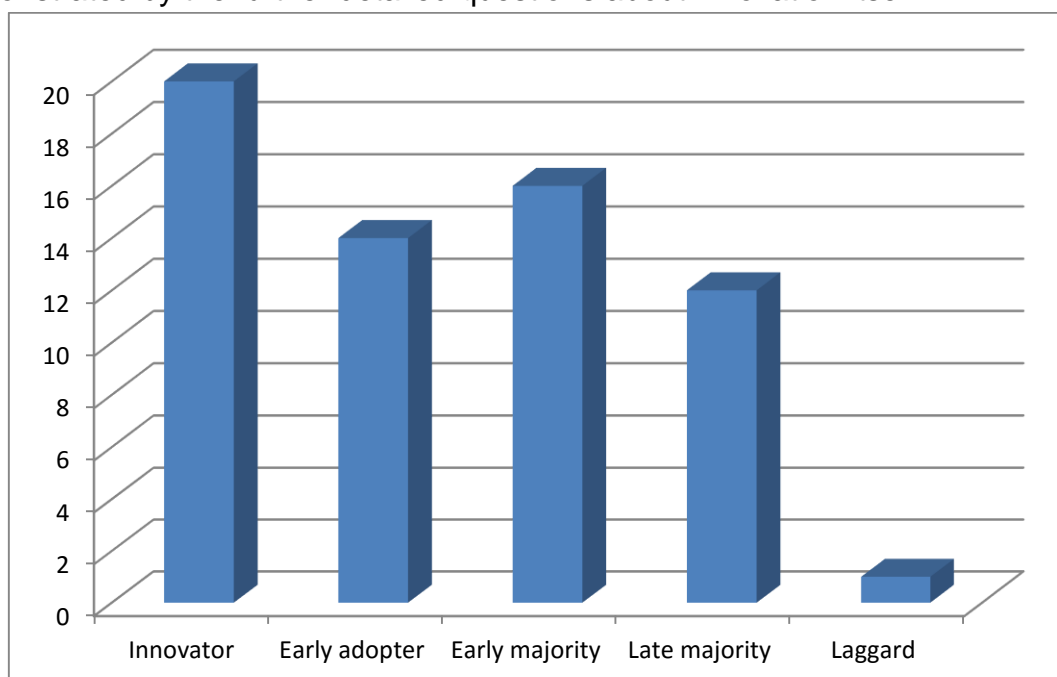
The main areas in which the companies tried to seek innovation in the past five years result mainly Production & Processes, Marketing/Strategy, followed by Organization area, as shown in the Graph 5.



*Graph 5: Areas investigated for Innovation in the past 5 years*

The innovation strategy followed by the major part of enterprises result the “*innovator*” one, [Characterised as being risk takers: venturesome with substantial financial resources, ability to cope with a high degree of uncertainty, eager to try new ideas, willing to accept an occasional setback or loss], followed by *Early majority*.

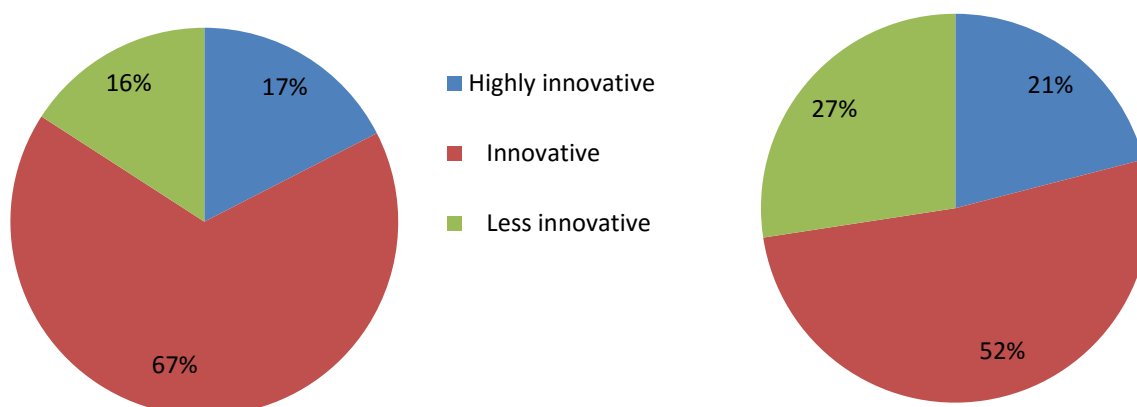
Considering all the answers, it can be said that these companies seem attracted by innovative behavior, even if the majority of them express some perplexity in answering to this question, not immediately understood. Anyway all the interviewed tried to give a more realistic answer considering their own strategy. Really this upcoming general positive approach towards innovation at this point of the questionnaire could not be considered as a real and concrete strategy pursued, as demonstrated by the further detailed questions about innovation itself.



*Graph 6: Innovation strategy pursued according the innovation categories as defined by Everett M. Rogers*

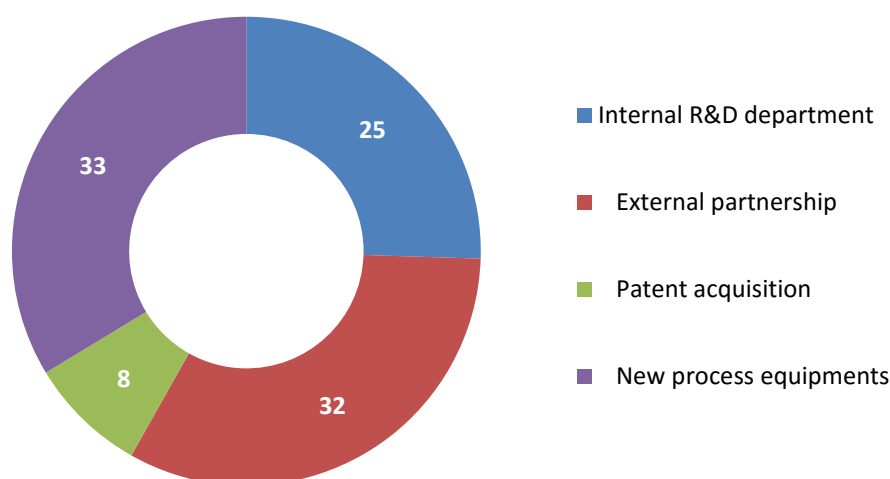
In the next question, the companies confirm having an innovative spirit, mainly declaring that their products and processes are in average innovative in comparison with the state of the art and also with their main competitor, as shown in the following graphs (7-8).





The main sources used by companies for innovation are shown in the graph 9, indicating that companies are focused on new process equipments (33), aiming at a continuous process improvement, also mainly using external partnership to implement innovation (32), while patent as driver of innovation results very low.

It should be noticed that many wine producers declared to have an internal R&S department, really referring to the internal laboratory used by enologist and lab team to carry on analysis on wines during the production year.



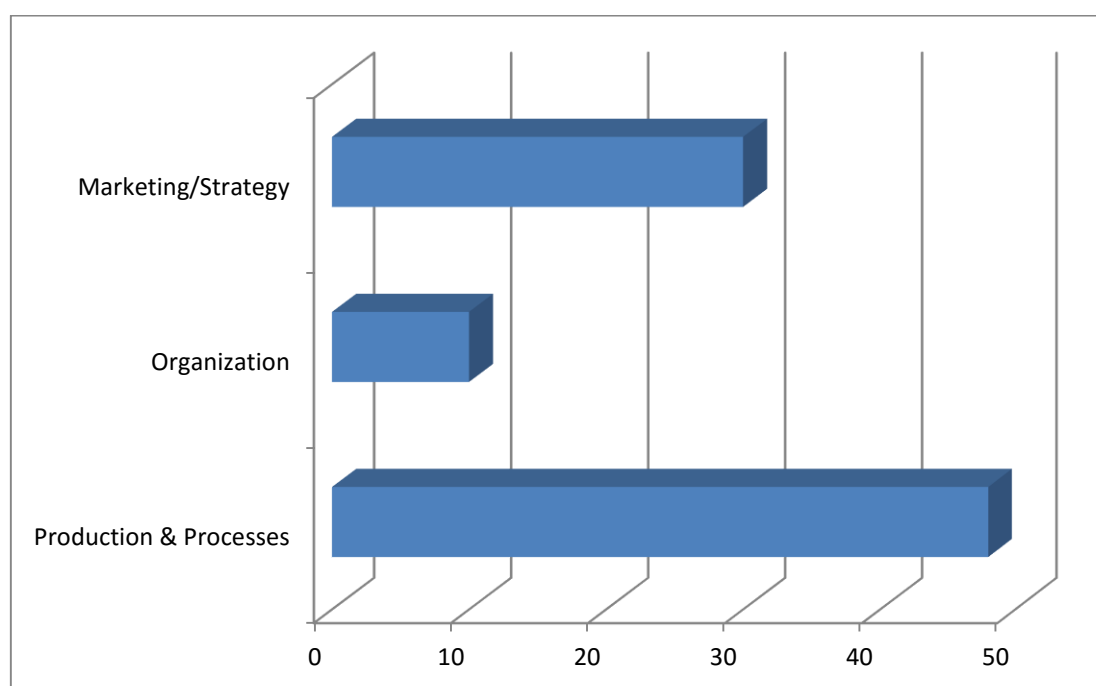
*Graph 9: Main sources of innovation*

Regarding the innovation management and organization, when innovation activities are organised internally in company, 45 enterprises think that the responsibility is embedded within the organization while only 6 declare that the responsibility represents an additional task, not continuously foreseen in the organisational

structure. In case of innovation activities externally organized, the main kinds of collaboration used are represented by cooperation with research centres/universities (29 answers), cooperation with consulting companies (22 answers) and cooperation with other enterprises of the same sector (10 answers)

This cooperation deploys at national (29) and regional level (24), and rarely at international level (4). In this case some enterprises gave more than one answers, being possible to act with different kinds of cooperation.

This section ends investigating the interest to innovate or purchase innovation and research results in the future in certain areas of activity. Almost all the interviewed expressed a positive interest towards innovation by purchasing research results or carrying on innovation. Only one enterprise answered negatively. The main attractive areas result processing and production, followed by marketing/strategy.



*Graph 10: Areas of interest for innovation in the future*

### **3.3.3 SECTION C - COMMITMENT TO TECHNOLOGY**

In this section entrepreneurs and/or managers have been asked to express and describe their production processes, the key technologies applied in their processing cycle, the knowledge level inside their organization, last the new products and processes. It should be noticed that this part of interview appeared a little bit difficult and some people felt scared about this matter, giving fair or brief reply, with a low level of detail, trying to be quite approximate and in some case not answering at all.

Nevertheless these difficulties, we can resume a framework of technologies applied by these sample of Apulian companies in the different food chains.

The following considerations could be made regarding the technological perspective by food chains:

- The **safety assurance** is important in all the food chain analyzes, but the need is very high and critical for the food conserve sector as well as in that of vegetables transformation (especially in the production of fresh cut). In these sector, as and in milk-based products too, request for time saving services or for increasing shelf-life duration are numerous.
- The attention to **quality features**, like taste, odor, color, texture and all other sensory aspects has always been primary in the food industry. In Apulia it is particularly strong in the wine industry as well as in the dairy industry. In these compartments is more evident the consumer's ability to recognize differences in the products related to sensory attributes, arising a more sophisticated market demand.
- The attention to **water and energy saving** problems is rather generalized and motivated by the growing impact of these items on production costs.
- The request for interventions to reduce the **waste disposal** costs or to enhance the by-products is widespread especially in the oil.
- The link between **diet and health** is becoming more and more central role also in the market choices. In Apulia the needs to improve the food supply with light products or functional foods are growing especially in the cereals and milk – dairy products. In the milling industry,(high advanced sector, characterized by local presence of large firms and plants, and some small and medium-sized enterprises too) new technologies using raw materials and/or producing ingredients, are very important, especially with reference to functional foods. The application of innovative techniques that could modify manufacturing processes preserving the most nutrients, could give a further innovative boost to food sector.
- In the field of **fruit and vegetables** and conserve the primary interest is to foster a sort of technological upgrading: stabilization technologies significantly reducing the thermal damage, such as high pressure and microwave applications, could enable significant growth for the largest industrial firms . Moreover, other technological needs are represented by energy consumption rationalization connected with the need of effective cold chain maintaining, innovative packaging, production of optical sorters or machines better allowing the production control processes.
- In the **wine industry** are highlighted problems that could be largely solved by adaptation and/or modernization of facilities: very important for this purpose are also the development of innovative procedures aimed at enhancing autochthonous wine species and experimentation in biotechnology, such as

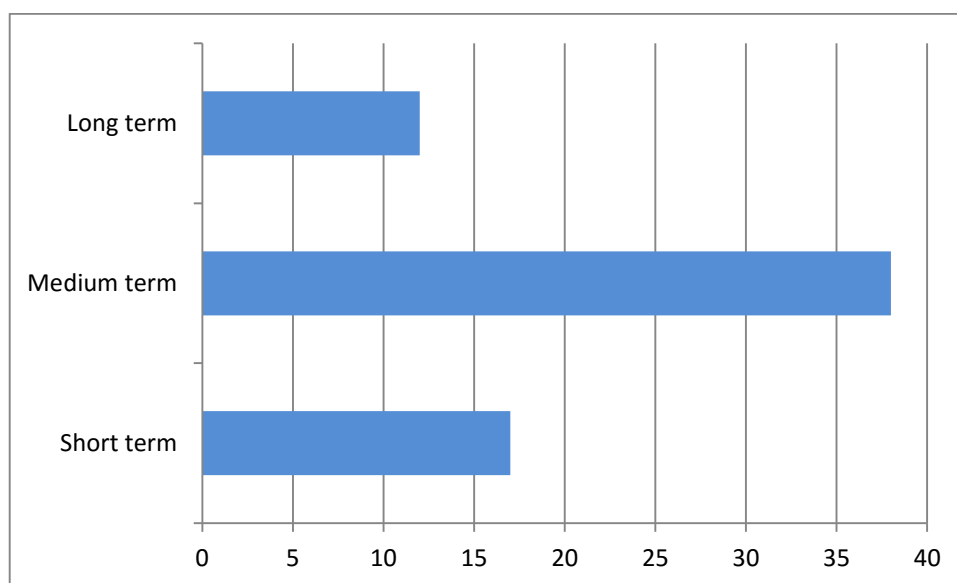
selection of yeasts and lactic acid bacteria as fermentation starter and enzymes as processing aids, to the benefit of both health and sensory quality.

- The **oil industry** seems to have good level of technology even in small companies, with the exception, for the latter, in automating need in the bottling process.

The second part of this section aims to know the effort and its entity, in terms of **economic and financial resources as well as human resources addressed to Research, Development and Innovation** in the past and the future by companies. Unfortunately the 16% of interviewed did not give any answer, being scared to make public their own economic data, while the majority of companies omitted the data on financial expenses about R&S. About 10% of the sample (12 companies) clearly declared that no internal financial and human resources committed to research and innovation.

Regarding the **economic resources for R&D**, the 46% of companies declared that these are less than 5% of annual income and the human resources engaged in research activities are really low counting few units. Only in 12 cases the financial resources represent more than 5% of total annual income, but these data are influenced by the consistent quota (more than 50% annual income) addressed by technological firms, that naturally found the core business on innovation.

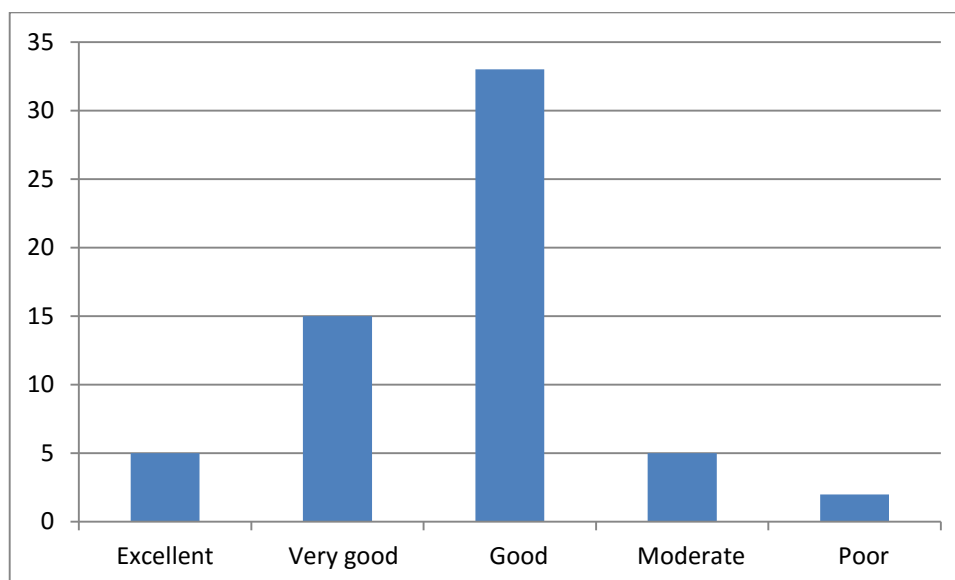
The **strategic planning timeframe** results to be at medium and short term, really low at long term, as shown in Graph 11. We can assume this positive information, considering the current economic scenario of crisis, in which the short term horizon appears the principal one.



Graph 11: Strategic planning timeframe

The **ratio of technology expertise knowledge to the appropriateness of strategic decisions** applied in the companies is shown in the graph 12 and it seems

in correlation with the companies dimension. It can be affirmed that the “excellent or very good” ratio has been expressed by those companies having a consistent dimension (medium/large), while the “moderate and poor” came out mainly by micro and small enterprises.

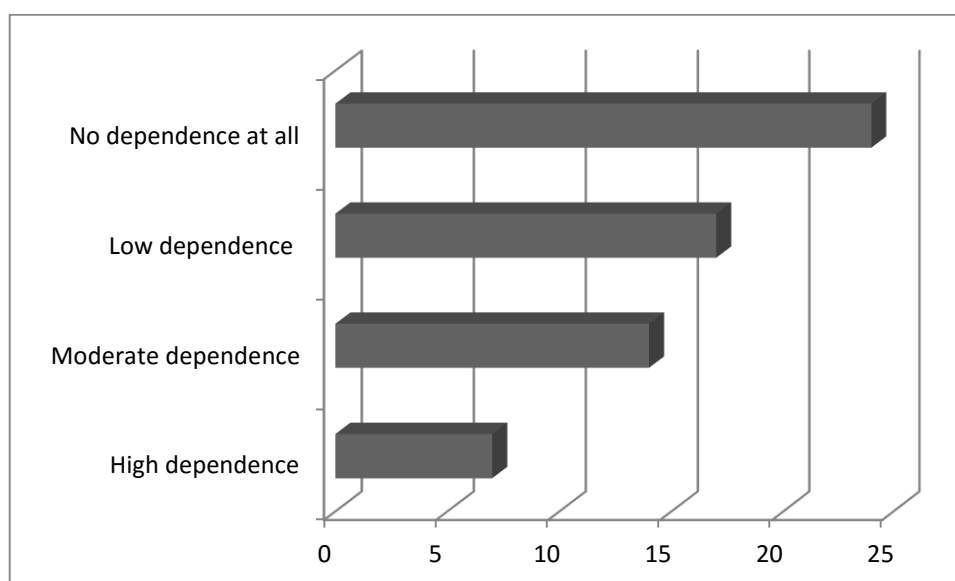


*Graph 12: Ratio of technology expertise knowledge to the appropriateness of strategic decisions*

Another aspect of relationship between companies and innovation players is investigated in this section, where details (description and names) of *existing R&D partners* (other companies, competitors, subcontractors, customers, research centres, universities) are asked, to really know the existing and concrete partnership in the innovation process. In Apulia this link with this body seems to be weak or not directly related to strong and permanent relationships, and it is related to research centers, University of Bari and Foggia, consulting companies. It should be noted that the “research partners” as indicated and involved in this process are mainly referred to those local laboratories of analysis normally cooperating for quality control of raw materials during the production process. It’s clear that these labs could not be intended as research centers, anyway this information shows a weak link with external expertise oriented to research in some way.

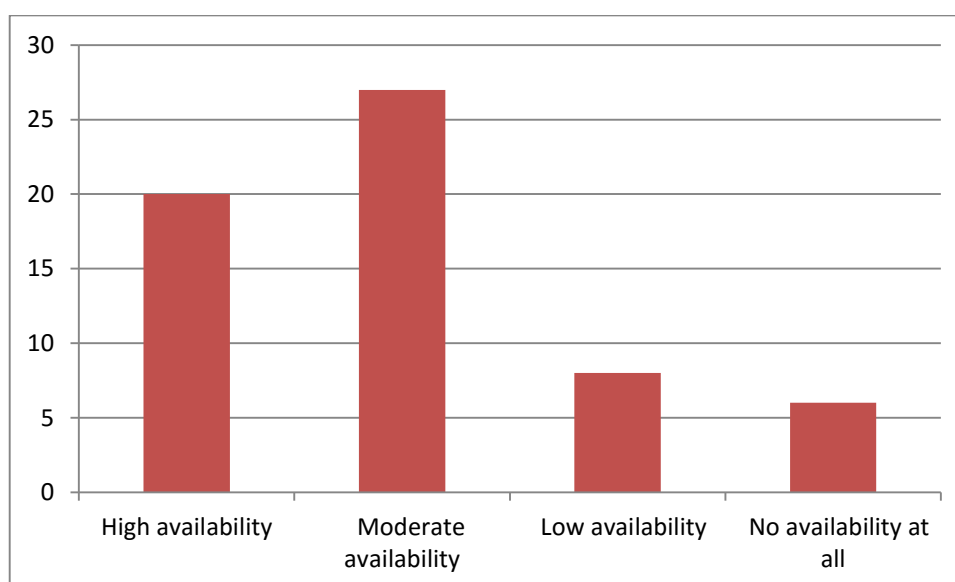
Another key indicator of research level in agrofood companies could be expressed by the **level of the company’s dependence on external technical personnel** related to the sector.

The Graph 13 shows the soundness of this link, appearing very weak and low, indicating that the enterprises are not really oriented to hire external resources with technological skills and expertise, probably due to additional expenses and incurring problems afflicting their organization.



*Graph 13: Level of the company's dependence on external technical personnel*

This trend is confirmed by results obtained by the next question asking the level and availability of *skilled labour* in companies needed to make technology innovation, focusing on internal Research and Development activities. In this case the majority of firms expressed a positive situation in terms of skills present in their organization, stating a high and moderate availability.



*Graph 14: Level and availability of skilled labour in companies*

Regarding the technological barriers, few enterprises declare that the technological level in the agrofood sector represents a key factor to be considered as a significant barrier: 46 enterprises think that no technological barriers exist to enter in their market, in opposition to 11 contrary answers. Anyway, many interviewed firms recognize that the **core technologies** should be considered very important for a

future diversification in terms of market or products (36 answers), while 22 firms expressed a negative answer.

In conclusion, we can assume that these results are representative of the regional scenario of agrofood sector, taking into consideration that the sector and the market are mainly focused on handcraft tradition and quality of raw materials, more than on competition based on a continuous product and market diversification and research and technology investments.

### **3.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS**

This part of the questionnaire aims to know in detail which kind of projects are being carried out by Apulian agrofood enterprises, but also in this case the interviewed companies' representatives have been not completely sound and complete about particulars.

Some companies preferred not to answer or to give approximate information and explanations about their projects: these data are referred to those enterprises which presented at the beginning of interview their own involvement in innovation projects, but when asked to give more details such as project name, objectives, budget, team of resources, research theme and activities) they have been almost superficial.

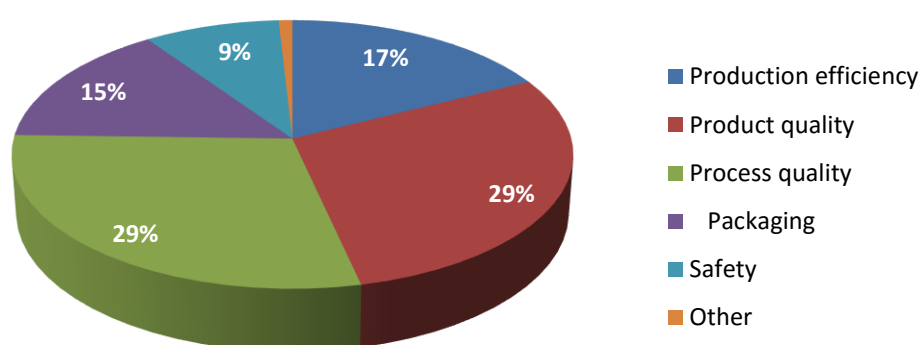
Anyway, 26 enterprises have been involved in while more than half of sample (35) no and the scenario seems to be more comfortable considering information about the **innovation technology projects** carried out in the **past 5 years** (question D1).

Even if a quantitative resume could not be exhaustive, because of the obvious differentiation of projects, it can be stated that 13 projects were addressed to develop and obtain a new technology and other 13 to develop a new product. The average duration of the projects is about 18 months, shifting from one to three years. In the 73% of cases (19) the agrofood enterprises requested external expertise, represented mainly by regional and national consultants and experts. In total, the projects respected the initial requirements reaching their goals and obtaining good outputs and results, with a good level of satisfaction expressed by enterprises and their partners. Only an exception was found about the effectiveness of the projects, specifically an enterprise obtained weak results and not consistent with the financial effort.

Having a look to the current year, on the other side, 20 enterprises affirmed to be actually involved in technology innovation projects, while 39 are not involved in. The recent ongoing projects have an average duration of 18 months, 6 projects aimed to develop a new technology, 11 addressed to develop a new project, in cooperation with national and regional external consultants in 11 cases.

In general, it can be observed that the larger and more important companies result innovation-friendly, and ready to invest their resources in innovation projects. Anyway, also some positive exceptions were found in this survey, represented by few small enterprises which are being involved in this kind of project too (i.e. La Bella di Cerignola and Fiore di Puglia Spa).

The innovation seems to attract the agrofood enterprises: when asked if interested in promoting an innovation project in the short to medium term (question D3): while only 9 declared to be not interested, about 75% of enterprises expressed their positive approach (47), mainly declaring to eventually request an external specialized support (31 yes, only 16 no), represented by a technical/professional support or -by a technical partnership able to share financial and economic efforts. The projects objectives to be addressed are represented as follows in the graph below, with particular attention to process and product quality (equally 29%).



*Graph 15: New projects objectives to be addressed*

More than half of companies (57%) declared not to have a precise idea for the development of an innovation project, while 16 of them affirmed to have a new one, but without any specification and details about the contents of their idea.

Two **main obstacles** were seen by companies in participating at innovation projects (D5): the economic effort and the bureaucracy. The first one is related to a deficit situation of the overall economic scenario, while the second one is related to very expensive bureaucratic procedures and practices to be followed to access to national and regional funds sustaining the innovation, both in preliminary phase (proposal preparation and submission) and in administrative and monitoring one (statement accounts and audits). The overall economic situation doesn't allow to address directly



funds to R&D, and other economic factors, such as prices growth of many raw materials and public fund scarcity for research.

### 3.3.5 SECTION E - POLITICAL CONTEXT

This section is focused on the **running political initiatives** and actions supporting the agrofood enterprises, aiming also to have a summary opinion about the efforts by participant companies.

The existing policies were considered *favourable* for this sector and supportive for being successfully operative in Apulia by 31 companies in comparison with remaining 27, expressing on the contrary a negative opinion (question E1).

According to 36 companies, in Apulian region the incentives for agrofood sector exist, while for other 17 ones do not exist. This information is quite contradictory, expressing the different perception or information by users about policies. Thus admitting to be aware of running incentives and policies, the majority of these enterprises (58%, 21) underline that the current measures are not really *particularly efficient* for motivating research and innovation activities in companies, while only 12 consider them efficient. It could be observed that, regarding this first part of section, answers resulted often different: many companies consider favourable the existing policies to operate in agrofood sector in Apulian but are not aware about incentives. Many other companies know the incentives expressing contemporarily a general negative opinion about the effectiveness of policies at European, national and regional level.

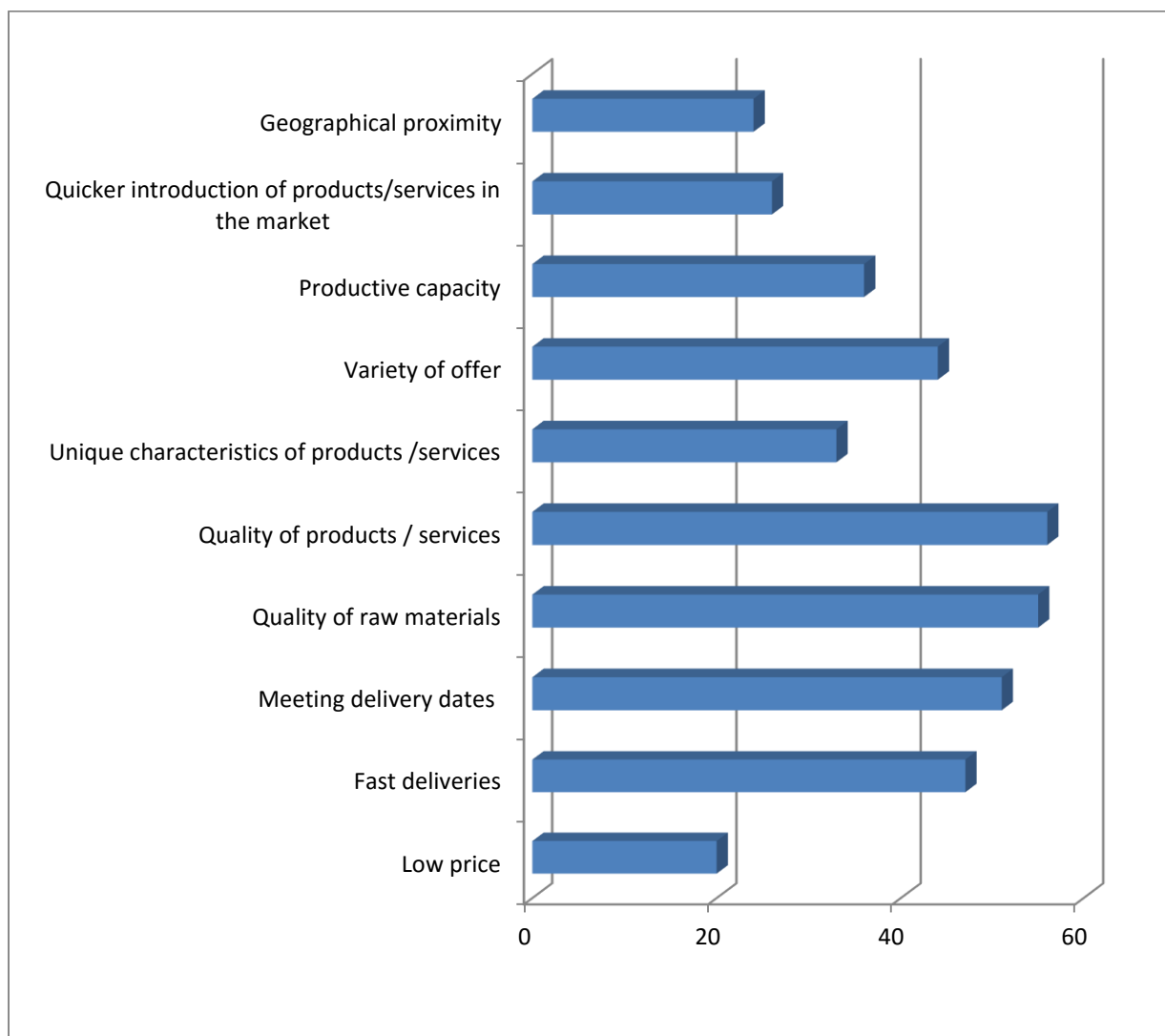
In conclusion, a *massive financial actions/support* as well as a *bureaucracy simplification* were expected for the future as of measure/ incentives from political side for the agrofood sector.

### 3.4 PRELIMINARY SWOT RESULTS

The preliminary results of SWOT analysis are presented in the table below, listing the first 5 factors per each area indicated by companies and No of answers received. It should be noted that for this section it was allowed to give more than answer.

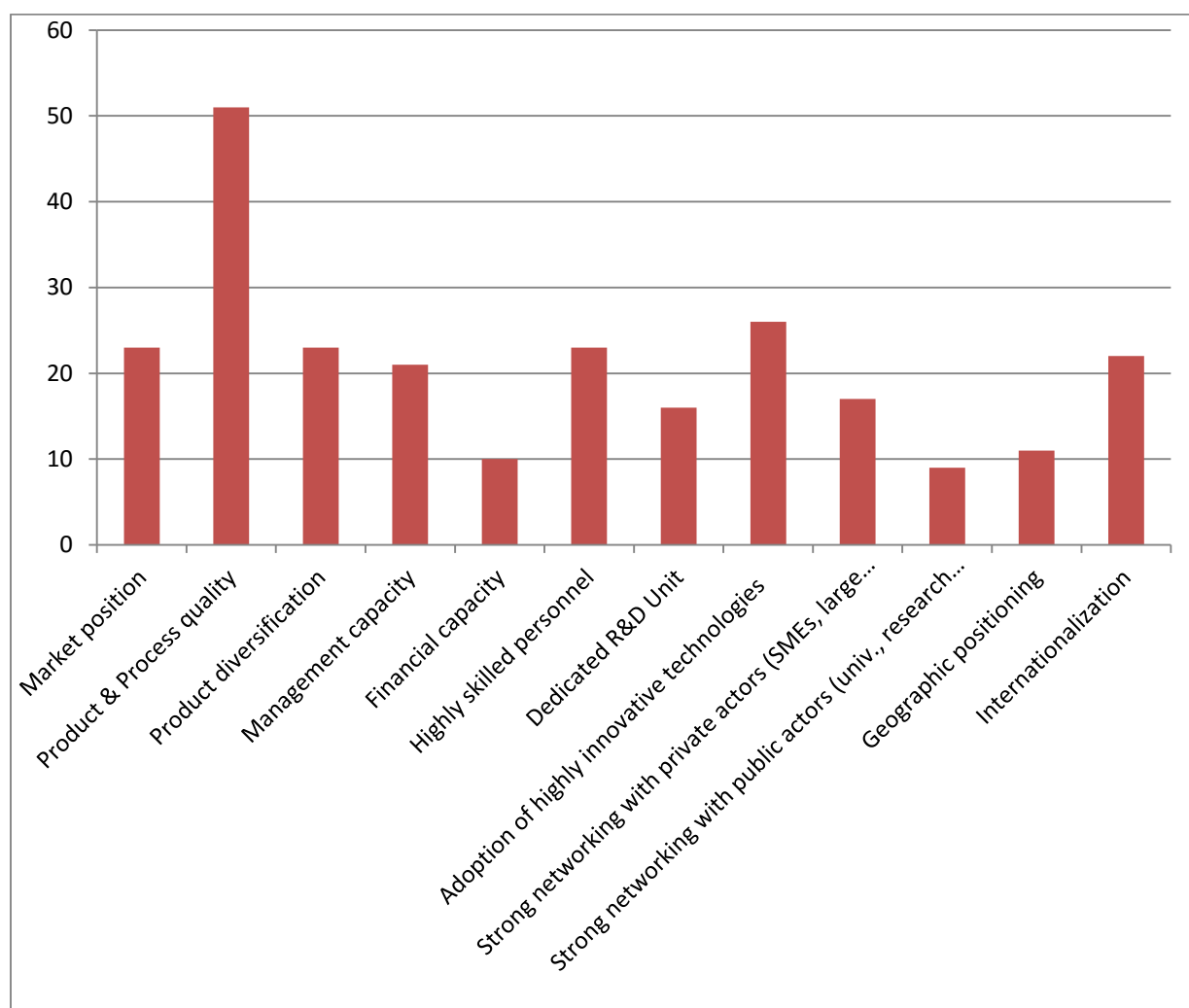
<b>Strengths</b>	<b>Weaknesses</b>
1. Product & Process quality (51) 2. Adoption of highly innovative technologies (26) 3. Market position (23) 4. Product diversification (23) 5. Highly skilled personnel (23)	1. Low financial capacity (32) 2. No dedicated R&D Unit (18) 3. Poor networking with public actors (univ., research centres) (17) 4. Lack of time (15) 5. Poor networking with private actors (SMEs, large companies) (12)
<b>Opportunities</b>	<b>Threats</b>
1. Increasing export trends (40) 2. Availability of R&D funds for research and innovation (33) 3. Strong regional/national product identity (31) 4. Networking possibilities (associations, technologic platforms) (21) 5. Existing RTD & innovation programmes tailored to the sector (18)	1. Bureaucracy / Regulation barriers (36) 2. No political long-term commitment to the sector (33) 3. Scarce funding resources for R&D available (29) 4. Expensive IPR (28) 5. Insufficient incentives addressed to the sector (24)

First of all, the interviewers were asked to indicate a list of potential factors influencing the strategic positioning of agrofood companies. These expressed different preferences, really saying that the highly important factors are represented by quality of products and/or services, as well as quality of raw materials. Issues related to logistic process are very important too, such as the meeting of delivery dates or delivery fastness (Graph 16). The low price is not foreseen as strategic factor at all, listed as the last one, indicating in this way that the competition is more based on the inner quality of the final product (obviously influenced by the raw materials quality) and on the “service” component, (delivery), concurring to quality itself for the nature of agrofood product, and diversification (variety of offer), thus expressing an overall market-oriented approach and a comprehensive attention to customer satisfaction.



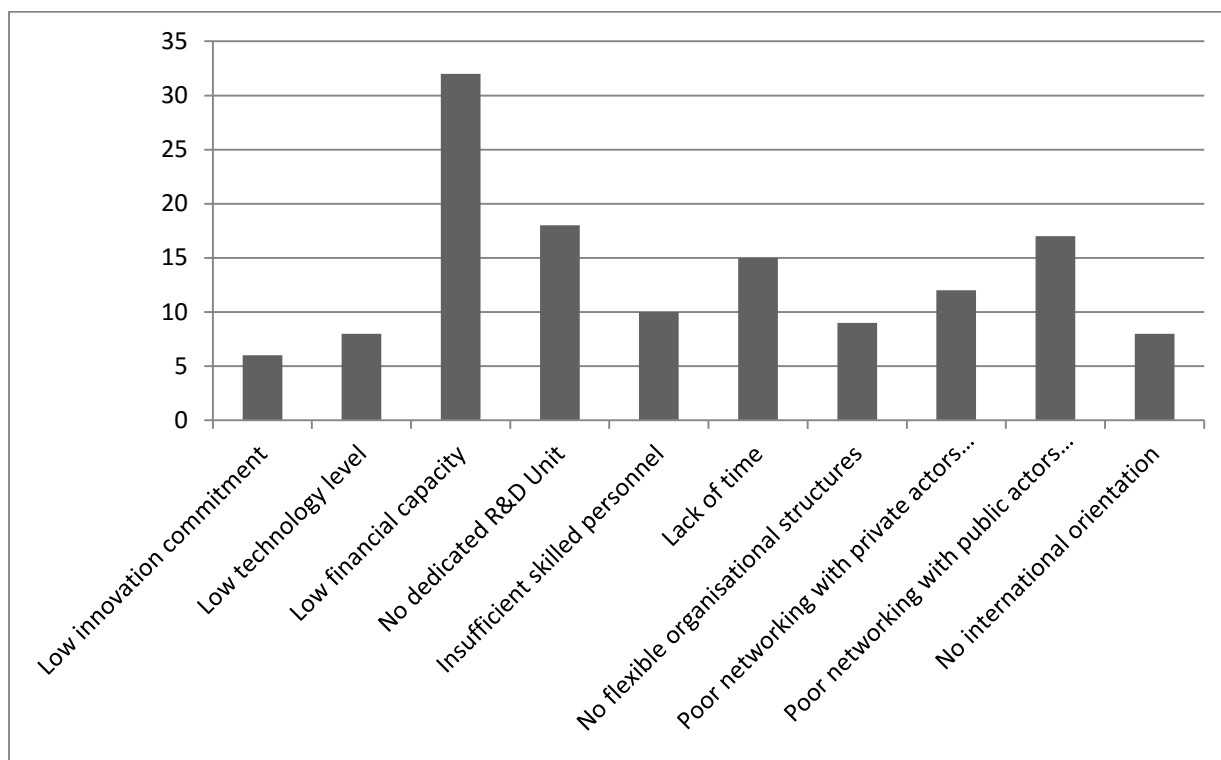
*Graph 16: Relevant factors for the company's strategic positioning*

The SWOT analysis results very interesting giving an idea about the approach by companies towards the market and agrofood sector perspective. Considering the strenghts, interviewed companies indicated their product and process quality as the more important factor, followed by their capacity to adopt new technologies and realize innovation processes. Other relevant factors are their market position, evidently considered good and able to drive competition, their product diversification and the high skilled personnel, and internationalization, all factors relevant for the market. It seems that these companies are generally not very strong for their financial capacity and geographic position (Apulia is a southern region, far from national important nodes), neither for their partnerships with the local players (private and public ones); anyway these data are comfortable because indicating a beginning cooperation with territory useful for competitiveness.



*Graph 17: Companies STRENGTHS*

The information collected about the weaknesses confirm some structural difficulties of these companies, indicating mainly their low financial capability as critical, and the absence of dedicated R&D unit in their organization. Others weak factors are the companies capacity of integration with territory, confirming that these aspects could be considered important and strategic for their competitiveness. The different answers obtained for strengths and weaknesses are clearly related to the different enterprises dimensions: the small and micro firms demonstrate difficulties to have internal R&D unit or international orientation or high technological level/innovation commitment, suffering often for financial capacity.

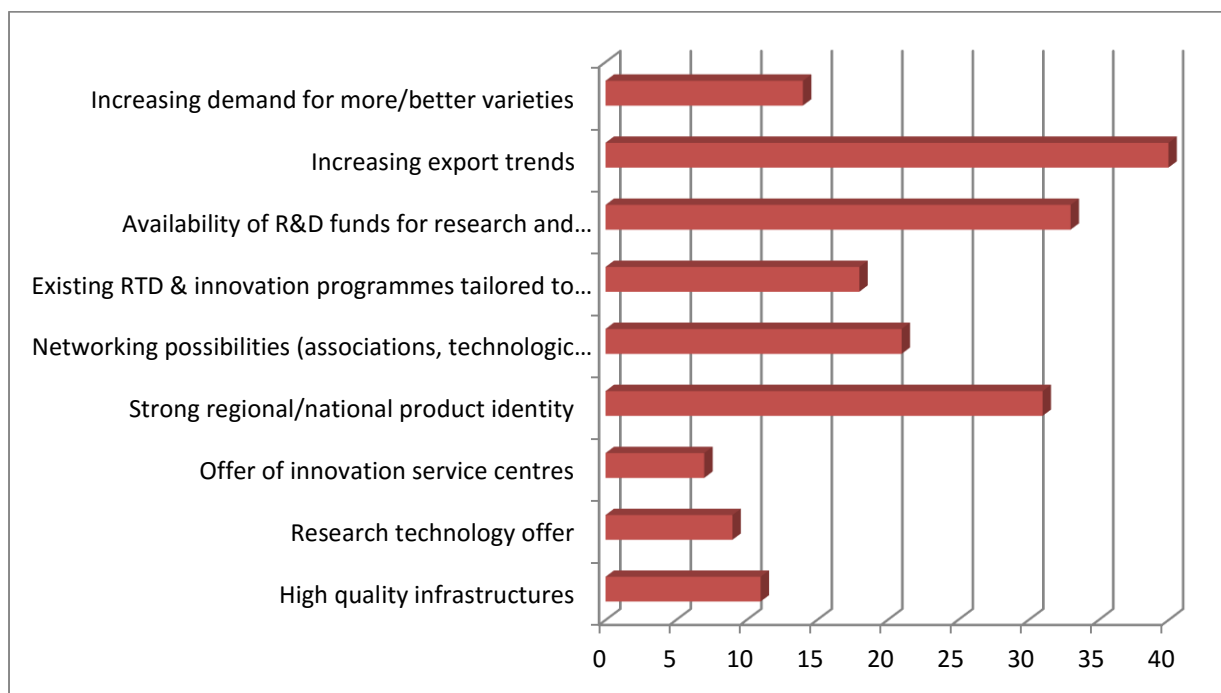


*Graph 18: Companies WEAKNESSES*

It's quite curious that listing their strengths and weaknesses points, the companies are more oriented to express their best characteristics than the weak ones (the total amount of answers for "strengths" have been 252, the total amount for "weaknesses" have been about the half, only 235!), thus probably indicating a positive self-consideration.

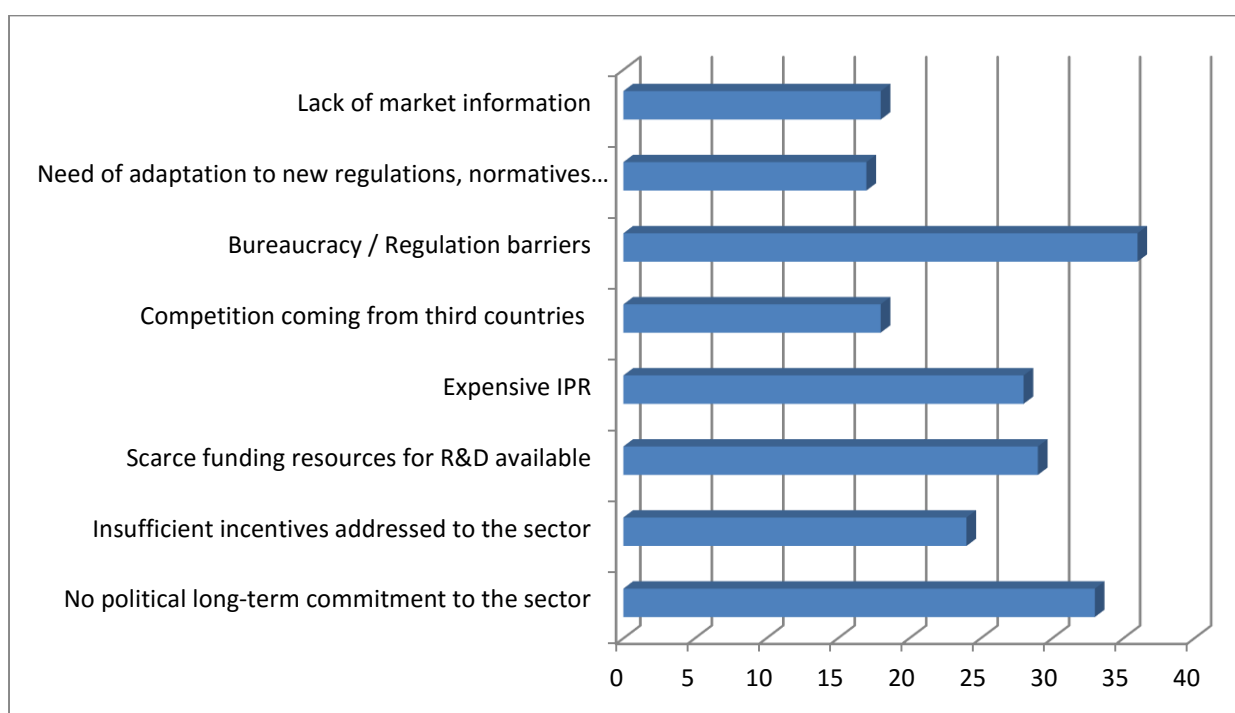
Finally, opportunities and threats have been investigated, focusing companies attention on external aspects related to sector and environment. The increasing export trends are considered as the most important factor to enlarge market shares in a profitable way. This information confirm that small enterprises are mainly local market-oriented (only in some cases the national markets are served) and foreign markets represent really an opportunity. Recent data on Apulian agrofood exports indicate an encouraging growth ratio (+17% in June 2012).

Also the availability of R&D funds together with existing regional programmes addressed to agrofood chains are perceived as possibility to reinforce the competitiveness, accompanied by a strong regional/national product identity, that is very important in this field. Other opportunities by few companies are considered those factors regarding the potentiality of the territory to sustain the sector by offering innovation services as well as research and infrastructures.



*Graph 19: OPPORTUNITIES according to companies*

On the other side, bureaucracy and regulation barriers together with no political long-term commitment to the sector are seen as strong threats for Apulian companies, confirming the previous opinions emerged during the survey. Again, low availability of funding resources for R&D, insufficient incentives addressed to the sector and expensive IPR costs are considered the main barriers.



*Graph 20: THREATS according to companies*

This technological audit shows that in the Apulian agrofood sector the companies are potentially oriented to and attracted by technological improvement, indicating a sort of business dynamism and attention at integrating new technological knowledge into existing organization. Nevertheless companies affirm to be ready at identifying needs for product and process innovation, however, rarely they are ready to express a defined and concrete request for new technologies, even if they set specific cooperation with research entities in order to solve some punctual problems.

The Apulian industry consists mainly of small and medium-sized enterprises, applying quite simple industrial processes and paying attention to the “tradition” of the food product (intended as inner product features strictly linked to territorial aspects or determined by, such as variety, climate conditions, agricultural practices etc). This behaviour is typical of an entrepreneurial class by handcraft origins, and actual strategies seem often not to be appropriate in the modern production and consumption context. In particular, regional companies rarely realize and sell their own brand products, and rarely develop relevant quality assortments or adopt internationalization strategies; in some cases they take contacts with buyers or dealers operating profitable markets. In addition, any innovative behavior follows such detailed paths that become a sort of additional barrier for a wider promotion of innovation. The equipment or plants provision, also representing a mean for the transmission of innovations in traditional sectors, results weakened due to companies distance from the market; most of new equipments is seen and experienced as a business modernization (perhaps obtained by public grants ) not coming up by attempt to competitive repositioning that also requires improvement in procedures, technologies and organization. Moreover, very often, the acquisition of machinery does not allow you to customize to the needs of innovation and markets. Moreover, the equipment purchasing does not allow the personalization of innovation according to enterprises and markets needs.

Another aspect characterizing the local companies is a continuous product and process improvement or re-styling, that result never properly designed and structured by entrepreneurs, but realized inside the operating processes, thus remaining quite hidden in the internal organization and not able to be expressed and known in the economic system (neither attracting public funds).

Another point emerged by technological audits is referred to the cooperation with the research public or private system. About half of the firms surveyed developed in the past, or are developing, partnerships with public research centers or private. Usually, these collaborations have been asked or pushed by the researchers themselves, who need business partners to develop and complete their research projects. Few companies have shown very active in research projects or have sought directly specialized collaborations to solve specific business needs. In this context many companies shown not to having a deep knowledge of potential public financing

measures; in addition, they declared not be interested in public funding mainly because of the long bureaucratic processes.

In conclusion, it seems important not only to push the food industry towards market driven technologies in order to respond to the real demand in the region, but also to facilitate contacts between industry and the research world.

### **3.4 CONCLUDING REMARKS**

In this present work the analysis was focused of the innovation process in the food industry in Apulia, in order to try to identify the demand for innovation in key food chains by needs and technologies analysis.

The Apulian agrofood industry system seems to move towards the creation of food products supply based on specialization as key factor to play in a large competitive market, being guided by market drivers enhancing and adding value to critical factors already existing differently in each chain.

The more potential competitive food chains seem to be those having a strong distinctive specificity, such as the traditional chains of wine, olive oil, and vegetables, wheat based products, cereals, dairy products. For these chains the companies may use existing competitive advantages arising from product characteristics (quality, diversification), organization (production and marketing), brand recognition and ability to evoke "Made in Puglia".

The first conclusion that can be drawn from the analysis is the presence of a substantial demand for innovation, mainly unspoken (or latent). During the interviews companies expressed other real needs, both for the improvement of the quality of products supply and for productivity increase. Moreover, they shown having a deep knowledge and awareness of manufacturing processes and products in order to improve their capacities/characteristic, even if they expressed a minor capability to act really and find a way for operating in this sense, as well as severely limited low financial resources..

This analysis allowed to fully experience the difficulties of small and medium-sized regional companies to transform their request for improvement in a potential pathway (internal or external) of innovation. Companies in which it was clear what and how perform innovative actions were extremely rare and often when high skilled and specialized human resources worked inside (generally in large enterprises).

The more common technological issues and needs concerned mainly the maintenance of quality standards, the higher manufacturing capacity, the food safety, the ability to product diversification to meet the -changing needs of the market and the reduction of energy and water consumption.



These technological lines identified represent the content of requests for interventions based on the needs expressed by the industry. Anyway to respond to these requests of intervention and create a serious path towards innovation, it could be useful to enforce or create a close relationship between companies and Research & Development bodies, that result not completely developed or weak in some cases. This should be the only encouragement to lead the Apulian agrofood sector to the technological innovations bringing a significant competitive advantage to companies.

## 4. REGION OF PAZARDZHIK, BULGARIA

### 4.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

The Region of Pazardzhik is one of the 28 regions of Bulgaria and is situated in the South Central Planning Region of Bulgaria. The population of the Region of Pazardzhik is 275,548 (2011 Census), equal to 3.74% of the total population of Bulgaria (it is the 7<sup>th</sup> largest region in terms of population). The regional gross domestic product (GDP) at current market prices in 2008 has been EUR 906 million (~2.61% of total national GDP, Eurostat 2008). GDP per inhabitant in 2008 has been 3,089 Euros (~2.55% of the national average/ ~12.36% of the EU-27 average, Eurostat 2008).



The region of Pazardzhik is an industrial-agrarian region with predominant industrial production. In 2008, there were 7,353 registered companies, as 244 of them were agricultural companies. Agriculture is of high importance for the economy of the region, though it generates a relatively small share of the operating revenue (3.8% in 2008). The terrain and climate of the region determines the development mainly of agriculture and alpine livestock breeding.

In Pazardzhik region, different crops from the following groups are cultivated: cereal (wheat, barley, rye, corn, rice, oats), oilseeds (sunflower, rapeseed), technical (tobacco), vegetables and fruit and nuts, greenhouse (peppers, tomatoes, cucumbers, melons, etc.), tubers (potatoes), vine (table and wine), fruit, incl. pome, stone, berries, nuts (apples, pears, quinces, cherries, sour cherries,

plums, peaches, apricots, raspberries, strawberries, walnuts), essential oil (rose oil, lavender), feed (corn, peas), medicinal and aromatic (hops, etc.).

In 2008, the highest share of enterprises in the agricultural sector employ up to 9 persons - 75% of the agricultural enterprises in the South Central Planning Region. In 2007, the Gross Value Added of the sector has been 18.9% of the added value of the South Central Planning Region.

Food industry is of high importance and a major sector in the Pazardzhik region's economy. In terms of revenues of the enterprises the industry has a leading position with 16.5% of the revenues of all industrial enterprises in the region. In 2010, the enterprises in the Food industry represent 16.4% of the total number of industrial enterprises in the planning region.

Food industry is the second largest sector in the region in terms of number of enterprises – 194 in 2008. The total turnover of the enterprises in the industry has been EUR 147,737,000 and the number of persons employed has been 4,136.

In 2008, 194 companies producing food and beverages (excluding alcohol and tobacco) were registered in Pazardzhik. The largest number comprised enterprises producing bread and other food products - 98, followed by enterprises producing beverages - 27, processing and preserving fruits and vegetables - 18.

Over the 2004-2008 period, the revenues from the overall activity of the companies in this sector has increased nearly three-fold, the number of employees has increased by 1,075, while the average annual salary has increased by EUR 942. Labour productivity has increased by nearly 63% due to technological innovation of the enterprises in the sector.

The share of food and live animals has accounted to 10.7% of the total exports of Bulgaria in 2010. About 76% of the products have been exported to the EU.

## 4.2 PROFILED AGROFOOD SMEs

Full official name of company	Productive sectors the company is active in
1. Bravo Ltd.	Production, processing and preserving of meat and meat products
2. Ivet PLtd.	Production, processing and preserving of meat and meat products
3. Bratya Pilevi OOD	Manufacture of grain mill products, starches and starch products
4. Slancho AD	Manufacture of other food products
5. KEN JsCo.	Production, processing and preserving of meat and meat products
6. Karol Fernandez Meet - KFM Ltd.	Production, processing and preserving of meat and meat products
7. Nikas Bulgaria PJsc.	Production, processing and preserving of meat and meat products
8. Normex Ltd	Production, processing and preserving of meat and meat products
9. Compass Ltd.	Production, processing and preserving of meat and meat products
10. Primo Trade LTD (PILCO)	Production, processing and preserving of meat and meat products
11. Tandem-V Ltd	Production, processing and preserving of meat and meat products
12. UNITEMP LTD	Production, processing and preserving of meat and meat products
13. Karmela 2000 OOD	Manufacture of other food products
14. CHEH LTD	Manufacture of dairy products
15. Izida OOD	Manufacture of dairy products

Full official name of company	Productive sectors the company is active in
16. Atlantic Group	Processing and preserving of fish and fish products
17. AVA OOD	Production, processing and preserving of meat and meat products
18. Avis EOOD	Production, processing and preserving of meat and meat products
19. Diavena	Processing and preserving of fish and fish products
20. Sofia Mel EAD	Manufacture of grain mill products, starches and starch products
21. Bessa Valley Ltd.	Manufacture of beverages
22. LM Pltd.	Manufacture of other food products
23. Ekokons Pltd.	Processing and preserving of fruit and vegetables
24. Fulmax Ltd.	Manufacture of vegetable and animal oils and fats
25. Ecco-F Jsc.	Manufacture of dairy products
26. Factory for mayonnaise "Kradi"	Manufacture of vegetable and animal oils and fats
27. MIO Ltd.	Manufacture of other food products
28. Orion 2001 Ltd.	Production, processing and preserving of meat and meat products
29. Provimi – Vianid Jsc.	Manufacture of prepared animal feeds
30. Fedon Ltd.	Manufacture of other food products
31. Djiev AD	Production, processing and preserving of meat and meat products
32. Prestij 96 OOD	Manufacture of other food products
33. Mes Co PLE	Production, processing and preserving of meat and meat products
34. MEKOM Jsc.	Production, processing and preserving of meat and meat products
35. BRIK OOD	Processing and preserving of fruit and vegetables
36. Konex-Tiva OOD	Processing and preserving of fruit and vegetables
37. Deroni OOD	Processing and preserving of fruit and vegetables
38. Gold Oil OOD	Manufacture of vegetable and animal oils and fats
39. Zarneni hrani AD	Manufacture of grain mill products, starches and starch products
40. Bulcons Parvomay AD	Processing and preserving of fruit and vegetables
41. Royal Potatoes AD	Processing and preserving of fruit and vegetables
42. Eko Mes EOOD	Production, processing and preserving of meat and meat products
43. Yugoplod AD	Processing and preserving of fruit and vegetables
44. Aktiniya-3 OOD	Manufacture of vegetable and animal

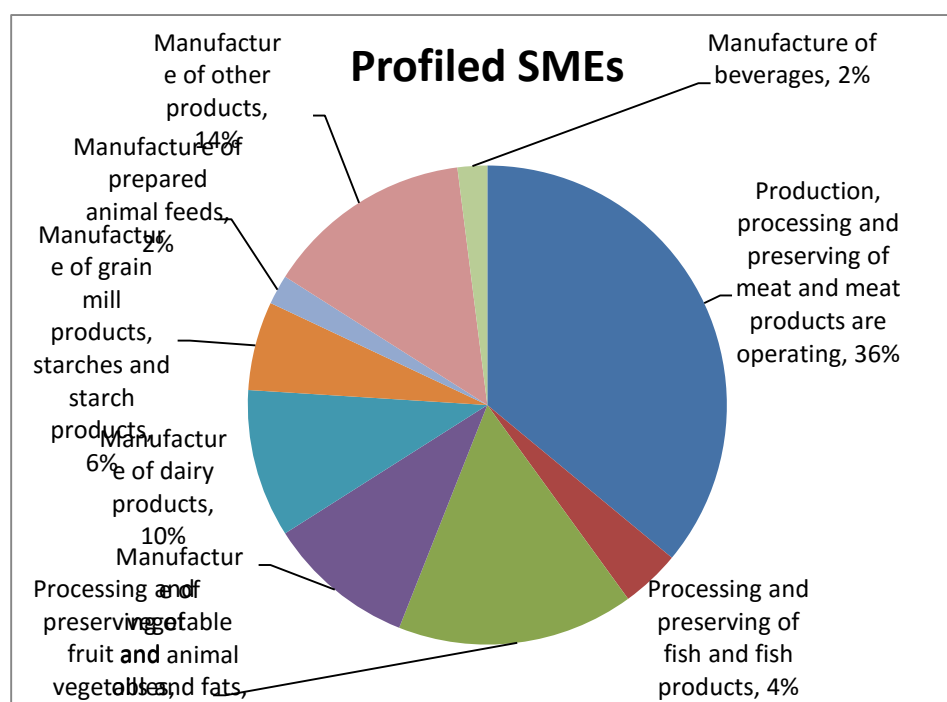
Full official name of company	Productive sectors the company is active in
	oils and fats
45. Grivas OOD	Processing and preserving of fruit and vegetables
46. Intermed 1 EOOD	Manufacture of vegetable and animal oils and fats
47. Bulgarsko sirene OOD	Manufacture of dairy products
48. Denito OOD	Manufacture of other food products
49. Yotovi OOD	Manufacture of dairy products
50. May Day OOD	Manufacture of dairy products

### 4.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

#### 4.3.1 SECTION A - COMPANY GENERAL INFORMATION

The database of Bulgarian SMEs consist 50 enterprises. The geographical scope of the research is taken from levels NUTS 1 to NUTS 0, because of the small size of one country and the significant industrial activity that an adjacent region presents. 4% of the profiled SMEs are micro, 56% - small and 40% - medium.

**Figure 1. Profiled SMEs in aspect of the productive sector of the Food Industry they operate in.**



All companies meet the State and EU requirements and standards for food safety and control. Except the HACCP (Hazard Analysis and Critical Control Point) certification, which is introduced in 82% of the profiled SMEs, also prevails the ISO 22000 for Food Safety

Management Systems certification which is introduced in 50% of the enterprises. The ISO 14001 for Environmental Management System is applied in only 6% of the profiled SMEs. Some SMEs have also applied GMP – Good Manufacturing Practice (10%) and introduced some specific certificates as IFS - International Food Standard (12%), CH06/1074:1 Valves for water supply (2%) and ISO 17025:1 - General requirements for the competence of testing and calibration laboratories (2%).

Quality management is also important for the Bulgarian SMEs operating in the Food Industry. It is proven by the fact that 50 % of the profiled SMEs have introduced ISO9001 for Quality Management Systems.

Most of the SMEs operate at regional and national market, respectively 72% and 90%. EU market is also attractive for 72% of the Bulgarian SMEs, compared to other markets, where operate only 16% of the profiled SMEs. The structure of market localization is as follows:

- At local market:
  - 40% of the SMEs sell between 0-35% of their production;
  - 16% of SMEs sell between 31-70% of their production;
  - 6% of SMEs sell between 71-100% of their production;
- At national market:
  - 16% of the SMEs sell between 0-35% of their production;
  - 40% of SMEs sell between 31-70% of their production;
  - 14% of SMEs sell between 71-100% of their production;
- At EU market:
  - 48% of the SMEs sell between 0-35% of their production;
  - 6% of SMEs sell between 31-70% of their production;
  - 2% of SMEs sell between 71-100% of their production;
- At other markets:
  - 10% of the SMEs sell between 0-35% of their production;
  - 2% of SMEs sell between 31-70% of their production;
  - 0% of SMEs sell between 71-100% of their production;

#### **4.3.2 SECTION B - INNOVATION STRATEGY**

According to the results of the questionnaires, most Bulgarian SMEs are fairly open to innovations. Reference to innovation is included in the company's mission or vision of 60% of the SMEs. The areas in which they seek for innovation in the past five years are: Production and Processes (86%), Marketing/Strategy (30%) and Organization (22%). Only 2% were seeking innovation in other areas, e.g. Corporate Social Responsibility.

Compared to their main competitor's products and processes, 38% of the enterprises define their own products and processes as highly innovative, 40% - as innovative and 22% - as less innovative.

18% of the interviewed SMEs define their competitor's products and processes as highly innovative, 34% - as innovative and 30% - as less innovative.

The main source of innovation in the enterprises is the new process equipment, in which invest 70% of the SMEs. Important role in the current global market plays the partnership with external organizations, which source is spread among 26% of the SMEs. Because of the bureaucracy and the expensive intellectual property rights patent acquisition is observed among only 6% of the SMEs.

Internal R&D department have only 28% of the SMEs. 92% of the SMEs organize internally their innovation activities. In 68% of them the responsibility is embedded within the organizational structure, as in 24%, the responsibility represents an additional task, not continuously foreseen in the organizational structure.

Only 46% of the SMEs organize their innovation activities externally. The most of them - 38%, cooperate with companies of the sector. Relatively low is the cooperation with research centres/universities and consultancy companies, respectively 6% and 2%. The geographical dimension of the externally organized innovation activities is: 24% at national market, 14% at international market and 10% at regional market.

#### **4.3.3 SECTION C - COMMITMENT TO TECHNOLOGY**

The companies in Food Industry are well-equipped and have the core technologies and applications for their business. Usually the production takes place in plants where the core technologies and product lines are situated. Many companies in the Food industry have closed production cycle for the production, packaging/bottling and storing of their products.

Because of the insufficient supply of raw meat in Bulgaria, many companies supply their production except by Bulgarian meat, also by import from foreign countries, especially EU-members. Some of the SMEs, which operates in the sector of production, processing and preserving of meat, breed animals and build fodder plants, by which they close their production cycle.

Many companies, which operate in the sector of processing of fruit and vegetables, have their own land for growing fruits and also collection points all over the country. Part of the fruits they also sold fresh.

A lot of companies, which operate in the sector of manufacture of dairy products, have several production lines for the production of a variety of milk products.

Some production companies, e.g. in the sector of production of meat products and fish products have their own company stores. Typical for the Food Industry is the establishment of own warehouse and logistics facilities and building of distribution networks.

Many companies also product under their own brands, but also under the brands of their clients, e.g. supermarkets brands.

Important role for the enterprises in the sector have efficiency, safety, quality and control of production.

Selling final products by closed production cycles (own production, warehousing, packaging/bottling, freezing, etc.) is defined as a strategic priority by the interviewed companies from the industry.



Adoption of new production and processing technologies for production of new products and variety of products, tailored to the customer needs and preferences is also considered strategic by the SMEs from the sector.

Improving the capacity of production, control over the raw products and the adoption of waste-free technologies are also strategic for the sectors within the Food Industry.

In the past 5 years the companies in the Food Industry have adopted advanced systems, new technologies and processes for product diversification and increasing the production range by new and sub-products.

In addition to offering new products, a lot of other marketing approaches have also been adopted, especially media advertising, social networking, making comfortable and ecological packaging, branding, improving distribution channels, issuing of recipes, etc.

There are also companies, which rely on traditional products by improving their quality.

One more notable fact in the last few years is the willingness of Bulgarian food producers to adopt the Bulgarian State Standard of production.

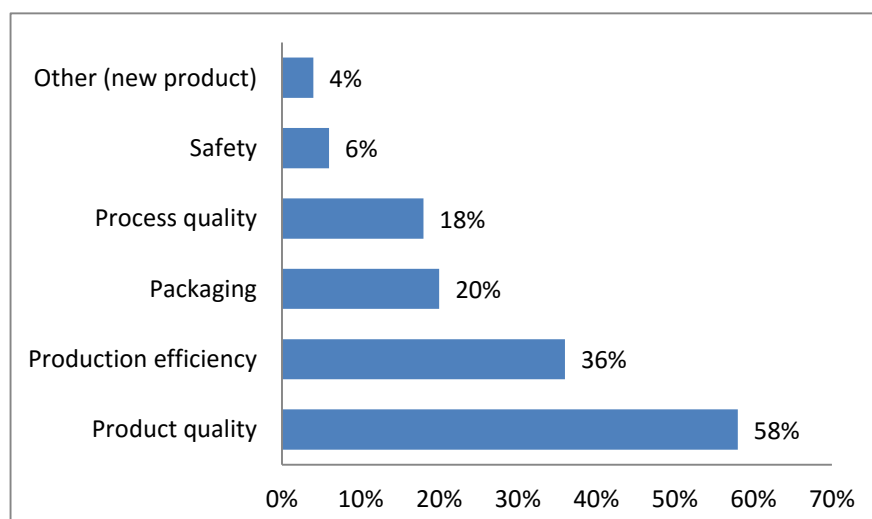
Only 10% of the SMEs indicate that their resources allocated to R&D amount to 5% of the annual turnover in the last year. Most of the companies use their internal resources and personnel. 44% of the SMEs consider moderate availability of skilled labour in their company needed to make technology innovation, 38% consider high availability and 18% - low availability. There is no company that reports no availability at all.

#### 4.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS

During the past five years 58% of the SMEs have been involved in innovation and technology projects. The innovation projects address almost equally new technologies and new products. Most of them are realized at regional/national level compared to international and generally the results meet the partner's expectations.

Presently, only 16% of the companies perform innovation and technology projects. Nevertheless, 94% are interested in promoting an innovation project in the short to medium term.

**Figure 2. Objectives at which the SMEs are willing to address an innovation project**





The main obstacles for the companies to participate in innovation projects are:

- Lack of sufficient information about the availability of such projects and how to get involved in them;
- Long time for approval of the projects – when they are not needed any more;
- Long time for implementation when the innovation is not valid any more if EU funds are used;
- Insufficient resources – time, funds, capacity - technical and personnel;
- Lack of external funding;
- Lack of external partners;
- The reduced consumption as a result of the financial crisis reduces the financing opportunities;
- Lack of free resources.

#### **4.3.5 SECTION E - POLITICAL CONTEXT**

Regarding the existing policies at regional, national and European level, 50% of the SMEs consider they are favorable and supportive for being successfully operative in the Food sector in the region and 50% consider they are not.

The measure/incentives that the companies expect from the policy makers for the AgroFood sector for the future are:

- To support SMEs and producers in the quality raw materials. The resource base in Bulgaria is not sufficient for the production;
- Building strong regional/national product identity and creating favorable conditions for increasing exports;
- Support to SMEs in the sector and fight with unfair competition.
- More EU grant schemes and state subsidies for producing companies and agricultural producers;
- Better access to finance for R&D projects;
- Less formality in application for a project;
- More pro-active offer of new knowledge and innovation services;
- Less administrative requirements for the business;
- Promotion of the use of Bulgarian vegetables for the production of local products and brands;
- More financial support to small and medium companies and establishment of normal business environment;
- High quality infrastructures.

## **4.4 PRELIMINARY SWOT RESULTS**

Focusing on their own resources, 90% of the enterprises consider as their main strength (capabilities to provide comparative advantages in the AgroFood research sector in their region) the product and process quality, 64% rely on market position, 46% are backed by product diversification, 16% - by the highly skilled personnel, 12% - by the management capacity, 12% rely on geographical positioning as their strength, 10% - on the strong networking with private actors, 8% - on the adoption of highly innovative technologies, 8% - on internationalization, 6% - on financial capacity, 2% - on dedicated R&D unit and 2% - on other factors (safety).

Focusing on their own resources (personnel, organizational aspects, financial aspects, etc.) 28% of the companies consider as their main weakness the lack of dedicated R&D unit, 28% - the poor networking with public actors, 24% - the lack of time, 14% - the low innovation commitment, 8% - the insufficient skilled personnel, 8% - the low financial capacity, 6% - no international orientation, 4% - the poor networking with private actors, 4% - the lack of flexible organizational structure, and 2% - the low technology level.

Focusing on aspects outside their control, 40% of the SMEs see opportunities for their companies, i.e. opening up of possibilities to capitalize in existing RTD & innovation programmes tailored to the sector, 38% - in increasing demand for more/better varieties, 24% - in the offer of innovation service centres, 24% - in increasing export trends, 22% - in the networking possibilities, 16% - in research technology offer, 16% - in the availability of R&D funds for research and innovation, 12% - in the strong regional/national product identity and 8% - in the high quality infrastructure.

Focusing on aspects outside their control, 68% of the enterprises see threats for their company, i.e. for closing off of future possibilities in the insufficient incentives addressed to the sector, 48% - in the scarce funding resources for R&D available, 46% - in the bureaucracy/regulation barriers, 22% - in the need of adoption to new regulations, normative and priorities, 20% - in the competition coming from third countries, 16% - in no political long-term commitment to the sector, 16% - in the expensive intellectual property rights (IPR).

<b>Strengths</b>	<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. Product and process quality (90%)</li> <li>2. Market position (64%)</li> <li>3. Product diversification (46%)</li> <li>4. Highly skilled personnel (16%)</li> <li>5. Management capacity (12%)</li> <li>6. Geographical positioning (12%)</li> <li>7. Strong networking with private actors (10%)</li> <li>8. Adoption of highly innovative technologies (8%)</li> <li>9. Internationalization (8%)</li> <li>10. Financial capacity (6%)</li> <li>11. Dedicated R&amp;D Unit (2%)</li> <li>12. Others (safety) (2%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of dedicated R&amp;D Unit (28%)</li> <li>2. Poor networking with public actors (28%)</li> <li>3. Lack of time (24%)</li> <li>4. Low innovation commitment (14%)</li> <li>5. Insufficient skilled personnel (8%)</li> <li>6. Low financial capacity (8%)</li> <li>7. No international orientation (6%)</li> <li>8. Poor networking with private actors (4%)</li> <li>9. Lack of flexible organizational structure (4%)</li> <li>10. Low technology level (2%)</li> </ol>
<b>Opportunities</b>	<b>Threats</b>
<ol style="list-style-type: none"> <li>1. Existing RTD &amp; innovation programmes tailored to the sector (40%)</li> <li>2. Increasing demand for more/better varieties (38%)</li> <li>3. Offer of innovation service centres (24%)</li> <li>4. Increasing export trends (24%)</li> <li>5. Networking possibilities (22%)</li> <li>6. Research technology offer (16%)</li> <li>7. Availability of R&amp;D funds for research and innovation (16%)</li> <li>8. Strong regional/national product identity (12%)</li> <li>9. High quality infrastructure (8%)</li> </ol>	<ol style="list-style-type: none"> <li>1. Insufficient incentives addressed to the sector (68%)</li> <li>2. Scarce funding resources for R&amp;D available (48%)</li> <li>3. Bureaucracy/regulation barriers (46%)</li> <li>4. Need of adoption to new regulations, normative and priorities (22%)</li> <li>5. Competition coming from third countries (20%)</li> <li>6. No political long-term commitment to the sector (16%)</li> <li>7. Expensive IPR (16%)</li> </ol>

## 4.4 CONCLUDING REMARKS

There are 50 enterprises from the Food Industry in the Region of Pazardzhik (NUTS 1 to NUTS 0) mapped and analysed by filling in of questionnaires (ANNEX 1).

The result of the Technology Audit indicates that most of the Bulgarian SMEs are fairly open to innovations. Reference to innovation is included in the company's mission or vision of 60% of the SMEs. Compared to their main competitor's products and processes, 38% of the enterprises define their own products and processes as highly innovative, 40% - as innovative and 22% - as less innovative.

The main source of innovation in the enterprises is the new process equipment, in which 70% of the SMEs have invested. About 46% of the SMEs organize their innovation activities externally. In the last 5 years, the companies in the Food Industry have adopted advanced systems, new technologies and processes for product diversification and increasing the production range by new and sub-products. In addition to the offering of new products, a lot of other marketing approaches have been adopted as well, especially media advertising, social networking, making comfortable and ecological packaging, branding, improving distribution channels, issuing of recipes, etc.

During the past five years, 58% of the SMEs have been involved in some type of innovation and technology projects. The innovation projects address almost equally new technologies and new products. 94% of the SMEs are interested in promoting an innovation project in the short to medium term. The objectives which they are willing to address in an innovation project are:

- 58% - product quality
- 36% - production efficiency
- 20% - packaging
- 18% - process quality
- 6% - safety
- 4% - other (new product)

The main obstacles to the companies to participate in innovation projects are:

- Lack of sufficient information about the availability of such projects and how to get involved in them
- Long time for approval of projects – when they are not needed any more
- Long time for implementation when the innovation is not valid any more if EU funds are used
- Insufficient resources – time, funds, capacity - technical and personnel
- Lack of external funding
- Lack of external partners
- The reduced consumption as a result of the financial crisis reduces the financing opportunities
- Lack of free resources

## 5. SOUTH-EAST DEVELOPMENT REGION AND BUCHAREST-ILFOV DEVELOPMENT REGION, ROMANIA

### 5.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

#### ROMANIA - Country Profile

Romania has a surface of 237.500 km<sup>2</sup> and it is the second biggest East European country after Poland (312.685 km<sup>2</sup>) having almost the same surface as the United Kingdom of the Great Britain and Northern Ireland. Romania is splitted in several administrative units called *counties* (41). To apply the European regional development policy, on the Romanian territory has been created 8 *development regions* as a free agreement between counties councils and local councils.



*Main industries are:* textile and leather industry; metallurgical industry; building machines industry; mining industry; wood processing industry; construction materials industry; chemical and petrochemical industry; food industry; IT industry

In 2010, the economy is based on services (55% of GDP), and industry and agriculture had a contribution of 35% and 10% respectively. In the same time, 32% of the working population is involved in agriculture and production, one of the higher rates in Europe.

#### Agriculture Production

*The contribution of agriculture, forestry and fishery* is about 6% of GDP, in comparison with the EU member states which is about 1.7%. Out of the 23,8 million ha of Romanian territory, the used agricultural area is representing about 62.1% (14,8 million ha) and out of which 8.3 million ha is arable land. About 4.9 million people work in agriculture, fishery and forestry industry, representing 42.8% out of the total labour force. Out of 3.9 million land owners, 40% is working less then 1 ha and only 0.6% of the farms have more then 10 ha.

In 2010, the value of agricultural production was about 16,000 million euro (with +1% bigger then in 2009) and its distribution was: +6.6% the vegetal one, -6.8% the animal one and -26.5% agricultural services. In 2010, a production of 5,774 thousand tones of wheat (+4.5% more then 2006) and 9,008 thousand tones of corn (+0.3% more then 2006) has been registered. One year before, in 2009, production of 1,267 thousand tones of sunflower and 3,284 thousand tones of potato has been registered also.

### **Food Industry**

The food industry in Romania is having a turnover of about 10 billion euro annually, meaning a contribution of 8% to the GDP and offers jobs for about 200,000 people. In 2010, the food industry has been the third industry of Romania based on turnover.

- food production in March 2012 increased with 107.8% against March 2011;
- food production in March 2012 increased with 118.2% against February 2012;
- food production in the first three months of 2012 increased with 103.3% against the similar period of 2011

The sub-sectors: *the meat processing* had a turnover of 1.3 billion euro, *bakery* had 1.1 billion euro and *non-alcoholic drinks* had 1 billion euro. Important contributions had *meat production* with 840 million euro and *dairy* with 800 million euro.

The number of economic agents in food industry is slightly bigger then 10,000 units, a constant number between 2006 – 2010.

## **SOUTH-EAST DEVELOPMENT REGION**

### **Region's Profile**

The South-East Development Region is neighbouring in the North with The North-East Development Region, in the West with Center Development Region in the South-West with South-Muntenia Development Region and Bucharest-Ilfov Region, in the South with Bulgaria and in the East with Republic of Moldova, Ukraine and the Black Sea.

The Region has a surface of 35,762 km<sup>2</sup>, being the second largest development region of Romania (15% of the country's territorial area). The region is participating with 11.2% of the national GDP, the 6<sup>th</sup> place between the 8<sup>th</sup> Development Regions of Romania.

The Economic structure of the Region and their components contributions to the Regional GDP: agriculture and forestry with 22%; industry with 22%; constructions with 11%; trade with 9%; hotels and restaurants with 2%; transportation and communications with 10%

The industry in the South-East Development Region includes companies from: food sector; leather sector; mechanical and metallic products sector; petro-chemistry sector; ship construction sector; electrical equipments sector

The Region has three specific issues making a difference of the other Development regions:

1. The ship building industry (4 locations: Braila, Galati, Mangalia and Tulcea) and the water transportation sector, because of the Danube and the Black Sea, the largest harbour of Constanta at the Black Sea and Danube River's harbours like Galati, Braila and Tulcea.



2. The leisure and entertainment industry because of the touristic potential, due mainly the 70 km of the Black Sea coast with 13 vacation cities for the summer holiday.

3. The Danube Delta Reservation has a touristic and scientific potential in the same time and it is one of the main attraction of the region all over the year.

### **Agriculture Production**

The South-East Development Region is an agriculture area. The main cereals: corn, wheat, oats, industrial plants, sunflower. The useful agriculture area is 2.332.000 ha, meaning 15.85% of the total agricultural area of Romania. Here it is the second agricultural exploitation area in Romania.

The region is having the largest vineyard area in the country (covering about 40.2% of the national vineyards area) producing wines which are very well known in abroad. The region is also having the largest production of sheep and goats meat and the largest production of wool. The region is the second in the country as production of eggs, the forth place at swine meat and fifth place at chicken meat.

Ecologic agriculture is having 62.514 ha in the region (28.2% of the total national ecologic agriculture), but it still represent only 2.68% of the overall agriculture area. The number of the registered entities in 2009 as acting in ecologic agriculture was 331 (8% of the total national entities) in the sector).

### **Food Industry**

In 2009, the region counted 1,699 licenced companies in the food industry:

- 163 in the milk and diary sector;
- 99 in the meat processing sector;
- 788 in the milling and baking sector;
- 14 in the can producing sector;
- 51 in oil processing sector;
- 2 in the sugar and sugar beat processing sector;
- 247 in the sugar products manufacturing sector;
- 335 in the beverages sector;

## **BUCHAREST-ILFOV DEVELOPMENT REGION**

### **Region's Profile**

The Bucharest Ilfov Development Region is located in the southern part of Romania, being surrounded by the South-Muntenia Development Region. It is constituted by the largest metropolitan area of Bucharest (the capital city of Romania) and the smallest county of Romania (Ilfov).

The Region has a surface of 1,821 km<sup>2</sup> (0.76% of the country's territorial area) being the smallest Development Region as area. 13.1% of the region's territory is the city of Bucharest and 86.9% is the area of Ilfov county. The region is participating with 26.1% of the national GDP, the 1<sup>th</sup> place between the 8<sup>th</sup> Development Regions of Romania. The GDP per capita in 2011 was 13.164 euro, due to the development status of Bucharest metropolitan area, which is 111% over the EU-27 average.

The Economic structure of the Region (2010) and their components contributions to the Regional GDP: agriculture and forestry with 0.3%; industry with 12.8%; constructions with 13.7%; services with 64.3%; others 9%.

The Bucharest-Ilfov Development Region has a strong development of the services which include: financial and insurance; public administration; real estate; trade and retails; hotels and restaurants;

### **Agricultural Production**

*Due to the capital city of Bucharest*, the agriculture area is considered only for the Ilfov county and the figures for the agricultural area in 2009 were the followings:

- arable area 102,245 ha;
- pastures area 1973 ha;
- hay area: 58 ha;
- vineyards area: 1,412 ha;
- orchards area: 847 ha;

The volume of the agriculture production in 2009 was about 130 million euro, out of which:

- vegetal production - about 70 million euro;
- animal production – about 55 million euro;
- agricultural services – about 5 million euro

The vegetal production in the Ilfov county in 2009:

- Cereals for seeds: 96,790 tones;
- Wheat: 51,022 tones;
- Barley: 8,646 tones;
- Sunflower: 33,687 tones;
- Potato: 14,336 tones;
- Grapes: 5,300 tones;
- Fruts: 3,642 tones;

Animal production in the Ilfov county in 2009:

- cattle meat: 2,835 tones;
- swine meat: 24,258 tones;
- sheep and goats meat: 394 tones;
- chicken meat: 1,739 tones;
- milk: 453 hl;
- wool: 63 tones
- eggs: 102 millions;
- honey: 241 tones



## 5.2 PROFILED AGROFOOD SMEs

	Full official name of company	Productive sectors the company is active in
1.	<b>S.C. ALCOVIN SRL</b> MACIN – Tulcea (1)	Manufacture of beverages
2.	<b>S.C. ALEX &amp; COMP SRL</b> VANATORI – Galati (11)	Manufacture of other food products
3.	<b>S.C. AVE IMPEX SRL</b> SATU MARE – Satu Mare (6)	Production, processing and preserving of meat and meat products
4.	<b>S.C. DIZING SRL</b> BRUSTURI – Neamt (7)	Manufacture of grain mill products, starches and starch products
5.	<b>S.C. DOBROGEA GROUP SA</b> CONSTANTA – Constanta (13)	Manufacture of grain mill products, starches and starch products; Manufacture of other food products
6.	<b>S.C. DURO SRL</b> CONSTANTA – Constanta (2)	Processing and preserving of fruits and vegetables
7.	<b>S.C. ELDA MEC SRL</b> CONSTANTA – Constanta (3)	Manufacture of dairy products
8.	<b>S.C. ELION IMPORT EXPORT SRL</b> CONSTANTA – Constanta (4)	Manufacture of dairy products (ice cream)
9.	<b>S.C. EUROPROD SRL</b> BACAU – Bacau (26)	Production, processing and preserving of meat and meat products
10.	<b>S.C. FARINSAN SA</b> GRADISTEA-COMANA - Giurgiu (25)	Manufacture of grain mill products, starches and starch products;
11.	<b>S.C. FERMA ZOOTEHNICA SRL</b> BAIA MARE – Maramures (27)	Production, processing and preserving of meat and meat products; animal growth
12.	<b>S.C. FIRMA HUTTON SRL</b> SATU MARE – Satu Mare (5)	Manufacture of grain mill products, starches and starch products;
13.	<b>S.C. FRUVIMED SA</b> MEDGIDIA – Constanta (15)	Manufacture of wines from grapes
14.	<b>GRUP VEL PITAR SA</b> BUCURESTI (16)	Manufacture of baking products; pastry and sugar-made products
15.	<b>S.C. IEZERESS SRL</b> DEJ – Cluj (17)	Manufacture of other food products
16.	<b>S.C. KLEVEK FACTORY SRL</b> FETESTI – Ialomita (14)	Processing and preserving of fruits and vegetables
17.	<b>S.C. L&amp;N NICK SRL</b> CONSTANTA – Constanta (28)	Manufacture of other food products
18.	<b>S.C. LACTO BARON SRL</b> CONSTANTA – Constanta (29)	Manufacture of dairy products

19.	<b>S.C. LACTO SRL</b> BANEASA – Constanta (18)	Manufacture of dairy products
20.	<b>S.C. LACTO – GENIMICO SRL</b> HARSOVA – Constanta (19)	Manufacture of dairy products
21.	<b>S.C. LACTO PROD COM SRL</b> CONSTANTA – Constanta (30)	Manufacture of dairy products
22.	<b>S.C. MARIOT B.M. COM. SRL</b> BALENI-ROMANI – Dambovita (8)	Manufacture of grain mill products, starches and starch products; Manufacture of prepared animal feed
23.	<b>S.C. MARIPUSC PROD SRL</b> BRASOV – Brasov (31)	Manufacture of other food products Manufacture of fresh pastry products
24.	<b>S.C. MED UNION SRL</b> CONSTANTA – Constanta (32)	Manufacture of dairy products
25.	<b>S.C. MIH PROD SRL</b> CONSTANTA – Constanta (33)	Manufacture of dairy products
26.	<b>S.C. MINE LIMITED SRL</b> LUMINA – Constanta (34)	Manufacture of grain mill products, starches and starch products;
27.	<b>MURFATLAR ROMANIA – Stat de C&amp;D Viticultura si Vinificatie</b> MURFATLAR – Constanta (20)	Research and Development in winery
28.	<b>S.C. PAN GROUP SA</b> CRAIOVA – Dolj (21)	Manufacture of grain mill products, starches and starch products; Manufacture of other food products
29.	<b>S.C. PANEUROGAL SRL</b> GALATI – Galati (36)	Manufacture of grain mill products, starches and starch products;
30.	<b>S.C. PLEVNEI SA</b> BUCURESTI (22)	Manufacture of grain mill products, starches and starch products;
31.	<b>S.C. PROSPERO SRL</b> TIMISOARA – Timis (23)	Manufacture of grain mill products, starches and starch products; Manufacture of cookies, cakes and fresh pastry products
32.	<b>S.C. PURATOS PROD SRL</b> TUNARI – Ilfov (9)	Manufacturing margarine, bread improvers, portions and fillings confectionery
33.	<b>S.C. RAP CONFECTIONERY SRL</b> GHIMBAV – Brasov (35)	Manufacture of other food products
34.	<b>S.C. RO CREDO SRL</b> CONSTANTA – Constanta (12)	Manufacture of grain mill products, starches and starch products; Manufacture of other food products
35.	<b>S.C. SERVMETRO SRL</b> OLTENITA – Calarasi (24)	Manufacture of electronic weighing scale
36.	<b>S.C. SPICUL – ETAP SA</b> ROSIORII DE VEDE – Teleorman (10)	Manufacture of other food products
37.	<b>S.C. STC INTERNATIONAL SRL</b> SLOBOZIA – Ialomita (38)	Production, processing and preserving of meat and meat products
38.	<b>S.C. SULTAN PRODEXIM SRL</b> MEDGIDIA – Constanta (39)	Manufacture of sugar-based confectionery and pastry products

39.	<b>S.C. TELETXT SRL</b> SLOBOZIA – Ialomita (37)	<i>Manufacture of other food products</i>
-----	---	---

## 5.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

### 5.3.1 SECTION A - COMPANY GENERAL INFORMATION

*Number of received questionnaires: 39*

*Number of large companies: 2*

*Number of SMEs: 37 (13 medium, 17 small, 7 micro)*

*Food Sectors:*

- 8 – Manufacture of dairy products;*
- 13 – Milling and baking products;*
- 4 – Processing of meat and meat products;*
- 2 – Processing of fruits and vegetables;*
- 1 – Manufacture of wines from grapes;*
- 1 – R&D on wines from grapes and winery;*
- 1 – Manufacture of beverages;*
- 6 – Manufacture of other food products;*
- 1 – Manufacture of sugar based products;*
- 1 – Manufacture of weighing scales*
- 1 – Manufacturing margarine and food improvements*

*Certified companies: 20 companies with Quality management*  
*10 companies with Environment Management*  
*22 companies with Food Security Management*  
*13 companies with HACCP*

*ONLY 5 companies with all 4 certification categories*

*Almost of SMEs have regional activities and regional (local) clients. The 2 main companies and few of medium companies have national coverage as overall sales and different production capacities in the country.*

### 5.3.2 SECTION B - INNOVATION STRATEGY

#### **General Remarks:**

- (1) Almost SMEs (99%) declared that their strategies include innovation and 85% that there are specific objectives concerning innovation within their companies;
- (2) More than 90% of responding SMEs declared that innovation is related mainly to production activities – technology and equipments
- (3) Only 20% of them indicated marketing as a potential area for their innovation objectives.
- (4) 70% of the responding SMEs declared that their products are innovative and only 30% considered their products less innovative in comparison with the competitors' ones.
- (5) The perception of the half of the responding SMEs is that innovation is related to new equipments and their performances and the other half is considering the innovation related to the activity of their internal departments of R&D or similar labs.
- (6) Only few responding SMEs indicated external partnerships and patents as important issues in the innovation process and between their specific objectives within the company.
- (7) Over 75% of the responding SMEs considered that innovation activities are included between the tasks of their personnel and innovation is integrated in the organizational structure.
- (8) Half of the responding SMEs considered that cooperation with R&D units – research institutes and universities is a major way of externalize the innovation activities and only 25% indicated consultancy an alternative way for achieve externalised innovation.
- (9) Over 90% of the responding SMEs declared that in the future are interested to achieve innovative processes mainly for production and manufacture and only 30% included marketing together with production and manufacture.

#### **Specific Remarks:**

Specific objective concerning innovation:

- **ALCOVIN SRL** – to set up a microbiology lab to perform specific analysis for bio and eco wines;
- **ELDA MEC SRL** – development of new products;
- **FIRMA HUTTON SRL** – gaining new markets, adaptation of the production to new technologies;
- **AVE IMPEX SRL** – “niche” products;
- **DIZING SRL** – research, modernise the technological processes, integration of new products;
- **MARIOT B.M. COM SRL** – building storage houses for cereals;

- **SPICUL ETAP SA** – new products for new markets
- **FRUVIMED SA** – production efficiency;
- **GRUP VELPITAR** – using of new technologies, new products, organisation;
- **MULFATLAR** – innovation in the wines and grapes production process, obtaining new types of grapes and winery procedures;
- **FERMA ZOOTEHNICA SRL** – development of new products;
- **L&N NICK SRL** – increasing competitiveness of products;
- **MARIPUSC PROD SRL** – new product recipes; new catering products;
- **RAP CONFECTIONERY SRL** – launching of new products;

### **5.3.3 SECTION C - COMMITMENT TO TECHNOLOGY**

#### **General Remarks:**

The questions in section C tried to identify specific information about products and technologies within responding SMEs and way how innovation is related to the development or modernization or updating these technologies and products.

(1) The investment in innovation as responding SMEs declared is between 0.5 till 3% of their turnover, very rarely the percentage is raising to 10% and this aspect is related to the period of which the strategic planning period within company is considered. More then 70% of the responding SMEs indicated they have a medium term planning strategy.

There are expectations that those SMEs who already invest percentages of their turnover in innovation to keep the same level of investment in the closed future.

(2) For this medium term strategy, the SMEs allocated task to own personnel in an average between 1 and 3 persons/months, depending of the size of the company.

(3) An important aspect is that the responding SMEs considered good and very good the ratio between the technological knowledge and the opportunity of the strategic decision within company.

(4) In the section B, about half of the responding SMEs indicated as source of innovation their internal R&D departments. In the C section, the level and the availability of the qualified working personnel for technological innovation is considered medium to low by more then 80% of the responding SMEs. It means that the current production issues are covering almost of the attention of the company management and still the R&D within companies is still at a lower level.

(5) There are few responding SMEs – less than half – which indicated that they have R&D partners which are currently in collaboration, which shows that the industry-research dialogue is still at a lower and an inefficient level.

(6) Almost of the responding SMEs do not consider technical barriers as an issue for entering with products on different markets and more than 70% of the responding SMEs appreciated that their basic technologies may go for a diversification of their products on the markets

#### **5.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS**

##### General Remarks:

Only one third of the responding companies mentioned they have been involved in the past in innovative projects, but the majority of them were regarding the modernisation of the production line (in some cases updated version of the equipment).

The percentage is the same when the companies mentioned the current situation when also a third of the responding companies declared that they are working in running innovative projects.

Despite the fact of these small percentages, the prospective seems to be more desirable, 90% of the responding companies express their wish for innovation in the closed future, majority on production and product matters.

About half of the responding companies mentioned they have an innovative idea that they would like to promote in the future within an innovative project, but few of them came with specific information concerning the innovative idea. Concerning the area of interest both packaging and food safety are considered equal as important in a future innovation activity.

Almost of the responding companies claimed that different factors occur their involvement in innovative projects and activities, like:

- Co-financing in terms of cash flow or access to alternative source of funding;
- Bureaucracy still too much;
- Lack of information about programmes and funding;

##### Specific Remarks:

##### Examples of past innovative projects:

##### **DIZING SRL** (*Manufacture of grain mill products, starches and starch products*)

- Achievement of equipments to increase the product competitiveness - 12 months, 5 people involved, total budget 70,000 euro (50,000 euro SME's contribution), new technology for wheat milling, regional/national cooperation

- Additional achievement for lab equipments for upper valorisation of wheat and increasing of work productivity, partner in a national project of 500,000 euro for obtaining an optimisation of flower's water absorption capacity and increasing of production capacity in baking processes;

**PAN GROUP SA** (*Manufacture of grain mill products, starches and starch products; Manufacture of other food products*)

- Production of POIANA cakes and coffee mixes (co-manufacturer) – 5 year project (direct financement from Kraft Food Manufacturers);

**EUROPROD SA** (*Production, processing and preserving of meat and meat products*)

The efficiency of packaging and production process – changing the way of packaging of company's products - 1 year, 5 engineers involved, total budget 12,000 euro

**FERMA ZOOTEHNICA SRL** (*Production, processing and preserving of meat and meat products; animal growth*)

- Implementation of mixes without "E" – a new product, one month, 4 high graduated people involved

**PANEUROGAL SRL** (*Manufacture of grain mill products, starches and starch products*)

- Modernisation of production line, achievement of equipments and machines – 2 years project with 3 people involved, total budget 2,000,000 euro, with 40% co-financing from SME

**STC INTERNATIONAL SRL** (*Production, processing and preserving of meat and meat products*)

- Modernisation and extension of production capacity (slaughterhouse), achievement of new technological line, total budget of 700,000 euro, out of which half is SME contribution

Examples of current innovative projects:

**ELDA MEC SRL** (*Manufacture of dairy products*)

- A 4-years innovative running project on researches on wind mill of high efficiency, location, parameter measurements – regional/national project;

**DIZING SRL** (*Manufacture of grain mill products, starches and starch products*)

- Improvement of hygiene in baking production, 24 months, 5 people involved, total budget: 836.000 euro, 40% SME's contribution. Besides hygiene rules and procedures within the project the SME has to integrate in its production some traditional pastry products

**PURATOS PROD SRL** (*Manufacturing margarine, bread improvers, portions and fillings confectionery*)



- a new type of margarine “Pastry”, by improvement of baking conditions and performances, measurement and improvement of production lines parameters, deadline in January 2013

**EUROPROD SA** (*Production, processing and preserving of meat and meat products*)

Improvement performances on production process - 1 year, 5 engineers involved, total budget 12,000 euro from SME, reduction of losses on the production flow (improvement technology)

**FERMA ZOOTEHNICA SRL** (*Production, processing and preserving of meat and meat products; animal growth*)

- Removal of Sodium mono-glutamate from recipes – 6 months, 3 high-educated people involved (a new technology)

**RAP CONFECTIONERY SRL** (*Manufacture of other food products*)

- Development of new products on current production lines – 6 months, 6 people involved, new defined products, development and testing

**SULTAN PRODEXIM SRL** (*Manufacture of sugar-based confectionery and pastry products*)

- Energy efficiency – 6 months, reduction of energy consumption, 5 people involved

With very few exceptions, the running innovative projects seem to be more internal company projects on short terms (about 6 months) to solve specific problems related to production line.

SMEs are still reluctant to invest in research and innovation large amount of funds.

### 5.3.5 SECTION E - POLITICAL CONTEXT

**Are the existing policies favourable and offer of support for local business?**

All respondent companies mentioned NO at this question.

**Are there political incentives for the agrofood sector in your region?**

-

**What kind of measures / incentives are you waiting from political level into agrofood sector?**

The responding companies mentioned the following measures/incentives:  
legislative and financial incentives;

- VAT reduction for food production;



- *Identifying and stopping the fake food products;*
- *More regulation for production conditions;*
- *Support for exporting food products;*
- *Non-reimbursable financing for achievement of technology;*

## 5.4 PRELIMINARY SWOT RESULTS

Strengths	Weaknesses
1. Product and Process Quality (33) 2. Product Diversification (20) 3. Highly skilled personnel (15) 4. Geographical positioning (15) 5. Management cappacity (15)	1. Poor networking with public actors (14) 2. No international orientation (14) 3. Low financial cappacity (11) 4. No dedicated R&D unit (9) 5. Low technology level (9)
Opportunities	Threats
1. Strong regional/national product identity (16) 2. Availability of R&D funds for research and innovation (14) 3. Increasing export trends (14) 4. Networking possibilities (associations, technology platforms, fora, etc) (12) 5. Existing RTD & innovation programmes tailored to the sector (8)	1. Insufficient incentives addressed to the sector (24) 2. Bureaucracy / Regulation barriers (22) 3. Scarce funding resources for R&D available (15) 4. No political long-term commitment to the sector (14) 5. Need of adaptation to new regulations, normatives and priorities (10)

### Comments:

1. The strong points go especially for the products and process quality, showing the confidence of the responding SMEs in their current products and technologies;
2. Also the responding SMEs' confidence goes in supporting the quality of the personnel, considered appropriate for development of the companies;
3. As it was mentioned in the sections B, C and D, the quality and the efficiency of the industry – research dialogue is very low and this is a major weakness in developping innovation within SMEs;
4. In several cases, not only the dialogue is weak, but the fact that many companies didn't develop an internal R&D department or unit is widening the weakness.

5. In the food industry, the regional/national identity of the products still is a chance for business development (including innovation).
6. Availability of the public funds – especially coming from National Authority for Scientific Research (ANCS) – will stimulate the innovation within companies and also product and technology development in production and manufacture sector;
7. Networking with or inside associations or other voluntary forms of cooperation between industry and research is also part of increasing the dialogue and make it efficient.
8. No surprise that major threat is consider the lack or the missing of the incentives. Food industry needs incentives for introducing and exploiting innovation.
9. The bureaucracy and still the lower of level of public funds for technology transfer and innovation will represent barriers and threats for the closed future.

## **5.5 CONCLUDING REMARKS**

- Agriculture and Food Industry major economic sectors in Romania and in the South-East Development Region
- Key statistics show that agriculture and food industry are key support pillars of Romania's and South East Development Region's GDP's;
- The number of people involved in the sectors and the number of licensed companies (large and SMEs) assure the human and the material resources for companies' development through innovation activities
- Innovation as a key issue in company development in the food industry in Romania and South East Development Region
- The responding SMEs of the country and of the region considered innovation important in their development strategies;
- Innovation is still regarded in connection with equipment acquisitions or improvement;
- The availability for future innovation projects and future SMEs involvement in innovation is very big – concerning the production and product quality improvement
- SME investments in innovation in direct relation with public support (incentives and public funds available for innovative projects)
- The size of past and running innovation projects in the country and in the region is still low, but the complementarity between private and public funds for innovation still to be improve;
- Lack and missing of state (national and regional) incentives is the major barrier in the SME development by innovation
- Future opportunities in the sector and in the region are directly related to the available public funds for innovation
- Quality of the products and processes, regional brands and high skilled personnel three pillars for development through innovation in food industry
- The food industry in the country and in the region still has strong points: the quality of products, the regional brands and the high skilled personnel.
- The public funds for innovation shall go to support these three main pillars as regional/national label of quality;

- Increasing and making more efficient the dialogue between industry and research to promote technology transfer and innovation
- Innovation cannot be developed without an efficient dialogue between industry and research units and without strong networking at regional/national and international level;
- Development of internal R&D departments within companies (large or SMEs) is a sign of an industrial commitment to invest and to support innovation in the food industry and in agriculture.

## 6. REPUBLIC OF SLOVENIA

### 6.1 SHORT PROFILE OF THE COUNTRY, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

Republic of Slovenia is one of the smallest EU member states and covers 20,256 square kilometres. It borders with Austria in the North (the length of border is 324 km), with Italy in the west (235 km), Hungary in the northeast (102 km) and Croatia in the south and southeast (546 km). Slovenia has a population of about two million people. The larger towns are Ljubljana (the capital), Maribor, Kranj, Celje, Koper, Novo mesto, Nova Gorica, Velenje, Ptuj, Murska Sobota, Slovenj Gradec. In spite of its geographically small size, Slovenia is a convergence point of a range of different landscapes – Alpine and Mediterranean, Pannonian and Dinaric, each of which has its own characteristics and unique features as well as this area has always been the juncture of various cultural impacts. With its position between the Alps and the northernmost gulf in the Mediterranean, Slovenia represents one of the most important passages from the south-eastern Europe to the west.



Slovenian agro-food sector is relatively small in terms of its contribution to the national economy. Natural conditions for agriculture are relatively unfavourable in Slovenia. Availability of land for agricultural production is limited in Slovenia, with forests covering more than 60% of the country's territory. The agricultural area accounts for about 30% of total land and its area has been steadily declining due to expansion of forests, built-up territories and new transport infrastructure. The greatest share of the structure of agricultural land use is covered by permanent grassland and pastures (58 %), followed by fields (36 %) and perennial crops (6 %). Agricultural production in Slovenia still depends greatly on weather conditions; as a consequence, the volume of crop production varies considerably between years. The sectorial structure of agricultural output has remained almost unchanged in last decade, with livestock and crop production accounting for about 50% of GAO each. Milk and beef production are the most important livestock sub-sectors, followed by pig and poultry production. In the structure of crop production, beside forage plants, fruits and wine together

represent the highest share of GAO, followed by cereals. According to the last agricultural census (SORS, 2012) there is 74.646 farms with the average size of only 6,4 ha – farms are thus around 3-times smaller compared with the EU average.

Slovenian food processing industry is economically and technologically rather advanced, when compared to other EU new member states, however the key competitive pressure recently comes from the expansive companies from incumbent members. Despite the fact, the production of food and beverages is still one of the most important activities of the Slovene processing sector. In 2011, 1.183 business subjects were registered in the food processing sector out of which 599 companies and 584 individual entrepreneurs, providing employment for 15.987 employees. The incomes generated amounted to EUR 2,1 billion, while the value added amounted to EUR 0,471 billion. The number of registered business subjects in the food processing industry increased significantly in the last five years however the number of employees is in decline. Meat processing and the bakery sectors are two major activities, in terms of the number of companies and employees, together accounting for more than a half (57% in 2011) of all employed in the food industry.

## 6.2 PROFILED AGROFOOD SMEs

A list of the profiled agrofood SMEs is presented as below:

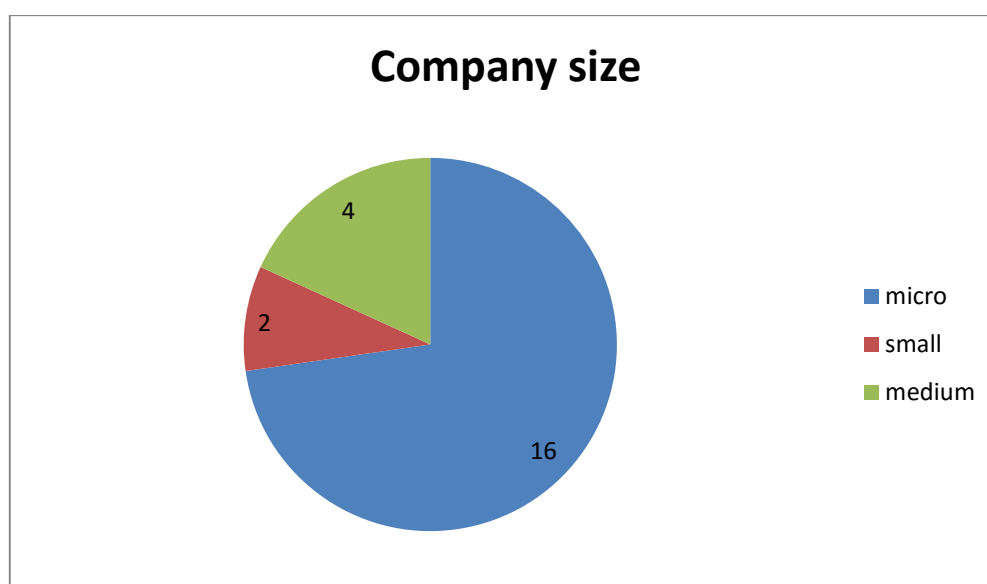
	Full official name of company	Productive sectors the company is active in
1.	Pekarna proizvodnja in trgovina d.o.o.	Manufacture of grain mill products, starches and starch products
2.	Slaščičarstvo Supeks d.o.o.	Manufacture of grain mill products, starches and starch products
3.	Istenič d.o.o.	Manufacture of beverages
4.	Kmetijska zadruga Laško z.o.o.	Production, processing and preserving of meat and meat products
5.	Pomurske mlekarne d.d.	Manufacture of dairy products
6.	Vinogradniško-vinarska zadruga Bizeljsko-Brežice z.o.o.	Manufacture of beverages
7.	Bokas d.o.o.	Manufacture of dairy products
8.	Dino-pek d.o.o.	Manufacture of grain mill products, starches and starch products
9.	Janček d.o.o.	Manufacture of beverages
10.	Pekarna Hrovat d.o.o.	Manufacture of grain mill products, starches and starch products
11.	Bio-sad d.o.o.	Manufacture of beverages
12.	Pekarna Resman d.o.o.	Manufacture of grain mill products, starches and starch products
13.	Mesarstvo Krušič d.o.o.	Production, processing and preserving of meat and meat products
14.	Sporti d.o.o.	Manufacture of beverages
15.	Agroind Vipava 1894 d.d.	Manufacture of dairy products
16.	Verus vinogradi d.o.o.	Manufacture of beverages
17.	Perutnina Ptuj d.d.	Production, processing and preserving of meat and meat products
18.	Klanšek d.o.o.	Manufacture of beverages
19.	Motivi top d.o.o.	Manufacture of other food products
20.	Papaja d.o.o.	Other, production of teas and herbs
21.	Feliks natura d.o.o.	Other, production and sale healthy and fresh food / smoothies, salads, sandwiches, desserts from organic raw materials
22.	Mesarija Kepic Aleš s.p.	Production, processing and preserving of meat and meat products

## 6.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

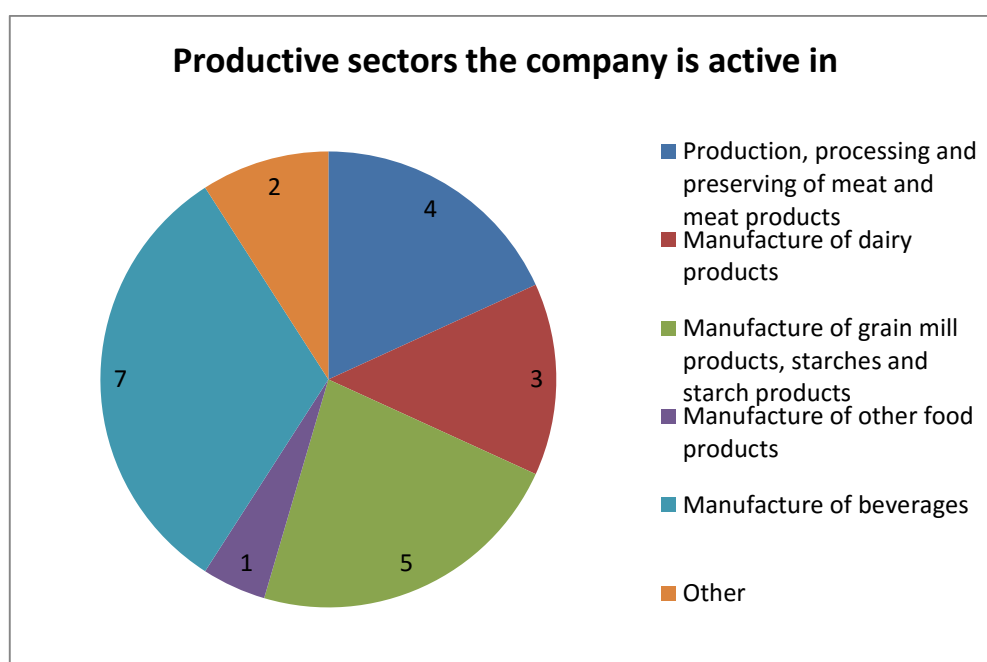
The information derived from the questionnaire will be presented according to the respective sections (except for the last which is presented in detail under 2.4) with appropriate commenting and presentation of statistical graphs, etc. The sections will be as below:

### 6.3.1 SECTION A - COMPANY GENERAL INFORMATION

#### A3- Company size



#### A4- Productive sectors the company is active in



### A5- Does your company have a *quality certification*? If so, which kind of certification?

Most companies (12) have the HACCP certificate. Certificate for Quality Management Systems / ISO 9001 have 3 companies and certificate ISO14001 for Environmental Management Systems / ISO 14001 have 1 company. Companies also have other certificates such as SQ, BRC, IFS, McD, GLOBAL GAP, HALAL certificate.

### A6- Consumers localization

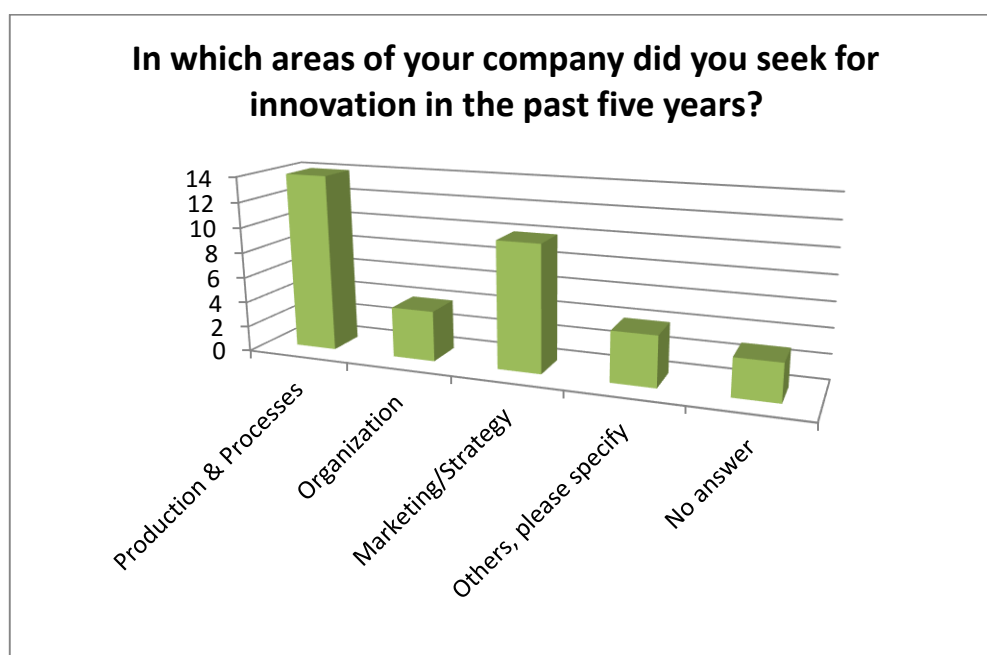
Most companies sell products at local and national level. For companies which manufacture of grain mill products, starches and starch products the share is 100%. In the EU market most companies sale in the sector of beverages (wine). In foreign markets most sale the manufacture of beverages company and one of the dairies that sell milk powder on the markets such as Vietnam and Libya. It is still most in the export markets of the former Yugoslavia

## 6.3.2 SECTION B - INNOVATION STRATEGY

### B1- Does the company's "mission" or "vision" include any reference to innovation?

17 companies answered in this question with yes, 3 companies have responded with no, 2 companies did not answer to this question.

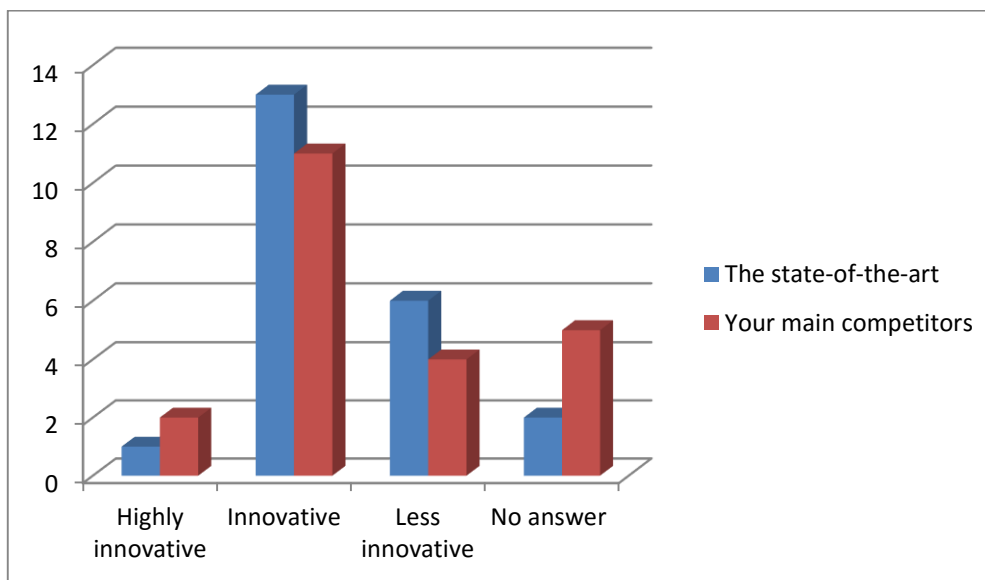
### B2



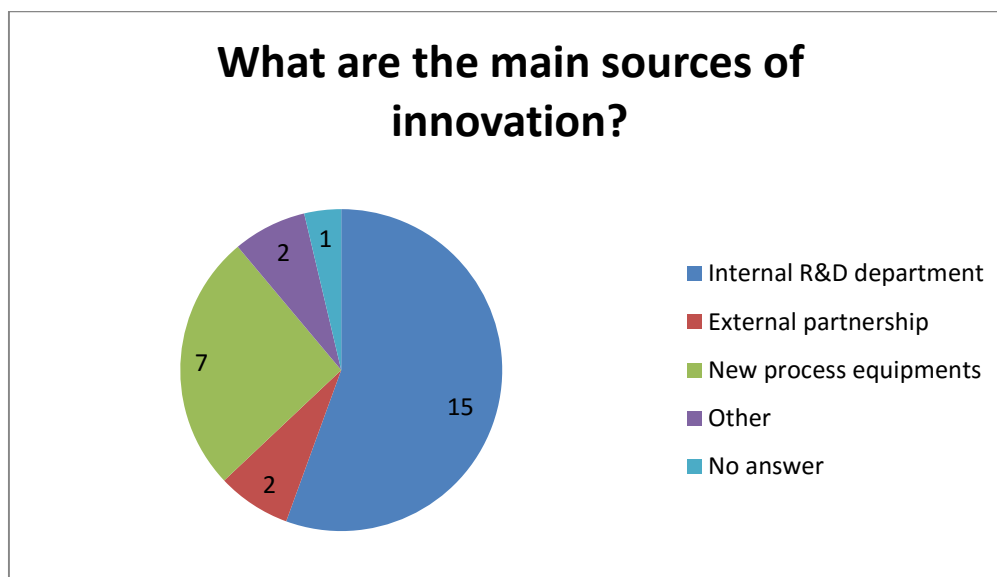


In answer others, please specify company answers: Energy and water consumption (Klanšek d.o.o.). Increase the quality of products (Sporti d.o.o.). Saving energy (Supeks d.o.o.).

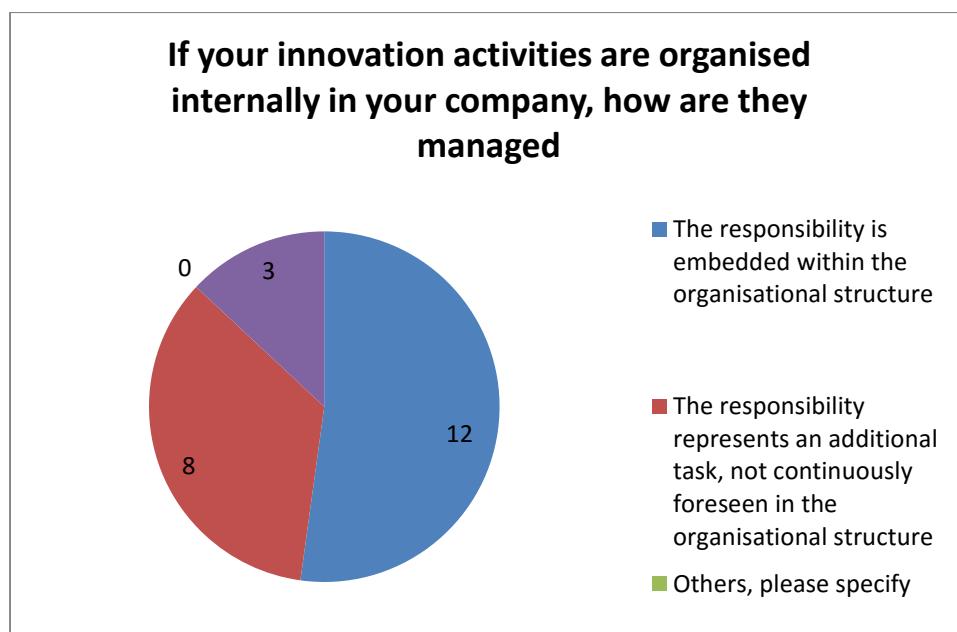
### B3- How innovative are your *products & processes* in comparison with?



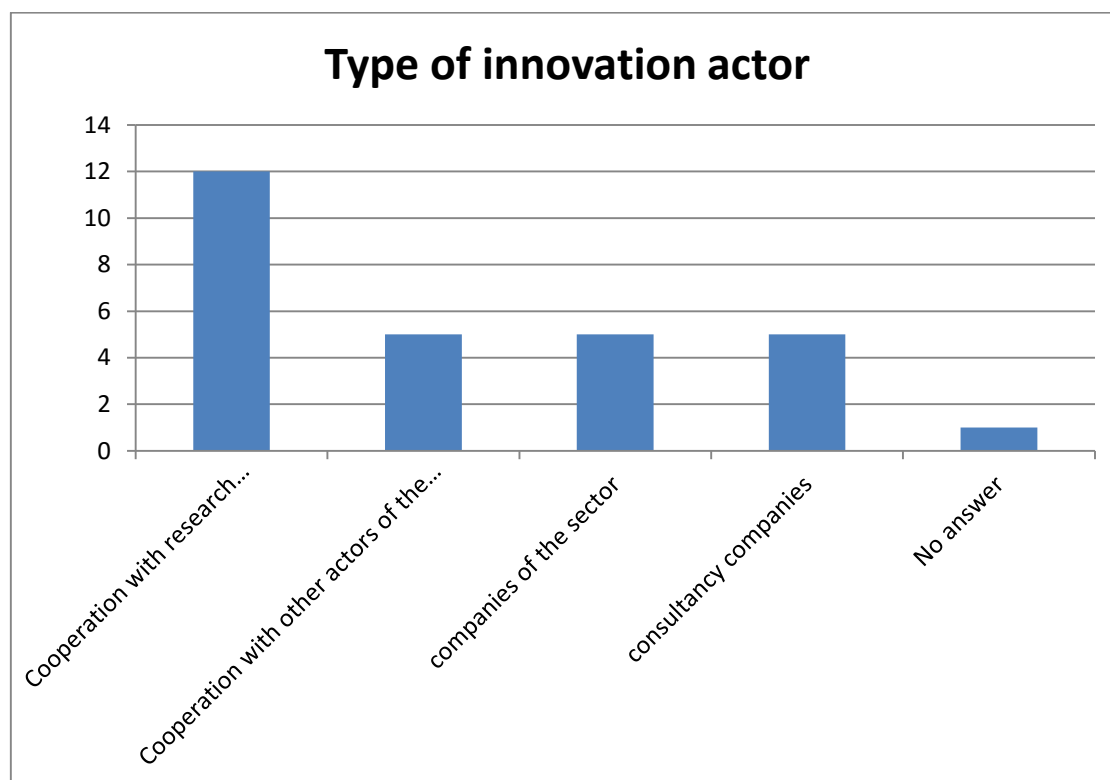
### B4- What are the main sources of innovation?

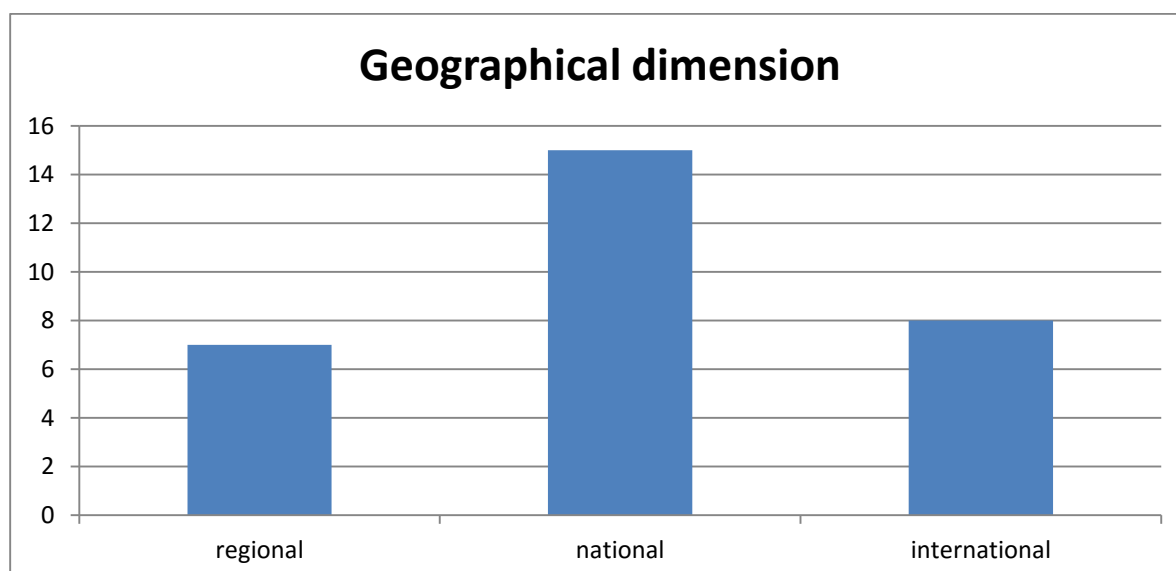


**B5- If your innovation activities are organised internally in your company, how are they managed?**

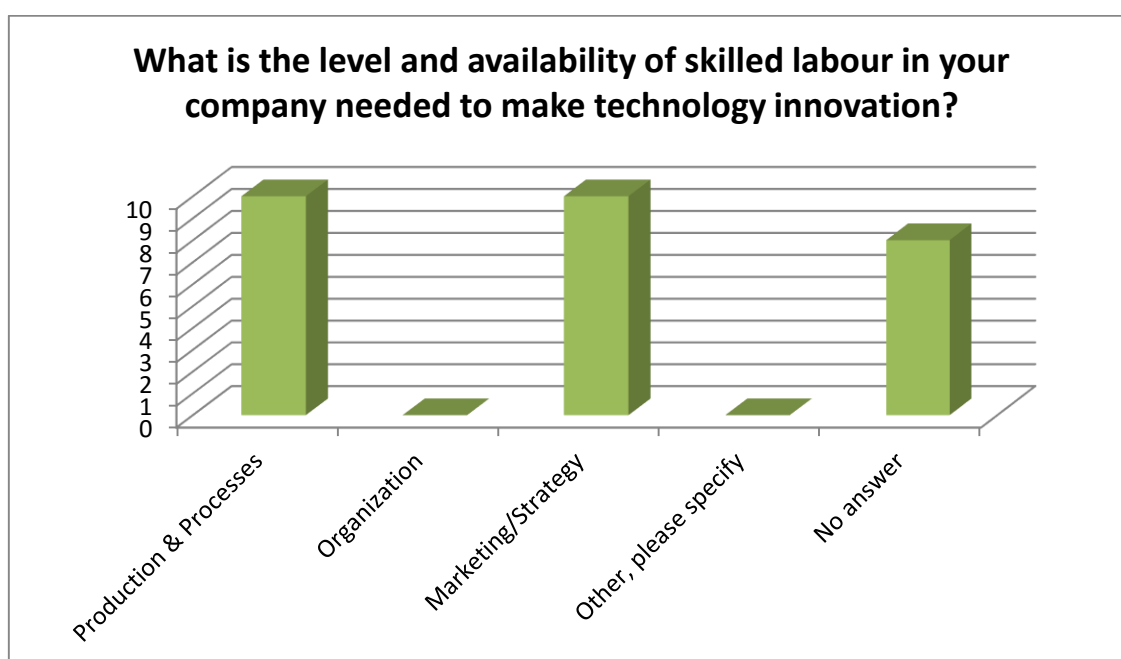


**B6- If your innovation activities are organised externally, what kind of collaboration do you use:**





**B7- What is the level and availability of skilled labour in your company needed to make technology innovation?**



### 6.3.3 SECTION C - COMMITMENT TO TECHNOLOGY

**C1- Please describe core technologies and the purposes to which they apply in your company**

Maintain the value of raw materials, non-thermal processing below	Feliksatura d.o.o.
Mixing and preparation of soft drinks in bottles and filling bottles, pasteurization and homogenisation of juices, cooling	Klanšek d.o.o.
Production and processing of grapes and wine production	Verus vinogradi d.o.o.
Pasteurization and milk fermentation and bottling milk and milk products	Agroind Vipava 1894 d.d.
Modern and innovative production wines	Sporti d.o.o.
Machine to make the dough and baking	Pekarna proizvodnja in trgovina d.o.o.
Manufacture of beverages, filling beverages	Bio-sad d.o.o.
Filling wine	Janček d.o.o.
Technologies for processing meat by natural processes	Kmetijska zadruga Laško Z.o.o.
Technologies of bakery and confectionary	Pekarna Radlje d.o.o.

**C2- Please indicate the *technical resources / laboratories* in your company.**

High-performance blenders, juicer, dehydrator	Feliksatura d.o.o.
Development laboratory for the manufacture a new product	Motivi top d.o.o.
Paster, homogenizer, cooling system, battery with a closing head, labeling machine, laboratory for chemical analysis of beverages	Klanšek d.o.o.
Chemical, microbiological, development laboratory	Perutnina Ptuj d.d.
Processing equipment	Verus vinogradi d.o.o.
Pasteurizer separator, homogenizer, filling lines, ripening, microbiological and chemical laboratory	Agroind Vipava 1894 d.d.
Cooling- heating tanks, electronic weighing, wine fermenters	Sporti d.o.o.
Mixing systems, filtration, filling and packaging equipment	Bio-sad d.o.o.
Freezers, bakery equipment	Dino-pek d.o.o.
Wine-oenological laboratory	Vinogradniško-vinarska zadruga Bizeljsko-Brežice Z.o.o.
Technological development and quality department	Pomurske mlekarne d.d.
Machines in production	Pekarna Radlje d.o.o.

**C3- What are the *technologies* that you consider *strategic* for your company and / or for your company's sector?**

Mixing and preparation of soft drinks, pasteurization, cooling system	Klanšek d.o.o.
Milk pasteurization, filling of milk and milk products, ripening	Agroind Vipava 1894 d.d.
Machine to make the dough and baking (less manual work, higher flexibility)	Pekarna proizvodnja in trgovina d.o.o.
Production of alcoholic beverages	Bio-sad d.o.o.
Processing grapes into wine, care and packaging processing	Janček d.o.o.
Freezing	Dino-pek d.o.o.
Filter for wine and laboratory	Vinogradniško-vinarska zadruga Bizeljsko-Brežice z.o.o.
Desalination of meat	Kmetijska zadruga Laško z.o.o.
Production of cheese	Pomurske mlekarne d.d.

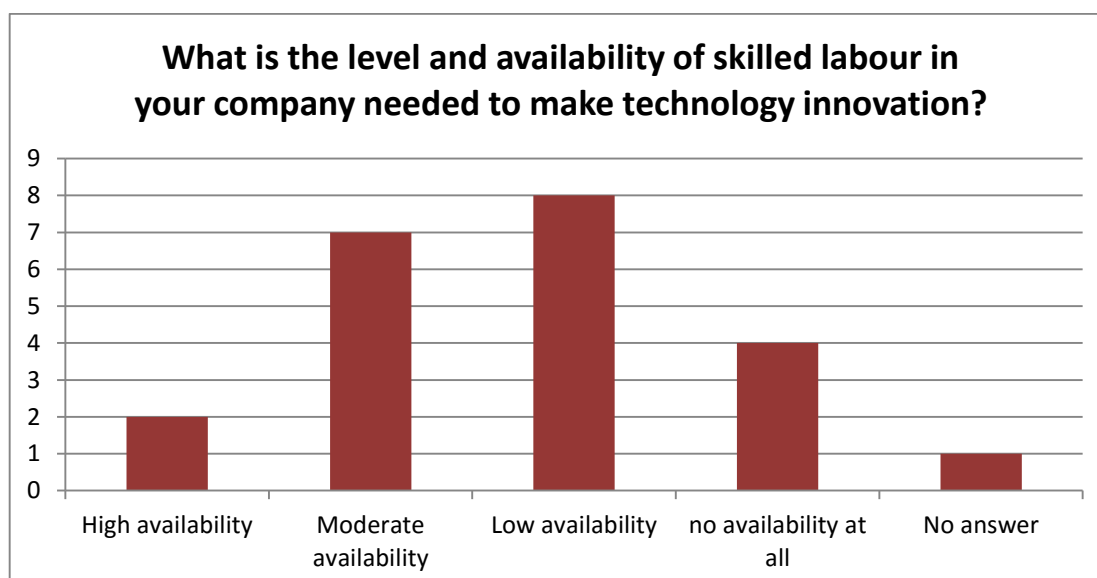
**C4- Which are the *new or improved products* adopted/developed in your company in the last 5 years?**

Green smoothies, fresh cakes	Feliksatura d.o.o.
Upgraded existing products	Motivi top d.o.o.
Organic apple juice (efficiency pressing and cooling)	Klanšek d.o.o.
Organic products	Agroind Vipava 1894 d.d.
Organic products, knitted products, special breads	Pekarna proizvodnja in trgovina d.o.o.
Production of chocolate and herbal liqueurs	Bio-sad d.o.o.
Smoked products without preservatives	Kmetijska zadruga Laško z.o.o.
Soft cheese, baby food	Pomurske mlekarne d.d.

**C5- Please quantify the *financial resources* allocated to R&D in the last year:**

Absolute value	% of annual turnover
350,000€ Pomurske mlekarne d.d.	10% Motivi top
1470€ Mesarija Kepic Aleš s.p.	2% Papaja d.o.o.
3000€ Kmetijska zadruga Laško z.o.o.	20% Istenič d.o.o.
6000€ Agroind Vipava 1894 d.d.	10% Dino -pek d.o.o.
	5% Pekarna proizvodnja in trgovina d.o.o.
	10% Verus vinogradi d.o.o.
	5% Sporti d.o.o.

C6



#### 6.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS

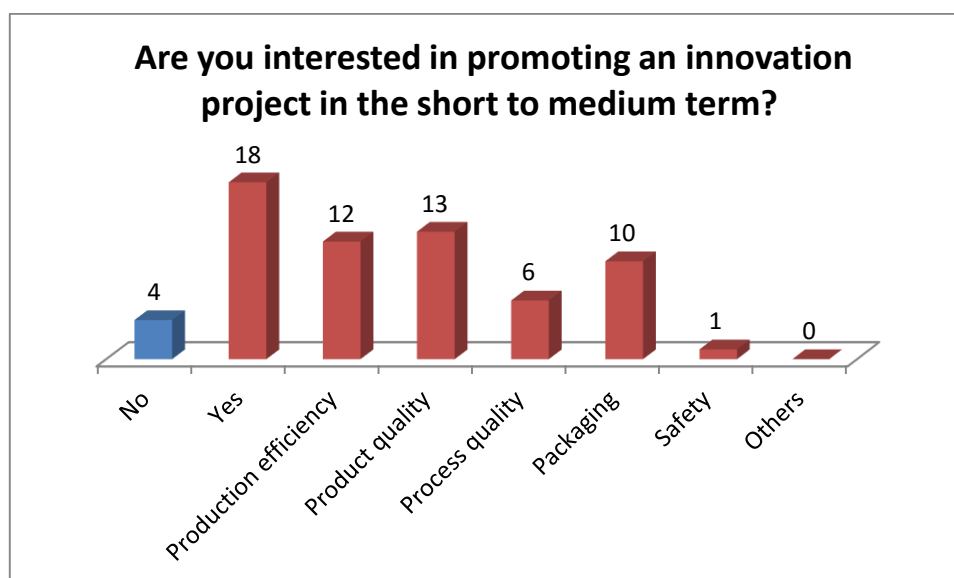
##### **D1- Have you been involved in *innovation and technology projects in the last past five years*?**

5 companies have been involved in *innovation and technology projects in the last past five years*. Most of the research carried technological processes. The outcome of the project was for all companies new product. They participated regional / national as well as with external consultants. The results fulfilled partners' expectations.

##### **D2- Does your company *currently perform innovation and technology projects*?**

4 companies *currently perform innovation and technology projects*. The outcome of the project is a new technology and new product. The results fulfill partners' expectations.

##### **D3- Are you interested in promoting an innovation project in the short to medium term?**



**D4- Does the company have an *idea* for the development of an innovation project?**

13 answers no

9 answers yes, please specify: manufacture of the product which are not yet on the market, lower costs and energy use in the production process, extraction of herbs, saving on water consumption, manufacture infant milk substitutes, organic products,

If Yes, is the company interested in developing it within an RTD funded project?

Yes 7

No 2

**D5- What are the *main obstacles* that you see for your company to participate to innovation projects?**

Narrow focus of food industry, financial obstacles, lack of time, enough qualified human resources, small size of enterprises, cost of the project, administrative barriers.

### 6.3.5 SECTION E - POLITICAL CONTEXT

**E1- Do you consider *existing policies* (at regional, national and European level) as *favourable and supportive* for being successfully operative in the AgroFood sector in your region?**

Yes 1

No 19

No answer 2

**E2- What kind of *measure/ incentives* do you expect from political side for the AgroFood sector *for the future*?**

Lower costs, subsidies for natural food, financial incentives for development new products, promotion local products (decrease in imports), financial support in the development of the project, incentives for investment, marketing.

## 6.4 PRELIMINARY SWOT RESULTS

Please present the preliminary results of the SWOT in a tabular form as in below and provide some short comments:

<b>Strengths</b>	<b>Weaknesses</b>
1. Product & Process quality (16)	1. Low financial capacity (16)
2. Geographic positioning (6)	2. No dedicated R&D Unit (7)
3. Financial capacity (6)	3. Poor networking with public actors (univ., research centres) (5)
4. Market position (6)	4. No flexible organisational structures (3)
5. Product diversification (5)	5. Low innovation commitment (3)
<b>Opportunities</b>	<b>Threats</b>
1. Increasing export trends (11)	1. Bureaucracy / Regulation barriers (16)
2. Increasing demand for more/better varieties (10)	2. Insufficient incentives addressed to the sector (11)
3. Availability of R&D funds for research and innovation (8)	3. No political long-term commitment to the sector (7)
4. Strong regional/national product identity (8)	4. Need of adaptation to new regulations, normatives and priorities (5)
5. High quality infrastructures (4)	5. Competition coming from third countries (e.g. China, India) (5)



## **7. HUNGARY**

### **7.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY**

Hungarian agriculture is characterised by declining competitiveness and loss of position and markets both at home and abroad. The gravest problem of the domestic farming world is the lack of adaptation to changing market conditions. A contributory factor to this unfortunate situation was the fact that the change of agricultural regime, that had in any case been well over due, did not taken place according to an up to date agricultural strategy, after adequate preparations before joining the EU.

The shift of production structure toward extensive farming, low income producing capacity, is exceptionally harmful. In attempting to make improvements it is advisable to consider the present situation in the light of forthcoming changes in European farming and agricultural policies. Improvements in competitiveness require a strategy based on consensus and a serious of complex tasks to execute. Factors to be considered are the expected liberalisation of agricultural markets, the domestic approaches relating to bio-technology and GMO plants, evaluation of bio-energy production, future of CAP, harmony of domestic industrial structure, settlement of land ownership questions and rapid technological developments with particular emphasis on supporting scientific research, cooperation of farmers, effective co-operation between private and state concerns and a new type of synthesis of agriculture and countryside.

Agricultural production accounted for 35% of the economy in 2009 according to EUROSTAT and although it was of different importance in the different regions according to their geographical location, agriculture was considered to be a dominant sector.

The food industry is traditionally one of the most important sectors of Hungary's national economy. Including the food, soft drinks and tobacco sub-sectors, this industry is the 2nd largest employer and the 3rd largest producer of the processing industry in Hungary. Being one of the most modern food sectors in the CEE, its export revenues are vital to Hungary's overall trade balance. Hungary is the only net exporter of agricultural and food products in the region. The industry provides 5.31% of the country's exports.

70% of Hungarian agricultural production is utilized by Hungarian food producers.

The security of food supplies is becoming an increasingly important social-political issue following the last few decades of food overproduction. Dependence on import may become a problem once again for certain countries, a process that can be aggravated radically by the crisis. Because of the growing food safety risks arising of the global free movement of goods, the consumers appreciate local food producers more, since they are considered to be more likely to guarantee the safety of food.

In this situation, countries with comparative advantages regarding food production, such as Hungary, should do everything they can to capitalize on this advantage. It is the interest of both the country and the national economy to utilize the outstanding capabilities of the food industry to regain and increase its competitiveness in order to meet domestic food needs, and to contribute to the growth of the economy as a whole, once the domestic supply is secured.

## 7.2 PROFILED AGROFOOD SMEs

The list of Hungarian agrofood SMEs answering to the Technology audits is indicated in the following table:

Full official name of company	Productive sectors the company is active in
Nádudvari Élelmiszer Kft.	<i>Meat and milk process</i>
Virágoskút Biogazdaság	<i>Meat process and organic farming</i>
Fish & Food Élelmiszeripari és Kereskedelmi Kft.	<i>Fish processing</i>
Kiskun-Konzerv Kft.	<i>Meat process</i>
Merian Foods Kft. (Orsi)	<i>Meat process</i>
Roll zRt	<i>Meat process, bakery</i>
Szilváshús Kft.	<i>Meat process</i>
Szilágyi Paprika Kft.	<i>Meat and vegetable (paprika) process</i>
Húscsarnok Kft.	<i>Meat process</i>
Kövértanya	<i>Animal breeding</i>
Royal Manufaktúra	<i>Meat process</i>
Nógrádi Húsmanufaktúra Kft	<i>Meat process</i>
Temesvári Hús Kft.	<i>Meat process</i>
Alföldi Tej Értékesítő és Beszerző Kft.	<i>Milk process</i>
Naszálytej Tejfeldolgozó és Kereskedelmi Zrt.	<i>Milk process</i>
Minna Tejipari Zrt.	<i>Milk process</i>
Fino-food Kft.	<i>Milk process</i>
Körös-Maros Biofarm Kft	<i>Bio milk</i>
Alföldi Garabonciás Kft.	<i>Milk process (cheese)</i>
Cserpes Sajtműhely	<i>Milk process (cheese)</i>
Bicskei Mezőgazdasági Termelő és Szolgáltató Zrt	<i>Milk, milk process</i>
Horváth Farm	<i>Goat breeding, eco farm</i>
Óvártej Zrt	<i>Milk process</i>
Soma's Trade Kft	<i>Milk process (cheese)</i>
Kisteleki M+M Sajtgártó Kft	<i>Milk process (cheese)</i>
Univer cégcsoport	<i>Other foods</i>
Nyírség-Hasso Kft.	<i>Grain mill, cereals</i>
Aranyfácán Kft	<i>Vegetable process</i>
EKO Kft.	<i>Vegetable process</i>
Apium Kft.	<i>Vegetable process</i>
Szatmári Konzervgyár Kft.	<i>Vegetable process</i>
Agrárgazdasági Vagyongépző Kft.	<i>Vegetable process</i>
Vital Zrt.	<i>Vegetable process</i>
Fit Food Kft.	<i>Vegetable process</i>
Lek-Vár-Lak	<i>Fruit process</i>
Aranyszarvas-Gomba Kft.	<i>Meat and vegetable (truffle) process</i>
Stromi Kft	<i>Vegetable process</i>
Sauer Bt.	<i>Vegetable process</i>
Jona-Drink Kft	<i>Fruit process</i>
Biofaktura Kft.	<i>Bio Fruit process</i>
Háziszörp Kft.	<i>Fruit process</i>
Mecseki Erdészeti Zrt.	<i>Fruit process</i>
Nobilis Zrt	<i>Fruit process</i>

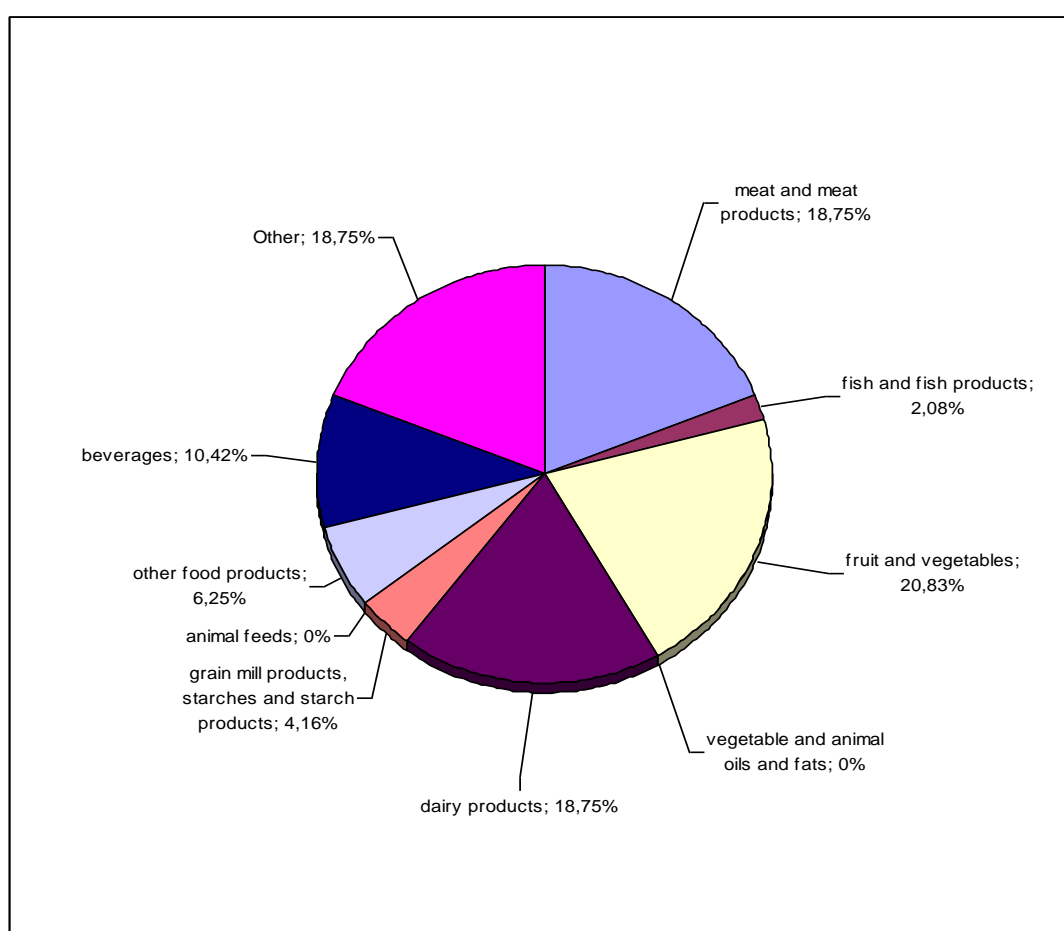
**Full official name of company****Productive sectors the company is active in**

**Bácska Sütő- és Édesipari Kft**  
**Proteus-Gold Kft**  
**Piszkei Öko Kft**  
**Fornetti Fagyasztott Pékáru-Termelő és Kereskedelmi Kft**

*Bakery*  
*Bakery*  
*Bio grain mill, bakery*  
*Frozen bakery products*

The total number of enterprises involved in this technical survey has been 48, representing the main food chains developed in Hungary, as shown in the Graph below.

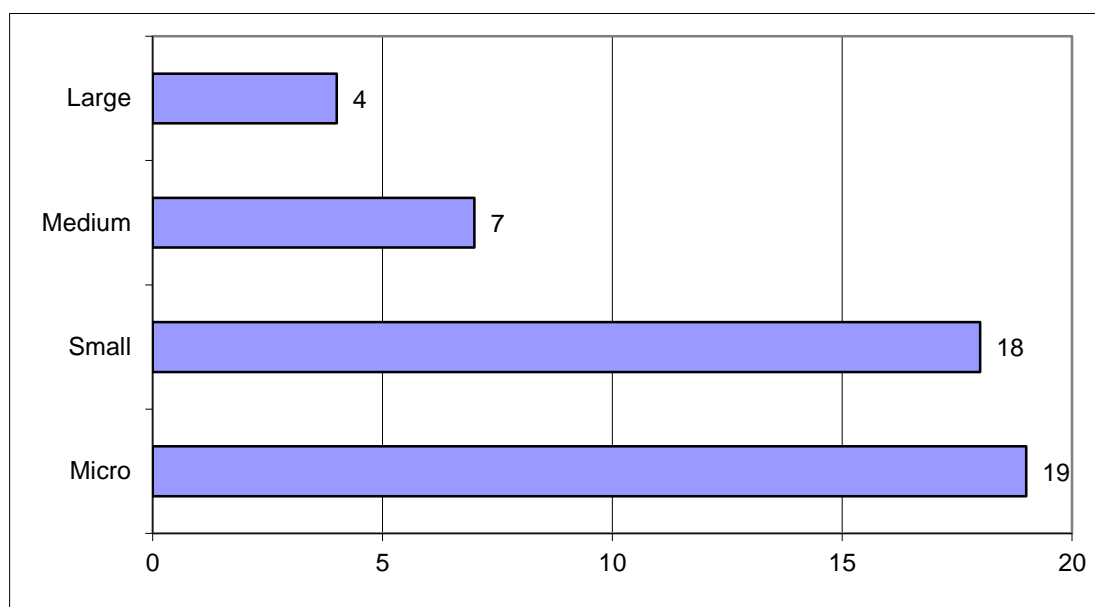
*Graph 1: Companies by food chains*



It should be underlined that about 200 SMEs have been contacted, introducing the project and the scope of the questionnaire by an official letter and questionnaire. Some of these enterprises were contacted or involved in other projects and gave often their cooperation again. In this case, the most of 48 SMEs answering to the audit have been directly interviewed by experts and introduced in the main concerns.

### 7.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

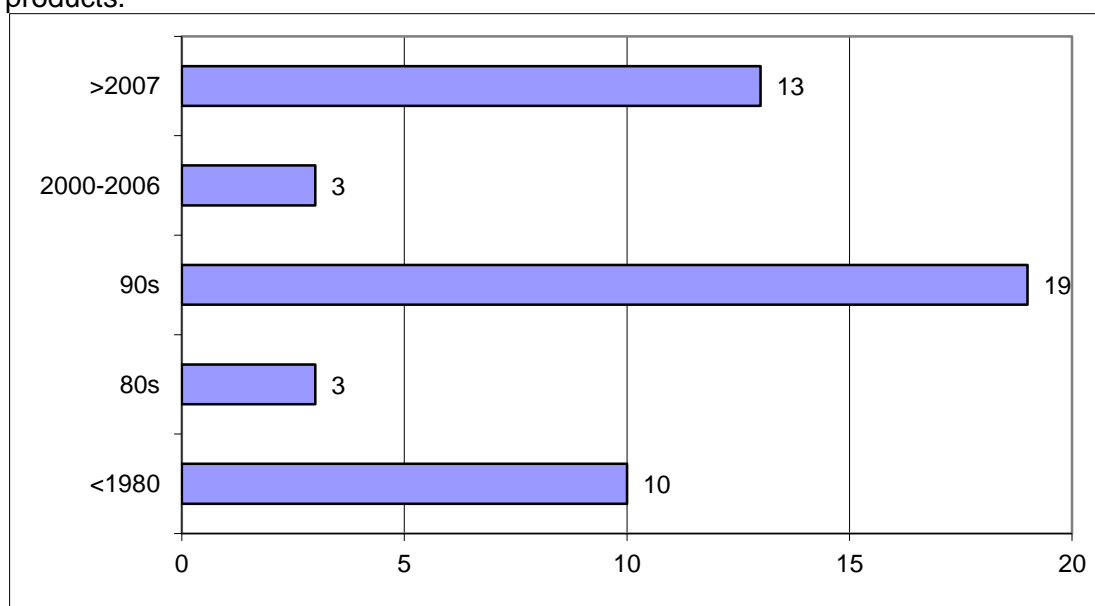
The companies participating at the InnoFood Technology audits well represent the agrofood sector in Central Hungarian Region, that is mainly composed by small enterprises and family management driven enterprises, better known and classified as micro-enterprises.



Graph 2: Companies by dimension  
(Regulation CE n°70/2001)

Regarding the establishment year, the majority of companies were created starting from 90s and after 2007, performing a process of industrialization of agriculture, by transformation and creation of final products for national and international markets.

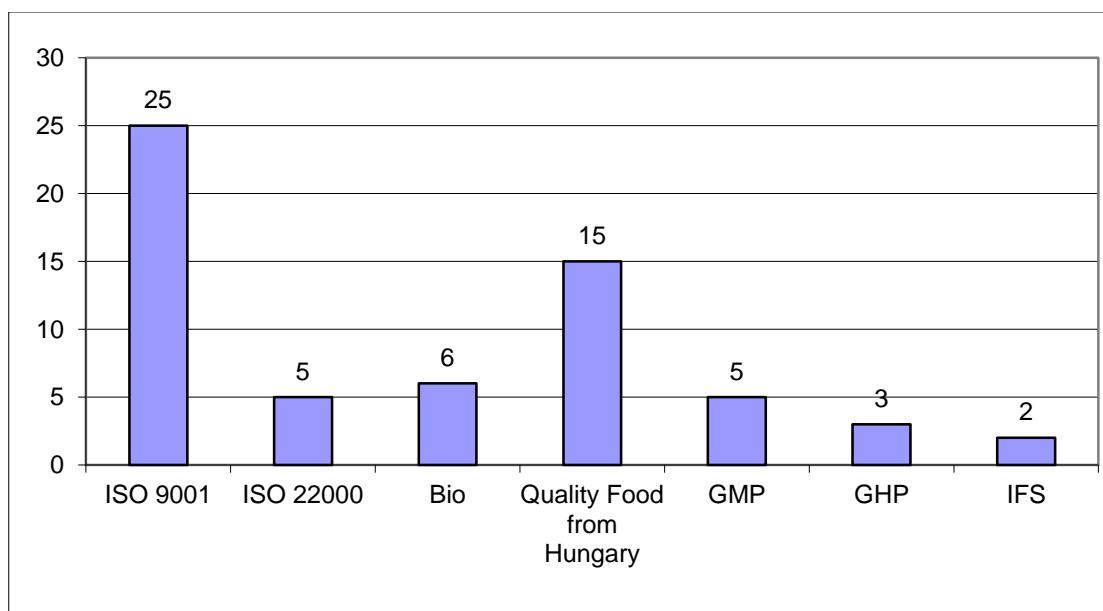
10 companies (20,8% of the total interviewed) were established more than 30 years ago, the ancient one is the Aranyfácán Kft (Golden Pheasant Ltd.) of 1934. This data is a bit representative of traditional sector in Hungary. Several companies make traditional home made products.



Graph 3: Companies ordered by year of establishment

All the manufacturing industries having an internal food processing cycle are certified according to HACCP system,

In the graph below the main relevant quality certificates released by third parties organizations reached by companies are indicated, excluding the HACCP ones, that are present in the totality of firms as before explained.



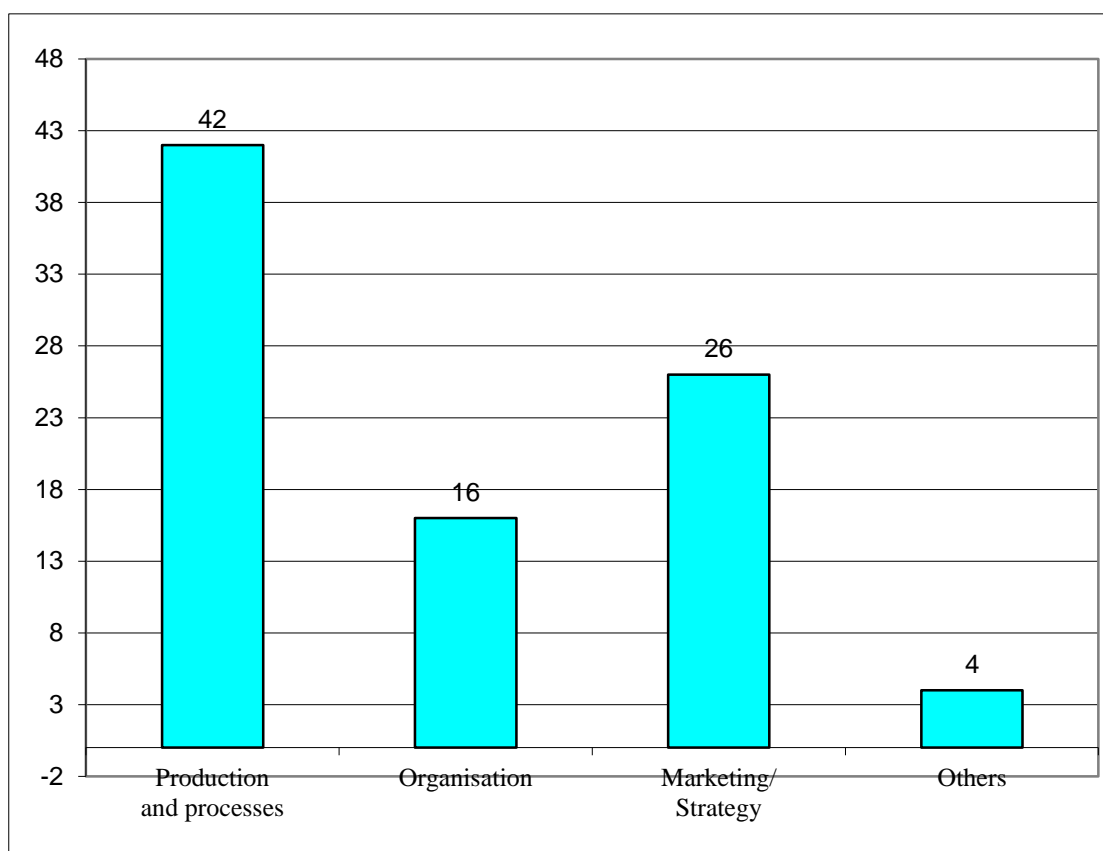
Graph 4: Quality certifications owned by interviewed enterprises

The second section of the Technological audit aims to investigate the effort and actions to apply an innovation strategy in the agrofood enterprises.

The main part of the interviewed companies declare to have a mission/vision including some reference to innovation (40 yes, only 3 No), while 5 companies declare not to have concrete objectives for their innovation.

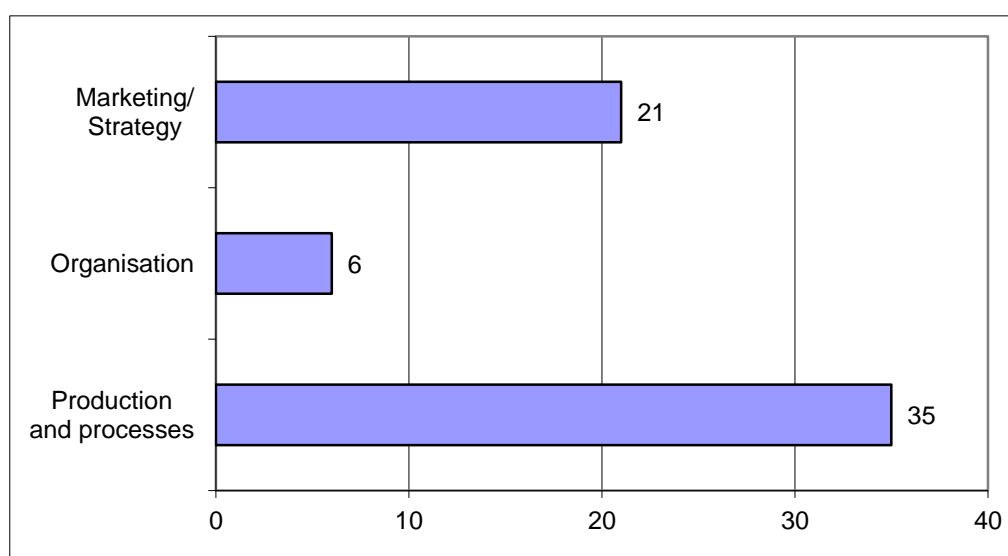
These answers seem almost contradictory in front of others inserted in the questionnaire regarding real operating innovation.

The main areas in which the companies tried to seek innovation in the past five years result mainly Production & Processes, Marketing/Strategy, followed by Organization area, as shown in the Graph 5.



Graph 5: Areas investigated for Innovation in the past 5 years

This section ends investigating the interest to innovate or purchase innovation and research results in the future in certain areas of activity. Almost all the interviewed expressed a positive interest towards innovation by purchasing research results or carrying on innovation. The main attractive areas result processing and production, followed by marketing/strategy.



Graph 6: Areas of interest for innovation in the future

## 7.4 GENERAL CONSIDERATIONS ON TECHNOLOGY COMMITMENTS

Entrepreneurs and/or managers would have been asked to express and describe their production processes, the key technologies applied in their processing cycle, the knowledge level inside their organization, last the new products and processes. It should be noticed that this part of interview appeared a little bit difficult and most people felt scared about this matter, giving fair or brief reply, with a low level of detail, trying to be quite approximate and in some case not answering at all.

**The following considerations could be made regarding the general perspective by food chains:**

- SMEs in Hungary have a similar **small-scale structure** as the EU-average, however, the contribution of Hungarian SMEs to the overall economy as measured by the added value is – in EU-terms – significantly lower (50 % vs. 58 % in the EU). The reason for this is the lower than EU average productivity of Hungarian micro companies.
- 
- Hungarian SMEs are significantly **less innovative than the EU average**, mainly as a result of lack of financial resources for innovation and a shortage of innovation management capabilities  
The innovation capacity (efforts, activities and results) of the individual small and medium sized enterprises (SMEs) is very limited. They have to restrict themselves due to their resource constraints. On the other side food production (including SMEs) has to fulfil food safety requirements in a rapidly increasing extent, which implies a continuous innovation and development process from all market players who are involved in the food chain.  
It is widely recognised that knowledge accumulation and coordination as base of innovative solutions for the production and technological processes can play decisive role in keeping the firms in competitive position.
- During the last two decades **the Hungarian agro-food sector had to face dramatic changes in its competitive environment**. In addition the shock of transition process, retail revolution has evolved much faster than in Western European countries. Structural change in retailing, processing and farming, together with growing market saturation and increasing consumers' concerns regarding product and process quality, have had strong influence not only on the organization and structures, but also on the generation of profits along the food chain. Moreover, the agrofood sector had to face a suddenly increased competition especially after the EU enlargement in 2004.

As a results of these pressures, agrofood chain, which is generally assumed as mature and relatively low technology sector has been forced to introduce changes affecting all aspects of operation. The only chance for them to overcome the stress of the recent economic crisis is if they explore their innovation capacities through their improved networking activities

The companies dare to make only short term plan because of frequently changing.

## 8. REGION OF ODESSA, UKRAINE

### 8.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

#### 8.1.1 INTRODUCTION

The region of Odessa is located in the far south-west of Ukraine. It borders on Romania in the south, Moldova in the west, Vinnitsa and Kirovograd regions in the north, and Nikolayev region in the east. Odessa region is the largest in Ukraine by its area (33.3000 sq. km) that constitutes approximately 5.5% of total Ukraine's territory and is comparable with the territory of such Western European countries as Belgium and the Netherlands. Odessa Region is administratively subdivided into 26 districts, as well as 7 cities (municipalities) which are directly subordinate to the oblast government: Bilhorod-Dnistrovskiy, Illichivsk, Izmail, Kotovsk, Teplodar, Yuzhne, and the administrative center of the region, Odessa.



The main peculiarity of economic and geographical status of the region consists in its coastal and boundary location. Free access to Black Sea - Azov basin and to large river routs of the Danube and the Dniester gives good advantages to Odessa region in the development of transport infrastructure. Sea ports of the region are located at the crossroads of existing international transport corridors. Thus, the region appears to be the main sea gate of Ukraine. Economically and geographically Odessa region is a zone of intensive steppe farming with advanced irrigation. Its coastal part is also included into the recreational zone of north-western Black Sea coast.

The AgroFood sector is an extremely important part of the economy of Odessa region. Agriculture accounts for over 8% of GDP and 5.5% of employment in Ukraine. The food industry contribution to GDP is about 9% and about 4% of total employment in Ukraine.

#### 8.1.2 AGRICULTURE

Land fund of the region is 3.3 million hectares, including 2.6 million hectares of agricultural lands. Natural conditions are favourable for growing cereals, corn, barley, sunflowers, grapes and affect on regional specialization and organization of agricultural production. The share of the region in total gross output in Ukraine exceeds 4.1%, grains - 6.2%, sunflower - 3.6%, grapes - 44%, meat - 2.4%, milk - 3.6 %, eggs - 3.7%. Nowadays Odessa region includes



983 enterprises and more than 6,000 farms. Production of gross agricultural output in 2010 amounted to more than 440,3 mln Euros. For agricultural market functioning there were created 50 trading houses, 44 agricultural service cooperatives, 13 credit unions, 47 wholesale food markets, 314 proprietary trading shops, 261 points harvesting agricultural products. The volume of foreign investments involved into agriculture is about 172,88 million Euro what is equal to 12.4% of total foreign direct investments into the economy of Odessa region. Nowadays in Ukraine there is a regime of the most-favoured status for the producers of the agricultural products, they are given advantages and benefits as for the taxes. The state implements stimulating programmes, carries out compensations as for the percent to the credits for agricultural producers and others. The programmes that support the agricultural business will be active during the next 5-10 years.

### 8.1.3 FOOD INDUSTRY

The most investment-attractive industries in the region due to favourable climatic conditions, availability of raw materials and consumer potential are food and processing industries. Food industry covers almost a quarter of region total output. Core businesses are concentrated in the fat-and-oil, dairy and meat, canning, wine industry. Odessa region is a traditional winegrowing and winemaking region. The region has grown 55% of all Ukrainian grapes that gave an impulse to the powerful wineries development. Food industry in Odessa region is of great importance to the Ukrainian economy development as a whole. Thus, the processing enterprises of the region produces almost 21% of all fruit and vegetable juices, 25% of wine, 8,5-9,0% of unrefined sunflower oil, 4,5-6,0% of flour, about 5,0% of bakery products. As a part of food industry the production of fat, sugar, bread, cereals and flour, cocoa, chocolate, chocolate and sugar confectionery, fish, industrial processing of fruits and vegetables, meat and dairy industry, watered spirits, wines, beer, mineral water and soft drinks is dominated

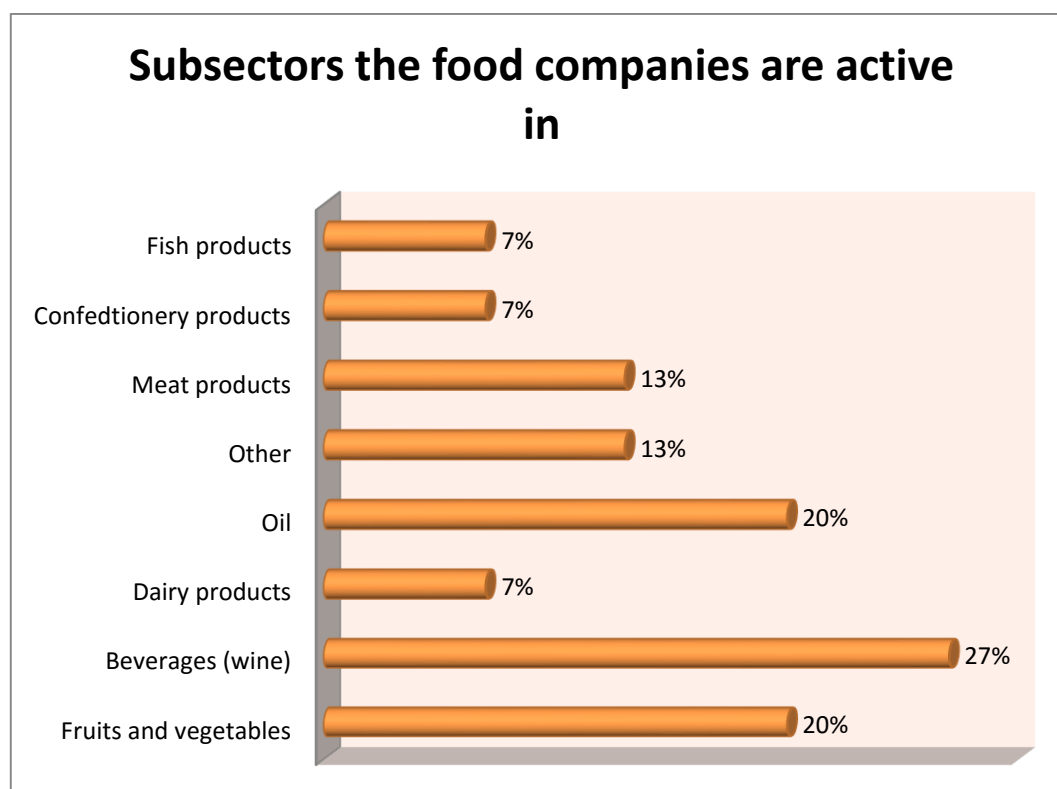
## 8.2 PROFILED AGRO FOOD SMEs

The list of Odessa agro food SMEs that participated in the research is presented in the following table:

	Full official name of company link	Productive sectors the company is active in
1.	Industrial Association "Odessa Canning Factory"	Processing and preserving of fruit and vegetables
2.	"Odessa Cognac Enterprise"	Manufacture of beverages
3.	"Odessa Fat and Oil Enterprise"	Manufacture of vegetable and animal oils and fats
4.	"Odessa Sparkling Wines Interprise"	Manufacture of beverages(wine)
5.	"Odessakonditer"	Manufacture of cocoa, chocolate, sugar and confectionery products
6.	"Odessavinprom"	Manufacture of

		beverages(wine)
7.	“Firma Oniss” LTD	Manufacture of liver paste
8.	“Shabo” LTD	Manufacture of beverages(wine)
9.	“Titan” LTD	Manufacture of dairy products and manufacture of meat products
10.	“Vitmark-Ukraine” LTD	Processing and preserving of fruit and vegetables and manufacture of beverages
11.	“Aqua frost” LTD	Processing and preserving of fish and fish products
12.	“Delta Vilmar SDN” LTD	Manufacture of vegetable and animal oils and fats
13.	“Firma Eurika” LTD	Processing and preserving of fruit and vegetables
14.	“Fores” LTD	Manufacture of seasonings and flavoring
15.	“Illychevsky Oil Extracting Plant”	Manufacture of vegetable and animal oils and fats

The total number of enterprises involved in this technical survey has been 15, representing the main food chains developed in the region of Odessa, as shown in the Graph below.

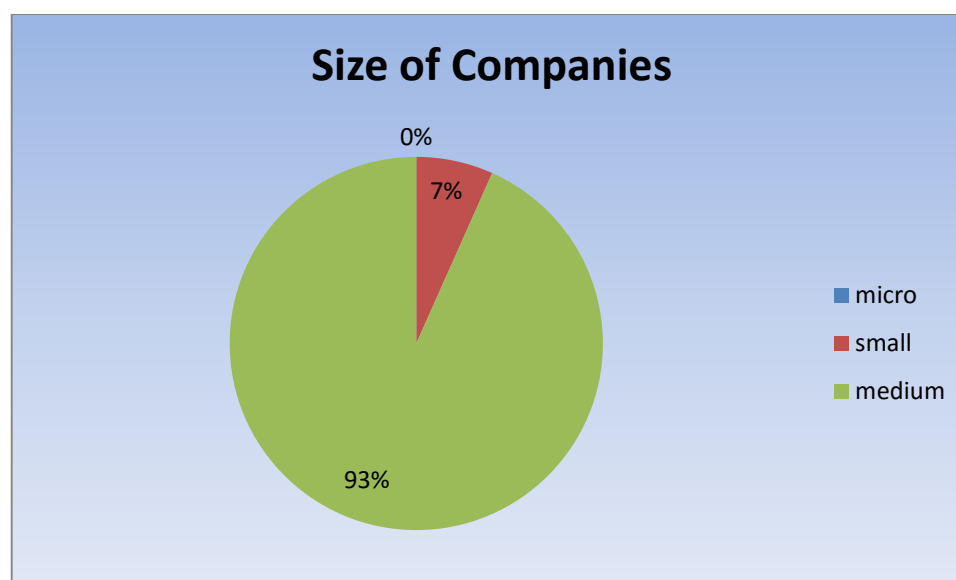


**Graph 15 – Categories of Companies**

## 8.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

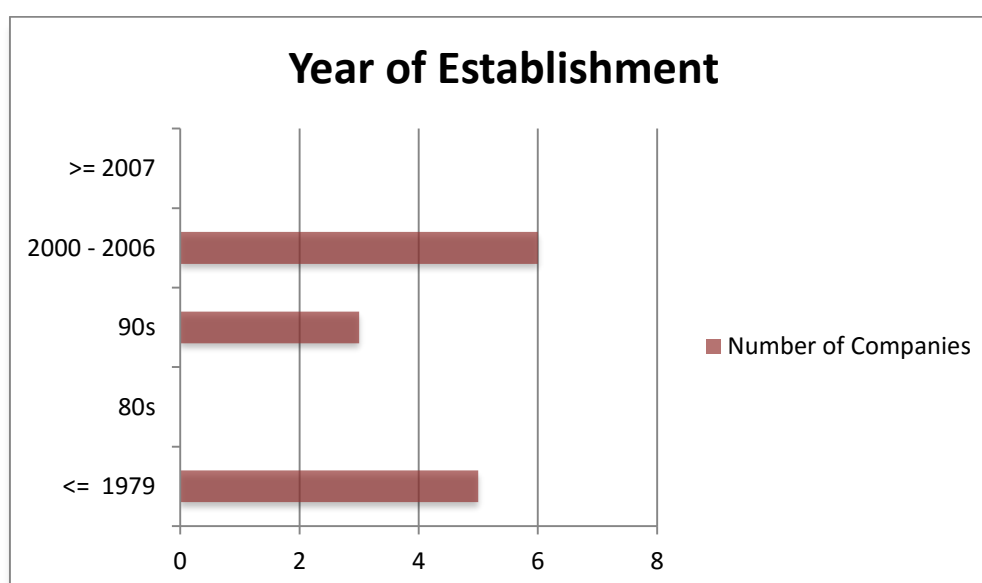
### 8.3.1 SECTION A - COMPANY GENERAL INFORMATION

The companies participating at the Inno- Food SEE Technology audits represent the Odessa agrofood sector, which is mainly composed by medium enterprises and family management driven enterprises, better known and classified as medium-enterprises.



**Graph 16 – Size of Companies**

Taking into consideration the establishment year, the majority of the companies that answered the questionnaire were created the years between 2000 and 2006 performing a process of industrialization of agriculture, by transformation and creation of final products for national and international markets. Furthermore, 30% of the total interviewed was established before 1979 and the 20% were in the 90s.



**Graph 17 – Year of Establishment**

Concerning quality certification, as presented in the graph below 100% of the companies are certified by ISO 9001 while 8% are certified by ISO 22000 (a standard developed by the [International Organization for Standardization](#) and focusing on [food quality and safety](#)).



**Graph 18 – Quality Certification owned by interviewed enterprises**

Regarding the customer segments which the examined agrofood enterprises address, the interviewers focus on “Small/medium enterprises”, “Large enterprises” and “Retailers” while minor percentages are addressed to the remaining typologies.

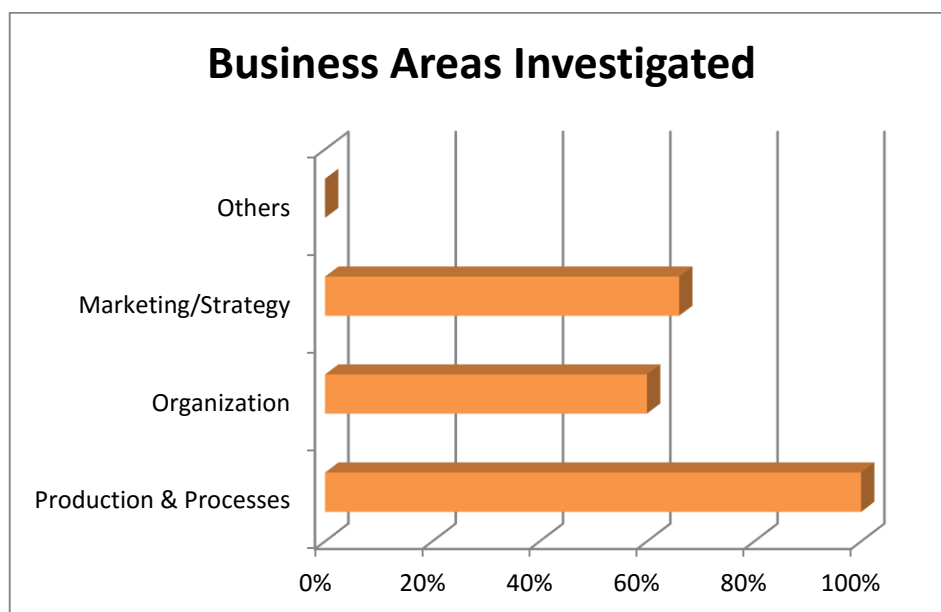
In this analysis, another aspect examined relates to the position/ localization of customers targeted by producers in Odessa. The major share of sales is represented by national channels, while a satisfactory percentage refers to other countries, such as Russia, Moldova, US, Egypt, , Iran and India. A smaller share of sales refers to customers in EU countries.

### **8.3.2 SECTION B - INNOVATION STRATEGY**

The second section of the Technological audit aims to investigate the actions implemented by the agrofood enterprises of the region of Odessa in the development of an innovation strategy. Innovation consists of the successful production, assimilation and exploitation of novelty in the economic and social spheres. Moreover, innovation helps companies target new markets or to keep up with competition. It comes in many different forms, ranging from an invention arising from R&D to efforts to adapt production procedures, tap new markets, use new organizational approaches or create new marketing concepts.

It should be mentioned that the majority of the interviewed companies (93%) declared that their company’s “mission” or “vision” includes some type of reference to innovation, while 73% of them reported to have concrete objectives in terms of innovation. Indicatively these objectives are related to the development of a vertically integrated supply chain; other innovative strategies in order to promote their products, ; new marketing strategies; modernization and improvement of the products, raw materials and processes; and adoption of advanced technologies in various production phases.

The main business areas for which the companies searched for innovation in the past five years are mainly “Production & Processes”, “Marketing/Strategy” and “Organization”, as shown in the Graph below:



**Graph 19 – Business Areas Investigated in the past 5 years**

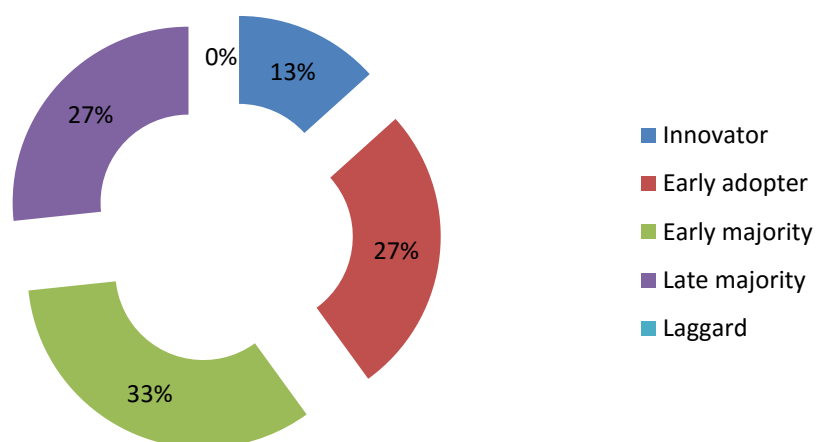
The innovation strategy followed by the major part of enterprises in the region of Odessa is that of the “Early Majority”<sup>2</sup>. 27% of the companies consider themselves as the “Late Majority”<sup>3</sup> and with the same percentage (27%) “Early Adopters”<sup>4</sup>

<sup>2</sup> follow with deliberate willingness in adopting innovations, but seldom lead and .they follow the innovators' and early adopters' lead

<sup>3</sup> approach innovations and change with caution, most frequently in response to economic necessity or other pressures. They frequently have scarce resources and respond when almost all of the uncertainty about the innovation has been removed

<sup>4</sup> which means that whereas innovators are cosmopolitan in terms of social relations, early adopters have more local connections. This category has the greatest degree of opinion leaders who informally influence opinions, attitudes, and behaviors about innovations. They convey information that decreases the uncertainty about the use of a new idea.

## Innovation Strategy

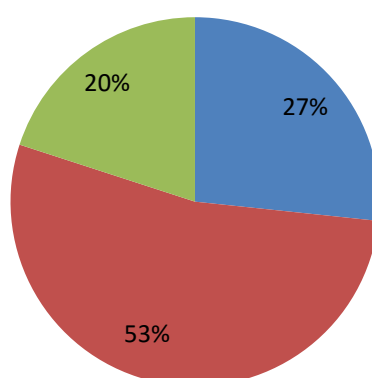


**Graph 20 – Innovation Strategy**

In respond to a relevant question, the companies report that they consider themselves having an innovative spirit, mainly declaring that their products and processes are innovative in comparison with both the state of the art and their main competitors, as shown in the following graphs:

## Innovation of the products & processes in comparison to the state-of-the-art

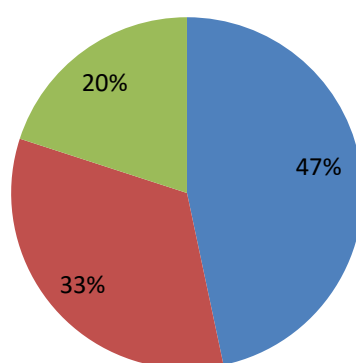
■ Highly innovative ■ Innovative ■ Less innovative



**Graph 21 – Innovation of the products & processes in comparison to the state-of-the-art**

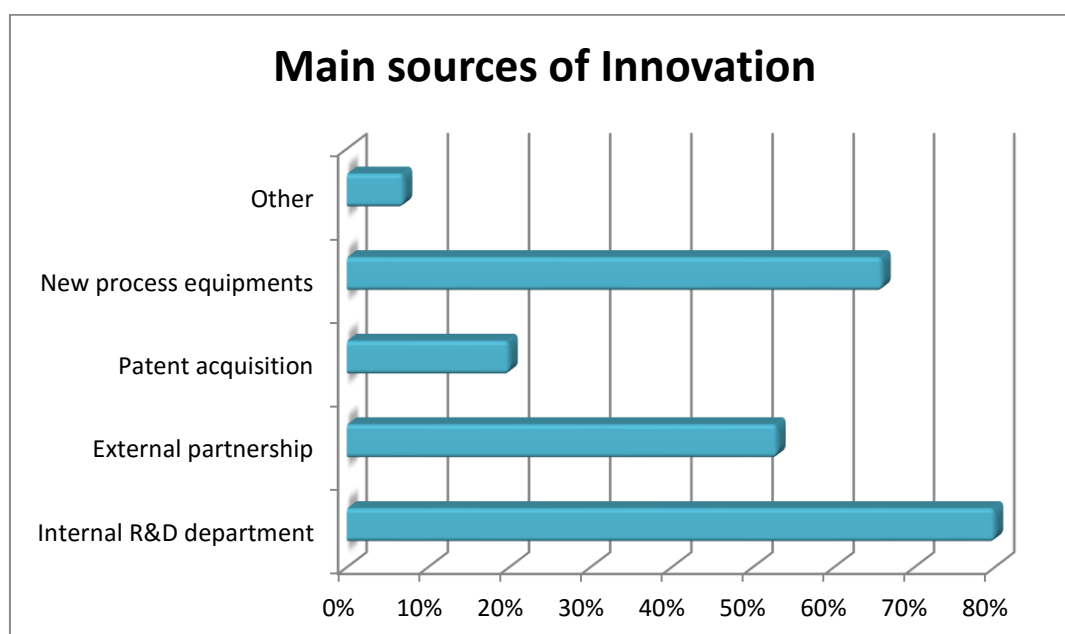
## Innovation of the products & processes in comparison to the main competitors

■ Highly innovative ■ Innovative ■ Less innovative



**Graph 22 - Innovation of the products & processes in comparison to the main competitors**

The main sources of innovation reported by the interviewed companies are presented in the next graph. The main sources reported were “Internal R&D department” (80%), “New process equipment” (67%) and “External Partnership” (53%).

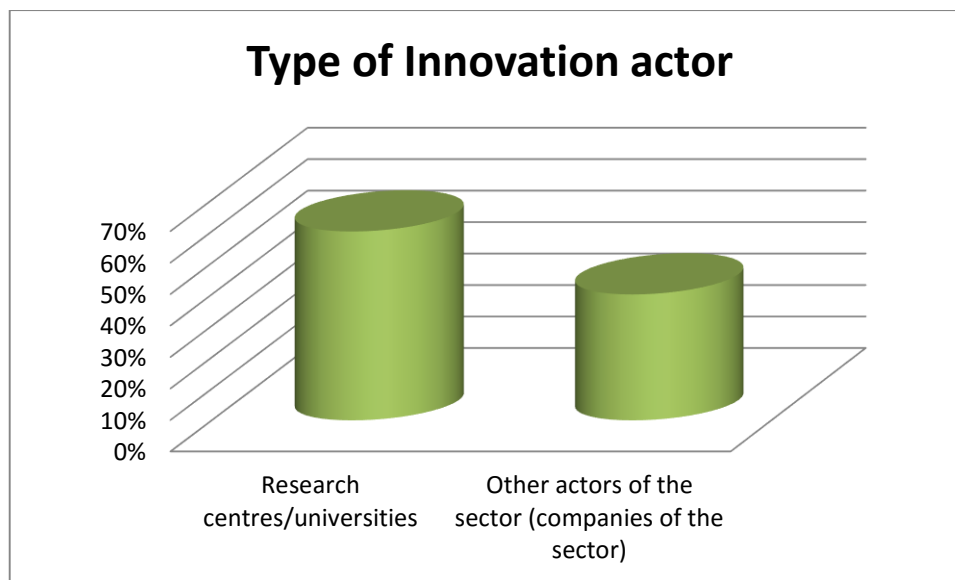


**Graph 23 – Main sources of Innovation**

In case of an internal organization of innovation activities, 50% of the companies consider that the responsibility represents an additional task, not continuously foreseen in the

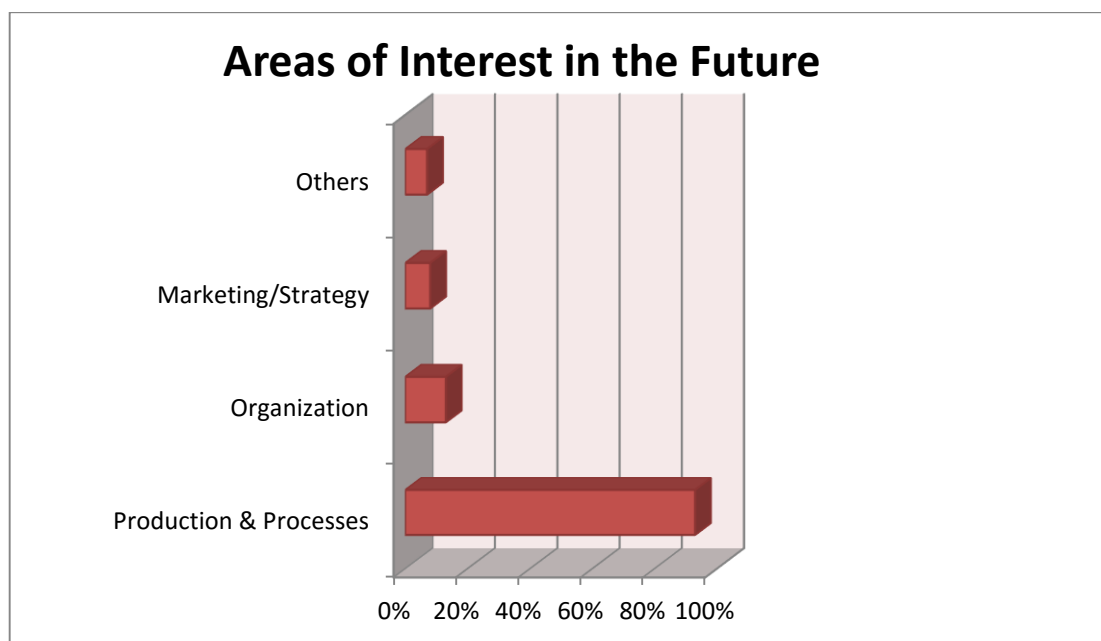
organizational structure and the rest supports that the responsibility is embedded within the organizational structure.

In case of innovation activities externally organized, the main kind of collaboration used is research centers and universities (60%)



**Graph 24 – Type of Innovation actor they collaborate with**

Finally the companies were asked in relation to their interest to innovate or purchase innovation and research results in the future in certain areas of activity. All the interviewed expressed a positive interest towards purchasing research results or carrying on innovation. The most promising areas are the “Production & Processes” and the “Marketing/ strategy” as observed at Graph 11.



**Graph 25 – Business areas of interest for innovation in the future**



### 8.3.3 SECTION C - COMMITMENT TO TECHNOLOGY

In this section entrepreneurs and especially managers were asked to describe their production processes and applications of technologies, the core technologies and applications used in the company, the technical resources, the technologies considered strategic, the knowledge level inside their organization as well as the new products and processes manufactured the last 5 years.

Keywords regarding current company skills and future expected technological development are referred to the questionnaires by the interviewed companies:

Quality	Innovation
Safety	Ecology
Efficiency	Brand name
Competitiveness	Technology
Profitability	Success

The reported Strategic Technologies were:

<b>Vegetable oil production line</b>
Manufacture of mayonnaise and dressings
Manufacture of juices and canned vegetables
Technology of production surimi crab sticks
Preparation line of domestic fruit and vegetable products
Production of meat products
Technology of wine and wine materials
Production of pastes
Jelly production lines

The reported new or improved products in the last 5 years were:

<b>Dietary products</b>
Canned vegetables and pickles
Manufacturing of spread
Manufacture of wine according ancient recipes
Dry and demi - sec win
Frozen products
New types of juice

The reported main process innovations implemented in their companies in the last 5 years are indicatively referred below:

#### **Re-equipment warehouse facilities for storing wine**

<i>Paste production line,</i>
<i>New equipment for washing drying and cutting fruit and vegetable feedstock</i>
<i>Technology of production seafood crab sticks</i>
<i>Technology of trans-isomer free fatty products</i>

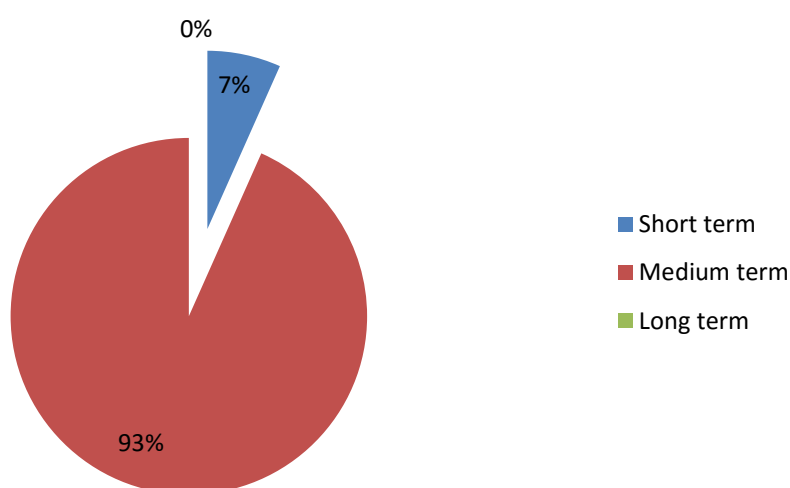
### *Manufacturing of spread*

#### *Adoption of a Bulgarian production line for cheese “Cheder” and “Suluguni”*

The companies were asked about the economic and financial resources as well as the human resources allocated by companies to Research, Development and Innovation in the previous year and in the future. The financial resources allocated to R&D last year were between 70,000 & 150,000 euro for 60% of the companies while the financial resources of the rest were less than 70,000 euro. In most cases RTD expenditure was less than 1% of the annual turnover,. Moreover, the company R&D expenditure foreseen for the future is under 150,000 euro for the 47% of the interviewed enterprises.

Concerning the company's strategic planning timeframe, almost all companies have a medium term strategic planning timeframe:

### **Strategic planning timeframe**



***Graph 26 – Strategic planning timeframe of the companies***

The majority of companies consider that they have the technology expertise and knowledge to address the strategic decisions of the companies as shown in the following graph. It has to be noted that “excellent” or “very good” grade has been expressed by medium and large companies, while “good” came out mainly by micro and small enterprises.

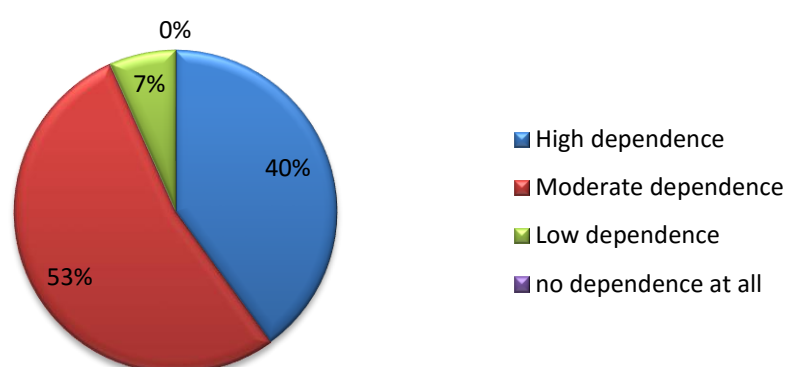


**Graph 27 – Ratio of Technology expertise and knowledge to address strategic decisions**

Another aspect of relationship between companies and innovation players is investigated in this section, where information about existing R&D partners were requested, ONAFT (the Odessa National Academy of Food Technology) was reported by all interviewed companies as the main existing R&D partner.

Another key indicator of research level in agrofood companies is revealed by the level of the company's dependence on external technical personnel related to the sector, as represented in the graph below:

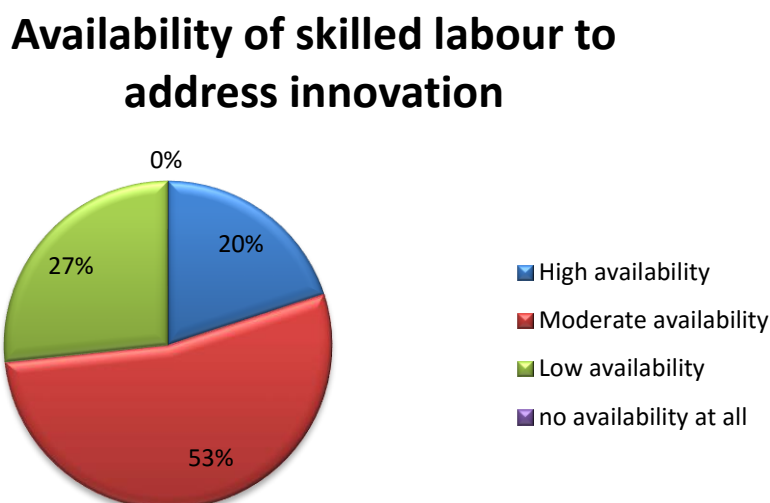
### Dependence on external technical personnel



**Graph 28 - company's dependence on external technical personnel**

The majority of the interviewed companies stated that, due to the fact that equipment is imported from different countries, there is dependence on the maintenance and delivery of spare parts by the manufacturer.

The reported availability of skilled labor necessary for technology innovation is represented in the graph below:



**Graph 29 - Availability of skilled labour to address innovation**

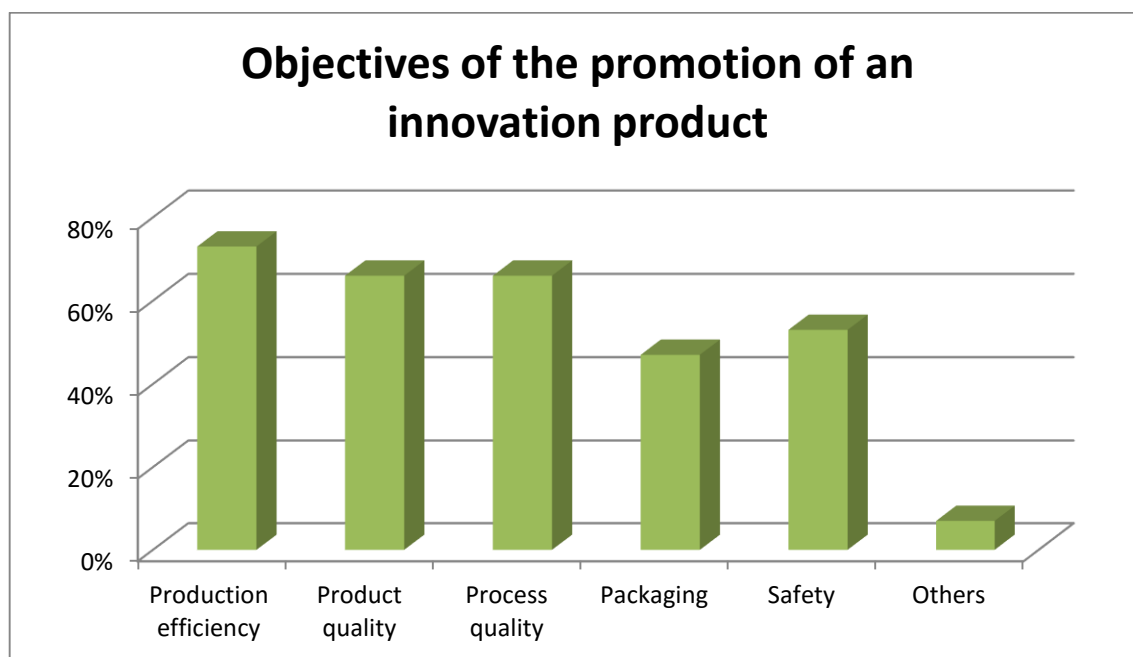
87% of the companies stated that there are identifiable and significant barriers to enter into the market, such as high rates of VAT on products made from domestic raw materials, increased foreign competition, stringent EU legislation for the import of food products and low customs duties on imported products.

Finally, 60% of the companies reported that their core technologies allow for future product or market diversification, by expanding the range of their products or inserting to the market with a new brand.

#### **8.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS**

In this part of the questionnaire which focuses on innovation and technology projects, 80% of the companies declared that they have been involved in innovation and technology projects in the last past five years. For almost all companies, the outcome of the project was a new product that contributed to improved profitability and enterprise value as well as competitiveness. The majority of the companies stated that the external cooperation level was mainly regional/ national and international. All the interviewed companies reported that the results of the project met the partner's expectations. However, all interviewed companies stated that currently they do not implement any innovation and technology projects.

All companies were positive to the prospect of promoting an innovation project in the short to medium term. The most interesting project objectives were "production efficiency", "product quality" and "process quality".



**Graph 30 – Objectives of the promotion of an innovation project**

87% of the companies reported that they have an idea for the development of an innovation project which is related to new or improved products, expansion of the range and new marketing technologies research. Moreover, the 87% of the companies that were positive in the idea for the development of an innovation project declared that the company is interested in developing it within an RTD funded project. It should be mentioned that the main reported obstacles for the participation in innovation projects are the lack of working capital, the high debts level and others that relate to the necessary changes in management structure.

### **8.3.5 SECTION E - POLITICAL CONTEXT**

In this section, that is related to the wider political and regulatory framework in which companies operate, 60% of the interviewed companies consider that existing policies (at regional, national and European level) are favorable. In addition, two of them declared that believe that the existing policies are favorable only at regional and national level. 60% of the companies consider that there are political incentives that given for the Agro Food sector in the region of Odessa, while 44% of them consider that each of these incentives are particularly efficient for motivating research and innovation activities in companies.

The policy measures/ incentives that the companies expect for the Agro Food sector are, as reported, a reduction of VAT and export duties, the adoption and implementation in funding programmes and the introduction of preferential credits and subsidies for enterprises that produce products from domestic raw materials.

## **8.4 PRELIMINARY SWOT RESULTS**

The preliminary results of SWOT analysis are presented in the table below, listing the first 5 factors per each area indicated by companies and the number of answers received:

<b>Strengths</b>	<b>Weaknesses</b>
1. Product & Process quality (15) 2. Highly skilled personnel (9) 3. Geographic positioning (8) 4. Market position (7) 5. Management capacity / Dedicated R&D Unit / Adoption of highly innovative technologies (6)	1. Low financial capacity (11) 2. Poor networking with private actors (SMEs, large companies) (9) 3. No flexible organizational structures (7) 4. Poor networking with public actors (universities, research centers) (2) 5. No dedicated R&D Unit (2)
<b>Opportunities</b>	<b>Threats</b>
1. Increasing demand for more/better varieties (14) 2. Increasing export trends (14) 3. Existing RTD & innovation programs (9) 4. Networking possibilities (8) 5. Availability of R&D funds (8)	1. Bureaucracy / Regulation barriers (10) 2. Scarce funding resources for R&D available (10) 3. Need of adaptation to new regulations (7) 4. No political long-term commitment to the sector (5) 5. Insufficient incentives addressed to the sector / Competition coming from third countries (3)

## 9. REPUBLIC OF MOLDOVA

### 9.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

#### 9.1.1 INTRODUCTION

Moldova is situated in South Eastern Europe, north of the Balkan Peninsula. With an area of 33,846 square kilometers (about 12,600 square miles), it is the second smallest member of the Commonwealth of Independent States. It stretches 350 km from North to South and 150 km from East to West. In the North and East Moldova borders Ukraine and in the West it borders Romania.



#### 9.1.2 AGRICULTURE

Agriculture and the rural sector play a central role in the national economy. Throughout the 1990s, the macroeconomic environment was quite poor. Between 1991 and 1999, GDP fell almost 70 percent. It began rising again in 2000 through 2004.<sup>7</sup> In fact, per capita GDP in constant dollars rose by more than a quarter in 1999-2003, evidencing rapid economic growth. Land reform, combined with macroeconomic stabilization and increased domestic demand from remittances, were all factors contributing to the agricultural sector's recovery. Despite GDP growth in 2004 (more than 7 percent), Moldovan GDP per capita, expressed in 2000 prices,

was still under US\$400, a sixth of the average for the Eastern Europe and Central Asia Region (ECA), and below the average for Sub-Saharan Africa.<sup>8</sup>

While GDP has continued to grow vigorously since 2002, there has been little progress in reducing poverty, particularly in rural areas. Indeed, farmers suffered a significant rise in poverty in 2004 and the first three quarters of 2005. In 2005, rural poverty accounted for 42.5 percent of the total, while rural households derived 73 percent of their income from agriculture. Evidence suggests that this increase in rural poverty was caused by a fall in farm incomes due to an increase of input prices and flat or falling prices of final products.<sup>9</sup>

A competitive market structure is not yet fully established, and government policies have not supported private agriculture. The government often intervenes in domestic and export markets of agricultural commodities such as bread and flour products in a way that appears non-transparent and distorted. Export of agricultural products was liberalized in 1997, but several non-tariff barriers for agricultural products remain.

The result of agricultural and macroeconomic policies caused a drastic drop in agricultural input use and low and unstable returns on agricultural commodities in the late 1990s. Yields

and agricultural productivity started increasing after 2000 in parallel with a lessening of government interventions in grain markets. In 2003, though, a severe drought interrupted the positive trend and brought renewed government interventions in the agricultural sector.

### 9.1.3 *FOOD INDUSTRY*

The food industry of the Republic of Moldova is one of the main industrial branches of the national economy. The different sectors of the food industry process over 80% of the local agricultural raw material. About 60% of the exports of the Republic of Moldova are the products of agri-food industry. The regional specialization branches include: wine industry, tobacco industry, sugar industry, canning industry, natural juices, essential oils, etc.

## 9.2 *PROFILED AGRO FOOD SMEs*

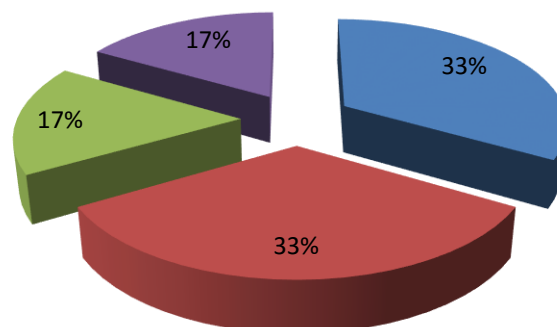
The list of Moldovan agrofood SMEs that participated in the survey is presented in the following table:

	Full official name of company link	Productive sectors the company is active in
1.	"Sandrillona" LTD	Manufacture of dairy products
2.	"VASTDIAL&CO" LTD	Manufacture of other product (honey, apiculture products)
3.	"HISTRIOS" LTD	Manufacture of vegetables and fruits
4.	"BOJO-VIN" Ltd	Manufacture of beverages
5.	"GELIBERT" Ltd	Manufacture of beverages
6.	"Ecovit N&N" LTD	Manufacture of vegetables and fruits



## Subsectors the food companies are active in

- Fruits and vegetables
- Beverages (wine)
- Dairy products
- Other (honey, apiculture products)

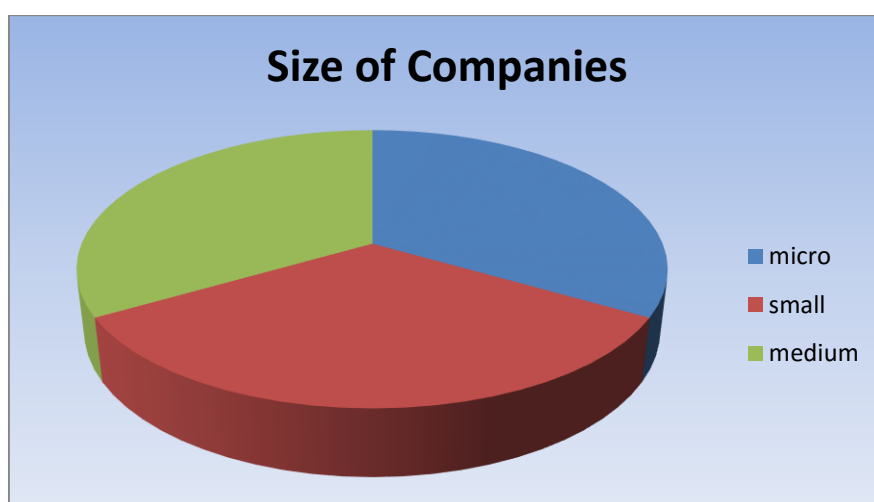


**Graph 31 – Categories of Companies**

### 9.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS

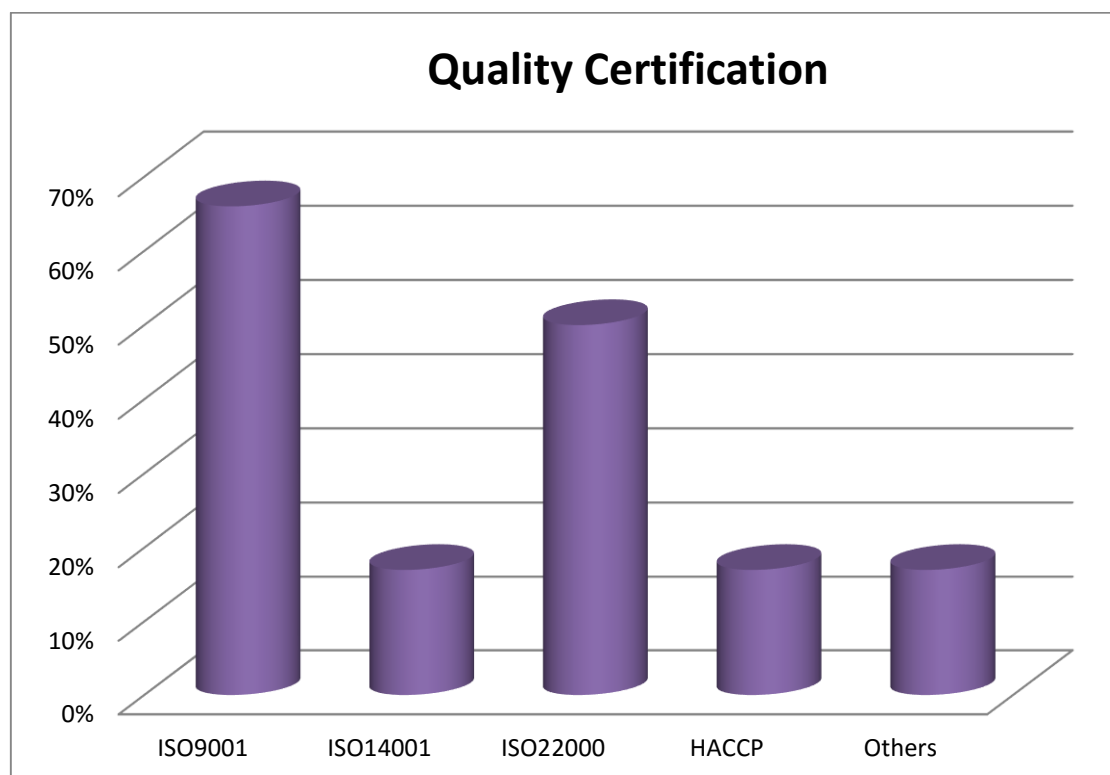
#### 9.3.1 SECTION A - COMPANY GENERAL INFORMATION

The companies participating at the Inno- Food SEE Technology audits roughly represent the Moldavia agrofood sector, which is composed by micro, small, medium enterprises and family management driven enterprises.



**Graph 32 – Size of Companies**

Concerning quality certification, as presented in the graph below 66% of the companies are certified by ISO 9001 while 50% are certified by ISO 22000 (a standard developed by the [International Organization for Standardization](#) and focusing on [food quality and safety](#)).



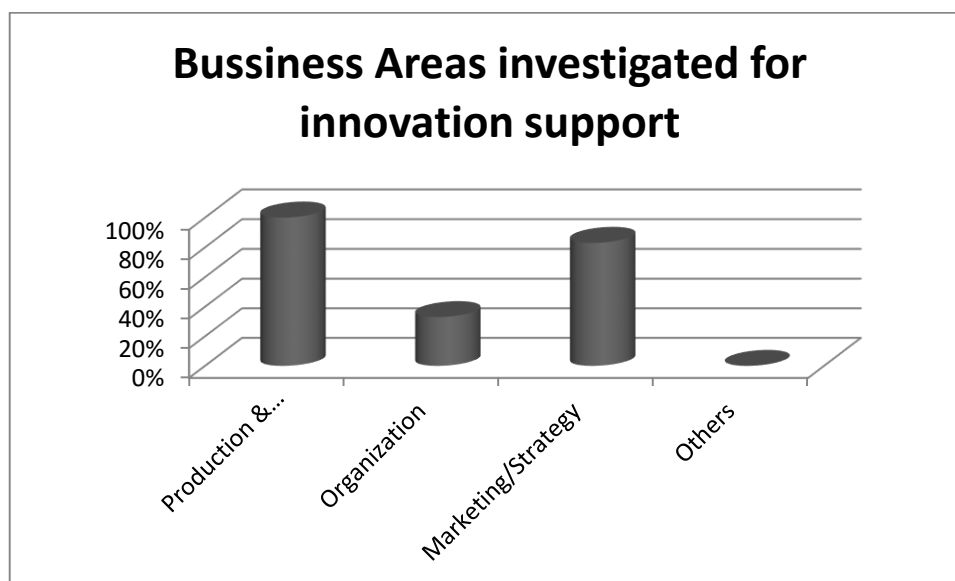
**Graph 33 – Quality Certification owned by interviewed enterprises**

In this analysis, another aspect examined relates to the position/ localization of customers targeted by producers in Moldavia. The major share of sales is represented by national and regional channels, while a satisfactory percentage refers to other countries). A smaller share of sales refers to customers in EU countries.

### **8.3.2 SECTION B - INNOVATION STRATEGY**

The second section of the Technological audit aims to investigate the actions implemented by the agrofood enterprises of the region of Moldavia in the development of an innovation strategy.

It should be mentioned that all the interviewed companies (100%) declared that their company's "mission" or "vision" includes some type of reference to innovation. The main business areas for which the companies searched for innovation in the past five years are mainly "Production & Processes", "Marketing/Strategy" and "Organization", as shown in the Graph below:

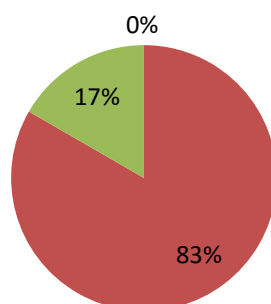


**Graph 34 – Business Areas investigated for innovation in the past 5 years**

The companies report that they consider themselves having an innovative spirit, mainly declaring that their products and processes are innovative in comparison with both their own company and their main competitors, as shown in the following graphs:

### Innovation of products & processes within the company

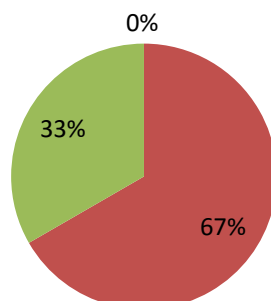
■ Highly innovative ■ Innovative ■ Less innovative



**Graph 35 – Innovation of products & processes within the company**

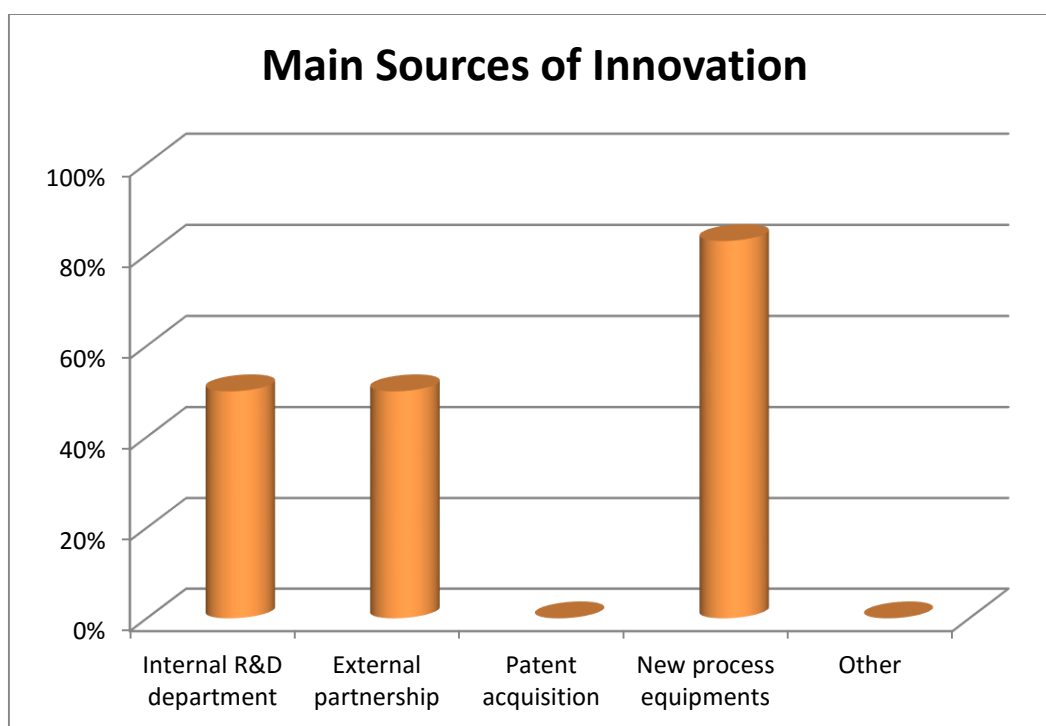
## Innovation of products & processes in comparison to main competitors

■ Highly innovative ■ Innovative ■ Less innovative



**Graph 36 - Innovation of products & processes in comparison to main competitors**

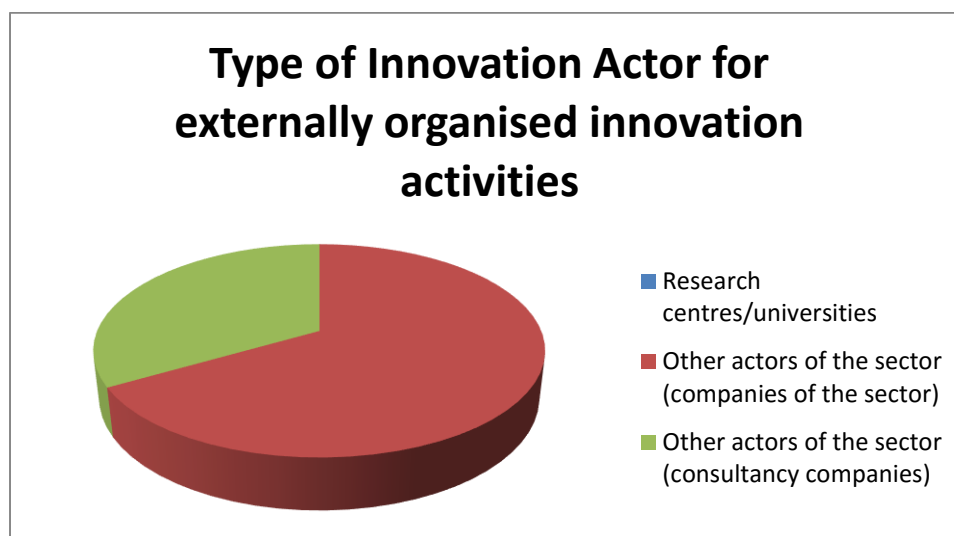
The main sources of innovation reported by the interviewed companies are presented in the next graph. The main sources reported were “New process equipment” (83%), “Internal R&D department” (50%) and “External Partnership” (50%).



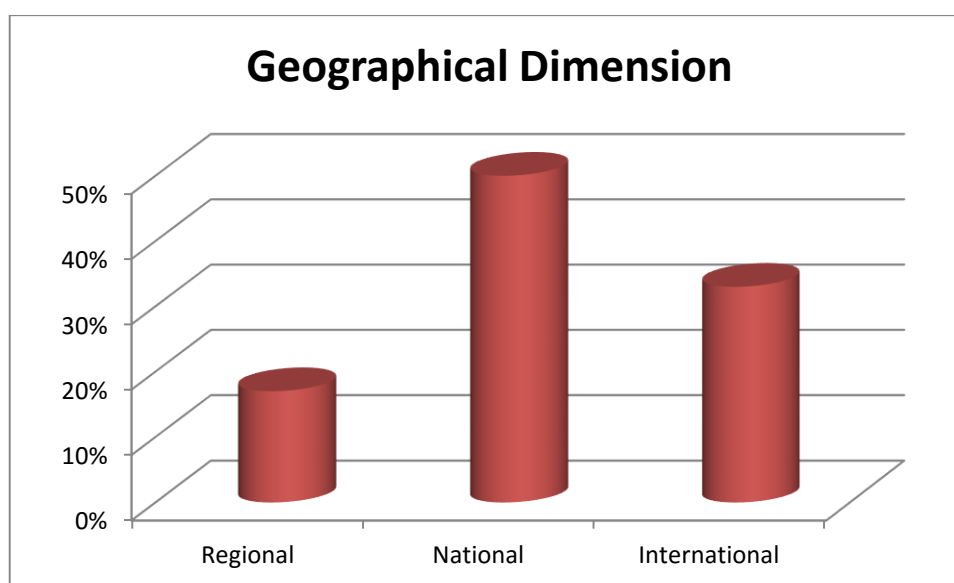
**Graph 37 – Main sources of Innovation**

In case of an internal organization of innovation activities, 67% of the companies consider that the responsibility represents an additional task, not continuously foreseen in the organizational structure and the rest supports that the responsibility is embedded within the organizational structure.

In case of innovation activities externally organized, the main kind of collaboration used is other companies of the sector (4 companies have reported so) and consultancy companies (2)



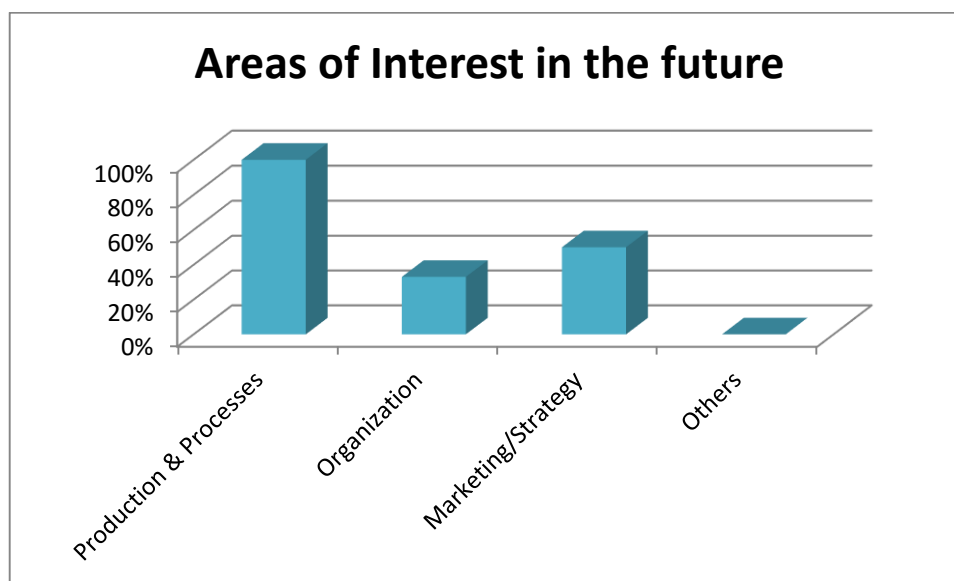
**Graph 38 – Type of Innovation actor for externally organised innovation activities**



**Graph 39 – Geographical dimension of collaboration for externally organised innovation activities**

In the graph above it is represented the geographical dimension of the innovation activities that are organized externally.

Finally the companies were asked in relation to their interest to innovate or purchase innovation and research results in the future in certain areas of activity. All the interviewed expressed a positive interest towards purchasing research results or carrying on innovation. The most promising areas are the “Production & Processes” and the “Marketing/ strategy” as observed at Graph 10.



**Graph 40 – Business Areas of Interest to innovate or purchase innovation in the future**

### 9.3.3 SECTION C - COMMITMENT TO TECHNOLOGY

The reported core technologies and applications from the various companies were:

Use of natural top-quality ingredients

Production process: decrystallisation

Beverage bottling

Water purification

Treatment, blending of ethylic alcohol and alcoholic beverages

Water treatment through the technology of reverse osmose

Ultrasonic and ultraviolet bactericidal treatment of water

Use of natural fertilizer

The reported strategic technologies from the various companies were:

Alternative source of energy

Processing new materials

Organic production technology

Solar panels for the CIP system

Automated financial controlling

The reported new or improved products in the last 5 years were:

Honey - cream

Honey with nuts

Champignons

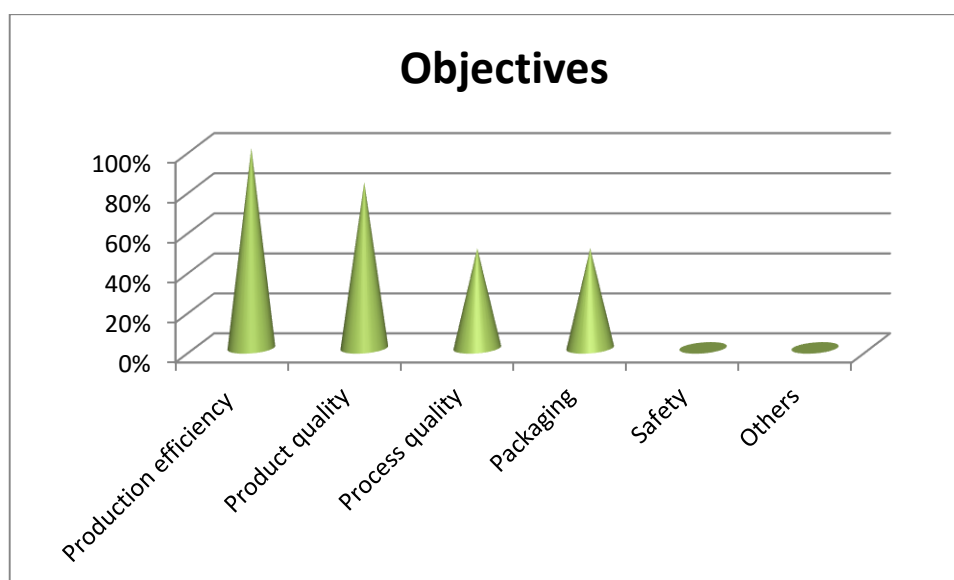
Ecological vegetables and fruits

All the interviewed companies stated that, the availability of skilled labor, which is necessary for technology innovation, is moderate in their own enterprise.

### 9.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS

In this part of the questionnaire which focuses on innovation and technology projects, 83% of the companies declared that they have been involved in innovation and technology projects in the last past five years. The outcome of the project was both a new product and a new technology that contributed to improved profitability and enterprise value as well as competitiveness. The majority of the companies stated that the external cooperation level was mainly regional/ national. All the interviewed companies reported that the results of the project met the partner's expectations. However, almost all interviewed companies (83%) stated that currently they do not implement any innovation and technology projects.

All companies were positive to the prospect of promoting an innovation project in the short to medium term. The most interesting project objectives were "production efficiency" (100%) and "product quality" (83%).



**Graph 41 – Objectives for the promotion of an innovation project**

83% of the companies reported that they have an idea for the development of an innovation project which is related to new or improved products, expansion of the range and new marketing technologies research. Moreover, the 60% of the companies that were positive in the idea for the development of an innovation project declared that the company is interested

in developing it within an RTD funded project. It should be mentioned that the main reported obstacles for the participation in innovation projects are the bureaucracy, the lack of financing, lack interest from public authorities, the unreasonably stringent regulations.

### **9.3.5 SECTION E - POLITICAL CONTEXT**

In this section, that is related to the wider political and regulatory framework in which companies operate, 100% of the interviewed companies consider that existing policies (at regional, national and European level) are not favorable and supportive for being successfully operative in the Food sector in the region of Moldavia.

The policy measures/ incentives that the companies expect from the political side for the Agro Food sector are, as reported, a reduction of VAT and export duties, more subsidies and cheaper credits, support of local producers / local market protection, reduction of production cost in order to be more competitive on international market.



## 9.4 PRELIMINARY SWOT RESULTS

The preliminary results of SWOT analysis are presented in the table below, listing the first 5 factors per each area indicated by companies and the number of answers received:

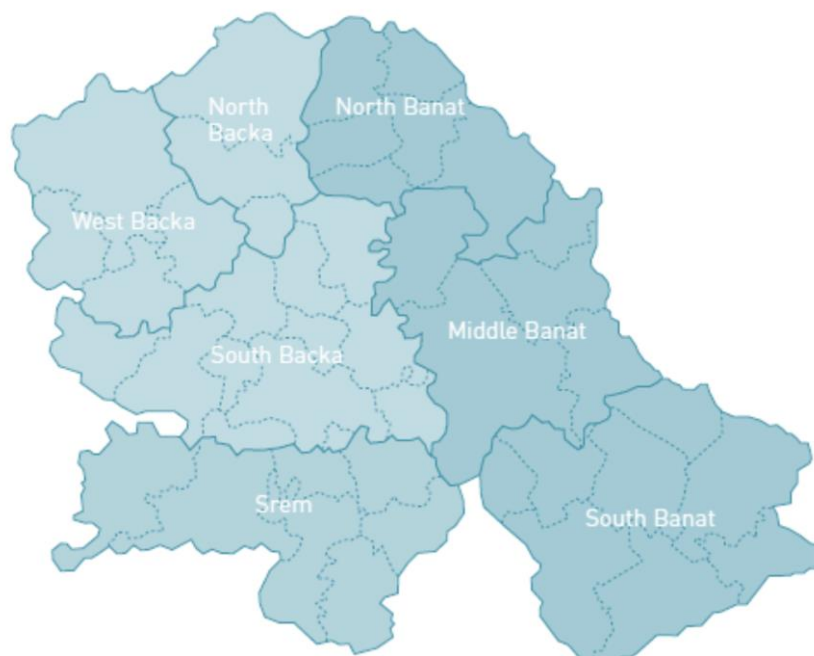
<b>Strengths</b>	<b>Weaknesses</b>
1. Product & Process quality (6)	1. No international orientation (4)
2. Market position (4)	2. Low financial capacity (3)
3. Geographic positioning (3)	3. No dedicated R&D Unit (2)
4. Management capacity (3)	4. Poor networking with private actors ( 2)
5. Product diversification / Dedicated R&D Unit / Highly skilled personnel (2)	5. Insufficient skilled personnel / Poor networking with public actors / Low innovation commitment (1)
<b>Opportunities</b>	<b>Threats</b>
1.Increasing demand for more/better varieties (5)	1. Bureaucracy / Regulation barriers (5)
2. Increasing export trends (4)	
3. Availability of R&D funds (3)	2. Scarce funding resources for R&D available (4)
4. Existing RTD & innovation programs (2)	3. No political long-term commitment to the sector (4)
5. Research technology offer / Strong regional/national product identity (2)	4. Lack of market information (3)
	5. Insufficient incentives addressed to the sector (3)

## 10. VOJVODINA DEVELOPMENT REGION, SERBIA

### 10.1 SHORT PROFILE OF THE REGION, THE AGRICULTURAL PRODUCTION AND THE FOOD INDUSTRY

#### **SERBIA - Country Profile**

The **Republic of Serbia** is located at the crossroads of Central and Southeast Europe, covering the southern part of the Pannonian Plain and the central part of the Balkans in total surface of 77,474 km<sup>2</sup>. Relative to its small size, history and culture, it is a very diverse country distinguished by a transitional character. Serbia is landlocked and borders Hungary to the north; Romania and Bulgaria to the east; Macedonia to the south; and Croatia, Bosnia, and Montenegro to the west; also, it borders Albania through the disputed region of Kosovo. The capital of Serbia, Belgrade, is among the largest cities in East-Central Europe.



Serbia is still one of the less developed countries of South East Europe. Serbia's GDP of about 28,9 billion EUR in 2009 was equivalent to about 0.2% the aggregate gross domestic product (GDP) of the EU-27, and 6% of the South East Europe GDP. Serbia's GDP per capita in 2009 was 3,954 EUR.

Processing of fruits, berries and vegetables is one the most developed segments in the food processing sector in Serbia.

#### **Agriculture Production**

Agriculture is still one of the most important industries of the serbian economy. According to serbian agriculture ministry data, this industry actually employs 10% of overall work force and accounts for 21% of serbian gdp. Moreover agricultural products account for 26% of total Serbian exports. Out of 5,200,000 hectares of agriculture land, 85% is privately owned lands and 15% belongs to cooperatives or public government. 83% of serbian agricultural lands is farmland. Harvest yields account for 57% of the total agricultural production while cattle breeding accounts for 33%. Vineyard and orchards account for 5% and 4% respectively.

60% of the harvest products is made up of cereals and only 18% is vegetable. The breeding industry includes pig, cow, poultry and sheep breeding respectively accounting for 41%, 40%, 14% and 5% of total breeding industry production. Wheat is the most important cereal with a throughput ranging between 2 and 2.5 million ton per year and a cultivation area of over 650,000 hectares land yielding on average 3.5 t/hectare. Corn is the second mostly cultivated cereal with nearly 2 million ton per year with a yield of 4.5 ton/hectare. Sugar beetroot with an overall production of 35 ton/hectare is another important serbian crop. Sunflower cultivation areas extend over 170,000 hectare of land yielding a production of 300,000 ton/year and 1.7 ton/hectare. Considerable yields are also coming from the fruit sector, especially apples and plums, although there has been a recent decrease both in local consumptions and exports. Viticulture is quite spread over the whole country with an average production of 380,000 ton table grapes and wine grapes. With an overall production of 50,000-70,000 ton/year serbia has long been one of major raspberry producers in the world and still holds a leading position. Beans cultivations cover a surface of 50,000 hectare land yielding 1.1 ton/hectare for a total production of 60,000 tons per year. Potatoes cultivations cover an area of approximately 100,000 hectare for a total production of 800,000 ton/year. Food processing industry is presently the most attractive sector for parties wanting to invest or draw up collaborations with local parties.

### **Food Industry**

Food processing industry is presently the most attractive sector for parties wanting to invest or draw up collaborations with local parties.

Total consumer expenditure for food and non-alcoholic beverages grew around 185 percent and expenditures for alcoholic and tobacco grew around 191 percent in local-currency terms between 2004 and 2009. A share of total household expenditure on food and non-alcoholic beverages declined to 26.7 percent in 2009 compared to 41 percent in 2000. The highest share in food consumption refers to dairy products, bakery, meat and vegetables. Consumption of organic products is still less than 0.01% compared to 3-4% in developed countries of Europe. In contrast to other countries of South-Western Balkans, the concentration of retail outlets in Serbia has not yet been completed and more than 70% of all food products are still sold through small grocery shops, estimated to number some 30 thousand scattered throughout the country. In 2010, 31% of shoppers claimed supermarket to be their main shopping place and only 10% preferred to make their food purchases in hypermarkets.

## **VOJVODINA REGION**

### **Region's Profile**

Vojvodina is an autonomous province of the Republic of Serbia, located in the northern part of the country. Vojvodina borders Romania in the east, Hungary in the north, Croatia in the west, Bosnia& Herzegovina in the southwest and central Serbia in the south. It covers an area of 21,506 km<sup>2</sup>, which represents approximately one quarter of the territory of the Republic of Serbia.

Vojvodina's economy is dominated by the food processing industry and agriculture, yet some other sectors are also significant such as processing of oil derivatives, chemical products,

banking and financial services, information and communication technologies, trade and distribution services.

In 2010 there were about 23,769 enterprises in Vojvodina, with 240,833 employees and 60,683 entrepreneurs with 66,683 employees, which makes in total 84,452 business entities (26.47% of the total number in Serbia) and 306,883 employees (25% of the total number in Serbia). Although small-sized enterprises are the most numerous, the majority of employees work in large companies.

### **Agriculture Production**

The share of region Vojvodina in the national output of agriculture is approximately 70%. Cereals, industrial crops, fruits and animal products are of particular importance for the regional economy and compared to the national averages.

Vojvodina has excellent natural conditions for agricultural production. It is located in the Pannonian plain, making the land configuration predominantly flat with a high quality of soil. There are also two mountains: Vrsacke in the southeast and Fruska Gora in the central area. As mentioned earlier, the agricultural population, based on 2002 census, accounts for 215,147 inhabitants or 10.59% of the total population of Vojvodina. The figure significantly decreased from the previous census in 1991, in which the number of the agricultural population in Vojvodina was 269,438. Agricultural land in Vojvodina in 2009 covers 1.747 million ha, which is 35% of the total agricultural land in Serbia. Arable fields and gardens cover 1.578 million ha (39% of total arable land in Serbia), 18,000 ha are under orchards and almost 10,000 ha are under vineyards. Meadows cover 41,000 ha and pastures 101,000 ha (Statistical Office 2010). The quality of land is very good with 52% is made up of black soil. Cultivation of arable land is dominated by cereal grains, planted on 66% of all land. Cereals are followed by oilseed crops (22%), vegetables (5%) and fodder crops (5%). In the last few years there has been a trend of increasing areas under oilseed crops (soya, in particular) at the expense of cereal grains, though the trend is falling in the areas under vegetables and fodder crops, mostly due to negative trends in the cattle-farming segment. Vojvodina covers 53.24% of the total area under cereal grains in Serbia, 91.81% under oilseed crops, 25.36% under vegetables and 16.26% under fodder crops (Statistical Office 2010).

Fruit production is much less significant than cereal grains. Fruit is mostly grown in the northern part of Vojvodina, as well as the Fruska Gora and Vrsac mountains. The total number of productive fruit trees in 2009 was about 12.8 million. The most widely grown fruits were apples (42.13%) with production at 105,000 tons, followed by plums (20.65%) with 57,000 tons and sour cherries (12.28%) with 26,100 tons.

### **Food Industry**

Sugar production is stable at around 430,000 tons. Domestic consumption of sugar amounts to 240,000 tons (25-30 kg per capita), exports to 180,000 tons (mostly to the EU within the customs-free export quota is 180,000 tons).

Confectionary and snacks is a sub-sector with an overall production of 130,000 tons per year and increasing importance in the food production in Serbia. The sub-sector achieves annual revenues of over 400 million EUR and an export value of 150 million EUR.

Total wine production in Serbia amounts to ~ 170 million litres. Local consumption is dominated by imported wine (third quarters of wine consumed is imported). The low prices paid for grapes have resulted in declining production and limited investment in grape production and processing.

Serbia is the world leader in raspberry production. Other key fruits are apples, plums, blackberries and sour cherries (in total around 20 types of fruit). Premium quality of berry fruits due to optimal climate and soil conditions (results in a higher dry content). More than 300 companies are active in the fruit sub-sector in Serbia.

## 10.2 PROFILED AGROFOOD SMEs

	Full official name of company link	Productive sectors the company is active in
1.	SPD Mala Mlekara, Silbaš	Manufacture of dairy products
2.	Zemljoradnička zadruga "Bačo", Vrbas	Other (Manufacture of grains and oilseeds)
3.	Žito-Bačka, Kula	Manufacture of grain mill products, starches and starch products;
4.	Fabrika stočne hrane „Komponenta“ d.o.o., Čuprija	Manufacture of prepared animal feeds
5.	Eugen Chocolate d.o.o., Gložan	Other: production of chocolate
6.	Victorioil AD, Šid	Manufacture of vegetable and animal oils and fats
7.	Concern "Swisslion-Takovo" ltd Belgrade	Manufacture of dairy products Manufacture of beverages
8.	Mirotin Tisa, Savino Selo	Manufacture of grain mill products, starches and starch products;
9.	Meat&Trade, Novi Sad	Manufacture of other food products
10.	Bononia, Banoštor	Manufacture of wines from grapes
11.	Hrana Produkt DOO	Manufacture of prepared animal feeds
12.	"Delta agrar" AD Danubius, Novi Sad	Manufacture of grain mill products, starches and starch products;
13.	Caporione d.o.o., Novi Sad	Processing and preserving of fruits and vegetables Manufacture of other food products
14.	Geneza d.o.o., Kanjiža	Processing and preserving of fruits and vegetables
15.	Tas-Mix doo Vrbas	Manufacture of prepared animal feeds

## **10.3 KEY INFORMATION FROM THE TECHNOLOGY AUDITS**

### **10.3.1 SECTION A - COMPANY GENERAL INFORMATION**

Number of received questionnaires: 15

Number of SMEs: 15 (5 medium, 7 small, 3 micro)

Food Sectors:

- 2 – Manufacture of dairy products;
- 3 – Manufacture of grain mill products, starches and starch products;
- 1 - Manufacture of vegetable and animal oils and fats
- 1 - Manufacture of grains and oilseeds
- 1 - Manufacture of wines from grapes
- 2 – Processing of fruits and vegetables;
- 1 – Production of beverages
- 2 – Manufacture of other food products;
- 1 – Manufacture of chocolate;
- 3 - Manufacture of animal feed;

Certified companies:

- 6 companies with Quality Management Systems
- 1 companies with Environmental Management Systems
- 4 companies with Food Safety Management Systems
- 6 companies with (HACCP) certification
- 1 company with PAS 2008 system
- 1 company with Halal, Cosher, IFS, GMP+ systems

Only one company has all certificates.

Almost all SMEs have local or regional clients (neighbouring countries or ex Yu countries).

Two companies have export into EU countries (5% and 30% of total consumers).

### **10.3.2 SECTION B - INNOVATION STRATEGY**

#### **General Remarks:**

- (1) Half of SMEs (50%) declared including innovation strategies within their companies;
- (2) Almost all of SMEs answered that innovation is related mainly to production activities – technology and equipments
- (3) SMEs also indicated marketing as a potential area for their innovation objectives.
- (4) 80% of the responding SMEs declared that their products are innovative and 20% considered their products less innovative in comparison with the competitors' ones.
- (5) Two SMEs mentioned that external partnerships influenced innovation process in the company.

(7) Over 80% of the responding SMEs considered that innovation activities are included between the tasks of their personnel and innovation is integrated in the organizational structure.

(8) 60 % of the responding SMEs considered that cooperation with R&D units – research institutes and universities is a major way of externalise the innovation activities.

(9) Almost all responding SMEs declared that in the future are interested to achieve innovative processes mainly for production and manufacture

**Specific Remarks:**

Specific objective concerning innovation:

GENEZA – development of mayonese without eggs and oil emulsion for baking industry

DANUBIUS – functional flour for human consumption

HRANA PRODUKT – new cattle feed

MEAT&TRADE – new mixture of spices for traditional meat products

MIROTIN – enriched extruded corn meal for animal feed

SWISLION – new jelly and foamy candies

VICTORIA OIL – condensate returning in processing of rapeseed

EUGEN CHOCOLATE – new chocolate with pepper

KOMPONENTA – Trout feed



### 10.3.3 SECTION C - COMMITMENT TO TECHNOLOGY

#### **General Remarks:**

The questions in section C tried to identify specific information about products and technologies within responding SMEs and way how innovation is related to the development or modernization or updating these technologies and products.

(1) The investment in innovation as responding SMEs declared is between 0.1 till 1% of their turnover.

(2) About 70% of the responding SMEs indicated they have a short term planning strategy.

(2) For this short term strategy, the SMEs allocated task to own personnel, time is depending of the size of the company.

(4) In the section B, about 90 % SMEs indicated as source of innovation their internal R&D departments. In the C section, the level and the availability of the qualified working personnel for technological innovation is considered medium to low. It means that company management and the R&D within companies is still at a lower level.

(5) Only 1 responding SME indicated that they have R&D partners which are currently in collaboration, which shows that the industry-research dialogue is still at a lower and an inefficient level.

(6) A half of responding SMEs do not considered technical barriers as an issue for entering with products on different markets.

### 10.3.4 SECTION D - INNOVATION & TECHNOLOGY PROJECTS

#### **General Remarks:**

Only 15% of the responding companies mentioned they have been involved in the past in innovative projects, regarding the modernisation of the production line.

Almost all responding companies express their wish for innovation in the closed future, majority on production and product matters.

About 10% of the responding companies mentioned they have an innovative idea that they would like to promote in the future within an innovative project

Almost all responding companies claimed that their involvement in innovative projects and activities were influenced by:

- Lack of information about programmes and funding;
- Low level of cooperation with domestic R&D entities (faculties and institutes);
- private property and lack of interest of owner;

- Bureaucracy;

### **10.3.5 SECTION E - POLITICAL CONTEXT**

**Are the existing policies favourable and offer of support for local business?**

All respondent companies mentioned NO at this question.

**Are there political incentives for the agrofood sector in your region?**

Most of companies answered NO

**What kind of measures / incentives are you waiting from political level into agrofood sector?**

The responding companies mentioned the following measures/incentives:

More stimulative environment for production and economy development;

More stimulative market development;

Stimulating of small enterprise promotion

Support for exporting food products;

## 10.4 PRELIMINARY SWOT RESULTS

<b>Strengths</b>	<b>Weaknesses</b>
1. Product and Process Quality (13)	1. Poor networking with public actors (4)
2. Product Diversification (6)	2. No international orientation (4)
3. Highly skilled personnel (2)	3. Low financial capacity (5)
4. Geographical positioning (1)	4. No dedicated R&D unit (4)
5. Adoption of highly innovative technologies (1)	5. No flexible organisational structures (2)
<b>Opportunities</b>	<b>Threats</b>
1. Strong regional/national product identity (3)	1. Insufficient incentives addressed to the sector (5)
2. Availability of R&D funds for research and innovation (3)	2. Bureaucracy / Regulation barriers (10)
3. Increasing export trends (3)	3. Competition coming from third countries (1)
4. Increasing demand for more/better varieties (6)	4. No political long-term commitment to the sector (4)
5. Existing RTD & innovation programmes tailored to the sector (3)	5. Need of adaptation to new regulations, normatives and priorities (3)

### Comments:

1. The strong points go especially for the products and process quality, showing the confidence of the responding SMEs in their current products and technologies;
2. Also the responding SMEs' confidence goes in product diversification, which makes them competitive on the market.
3. As a major weakness in developing innovation within SMEs is mentioned low financial capacities and missing of dedicated R&D unit and in several cases, networking with public sector is poor;
5. In the food industry, increasing demand for more/better varieties the regional/national identity of the products is still a chance for business development (including innovation).
6. Availability of the public funds – existing RTD & innovation programmes tailored to the sector should stimulate the innovation within companies and also product and technology development in production and manufacture sector;

7. The major threat is bureaucracy / regulation barriers consider as well as the lack or the missing of the incentives. Food industry needs incentives for innovation.

9. There is no political long-term commitment to the sector so they do not have clear vision of innovative strategy in the future.

## **10.5 CONCLUDING REMARKS**

- Key statistics show that agriculture and food industry are key actors of Vojvodina region;
- SMEs in the region consider innovation as important part of their development strategies;
- Innovation is still considered as innovation in equipment purchasing or improvement of products;
- The availability for future innovation projects and future SMEs involvement in innovation is very big – concerning the production and product quality improvement
- The size of past and running innovation projects in the country and in the region is very low, but the complementarity between private and public funds for innovation still to be improve;
- Missing of national and regional incentives is the major barrier in the SME development by innovation
- Future opportunities in the sector and in the region are directly related to the available public funds for innovation
- The food industry in the country and in the region still has strong points: the quality of products, the regional brands and the high skilled personnel.
- Innovation cannot be developed without an efficient dialogue between industry and research units and without strong networking at regional/national and international level;
- It is necessary to develop internal R&D departments within companies and it will show commitment to invest and to support innovation in the food industry and in agriculture.

## **11. ANNEX- QUESTIONNAIRE TEMPLATE USED FOR AGROFOOD SMEs TECHNOLOGY AUDITS**

<b>Identification data</b> <i>(to be filled in by the Inno- Food SEE partner)</i>	
Date	
Questionnaire number	
<b>Inno- Food SEE Partner</b>	
Organisation	
Person	
Telephone	
Fax	
E-mail	

## SECTION A - COMPANY GENERAL INFORMATION

A1. Company Legal Name

A2. Reference Person Contact Details

Surname:

Name:

Title:

Address:

Phone:

Fax:

Email:

Website address:

A3. Company Size<sup>5</sup>

☐ micro [ < 10 employees and annual turnover <= EUR 2 million or annual balance-sheet total <= EUR 2 million ]

☐ small [ < 50 employees and annual turnover <= EUR 10 million or annual balance-sheet total <= EUR 10 million ]

☐ medium [ < 250 employees and annual turnover <= EUR 50 million or annual balance-sheet total <= EUR 43 million ]

A4. Year of establishment

A5. *Productive sectors* the company is active in

☐ Production, processing and preserving of meat and meat products

☐ Processing and preserving of fish and fish products

☐ Processing and preserving of fruit and vegetables

☐ Manufacture of vegetable and animal oils and fats

☐ Manufacture of dairy products

☐ Manufacture of grain mill products, starches and starch products

☐ Manufacture of prepared animal feeds

☐ Manufacture of other food products

<sup>5</sup> according to the Commission Regulation (EC) No 70/2001.

☐ Manufacture of beverages

☐ Others, please specify:

A6. Does your company have a *quality certification*? If so, which kind of certification?

☐ ISO9001 for Quality Management Systems

☐ ISO14001 for Environmental Management Systems

☐ ISO22000 for Food Safety Management Systems

☐ HACCP (Hazard Analysis and Critical Control Point) certification

☐ Others, please specify:

A7. Customers type

☐ Large enterprises %

☐ SMEs %

☐ Universities/Research centres %

☐ Retailers %

☐ Government agencies %

☐ Associations / NGOs %

☐ Professionals %

☐ Consumers %

☐ Others, please (specify): %

A8. Customers localisation

☐ Local/Regional %

☐ National %

☐ EU %

☐ ACC %

☐ Others, please specify: %

## SECTION B - INNOVATION STRATEGY

*Innovation consists of the successful production, assimilation and exploitation of novelty in the economic and social spheres. Innovation helps companies conquer new markets or stave off competition. It comes in many different forms, ranging from an invention arising from R&D to efforts to adapt production procedures, tap new markets, use new organisational approaches or create new marketing concepts.<sup>6</sup>*

B1. Does the company's "mission" or "vision" include any reference to innovation?

☐ Yes

☐ No

B2. Are there any concrete objectives in terms of innovation?

☐ Yes

☐ No

If yes, which:

B3. In which areas of your company did you seek for innovation in the past five years?

☐ Production & Processes

☐ Organization

☐ Marketing/Strategy

☐ Others, please specify:

B4. Generally speaking, which *innovation strategy*<sup>7</sup> is being pursued within your company?

☐ *Innovator* [ Characterised as being risk takers: venturesome with substantial financial resources, ability to cope with a high degree of uncertainty, eager to try new ideas, willing to accept an occasional setback or loss ]

☐ *Early adopter* [Whereas innovators are cosmopolitan in terms of social relations, early adopters have more local connections. This category has the greatest degree of opinion leaders who informally influence opinions, attitudes, and/or behaviours about innovations. They convey information that decreases the uncertainty about the use of a new idea. ]

☐ *Early majority* [ Follow with deliberate willingness in adopting innovations, but seldom lead. They follow the innovators' and early adopters' lead.]

<sup>6</sup> European Commission, cfr. COM(1995)688.

<sup>7</sup> Based on the innovation categories defined by Everett M. Rogers (1983).



☐ *Late majority* [Often sceptic. They approach innovations and change with caution, most frequently in response to economic necessity or other pressures. They frequently have scarce resources and respond when almost all of the uncertainty about the innovation has been removed.]

☐ *Laggard* [Traditionalists with totally local and somewhat isolated social networks. They are the last to adopt the innovation. Decisions are typically made in relation to what has been done in the past.]

B5. How innovative are your *products & processes* in comparison with?

The state-of-the-art:

- ☐ Highly innovative  
☐ Innovative  
☐ Less innovative

Your main competitors:

- ☐ Highly innovative  
☐ Innovative  
☐ Less innovative

B6. What are the *main sources of innovation*?

- ☐ Internal R&D department  
☐ External partnership  
☐ Patent acquisition  
☐ New process equipments  
☐ Other

B7. If your innovation activities are organised internally in your company, how are they managed:

- ☐ The responsibility is embedded within the organisational structure  
☐ The responsibility represents an additional task, not continuously foreseen in the organisational structure  
☐ Others, please specify:

B8. If your innovation activities are organised externally, what kind of collaboration do you use:

*Type of innovation actor*

- ☐ Cooperation with research centres/universities

Cooperation with other actors of the sector

- ☐ companies of the sector

☐ consultancy companies

*Geographical dimension*

☐ regional

☐ national

☐ international

B9. Are you interested in the *future* to innovate or purchase innovation and research results in certain areas of your activity? If yes, in which:

☐ Production & Processes

☐ Organization

☐ Marketing/Strategy

☐ Other, please specify:

## SECTION C - COMMITMENT TO TECHNOLOGY

C1. Keywords regarding current company skills and future expected technological development (max 10)

--	--	--	--	--	--	--	--	--	--

C2. Please give a short description of the *production processes / applications of technologies* in your company.

C3. Please describe *core technologies /applications* used in your company.

C4. Please indicate the *technical resources / laboratories* in your company.

C5. Please describe the *technological know-how* of your company (expertises, patents, etc.).

C6. What are the *technologies* that you consider *strategic* for your company and / or for your company's sector ?

C7. Which are the *new or improved products* adopted/developed in your company in the last 5 years?

C8. What are the *main process innovations* implemented in your company in the last 5 years?

C9. Please quantify the *financial resources* allocated to R&D in the last year:

☐ Absolute value:

☐ % of annual turnover:

C10. Please quantify the *No. of man/months devoted to R&D* in the last year:

C11. Please quantify the company R&D expenditure foreseen for the future:

☐ Absolute value:

☐ % of annual turnover:

C12. How is the company's *strategic planning timeframe*?

- ☐ Short term
- ☐ Medium term
- ☐ Long term

C13. How is the *ratio of technology expertise knowledge to the appropriateness of strategic decisions* made in your company?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Moderate
- ☐ Poor

C14. Please describe and name main *existing R&D partners* (other companies, competitors, subcontractors, customers, research centres, universities):

C15. What is the level of the company's dependence on *external technical personnel* related to the sector?

- ☐ High dependence
- ☐ Moderate dependence
- ☐ Low dependence
- ☐ no dependence at all

Please specify why:

C16. What is the level and availability of *skilled labour* in your company needed to make technology innovation?

- ☐ High availability
- ☐ Moderate availability
- ☐ Low availability
- ☐ no availability at all

C17. Are there identifiable and significant *technical barriers* to enter into your market?

- ☐ Yes
- ☐ No

If Yes, please specify:

C18. Do your core technologies allow for future *product or market diversification*?

- ☐ Yes

☐ No

If Yes, please specify:

## SECTION D - INNOVATION & TECHNOLOGY PROJECTS

D1. Have you been involved in *innovation and technology projects in the last past five years?*

☐ Yes

☐ No

If Yes, please describe briefly (for each project):

Name of the project

Duration

Main objectives

Number and type of personnel involved

Role in the project

Budget (overall and SME part)

Overall:

SME part:

What research was undertaken?

What was the outcome of the project?

☐ A new technology

☐ A new product

Please describe:

External cooperation level

☐ regional/national  
consultants

☐ International ☐ external

Results achieved?

Did the results met the partners' expectations?

☐ Yes

☐ No

If No, why:

Overall project evaluation by the company

+

0

-

☐

☐

☐

D2. Does your company *currently perform innovation and technology projects?*

☐ Yes

☐ No

If Yes, please describe briefly (for each project):

Name of the project

Duration

Main objectives

Number and type of personnel involved

Role in the project

Budget (overall and SME part)

Overall:

SME part:

What research is undertaken?

What will be the outcome of the project?

☐ A new technology

☐ A new product

Please describe:

External cooperation level	<input type="checkbox"/> regional/national consultants <input type="checkbox"/> International <input type="checkbox"/> external
<p>D3. Are you interested in <i>promoting an innovation project</i> in the short to medium term?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>If Yes, at which objective should it be addressed:</p> <p><input type="checkbox"/> Production efficiency</p> <p><input type="checkbox"/> Product quality</p> <p><input type="checkbox"/> Process quality</p> <p><input type="checkbox"/> Packaging</p> <p><input type="checkbox"/> Safety</p> <p><input type="checkbox"/> Others, please specify:</p> <p>Would you be interested in external specialized support? If so, which kind of support?</p>	
<p>D4. Does the company have an <i>idea</i> for the development of an innovation project?</p> <p><input type="checkbox"/> Yes, please specify:</p> <p><input type="checkbox"/> No</p> <p>If Yes, is the company interested in developing it within an RTD funded project?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>	
<p>D5. What are the <i>main obstacles</i> that you see for your company to participate to innovation projects?</p>	

**SECTION E – POLICY CONTEXT**

E1. Do you consider *existing policies* (at regional, national and European level) as *favourable and supportive* for being successfully operative in the AgroFood sector in your region?

☐ Yes

☐ No

E2. Are there any *political incentives* given for the AgroFood sector in your region?

☐ Yes

☐ No

If Yes, do you consider any of these incentives as *particularly efficient* for motivating research and innovation activities in companies?

☐ Yes

☐ No

If Yes, please specify:

E3. What kind of *measure/ incentives* do you expect from political side for the AgroFood sector *for the future*?



## SECTION F - STRATEGIC POSITIONING

F1. Classify, from high to low, the following factors for the company's *strategic positioning*:

	Past 3 years		Today		Next 3 years	
	High	Low	High	Low	High	Low
Low price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fast deliveries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meeting delivery dates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of products / services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unique characteristics of products /services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variety of offer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Productive capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quicker introduction of products/services in the market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geographical proximity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

F2. Focusing on your own resources (personnel, organizational aspects, financial aspects, etc.), what do you think are your company's *STRENGTHS*, i.e., capabilities to provide comparative advantages in the AgroFood research sector in your Region?

- |  |  |
|--|--|
| <input type="checkbox"/> Market position           | <input type="checkbox"/> Dedicated R&D Unit  |
| <input type="checkbox"/> Product & Process quality | <input type="checkbox"/> Adoption of highly innovative technologies                    |
| <input type="checkbox"/> Product diversification   | <input type="checkbox"/> Strong networking with private actors (SMEs large companies)  |
| <input type="checkbox"/> Management capacity       | <input type="checkbox"/> Strong networking with public actors (univ. research centres) |
| <input type="checkbox"/> Financial capacity        | <input type="checkbox"/> Geographic positioning  |
| <input type="checkbox"/> Highly skilled personnel  | <input type="checkbox"/> Internationalization  |
| <input type="checkbox"/> Others, please specify:   |  |

F3. Focusing on your own resources (personnel, organizational aspects, financial aspects, etc.), what do you think are your company's *WEAKNESSES*?

- |  |  |
|--|--|
| <input type="checkbox"/> Low innovation commitment | <input type="checkbox"/> No flexible organisational structures                       |
| <input type="checkbox"/> Low technology level      | <input type="checkbox"/> Poor networking with private actors (SMEs, large companies) |
| <input type="checkbox"/> Low financial capacity    | <input type="checkbox"/> Poor networking with public actors (univ. research centres) |

research centres)

- |   |   |
|---|---|
| <input type="checkbox"/> No dedicated R&D Unit          | <input type="checkbox"/> No international orientation |
| <input type="checkbox"/> Insufficient skilled personnel | <input type="checkbox"/> Others, please specify:      |
| <input type="checkbox"/> Lack of time                   |   |

F4. Focusing on aspects outside your control, where do you see *OPPORTUNITIES* for your company, i.e. open up possibilities to capitalize?

- |   |  |
|---|--|
| <input type="checkbox"/> High quality infrastructures to the sector | <input type="checkbox"/> Existing RTD & innovation programmes tailored to the sector |
| <input type="checkbox"/> Research technology offer innovation       | <input type="checkbox"/> Availability of R&D funds for research and innovation       |
| <input type="checkbox"/> Offer of innovation service centres        | <input type="checkbox"/> Increasing demand for more/better varieties                 |
| <input type="checkbox"/> Strong regional/national product identity  | <input type="checkbox"/> Increasing export trends                                    |
| <input type="checkbox"/> Networking possibilities for a, etc.       | <input type="checkbox"/> Others, please specify:                                     |

F5. Focusing on aspects *outside* your control, where do you see *THREATS* for your company, i.e. close off future possibilities?

- |  |  |
|--|--|
| <input type="checkbox"/> No political long-term commitment to the sector | <input type="checkbox"/> Bureaucracy / Regulation barriers                           |
| <input type="checkbox"/> Insufficient incentives addressed to the sector | <input type="checkbox"/> Need of adaptation to new regulations                       |
| <input type="checkbox"/> Scarce funding resources for R&D available      | <input type="checkbox"/> Lack of market information                                  |
| <input type="checkbox"/> Expensive IPR                                   | <input type="checkbox"/> Competition coming from third countries (e.g. China, India) |
| <input type="checkbox"/> Others, please specify:                         |  |

## SECTION G - COMMENTS

Inno- Food SEE partner: