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# FOODWEB Consumer Awareness Study report II Estonia. Finland. Latvia

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## 1. Introduction

This report gives an overview of FOODWEB Awareness Study results and methodology behind it. The study is one part of the European Union granted FOODWEB Project. The aim of the project is to gather existing information on the environmental impacts of food production and consumption on the Baltic Sea and food related risks. From the research material also the relation between awareness and food consumption habits will be studied. The goal is to ease the availability of information, so that consumers can base their everyday food choices to understandable and up-to-date environmental and health information. At the end of the project, nutritional information, environmental indicators and local risk information is gathered to an Internet-page and a database, which is the ground for communication directed to the target groups. The main goals of the project “The Baltic environment, food and health: from habits to awareness – FOODWEB” are (see Vorne *et al* 2011):

1. to raise public awareness about the links between food quality and its origin focusing on the Baltic Sea and its surrounding;
2. to improve consumer knowledge on risks linked to the origin of food;
3. to enhance consumer awareness of their impact on the status of the Baltic Sea;
4. to create new tools to combine and interpret environmental impacts and environmentally based risks to food consumers;
5. to achieve a mutual understanding and self-efficacy in management of the risks;
6. to reach for a renewed cross-border culture for environmentally aware and risk alert food strategy for the food shed of the Baltic Sea.

The Baltic Sea region is affected by industry and human action. Food production and other human activities (for example agriculture) create emissions that cause problems to the Baltic Sea. One of the main problems caused by these emissions is eutrophication of the Baltic Sea. Several harmful substances that originate from human activity can also accumulate into the food resources provided by the Sea. For example, some fish species that accumulate harmful substances can in addition to several positive health impacts also contain health risks. Ecological agriculture and food (seen as less harmful in a health and environmental sense – Granstedt, Seuri, Thomsson 2008) is therefore becoming more popular. Health studies show that people want more information about ecological foods, but also that the price of these food

products are considered to be quite high (Reiman, Laid 2005; Josing *et al* 2006). At the same time people base their food shopping decisions largely on their economical circumstances that therefore do not always support aware eating. The biggest obstacle for the availability of ecological food is the small number of processors while increasing the price as well (Kadarik *et al* 2010).

One factor of aware eating is consumers' awareness about the effects of their consumption habits on the environment. FOODWEB Consumer Awareness Study aims to reflect part of the Baltic Sea region's food consumption habits, awareness of consumption risks to the environment and the Baltic Sea, and relations between these factors.

Consumer Awareness Study is largely connected with the goals and aims of the FOODWEB project. The general target study groups for the FOODWEB project and therefore for Consumer Awareness Study are:

- Experts (government, institutes), market management, small-scale enterprisers, NGO representatives, school and kindergarten managers, hospital/clinics staff and doctors – valuable sources of information of the actual practice, problems, positive outcomes and the process itself.
- School children 6-9<sup>th</sup> grade – developing bodies (risk group), starting to make own food choices, preparing own food; peer pressure is also high, but still depending on parents. Are able to answer some more difficult questions as well and starting to develop their own opinion about food and the environment.
- Families with young children (aged 0-15 years) – parents influencing most of the food choices of their children; values and traditions from home.
- Pregnant women – one of the risk groups that directly influence more than one life.
- Other citizens – to involve more men and older people.

There is little attention on the consumers' awareness of healthy and at the same time environmentally friendly food consumption. Even such foods that are known as healthy foods (e.g. vegetables) can in some extent damage the environmental balance due to its production, storage, preparation or marketing. FOODWEB Consumer Awareness Study aims to study the choices and possibilities for enhancing the habits available to consumers; actual consumption; knowledge and conceptions of healthy and environmentally friendly foods. The main research

question of Consumer Awareness Study is “Which is the knowledge and beliefs base of consumers about food, eating and food related risks, and which factors may influence these aspects?”. The study consists of two parts – questionnaires (separately for adults and students) and expert interviews.

The next chapters give an overview about the FOODWEB Consumer Awareness Study, focusing on the questionnaires. Chapter 2 describes the methodology behind the study, including research methods, sample choice criteria, data collection and analysis methods. It also gives a more specific overview of the adult and student questionnaires, and expert interviews (which are not included in this report). Chapter 3 gives some general and specific information about the study areas in the participating countries – Estonia, Finland, Latvia. There is some general information about the areas included in the study and specific information that is related to the Consumer Awareness Study in particular. Chapter 4 represents the results from the adult and student questionnaires. First, the countries are analyzed together and then separately. Chapter 5 gives some concluding remarks about the report. Both questionnaire forms are available in the Appendixes section in the end of the report.

*All FOODWEB project partners would like to thank all the associations, enterprises, schools, experts and participants for their effort and their time they have put into further development of this project. Your involvement is valued highly!*

*This report reflects the author’s view and the Programme’s Managing Authority cannot be held liable for the information published by the project partners.*

*Project FOODWEB web page: <http://foodweb.ut.ee/>*

## **2. Methodology**

### **2.1. Research methods, sample and data collection**

Consumer Awareness Study uses combined research methods: questionnaires and interviews. Expert interviews give background information that is added later to the questionnaire analysis (see Chapters 2.4 and 2.5 for more information). They are methodologically connected with the questionnaires, aiming to cover these food situation aspects that the questionnaires are not covering – technological and economical side. The questionnaires help to reach the target groups and results are the basis for other stages / future activities of the FOODWEB project (e.g. the related exhibition in AHHA Science Centre in Estonia or the food website etc.). Many experts from all FOODWEB partner countries took part in developing the questionnaire forms. Triin Esko from AHHA Science Centre in Estonia had the main lead in methodological work.

Questionnaires are divided into adult and student questionnaire forms (Ch. 2.2 and 2.3; see Appendix 1 and 2 for accurate questionnaire forms). Questions were divided into four sections: 1) Dietary habits; 2) Conceptions of the food related risks; 3) Conceptions of the Baltic Sea region and food production; 4) Basic information. The first section provides information about the food habits of the respondent and in some extent about one's family. This section includes food choices, agricultural habits and knowledge about dietary issues. The second section studies respondents' beliefs and knowledge that are related to healthy and environmentally friendly behaviour. The third section gives information about the knowledge and beliefs basis that is related to food production. This section emphasizes specifically the Baltic Sea region. The fourth section is about respondents' basic information – gender, age, living place, marital status, nationality, mother tongue, education / grade, workplace, family size and household income. They are used as control variables.

The questions and answer options were mostly the same in each participating country. Answer options that differed in each country were about food labels and about income. Food label question presented different, country specific food labels. Labels were chosen, according to well-known and not so well known markings, and they carry national, organic, health, environmentally friendly and other meaning. Income rates vary between countries and each

country marked the numbers as following: the first answer option represented “very low income”; the second one “low income”; the third one “average income”; and the fourth option represented “high income”. Therefore, the answer options were as shown in Table 1.

**Table 1.** Income answer options in Estonia, Finland and Latvia

	<b>ESTONIA</b>	<b>FINLAND</b>	<b>LATVIA</b>
<i>Very low income</i>	under 300 Euros	under 1500 Euros	under 300 Euros
<i>Low income</i>	300–800 Euros	1500-3000 Euros	300-900 Euros
<i>Average income</i>	800–1300 Euros	3000-6000 Euros	900-1200 Euros
<i>High income</i>	over 1300 Euros	over 6000 Euros	over 1200 Euros

Some other differences between questionnaire forms occurred also. In the adult questionnaire, Finland and Latvia did not have 3 of the answer options in questions Q22a and Q32 that studied sources of information used by respondents about food related environmental risks and about Baltic Sea’s environmental developments. These answer options were “Radio”, “Public lectures” and “Educative organizations”. Estonia did not have options “Tuna filet” and “Coalfish” for question Q7 in adult questionnaire and option “Tuna filet” for question Q2 in student questionnaire about eaten fish species. In Q19 (student questionnaire) about effective learning ways, Latvia had included option “Neutral” as well, making a 4-points scale into a 5-points scale. Only Estonia had included a question of sense of connection with city, country side or seaside – “To which region do you feel closeness, connection the most?” (Q34 in adult, and Q27 in student questionnaire). Estonia did not have answer option “Neutral” in adult questionnaires for Q25 about different learning ways, therefore having a 4-points scale. Corrections to the data set were made accordingly for better country comparisons.

The main research question of Consumer Awareness Study was “Which is the knowledge and beliefs base of consumers about food, eating and food related risks, and which factors may influence these aspects?”. Consumer Awareness Study is focused on the following subheading research questions:

1. Which are the food habits of students and adults in Estonia, Finland and Latvia (questionnaires); and which support / do not support healthy and environmentally friendly food consumption (interviews)?
2. Which are the conceptions about food, food production and food related health and environmental risks (questionnaires)?



3. What is the knowledge about foods, food production and food related risks? Where do people get information about these aspects? (questionnaires)
4. How much are students and adults interested in knowing or learning about food related risks? (questionnaires)
5. Which are the similarities and differences in habits, knowledge and beliefs about food and food related risks between students and adults, countries and people with different background? (questionnaires and interviews)

The target sample of the questionnaires was created based upon the FOODWEB target groups (see Ch. 1). The students were aged 11-17 years (grade 7-9 in Estonia and Finland, grade 6-9 in Latvia) from the selected study areas (see Ch. 3 for further information about the study places). Study areas for the questionnaires and interviews were chosen according to FOODWEB study areas, while some other elements were emphasized as well (rural-urban for agricultural reasons, mainland-coastal for fishing reasons and smaller-bigger areas for industrial reasons). Schools were the study places for distributing student questionnaires. The sample of participating schools was randomly chosen, while keeping in mind the expected respondent number rates. For Finland, the expected student sample size was 700, for Estonia 500 and for Latvia 600. Each country targeted their audience somewhat differently: Finland sent the questionnaires to schools by mail and students filled in the questionnaire under teacher's supervision; in Latvia students filled in a web-based questionnaire at school under teacher's supervision; and Estonia distributed and collected the questionnaires on site. Therefore the return rates varied between countries. In Estonia almost all expected numbers (according to class size) were fulfilled, some losses were due to student absence from school on the day of the questioning. In Finland the return rate varies between schools from 60% to 90%. Latvia's turnout was around 60%. The questioning took place from December to April in Estonia, Finland and Latvia.

Adult questionnaires were aimed to target mostly parents with young children (aged 0-15) who might influence children's meal decisions and pregnant women, whereas they are the interest groups for FOODWEB project (most influenced and influencing groups). In the interest of the study, other groups were also included, to make some comparisons and general conclusions from the study results. For Finland, the expected adult sample size was 700, for Estonia 500 and for Latvia 350. The questionnaires were mostly distributed among the parents of the school children, in kindergartens, maternity clinics, hospitals, family centres, but also in

military institutions (targeting more men) and some in other places. Hospitals, maternity clinics, family centres were primary study places in Estonia for distributing adult questionnaires and giving questionnaire forms to parents of the students that participated in the study was the primary approach for Latvia and Finland. In Finland, questionnaires were also filled in in kindergartens. Estonia included military institutions and sport facilities as additional study places. There was a possibility to answer a computer-based questionnaire, leave the filled questionnaire on site or post the answers. The turnout has not been very good for adults – about ¼ from the distributed questionnaires in all participating countries. Low return rate could be because of the length or difficulty of the adult questionnaire. Other important reason is the impersonal approaching techniques that were used during the data collection (little direct approach).

## 2.2. Adult Consumer Awareness Study

Adult questionnaire was longer than the student one (comprising of 44 questions), but many questions were similar in both questionnaire forms. It took approximately 30-45 minutes to fill it in. Preliminary test questioning took place among some Estonian respondents (10 persons with different background), after what the questions and answer options of adult questionnaire were improved.

Adults had more answer options for some questions than students had. The similar questions and different answer options are marked in the Appendixes section at the end of the report (see Appendix 1 and 2). The questions or answer options that were only in the adult questionnaires were chosen due to the level of difficulty or relevance for adults (according to FOODWEB goals, and other researches or lack of them). The adult questions that differed from the student ones were the following (by different questionnaire sections):

### *I Dietary habits*

- What is your diet like?
- Do you or someone in your household follow a special diet, because of medical reasons? ) If yes, then which special diet?
- Which origin do you prefer the most, when buying or catching fish?
- How often do you usually eat ready or pre-cooked meals that are available in the shops?
- How often do you usually eat organic food products?

- Would you like to use organic food products more often? If yes, then which ones?
- Are you willing to pay more for organic food products than for regular foods? If yes, then for which ones?
- Do you or any of your household members farm, harvest or does gardening? If yes, then how big is the area to farm, harvest or garden? If yes, then which food products you or any of your household members produce? If yes, then which and how much do you or a member of your household use the following substances? Which are the reasons for you or your household member to farm, garden or harvest yourself?
- Do you or any of your family members keep animals?
- Could you say that meal decisions (which foods, how to prepare, where to eat) are mainly based on one person in your household (due to needs, limitations, preferences etc)?
- How would you describe your dietary habits as a whole?
- Which labels from the previous list you have seen on the food products
- Which labels from the previous list you have followed, when buying a food product

## ***II Conceptions of the food related risks***

- Which of the following statements you have heard others talk about? Which of these statements you also agree with?
- Which of these actors encourage or support you into favouring or following vegetarian lifestyle?
- Which of these actors encourage or support you into favouring or following organic lifestyle?
- Which of these actors encourage or support you into diminishing environmental risks in your food choices?

## ***III Conception of Baltic Sea region***

- Based on your knowledge, how the following aspects affect the Baltic Sea or its region?

## ***IV Basic information***

- Marital status
- Main occupation
- What is the average monthly income of your household (without taxes the sum of all incomes, including pensions, allowances etc.)?

### 2.3. Student Consumer Awareness Study

Student questionnaire comprised of 32 questions. It took approximately 25-35 minutes to fill it in. Preliminary test questioning took place among Finnish students (7<sup>th</sup> grade, 22 students). After the test round, student questionnaire was improved and simplified. The student questionnaire had some difficult questions as well that some respondents found hard to answer (mostly in sections II and III), but according to the commentary section and personal feedback, most students enjoyed the questionnaire or found it to be useful for them and the environment. Most students, who commented or gave feedback, felt that it is a necessary topic to deal with. Some students expressed their surprise that the Baltic Sea is related to their food consumption. Few questions (only in the first, dietary habits section) were different from the adult ones, because of their relevance for students (according to FOODWEB goals, and other researches or lack of them):

#### *I Dietary habits*

- Which are your favourite foods and drinks from the list? (Pick 4 foods and 1 drink and circle them)
- How many times do you usually eat during a day?
- How often do you usually eat at school?
- What do you think, how well are you informed about healthy foods and healthy eating?
- Which of these actors encourage or support you into favouring or following a healthy lifestyle?
- How often do you or your family members farm, harvest or do gardening?

### 2.4. Interviews

Expert interviews are an important part of the study, giving information about the food situation, food consumption, food processing and storing, farming and fishing in the study areas, experts' opinion about the food situation and their role in before mentioned aspects. With thorough research about the study areas (statistics, results from other researches), interviews give background and additional information about the possibilities of developing food consumption habits and possible influential factors that affect consumers eating or the healthiness and environmental friendliness of foods in the study areas. Experts are valuable

sources of information of the actual practices, problems, positive outcomes and the process itself, and include:

- Government officials and local administration;
- market and stores management;
- small-scale enterprisers (including ecological shops and local farmers/ fishermen);
- NGO representatives;
- school and kindergarten managers;
- hospital/clinics staff and doctors;
- researchers, scientists.

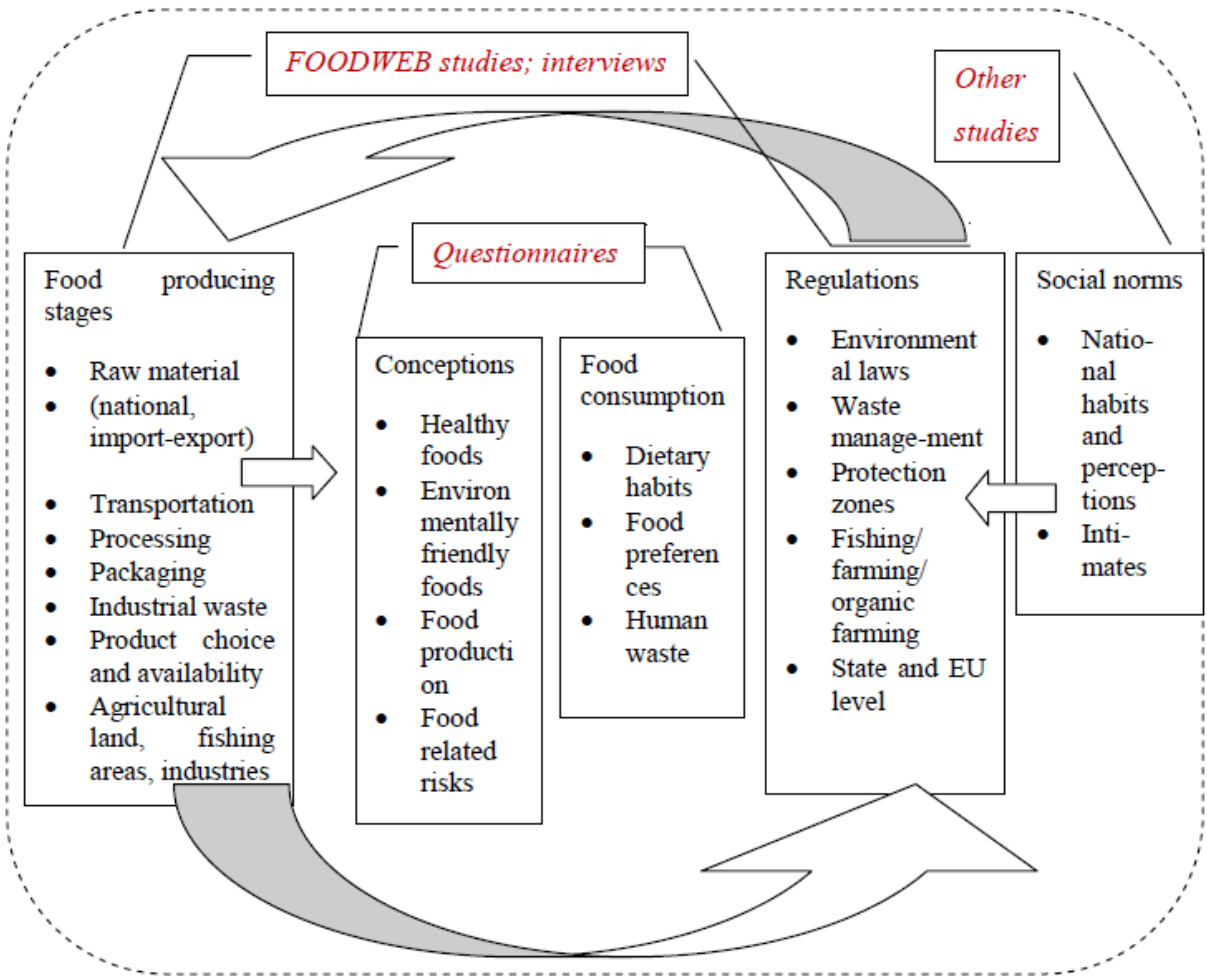
According to their expertise, respondents were asked to answer different questions. Some questions were asked to be filled in a written form (more statistical or specific information), some questions were asked during the interviews (opinions, conceptions, perceptions and general information). The structure of the interviews varied across countries due to different approaches and country situations, while the interview questions focused on the following themes:

- Food consumption and situation
- Food processing, storage and waste
- Agriculture and fishing, related industries and enterprises, local production
- National production, import-export
- Responsibility of the institutions, outcomes and assessment
- Availability and sources of information about food products, their healthiness and environmental friendliness
- Opinions about people's awareness
- Suggestions and current actions for improvement

## **2.5. Data analysis methods**

Data from the questionnaires was gathered in a file in English by all the FOODWEB partners who participated in the Consumer Awareness Study: Estonia, Finland and Latvia. The personal data of the respondents (age, gender, education/grade, nationality, family size and for adults marital status, income) were used as control variables. Data analysis report consists of

basic statistics (figures and percentages), matrix tables and correlations. Further analysis is needed for impact analysis, including interview results and other studies as well. The following Figure 1 shows, how the different stages of FOODWEB studies relate to the general food related elements.



**Figure 1.** Relationship between food related elements and FOODWEB study stages  
*Source: FOODWEB Riga meeting (30.-31.08.2011)*

Statistical programme PASW Statistics 18 was used for making the questionnaire analysis. Data analysis of the questionnaires (except food label analysis) was made by AHAA Science Centre in Estonia about all the countries. The final report of the study results is going to be made public in the official FOODWEB website (<http://foodweb.ut.ee/>). Each country is responsible for how feedback is given to the groups, who participated in the Consumer Awareness Study in their country. This study aims to have a sense of people’s food choices

and opinion about their healthy and environmentally friendly knowledge base or eating habits. The study focused mostly on the target groups, but has some information about the general public as well. The results and report of the study should interest people who participated in the study, people who are interested in the food, health and environmental issues, knowledge seeking students or parents with young children, governmental officials, NGOs dealing with such themes, market managers and other researchers.

### 3. Study areas

#### 3.1. Estonia

Estonian consumers' awareness about healthy nutrition has been considered to be quite good. Research shows that information about healthy food and cooking is largely available to people and many know the basics of a healthy diet. The main constraints for not following these diets, even when knowing the possible negative influences, are financial kind – healthy food products are considered more expensive – or the cooking takes more time than buying a ready or precooked meal. (Toiduliit 2008)

Consumer study in 2008 by TNS Emor stated that Estonians make shopping decisions based on their income (Estonians often look for discounts) and on the assortment provided by suppliers as well as on their inner values. Values are dependent on recommendations from others – especially appreciated recommendations from specialists, acquaintances, sales persons. One part of the decision making triggering mechanisms lies therefore on the food choices made available to consumers. 78% in Estonia buys their food mostly from big food markets (Reiman *et al* 2009). Estonian consumers are aware of the growing popularity of fast food and cheaper, but less qualitative food products (Reiman *et al* 2011:94). Supermarkets may have a large affect on actual consumption – their decisions of marketing and food assortment may also be shaping the habits of consumers.

Parents are on the whole quite satisfied with the ways their children are eating. The main constraints of healthy nutrition are lack of time and limited financial opportunities, but not so much lack of knowledge (Reiman *et al* 2006). Whereas parents' knowledge about children's healthy diet could be mistaken in some extent. For example 16% of the parents give additional vitamins (not all natural) and 10% enriched food to their children on daily bases (Reiman *et al* 2006).

Youngsters' eating habits in Estonia are influenced by family and societal values, peer pressure and financial means. The main factors influencing fish consumption are not very clear, but in some extent the better the financial means of the family, the more likely fish is eaten more than once a week. (Aasvee, Minossenko 2011)



It is likely that these conceptions and consumer habits are similar to which is the environmental thinking about foods.

### 3.1.1. General information about study areas in Estonia

The FOODWEB Project's study area included whole Estonia, which is why Consumer Awareness Study also focused on different regions in Estonia. The main focus was still on the sea region, whereas Latvia and Finland did the same. In Figure 2 is a Baltic Sea map referring to the Estonian coastal area and was used in the Estonian questionnaires for clarifications to the respondents.



**Figure 2.** Baltic Sea area map for Estonia (coastal area indicated with red line)

Study areas that are included in Estonia are Harju, Lääne, Pärnu, Tartu and Jõgeva county. Specifically, study areas close to the sea area are: cities Pärnu, Haapsalu, Tallinn and towns/villages nearby. Mainland study areas are: cities Jõgeva, Tartu and towns/villages nearby. The aim was to choose different cities and towns/villages nearby to have generalizable data for Estonia (town-rural areas, sea-mainland areas, agricultural and fishing areas).

Table 2 shows the size, population and population density of the study areas included (Estonia, cities, county districts on the whole and included cities separately) and Table 3 shows the population by the included counties and by Estonian and Russian population. Table 3 give information about how many questionnaires in Estonian and how many in Russian should be most likely distributed in the study places. At the same time, the table indicates, where to target Russian speaking population to have some kind of a comparison with other researches that have emphasized the difference between Estonian and Russian speaking population in dietary issues. In Table 4 can be found schools distribution in Estonian study areas, according to county (and separately city Tallinn). Schools, who participated in the study, were chosen by random choice method from the list of basic schools or gymnasiums that had also the basic study level.

**Table 2.** Population, size and population density in Estonia (January 2011)

	2011		
	Population	Size, km <sup>2</sup>	Population density, persons per km <sup>2</sup>
<b>Estonia</b>	1 340 194	43 432.31	30.9
<b>Cities</b>	866 986	643.38	1 347.5
<b>County districts</b>	473 208	42 788.93	11.1
<b>Tallinn</b>	400 292	158.27	2 529.2
<b>Jõgeva</b>	6 334	3.86	1 640.9
<b>Haapsalu</b>	11 604	10.59	1 095.8
<b>Pärnu</b>	43 966	32.22	1 364.6
<b>Tartu</b>	103 740	38.80	2 673.7

Source: Statistics Estonia

**Table 3.** Population by county, divided Estonian and Russian population

	All	Estonians	Russians
<b>2011</b>			
<b>Estonia</b>	1 340 194	924 100	341 450
<b>Harju county</b>	528 468	317 625	169 656
<b>..Tallinn city</b>	400 292	221 908	145 020
<b>Jõgeva county</b>	36 550	33 053	2 742
<b>Lääne county</b>	27 283	23 975	2 452
<b>Pärnu county</b>	88 327	77 519	7 989
<b>Tartu county</b>	150 535	125 305	20 110
<b>..Tartu city</b>	103 740	83 654	15 964

Source: Statistics Estonia

**Table 4.** Schools in Estonia by county (2010)

	Basic schools	High schools/gymnasiums	All basic educational schools
<b>2010</b>			
<b>Estonia</b>	253	224	545
<b>Harju county</b>	42	81	136
<b>..Tallinn city</b>	14	60	78
<b>Jõgeva county</b>	10	8	25
<b>Lääne county</b>	14	6	25
<b>Pärnu county</b>	25	13	50
<b>Tartu county</b>	21	27	55

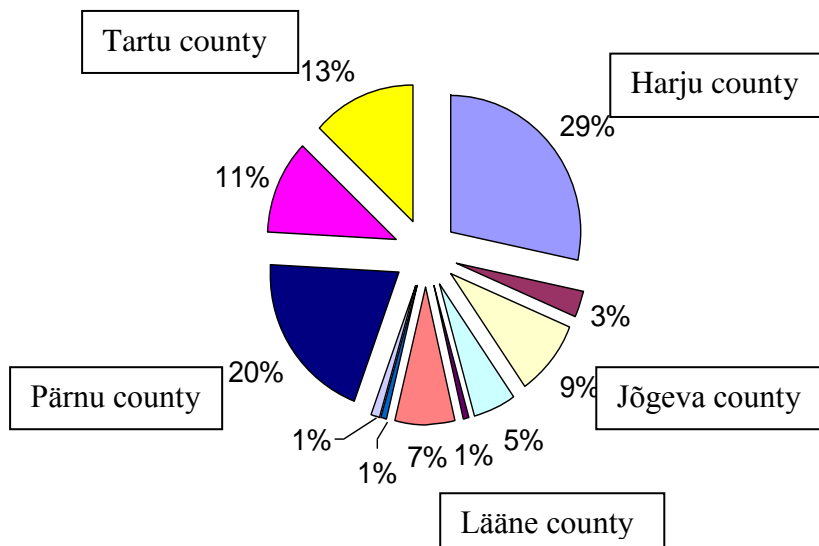
Source: Statistics Estonia

Agricultural areas are Jõgeva, Tartu and most of the villages (see Table 6). Fishing areas are Pärnu, Haapsalu (in some extent Tartu, Jõgeva and Tallinn as well) and their nearby town/villages, while fish industries are located mostly in Harju county (Tallinn), but also in Pärnu and Tartu county (see Figure 3 and 4). Lääne county has somewhat less fish industries (see Figure 3 and 4), but relatively many local fishermen.

**Table 6.** Agriculture by county (ha)

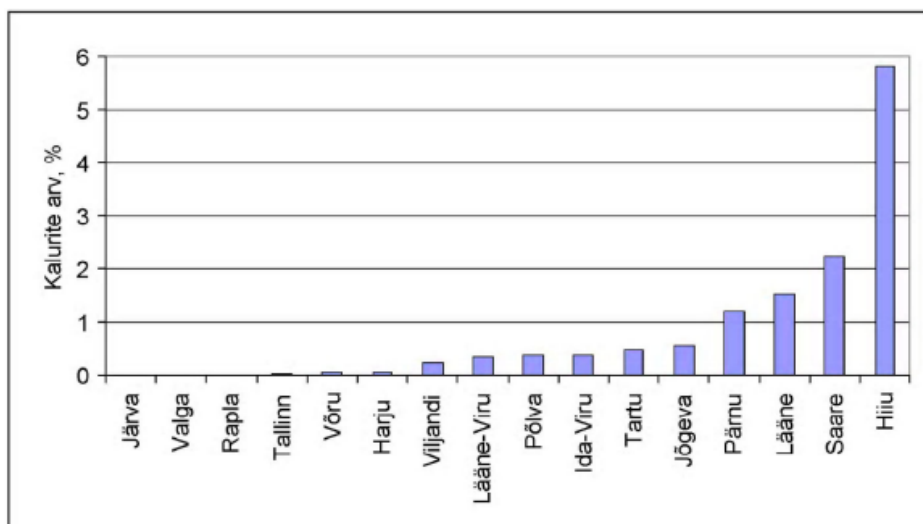
	All agricultural land	Farming land	Fruiter and berries garden land	Natural grassland
<b>2010</b>				
<b>Estonia</b>	948 826	645 067	7 057	187 262
<b>Harju county</b>	63 014	35 501	254	15 086
<b>Jõgeva county</b>	73 098	56 973	227	9 657
<b>Lääne county</b>	51 276	23 441	165	18 885
<b>Pärnu county</b>	85 903	51 826	338	20 502
<b>Tartu county</b>	83 037	68 921	732	7 115

Source: Statistics Estonia



**Figure 3.** Fish industries in Estonia by county

Source: Kangur 2006



**Figure 4.** Local fishermen proportion from working adult population in Estonia, by county

Source: Kangur 2006

Table 7 and 8 represents the list of counties included in the Estonian study, study places, and expected and received numbers of filled questionnaires. Table 7 is about adult study and Table 8 is about student study. Student study places had 5 health promoting schools out of the total of 12 schools.

**Table 7.** Study places for adults in Estonia

NAME	STUDY PLACE	RESPONDENTS NR	NOTES
Pärnu county	Student parents; some teachers; family centres, different enterprises	Distributed: 300	Coastal; bigger
Lääne county	Hospital	Distributed: 270	Coastal; smaller
Jõgeva county	Military institutions; parents of students	Distributed: 50	Mainland; smaller
Tartu county	Different enterprises	Distributed: 50	Mainland; bigger
Tallinn	Family centers	Distributed: 300	Coastal; bigger
		Expected: 500	
		<b>In sum received: 243</b>	

**Table 8.** Study places for students in Estonia

STUDY PLACE	STUDY PLACE	NOTES
Pärnu county	4 schools	Coastal; bigger
Lääne county	2 schools	Coastal; smaller
Jõgeva county	1 school	Rural, industrial area
Tartu county	3 schools	Mainland; bigger
Tallinn	2 schools	Coastal; bigger
		<b>In sum expected: 500</b>
		<b>In sum received: 541</b>

### 3.1.2. Target groups for questionnaires and expert interviews in Estonia

The target groups for Consumer Awareness Study in Estonia follows the target groups for the FOODWEB project:

- Experts (government, institutes), market management, small-scale enterprisers, NGO representatives, school and kindergarten managers, hospital/clinics staff and doctors
- School children 7<sup>th</sup>-9<sup>th</sup> grade
- Families with young children (aged 0-15 years)
- Pregnant women
- Other citizens

The target groups specifically for interviews in Estonia are:

- Governmental officials – county health officials from Lääne, Narva, Pärnu and Harju county; ministry of Agriculture (fish department, food department and food safety managers; marketing and industry department manager); local government officials (dealing with agricultural and fish tasks)

- Marketing managers – the biggest food-chain shops in Estonia (Rimi, Selver, Prisma, A&O); organic shops
- Maternity clinics/general hospitals
- Regional doctor's offices/general practitioners – from the same rural study areas as the questionnaire takes place if possible
- School and kindergarten managers, day care staff – from cities Jõgeva, Tartu, Tallinn, Pärnu, Haapsalu, and villages nearby
- NGO representatives – environmental and food NGOs (Green Movement Estonia)

## 3.2. Finland

*Author: Marja-Liisa Vieraankivi*

Finnish Ministry of Agriculture and Forestry has composed “Food for Tomorrow – Proposal for Finland’s National Food Strategy”. This document was launched in 2010 and it carries a vision for food strategy until 2030.

Some of the biggest problems in Finland related to food and health are growing obesity and related health problems. Preventing obesity is central goal of the health vision of the future. Obesity is a complex issue, which is why the preventive measures should also focus on healthy eating behaviour in a comprehensive way.

One growing nutritional problem is also the decrease in domestic food preparation at home and regular meals. These have been substituted by increased snacking, fast food consumption and use of prepared dishes, which alienate the population from food, its origin and preparation. Interest in a healthy diet requires interest in food and in culinary culture in general. Bringing attention to food qualities other than healthiness also contributes to healthier eating.

Environmentally-friendly consumption calls for further development of both early and adult education. Realistic environmental awareness and product assessment should be founded on solid basic knowledge and the ability to critically search and interpret the available information. Schools and the social media have a central position in this. Theoretical empirical learning should be combined with actions and the food system should be used as a learning environment. All food related guidance should be attached to the total well-being of the consumer and the consumption environment. Good taste, sustainable nutritional production could be combined.

Public food and catering services have a central position in the realisation of such an integrated perspective. One of the key instruments in this is the Finnish Government Resolution of promoting sustainable choices in public procurement. Innovative action founded on local resources is an indispensable counterforce for diminishing diversity in the food chain. The utilization of local and diverse resources is clearly linked to the sustainability

of the local food safety and diversity of the production environment. Such thinking finds support in local and seasonal foods.

School catering is available for free since 1948 in Finland. Finland was the first country in the world serving free school meals. The municipalities are responsible for monitoring and evaluating school meals in Finland. The statutory obligations are based on the following documents:

- The Basic Education Act (628/1998)
- The General Upper Secondary Schools Act (629/1998)
- The Vocational Education and Training Act (630/1998)

The common guideline is to serve a free meal every school day. One school meal should cover 1/3 of daily food requirements. School catering is part of a school's curriculum and in addition of providing healthy foods, there is an obligation to take into account nutritional education and teach manners. If students have some special diets, also follow up their health is obligated. Follow-ups of those students' health, who have some kind of a special diet, are also required.

The base of a school catering is a plate model. It teaches healthy eating habits. In some schools this plate model is visualized to help students make right decisions. The idea is that school meals are pedagogical tools teaching good nutrition and eating habits as well as to increase consumption of vegetables, fruits and berries, full corn bread and skimmed or low fat milk. There has been different kind of campaigns to improve school catering, to increase use of more local and organic food, to provide opportunities for students for involving in their own meal planning and other such mechanisms.

Allowances of school catering differed from one municipality to other. Allowances had decreased in the recent years because of bad financial situation in municipalities. 2010 most of the Finnish municipalities used 50-80 eurocents a day per student for raw material of school meal and total costs are 2 Euros per every meal (including all expenses). For further information, previous studies about school catering and health in Finland could be found (Antti Pulkkinen, "Case study of pupils' school catering- School of Applied Educational Science and Teacher Education" - Master thesis 2011). According to Antti Pulkkinen 42% of secondary pupils believe they follow a healthy diet at the moment. Girls feel they follow a



healthy diet more (48%) than boys (35%) (statistically significant). 58% of students thought that diet is important for health. Girls believed more (68%) than boys (43%) that a diet is important for own health (statistically significant)

### **3.2.1. General information about study areas in Finland**

Finland has distributed 1300 student questionnaires and 1000 adult questionnaires. They have received back 1031 student and 321 adult responses (see Table 9a). 47% of student respondents were girls and 49% were boys; 4% did left gender unanswered. 79% of adult respondents were women and 19% men; 2% did not write their gender. In Finland, student questionnaires were filled at schools during school lesson, supervised by teachers. Students were asked to take the questionnaires to home for their parents. Other adult groups were parents of day care children.

Finland has chosen four areas to be used in this study – Vantaa, Kotka, Länsi-Turunmaa/Parainen and Forssa district. Two of the municipalities (Kotka and Länsi-Turunmaa) are located on the southern coast of the country. Forssa district is an agricultural area with no sea line and only few lakes. Agriculture and farming play a great part in the Forssa district, whereas in Kotka port industry is a big business sector with many employers – one of the biggest harbours in Finland is located in Kotka.

Vantaa has 202 000 habitants. Kotka has almost 55 000 inhabitants, whereas the population of Länsi-Turunmaa is about 15 500. The Forssa district has 17 000 habitants and includes four small municipalities – Jokioinen, Tammela, Humppila and Ypäjä. Two municipalities were included in the questionnaire study areas – Jokioinen and Ypäjä.

**Table 9a.** Studied groups in Finland, by query group and location

<b>Query group</b>	<b>Location</b>	<b>Count of questionnaire</b>
<b>Adults</b>	Jokioinen	59
<b>Adults</b>	Kotka	119
<b>Adults</b>	Länsi-Turunmaa/Parainen	38
<b>Adults</b>	Vantaa	83
<b>Adults</b>	Ypäjä	22
<b>Students</b>	Jokioinen	98
<b>Students</b>	Kotka	352
<b>Students</b>	Länsi-Turunmaa/Parainen	155
<b>Students</b>	Vantaa	351
<b>Students</b>	Ypäjä	75

Before sending questionnaire forms to schools and day cares, some interviews with key actors of municipalities took place with help of an expert. Interviews in Finland included the following actors:

- supervisors of public catering;
- supermarket managers;
- rural services managers and secretary of agriculture;
- day care director / supervisor of early childhood education / supervisors of the child care in different regions of the municipality;
- NGO's.

**Table 9.** General information about the included municipalities Finland

		<b>Kotka</b>	<b>Länsi-Turunmaa (Parainen)</b>	<b>Jokioinen</b>	<b>Ypäjä</b>	<b>Vantaa</b>
<b>The total area (km<sup>2</sup>)</b>		949,74	5 548,25	181,95	183,3	240,4
<b>Land area (km<sup>2</sup>)</b>		271,3	881,8	180,43	182,8	239,6
<b>Inland water area (km<sup>2</sup>)</b>		5,76	7,41	1,52	0,5	0,8
<b>Sea area (km<sup>2</sup>)</b>		672,69	4 659,05	0	0	0
<b>Degree of urbanization</b>		98,5	68,0	66,7	41,3	99,6
<b>Population (inhabitants)</b>		54 824	15 501	5720	2565	200 055
<b>Population density inhabitants/km<sup>2</sup></b>		201,9	17,6	31,67	14,1	832
<b>Families (2010)</b>		14758	4431	1623	705	55 216
<b>Age distribution</b>	0-6	3 634	1 140	438	163	18245
	7-14	4 446	1 526	653	226	20723
	15-64	35 395	9 672	3 597	1 643	139347
	65-74	5 960	1 674	516	239	15330
	75-84	4 022	1 056	378	210	8842
	over 85	1 367	433	138	84	
<b>Economic structure (%) / work-force</b>	Services	72,2	70,1	60,8	54,9	77,8
	Processing	26,4	24,1	31	28,5	21,8
	Agriculture and forestry	0,8	4,9	7,4	15,1	
<b>Statistical classification of municipalities</b>		Urban	Densely populated	Rural	Rural	Urban
<b>Rivers and lakes</b>	Kymijoki branches: Langinkoski, Huumanhaara and Korkeakoski. Laajakosken järvi, Rapakivenjärvi.			Jänhijoki Kiipunjärvi	Loimijoki, Ypäjäjoki Kuusjoki	Vantaanjoki, Keravanjoki, Lepsämäenjoki

## LÄNSI-TURUNMAA



Land area: 881,8 km <sup>2</sup>
Sea area: 4 659,05 km <sup>2</sup>
Population: 15 501

Länsi-Turunmaa (since 2012 called Parainen) is located on the western coast of Finland. The municipality was formed after five smaller municipalities merged in 2009. These municipalities are Parainen, Nauvo, Korppoo, Houtskär and Iniö and they are located in the archipelago. Some of these municipalities are far away from the coast being reached only by ferryboats. The distances between the different municipality areas of Länsi-Turunmaa are long: from the municipality centre, Parainen, to the most distant island Iniö, the distance is 113 km, and the trip takes several hours. The municipality administration is held in the city of Parainen that is the only municipality out of five located inland.

There are commercial fishermen and farming in the municipality area, but no livestock production. Local food is used whenever it's possible and all the potatoes used in public meals are grown in the municipality area. Local fish as well as vegetables is also used when possible. Tomatoes and meat are transported to the area.

There are all together nine secondary schools in Länsi-Turunmaa with students aged 13 to 16, and three of them are located in the municipality area of Parainen where one of them has over 200 students. One bigger school is also located in the island of Korppoo. The local food services are delivering food to all of the schools in the area, but the menu and the origin of foods vary between different places. There are approximately twelve kindergartens in the area of Länsi-Turunmaa, and most of them get their meals from the local food services. There is also at least one private kindergarten with their own kitchen and family day care places make also their own meals.

There is one maternity clinic in each of the islands, so reaching young families through them would be very difficult due to distances and probably the lack of customers. There is one "Family house" in Länsi-Turunmaa, which offers day activities to families with children. Public catering serves daily 3000 lunch portions, schools 40%, elderly people 30%, day care 12% and personnel 18%.

## **FORSSA DISTRICT**

Forssa district is very rural and sparsely populated. In each municipality there is only one school and one kindergarten. The maternity clinics have been united with the maternity clinic of Forssa, which might have been a problem if we would have tried to reach young families / pregnant women through maternity clinics. The Forssa district is located 123 km northwest from Helsinki.

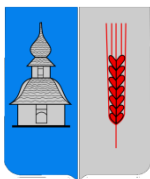
## **JOKIOINEN**



Land area: 180,43 km <sup>2</sup>
Inland water area: 1,52 km <sup>2</sup>
Population: 5700

There is a lot of agriculture and farming in the area. Half of the area of Jokioinen is forest and the other half fields. Approximately 7,4% of working inhabitants are working in agriculture or forestry, which is the smallest account of the municipalities in the Forssa district. There is one secondary school for 13-16 year old children and four primary schools. There are little less than 250 students in this secondary school. There is one kindergarten in the municipality, and probably also some family day care places. There is also a health station and one retirement home.

## **YPÄJÄ**



Land area: 182,8 km <sup>2</sup>
Inland water area: 0,5 km <sup>2</sup>
Population: 2500

Ypäjä is a small municipality with 2539 inhabitants. Most of working inhabitants are in service sector. The Loimiriver valley with its fertile arable land pastures filled with noble horses epitomises Ypäjä`s countryside. Ypäjä`s ancient horse pastures form an exceptionally large area of meadows and forest glades still grazed by horses to this day, are an important part of Finland`s national heritage.

There are two service centres for aged population and a health station, which has dental care, school health care, laboratory and child welfare clinic. There is one school (1-9 classes) and one kindergarten in Ypäjä. Public catering makes daily 450-500 lunch portion, school and day care 300, elderly people 100 and personnel 20-40.

### **KOTKA**



Land area: 271,3 km <sup>2</sup>
Sea area: 672,69 km <sup>2</sup>
Population: 54 824

Kotka is the second largest city in Kymenlaakso County. It is located on the coast of the Baltic Sea, the Gulf of Finland, at the estuary of Kymi river. Kotka is known by its port, industry and maritime festivals. Kotka is also known as a multifaceted city of educational institutions and culture.

Kotka was founded in 1878. Now the population is about 55.000. The area is 750 km<sup>2</sup>, but most of it is water, only 272 km<sup>2</sup> is land. Kotka is located 130 km east from Helsinki and 290 km west from St. Petersburg; the highway now runs through Kotka. In the city there are two centres, Kotkansaari (the Isle of Kotka) and Karhula. The characteristics of Kotka are based on the sea and Kymi river. The port of Kotka is the second biggest export port in Finland. The main traffic consists of timber, paper, metal and stone; nowadays also more and more cars, which are an important part of transit traffic. The port of Kotka is the biggest transit port in Finland.

In Kotka there are basic education schools: 1-6 classes seventeen, classes 7-9 five and upper secondary schools four. There are tree day-care areas: Kotkansaari, Länsi-Kotka and Karhula and in every area there is both municipality kindergarten and private ones. There is also

children's private day-care and open early education. Kotkansaari has 10 kindergartens (5 private), Länsi-Kotka 10 (1 private) and Karhula 16 (3 private). There are 8 retirement homes in Kotka and also 3 health stations and a day hospital. The archipelago of Kotka consists of tens of islands. Public catering serves daily 10 000 lunch portions, hospitals 29%, schools 29%, day cares 8%, service centres 20%, personnel 6%, and private people and events 8 %..

## VANTAA



Land area: 239,6 km <sup>2</sup>
Inland water area: 0.8 km <sup>2</sup>
Population: 200 055

Vantaa is the 4th largest town in Finland by population. It lies on metropolitan area. Official languages are Finnish and Swedish and in addition over 100 other languages are spoken in Vantaa. Airport makes this town very attractive also to enterprises both domestic and foreign.

Vantaa has:

- eight health centres and seven social centres and health centre on-call service in connection with Peijas Hospital (MedOne Oy)
- own primary care hospital (Katriina Hospital)
- three own homes for the aged
- two children's homes and a family rehabilitation centre
- four family counselling centres
- three A-Clinics and a youth centre
- own support unit for volunteer activities
- active councils for the elderly and the disabled

Basic education:

- elementary and secondary schools 53
- students 21 000, operating costs €6788 /student

High school education:

- high schools 8
- students 4000, operating costs €5606 / student

Vocational education:

- institutions 4
- students 3600
- operating costs €6695 / student

Percentage of students representing different linguistic and cultural backgrounds is 13.5%.

Public catering serves daily 35 000 lunch portions, schools 62%, day care 26%, personnel 9% and elderly people 3 %.



### 3.3. Latvia

*Author: Sintija Kuršinska*

#### 3.3.1. General information about study areas in Latvia

Latvia has chosen four study areas so as to cover both coastal regions – Vidzeme coast (located on the Eastern coast of the Gulf of Riga) and Kurzeme (Kurland) coast (located in between the Western coast of the Gulf of Riga and the Baltic Sea), and those are:

1. The Gulf of Riga, Eastern coast (Vidzeme coast) - mainly Salacgriva county and some adjacent towns;
2. The Gulf of Riga, Western coast (Kurzeme coast) – mainly Kolka parish and several towns and villages along the coast (Roja, Engure, Lapmežciems, Mērsrags);
3. The Baltic Sea, Northern coast - Ventspils city;
4. The Baltic Sea, Southern coast - Liepāja city and the adjacent town of Pavilosta.

Latvia has chosen to focus only on those municipalities that are located directly by the sea, and those cities, towns and villages that are closest to the sea. In these areas, the questionnaires have been distributed to the total of 16 schools (for both students and their parents).

**Table 10.** Population, size and population density in Latvia

	2011		
	Population	Size, km <sup>2</sup>	Population density, persons per km <sup>2</sup>
<b>Latvia</b>	2,229,641	64,562	34.5
<b>Project area</b>	1,894,628	50,012	37.8
<b>Salacgriva county</b>	5,752	325,2	18,6
<b>Kolka parish</b>	1,085	116,9	9,3
<b>Ventspils city</b>	41,881	55,36	756,52
<b>Liepāja city</b>	76,500	60,4	1266,5

*Source:* CSB database (2011)

**Table 11.** Schools in Latvia

	Primary schools	Secondary schools/gymnasiums
<b>2011</b>		
<b>Latvia</b>	354	362
<b>Salacgriva county</b>	1	2
<b>Kolka parish</b>	1	-
<b>Ventspils city</b>	3	6
<b>Liepaja city</b>	4	9

Source: [www.skolas.lv](http://www.skolas.lv) (December 2011)

**Table 12.** Agricultural land in Latvia (%)

	All agricultural land
<b>2010</b>	
<b>Latvia total</b>	37,7
<b>Salacgriva county</b>	60,3%
<b>Dundaga county (incl. Kolka parish)</b>	15,3%
<b>Ventspils city</b>	6,6%
<b>Ventspils county (around Ventspils city)</b>	20,6%
<b>Liepaja city</b>	0,9%
<b>Grobina county (around Liepaja city)</b>	41,3%

Source: Agricultural land and woodland changes in the Republic of Latvia as of 01.01.2010 (September 2012.)

## VENTSPILS CITY



Land area: 55,36 km<sup>2</sup>  
Coastal line: 13 km  
Population: 41 881

The city of Ventspils is located in the North-Western part of Latvia and the Kurzeme region where the River Venta meets the Baltic Sea. Ventspils covers an area of 55.36 square kilometres and has a 13 km long coastal line. By land area, Ventspils is the sixth largest city in Latvia and the second largest city in the Kurzeme region. The Southern part of the city has a 140-200m wide and 1,2 km long Blue Flag beach, which is the city's central beach and bathing area. One of the fastest growing industries in Ventspils is tourism.

Ventspils is one of the oldest cities of Latvia. Ventspils was known as a port city during the rule of the Livonian Order; it became a member of the Hanseatic League, an economic alliance of North German trading cities. Taking into account the city's specific location and its ice-free harbour, the principal sector of activity in Ventspils still is transport and storage. Ventspils is the only port in Latvia that the largest vessels of the Baltic Sea can enter. Ventspils Free port has a special economic area status.

Fishing and fish processing industry makes up about 1% of the economic activity. Compared to other Latvian coastal cities, this is a relatively well-developed sector in Ventspils, with 14 companies currently in operation. In 2008, the total of 214 people were employed in the fishing and fish processing industry, which was around 1,3% of all the employed in the city. The largest amount of fish caught is made up by sprat.

Source: [www.ventspils.lv](http://www.ventspils.lv)

## LIEPĀJA CITY



Land area: 60,4 km<sup>2</sup>

Coastal line: ~15 km

Population: 76 500

The city of Liepāja is located in the South-Western part of Latvia and the Kurzeme region, on the coast of the Baltic Sea, and is the third largest city in Latvia. From inland, it is enclosed by Lake Liepāja and Lake Tosmare. The beginnings of Liepāja date back to the 13<sup>th</sup> century when a village was founded between the lake and the sea.

Liepāja is a port city and the port is handling wide spectrum of transit cargos. Today Liepāja is the 3rd largest port in Latvia with dynamic growth of assets turnover. For passengers there is a ferry line Liepāja-Lübeck, but those travelling with a yacht can moor it in the Trade Channel almost in the very city centre. With its university, it is also a city of students. Liepāja is a city successfully combining manufacturing traditions, an ice-free port, great intellectual potential and rich historical and cultural heritage. The main industries are metal processing, textiles, food, paper production, ship building.

In the fishing and fish processing industry, the total of 32 companies is currently in operation. In mid-2011, these companies employed 781 people, which is 2.7% of all people employed in Liepāja-based companies.

The Liepāja Blue Flag beach is said to have the whitest and finest sand in the world. Liepāja also boasts the largest historical military territory in the Baltic – Liepāja fortress and Karosta {Naval Port) Karosta prison – the only military prison in Europe open to tourists. Liepāja is a “green” city, as 35% of its total area is taken up by greenery and natural areas, including parks and gardens, forests and waters.

Source: [www.liepaja.lv](http://www.liepaja.lv)

## SALACGRĪVA COUNTY



Land area: 325,4 km<sup>2</sup>

Coastal line: 19,5 km

Population: 5752

The Salacgrīva county is located in the North-Eastern part of the Gulf of Riga and the Western part of the Vidzeme region. The Salacgrīva county lies within the territory of the North Vidzeme Biosphere Reserve and includes Salacgrīva town (with its rural area), Ainaži town (with its rural area) and Liepupe parish. The Salacgrīva city area is 12,57 km<sup>2</sup>, rural area - 312,83 km<sup>2</sup> (with 36,6% forests and 60,3% agricultural land). The municipality has a 19,5 km long sea border along The Gulf of Riga. The municipality has the total of 5,752 residents.

The historical development of the Salacgrīva village was related to the development of shipping in the Gulf of Riga. During the Soviet period, its economic life experienced considerable changes, beginning with the establishment of the fish factory and the fishermen association *Brīvais vilnis*. With the development of the fishing industry, a new port was built, new residential houses appeared, and the number of residents was on an increase. Later on, the Fishermen’s Park was built in the Northern part of the city, which hosts the annual Fishermen’s festival, and as of 2001 – also the Sea Festival.

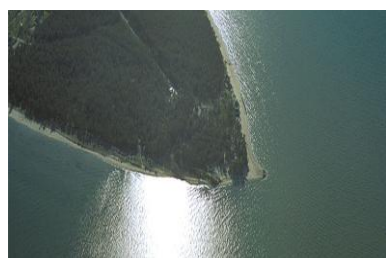
The municipality has two ports – the Port of Salacgrīva, mainly used for cargo transportation, and the Kuiviži Port, used by local fishermen and hosting a Yacht club and wharf for boats and yachts. The Port of Salacgrīva is situated in the furthest Northern area in Latvia, located at the outfall of the River Salaca, 100 km from Riga and 13 km from the Latvian-Estonian border. In historical records, it has been mentioned as a port of Livonian archbishop already in the year 1368. Starting from the 2<sup>nd</sup> half of the 19th century, the Port of Salacgrīva is an important entrepot of agricultural and timber products in the Vidzeme region. By the end of the 20th century, the Port of Salacgrīva became an active participant of European cargo transportation market when from a local fishing port it became an entrepot of timber products, woodchips and other cargo.

Salacgrīva is famous for its lamprey. Nowadays only in Salacgrīva weirs are still used for lamprey fishing - a unique fishing technique with a centuries-old history. The River Salaca is very rich in fish. It has the largest natural salmon population in the whole East Baltic region, and has been awarded a salmon river status that provides for a special protection regime. The county has 4 fish processing companies.

Salacgrīva aims at becoming a „green” municipality and has put it on its political agenda through the recent *Declaration on the Green County*.

Source: [www.salacgriva.lv](http://www.salacgriva.lv)

## KOLKA PARISH



Land area: 116,9 km<sup>2</sup>

Coastal line: 38 km

Population: 1085

The Kolka parish is situated in the most Northern point of the Kurzeme region and is one of the two parishes of the Dundaga county (formed by merging the Dundaga and Kolka parishes in 2009, area - 674 km<sup>2</sup>, population - 4740). It is the meeting point of the Baltic Sea and The Gulf of Riga, forming the Kolka Cape, which makes it a unique place in Latvia. The overall length of the coastal line in the parish is 38 km from which 10 km are the coast of the Gulf of

Riga. Around 96% of the parish area is within the territory of the Slitere National Park, where economic activity is fairly limited.

Kolka parish consists of 8 fishing villages. From time immemorial, the livelihood of people there was fishing and also today the most developed branches are fishing and fishery. There exists both controlled industrial fishing as well as coastal fishing for self-consumption. Industrial fishing takes place all the year round with a different intensity (depending on weather and climate conditions) with the peak season from April to September. There are about 10-20 species of fish in the industrial catch, but dominating are the Baltic herring, sprat and flounders. The yearly catch is generally made up by 300-600 tons of Baltic herring and 30-60 tons of flounder. Catch of other fish species is of little importance. In the last years, coastal fishing as the only and permanent source of income is solely for a small part of fishermen.

North-Kurzeme and particularly Kolka are also of heritage value for tourists as a last area compactly settled with the Livs – the second primary nationality of Latvia who have historically lived along the shoreline as fishermen. Over the centuries, this nationality was step by step assimilated by Latvians, and the Livonian language disappeared as a communicative tool in the middle of the 20<sup>th</sup> century. But even now Kolka has kept the cultural heritage of the Liv ethnos and is the only so-called Livonian village which was developed during the past 50 years. The Liv culture has a rich cultural heritage including their own specific cuisine and dishes. Tourism and eco-tourism is growing slowly but progressively (influence of the Slitere National Park), and coastal fishing is increasingly being involved in the tourism industry, especially in the summertime.

Source: <http://www.dundaga.lv/kolka/pagasts>

Latvia had 18 schools, where they distributed the student questionnaires and to parents of those students (see Table 13).

**Table 13.** Questionnaire distribution in study areas in Latvia

Area	School	Questionnaires sent	
		Students	Adults
Ventspils City, Ventspils county	2 schools	210	218
Liepaja City	3 schools	206	210
Salacgriva town, Ainazi town, Liepupe town in Salacgriva county	3 schools	293	300
Pavilosta town, Pavilosta county	1 school	54	55
Zvejniekiems, Saulkrasti county	1 school	118	118
Carnikava county	1 school	80	80
Kolka parish, Dundaga county	1 school	40	40
Lapmežciems parish	1 school	49	49
Mērsrags county	1 school	25	25
Engure county	1 school	60	80
Roja county	1 school	50	137
	<b>TOTAL SENT:</b>	<b>1185</b>	<b>1312</b>
	<b>In Sum received</b>	<b>619</b>	<b>576</b>

## 4. Analysis and results

### 4.1. Estonia, Finland and Latvia together

#### 4.1.1. General statistics

Adult and student questionnaires had 3310 respondents from Estonia, Finland and Latvia, whereas 2189 of them were students and 1121 adults. 94% of the respondents are Estonians, Finns or Latvians, and speak native main language. There are 50% male and 50% female students; and 17% male and 83% female adult respondents. Student respondents are 11-17 years old and average age is 14 years. Adult respondents are 18-81 years old and their average age is 40 years. Most of the students are from 7-9<sup>th</sup> grade, Latvia had involved also the 6<sup>th</sup> grade (139 students – about 8%). There are 32% 7<sup>th</sup>, 33% 8<sup>th</sup> and 28% 9<sup>th</sup> graders. For further specifications, see Table 14 and 15.

Most of the adult respondents have academic higher education (41%), others have vocational (24%), secondary (22%), unfinished academic (7%), basic education (6%) and 6 respondents had primary or less education. 71% of adults are full-time employees, 8% are managing the household, 5% are part-time employees and 5% enterprisers (others – Table 16 and Figure 3). 42% have low average total income of household (all revenues without taxes), 29% have average income, 15% high and 8% less than low income. Most adult respondents are married (61%) or living with a partner (20%) (others – see Table 17 and Figure 2).

**Table 14.** General student statistics, by country

	Male	Female	6 <sup>th</sup> grade	7 <sup>th</sup> grade	8 <sup>th</sup> grade	9 <sup>th</sup> grade	Average age	Majority nationality
<b>Estonia</b>	51%	49%	-	31%	42%	27%	14	88%
<b>Finland</b>	51%	49%	-	36%	34%	30%	14	98%
<b>Latvia</b>	48%	52%	23%	23%	28%	26%	14	99%
<b>TOTAL</b>	<b>50%</b>	<b>50%</b>	<b>8%</b>	<b>32%</b>	<b>33%</b>	<b>28%</b>	<b>14</b>	<b>94%</b>



**Table 15.** General adult statistics, by country

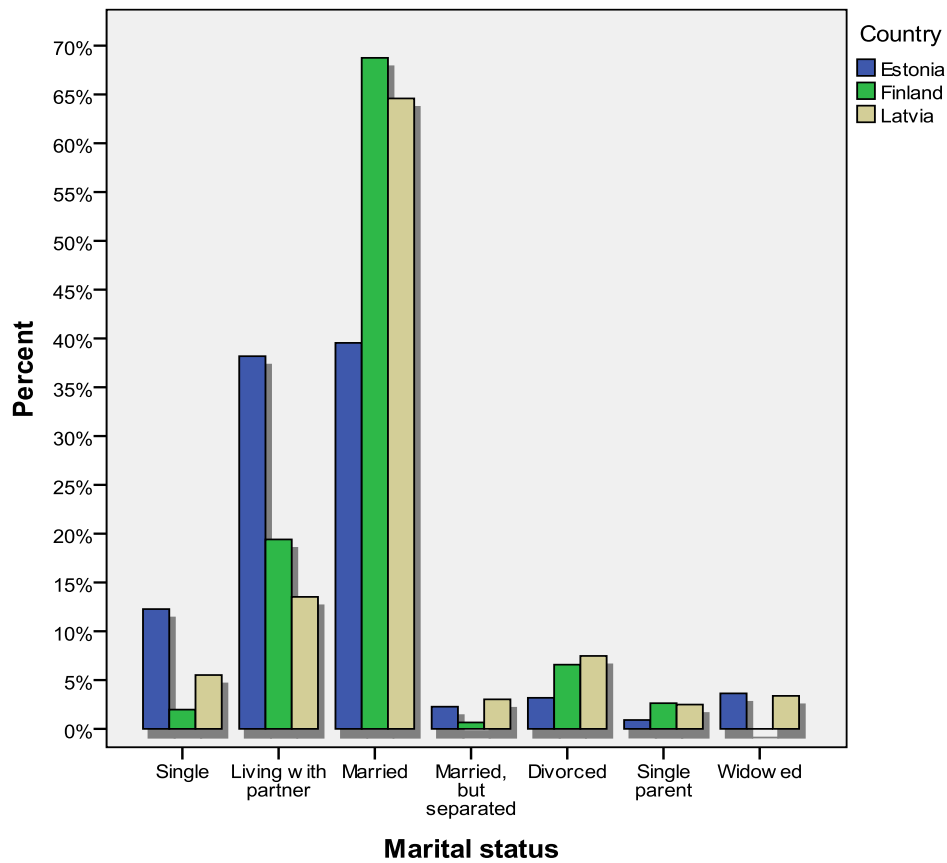
	Male	Female	Academic higher	Vocatio- nal	Secondary	Other	Average age	Majority nationality
<b>Estonia</b>	24%	76%	46%	20%	21%	14%	36	87%
<b>Finland</b>	19%	81%	35%	25%	24%	16%	41	98%
<b>Latvia</b>	12%	88%	42%	26%	20%	12%	42	95%
<b>TOTAL</b>	<b>17%</b>	<b>83%</b>	<b>41%</b>	<b>24%</b>	<b>22%</b>	<b>13%</b>	<b>40</b>	<b>94%</b>

**Table 16.** Main occupation of adult respondents from all 3 countries (N and %)

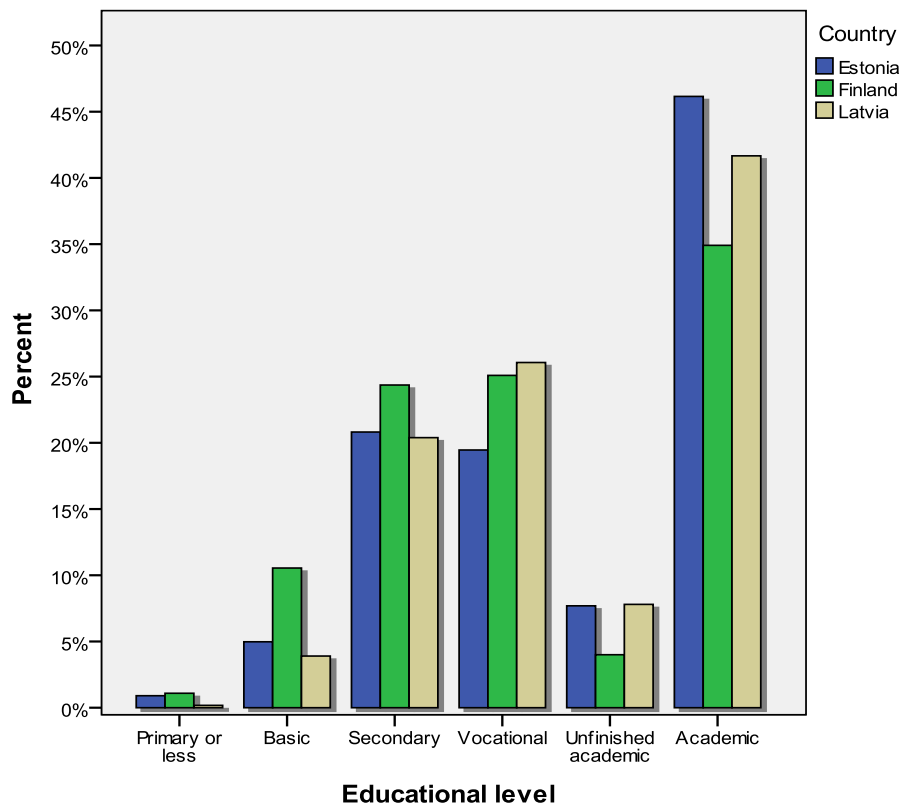
	N of respondents	% of respondents
<b>Full-time employee</b>	754	71%
<b>Part-time employee</b>	57	5%
<b>Employer</b>	15	1%
<b>Enterpriser</b>	54	5%
<b>Farmer</b>	12	1%
<b>Fisherman</b>	1	0,1%
<b>Unpaid worker in family business</b>	10	1%
<b>Student</b>	23	2%
<b>Unemployed</b>	38	4%
<b>Retired</b>	23	2%
<b>Managing the household</b>	81	8%

**Table 17.** Adult respondents' marital status, 3 countries together

	N of respondents	% of respondents
<b>Single</b>	64	6%
<b>Living with partner</b>	219	20%
<b>Married</b>	659	61%
<b>Married, but separated</b>	24	2%
<b>Divorced</b>	69	6%
<b>Single parent</b>	24	2%
<b>Widowed</b>	27	3%



**Figure 2.** Marital status, by country (%)



**Figure 3.** Educational level, by country (%)

#### 4.1.2. Dietary habits

Most adults are, as expected, omnivores (97%). There are 18 persons who don't eat red meat and 4 pescovegetarians (eating fish, but not meat), only 1 lacto-ovo vegetarian (eating dairy products and eggs, but not meat or fish) and 1 vegan. Some had also reported to have some other diet (mostly that they have low-carbohydrate or no fish diet). 13% of the adult respondents or their household members follow a special diet, mostly low-carbohydrate (31%) or lactose-free / low lactose diet (31%), but people noticed also that they do not eat milk, some milk products or fish. Few have marked down that they use organic, low-fat or just healthier foods.

47% of adults and 38% of the students stated their diet has not changed in the last few years, 33% of adults and 31% of students think they have started to eat healthier. Noticeable is that quite a lot of students (13%) have changed their diet due to weight control, although only 4% (90 persons) have noted that doctor recommended or insisted to change their diet, and only about 1/3 of those pupils have marked down both answers. Most of the respondents or their household members (81% of adults and 80% of students) did not have allergies / illnesses / limitations or beliefs that affect their eating; others had some limiting factors that affect their eating habits.

From the provided food list, respondents preferred eating fresh vegetables, fruits, black bread, cheese and other milk products over some processed foods. Potatoes are more often eaten than rice or pasta. Fish and other seafood are also eaten quite often, whereas 1% of adults and 5% of students do not eat seafood at all. Some more dietary differences could be found between adults and youngsters (marked with bold, see Table 18). Most often used meat product varied between countries. Most used or known fish are salmon (Baltic and farmed), herring and canned tuna, but also sprat, flounder and perch. Least often mentioned fish species were burbot and roach. Fish sticks are the most favourite for students. 4 adults have mentioned that they do not eat fish at all, whereas for children, this number was 193 (9% of all students). Many adults, who buy or catch fish, do not prefer any particular origin or cannot answer the question (30% of all respondents). Most adults preferred fish from local lakes, rivers, ponds or the Baltic Sea (respectively 25% and 31% of all respondents), other seas, ocean, fish farms or other waters were not that popular for the first choice.

**Table 18.** Adult and student food preferences from the provided item list

	Average*		% of respondents eating it often (at least 4-7 days a week)		% of respondents eating it very rarely or never	
	Adults	Students	Adults	Students	Adults	Students
<b>Seafood</b>	3,5	3,3	3	4	5	16
<b>Beef</b>	3,0	3,6	5	19	32	15
<b>Chicken</b>	3,9	4,9	15	14	3	17
<b>Pork</b>	4,0	3,6	26	24	6	17
<b>Whole-grain products</b>	4,4	-	43	-	5	-
<b>White bread</b>	4,1	4,2	40	31	12	3
<b>Black bread</b>	4,7	4,0	<b>62</b>	<b>31</b>	9	8
<b>Nuts or seeds</b>	3,5	4,5	<b>12</b>	<b>51</b>	2	6
<b>Muesli, breakfast cereals</b>	3,3	4,4	<b>14</b>	<b>49</b>	<b>27</b>	<b>7</b>
<b>Fresh vegetables</b>	4,9	4,3	<b>66</b>	<b>46</b>	1	7
<b>Frozen vegetables</b>	3,4	3,2	14	13	22	25
<b>Fruits</b>	4,9	4,8	66	63	1	2
<b>Hamburger</b>	2,5	3,1	6	7	<b>48</b>	<b>19</b>
<b>Chips</b>	2,6	3,3	1	8	<b>45</b>	<b>14</b>
<b>Eggs</b>	4,0	3,5	21	14	2	13
<b>Berries</b>	3,6	3,6	15	16	10	12
<b>Rice, pasta</b>	3,9	4,1	<b>16</b>	<b>30</b>	3	3
<b>Cheese</b>	4,8	4,5	<b>63</b>	<b>53</b>	1	5
<b>Other milk products</b>	5,2	5,0	75	71	1	2
<b>Potatoes</b>	4,6	4,7	<b>53</b>	<b>63</b>	1	1
<b>Fries</b>	2,7	3,3	1	9	40	14
<b>Mushrooms</b>	2,5	2,3	1	4	47	60
<b>Sweets</b>	4,2	4,4	<b>31</b>	<b>41</b>	3	3

\*- 6-points scale (6 the highest ranking, 1 the lowest ranking)

Most pupils eat 2 or more times a day (97%), whereas 2% eat usually 1 time a day and 0,6% some days nothing. 76% of students eat at school 4-5 times a week, 12% 1-3 days a week and 12% rarely (of which 4% never). Some children have written in the commentary section that meals are not healthy or tasty enough in their school. Adults and students eat mostly home-made food (the largest part of respondents eat at home every day at least once), but also ready or pre-cooked meals (45% of adult some times a month) or out (38% of adults and 53% of children some times a month).

People eat organic foods mostly some time in a month (27% of all), some very often (16%), 1-3 times a week (19%), some use them rarely (20%) and 4% do not eat organic foods at all.

14% could not answer to this question. People want to use more organic products (59% definitely and 35% somewhat more often), but they are not willing to pay more for organic food products (66% are somewhat willing and 27% not at all willing to pay more for them). Vegetables, fruits and berries, and meat products are the most often mentioned organic food products people wish to use more often and also to pay more for them. Noticeable is that adults are willing to pay more for meat and fish products more strongly than to use them more often, whereas with other organic food products, this tendency do not occur that distinctively (see Table 19).

**Table 19.** Willing to use organic food products more often and willing to pay more for them, according to product category (%)

	Willing to use more*	Willing to pay more*
<b>Grain products</b>	11%	11%
<b>Milk products</b>	13%	13%
<b>Other drinks</b>	3%	2%
<b>Meat products</b>	15%	16%
<b>Fish products</b>	9%	10%
<b>Vegetables</b>	16%	16%
<b>Fruits and berries</b>	14%	14%
<b>Eggs</b>	11%	10%
<b>Honey</b>	8%	6%
<b>Something else</b>	0,4%	0,5%

\*- Possible to mark down several answers, % of respondents answering the question with the option

For both adults and students, most important food product features are delicious, good for health, previous experience and especially suitable for children. National or local and own production, low salt, sugar and fat content are somewhat more important for adults than for pupils. Animal rights and environment protection is important for rather more students than for adults. Socially ethical production is not that important for adults; producer or label, low sugar, salt and fat content are least important for both groups. When comparing different countries, some differences can be found in the importance of different food characteristics. Estonians do not value national production so much as Latvians and Finns do. Finns think that ease of preparation is more important to them than for other countries. Producer or label, also no additives and GMO content are valued food features by Latvians more than by other countries' respondents.

**Table 20.** The importance of adults' and students' food choice characteristics

	Average *		% of respondents finding it to be quite or very important		% of respondents finding it to be not very or not at all important	
	Adults	Students	Adults	Students	Adults	Students
<b>Cheap or special sales offer</b>	3,0	2,6	78	55	22	45
<b>Attractive appearance</b>	3,0	2,7	76	60	24	40
<b>Delicious</b>	3,7	3,7	97	96	3	4
<b>Easy or fast to prepare</b>	2,7	2,5	60	47	40	53
<b>National/ local production</b>	3,2	2,4	<b>82</b>	<b>44</b>	<b>18</b>	<b>56</b>
<b>Socially ethical production (e.g. fair trade)</b>	2,3	-	39	-	61	-
<b>Good for me or my household member's health or weight</b>	3,2	3,0	86	76	14	24
<b>Amount of energy</b>	2,5	-	47	-	53	-
<b>Animal rights/ environment protected</b>	2,2	2,2	33	76	67	24
<b>Own production/ production of an intimate</b>	2,9	2,2	68	30	32	70
<b>Producer or label</b>	2,5	2,1	49	27	51	73
<b>No food additives, preservatives</b>	3,1	2,3	76	36	24	64
<b>Low salt content</b>	2,6	2,1	<b>54</b>	<b>26</b>	<b>46</b>	<b>74</b>
<b>Low sugar content</b>	2,6	2,1	<b>53</b>	<b>28</b>	<b>47</b>	<b>72</b>
<b>Low fat content</b>	2,6	2,3	<b>56</b>	<b>38</b>	<b>44</b>	<b>62</b>
<b>Previous experience</b>	3,4	2,8	90	66	10	34
<b>Without genetically modified ingredients</b>	3,1	-	72	-	28	-
<b>Organic production</b>	2,7	-	57	-	43	-
<b>Especially suitable for children</b>	3,0	2,8	73	64	27	36
<b>Recommendation from others</b>	-	2,5	-	48	-	52
<b>Something else</b>	2,9	2,8	63	63	37	37

\*- 4-points scale (4 the highest ranking, 1 the lowest ranking)

Adults are mostly following medical recommendations of a healthy diet (6% regularly and 25% some of the recommendations), but 32% do not limit their dietary habits and 11% found it was not an important issue for them. 20% follow other guidelines for healthy eating, and 5% find it difficult to follow medical recommendations. 74% of adult respondents agree that food related health risks interest them, while only 52% follow actively notifications concerning the healthiness of food and 32% check on what kind of information the notifications are based on. Students feel that they are quite well informed about healthy eating – 68% are well informed, 31% know less and 1% feels they know nothing. There are no significant differences between boys and girls in this matter. 53% of students thought that health related issues interest them, while 15% were not so interested.

Most important sources of food and eating habits for adults are friends, Internet sites, newspapers / magazines, but also TV and books about food and diets. Least important sources of information are state and European Union recommendations. Only 0,5% of all respondents do not follow this kind of information at all (no significant differences between men and women). For students, most important and frequently used sources were family, TV and the Internet, but also school in some extent. See also Table 20. 49% of the adult respondents and 50% of students feel that food related information changes too fast to believe it, while only 14% disagree with it.

**Table 21.** Sources of information about diets and dietary recommendations, adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	8%	9%	5%
<b>Friends / acquaintances</b>	12%	12%	13%	15%
<b>Family members</b>	<b>8%</b>	<b>18%</b>	<b>9%</b>	<b>22%</b>
<b>Internet sites</b>	13%	13%	16%	17%
<b>TV</b>	12%	14%	11%	16%
<b>Radio</b>	5%	-	2%	-
<b>Public lectures</b>	2%	-	1%	-
<b>Educative organizations</b>	2%	-	1%	-
<b>Newspapers/ magazines</b>	<b>14%</b>	<b>9%</b>	<b>18%</b>	<b>7%</b>
<b>Work/ Study place</b>	<b>5%</b>	<b>13%</b>	<b>5%</b>	<b>12%</b>
<b>Advertisements/ pamphlets</b>	5%	6%	3%	2%
<b>State recommendations</b>	2%	-	1%	-
<b>EU recommendations</b>	1%	-	0,2%	-
<b>Books</b>	9%	6%	11%	3%
<b>Something else</b>	1%	0,8%	0,3%	0,5%
<b>Don't follow</b>	0,5%			
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

48% of the respondents farm, harvest or do gardening for personal use, 6% of adults for non-personal use and 48% persons do not agriculture. 12 adults do it for both, personal and non-personal reason. 71% of the students have stated that they or their family members are doing some kind of agricultural or farming activity, while 29% of them do not. Adults mostly use manure fertilizers in their agricultural land (64% of land owners), but not very often other substances – pesticides and bug sprays are used often in 5% of the cases, poisons 2%, chemical fertilizers 9% and herbicides 11% of the cases.

People are mostly producing vegetables, fruits and berries. They farm for mostly practical reasons (land ownership and it is stated to be cheaper), but also for better and healthier food for themselves or their family. Only 11 adults thought that the reason to agriculture is to protect the environment and 1 person that to protect animal rights.

Adults want to use more organic foods, but they are not so willing to pay more for them (see Table 22). They mostly want to use more organic meat products and vegetables, fruits, berries. They are willing to pay more for them as well, while for organic fish and meat products they are especially willing to pay more.

**Table 22.** Wanted consumption of organic food products and production of food products

	Want to use more*	Want to pay more*	Self-produced*
<b>Grain products</b>	11%	11%	3%
<b>Milk products</b>	13%	13%	4%
<b>Other drinks</b>	3%	2%	2%
<b>Meat products</b>	15%	16%	5%
<b>Fish products</b>	9%	10%	2%
<b>Vegetables</b>	16%	16%	35%
<b>Fruits and berries</b>	14%	14%	37%
<b>Eggs</b>	11%	10%	8%
<b>Honey</b>	8%	6%	4%
<b>Something else</b>	0,4%	0,5%	1%

\*- Possible to mark down several answers, % of respondents answering the question with the option

Students were asked to assess which actors supports them to follow a healthy lifestyle – 41% said that their intimates support or encourage them to follow this, schools were mentioned in 20% of the cases, recreation clubs and general public received both 13%, and food market only 6%. 4% of the pupils felt that none of these actors support them and 4% that they do not follow or know about a healthy lifestyle.

#### 4.1.3. Conceptions of the food related risks

Adults are mostly somewhat aware of the environmental risks related to food production, storage and consumption – 48% of adults and 45% of children have heard about them in some extent, 24% of adults and 31% of students of them not very much, 9% of adults and 10% of pupils not at all, and 18% of adults and 15% of children a lot. Girls are somewhat more



interested in learning more about environmental risks ( $r = -0.28$ ,  $p < 0.01$ ), but they do not have more knowledge about this issue. Adults are rather interested in food related environmental risks (57% agree and only 8% disagree with that statement). Students stated that environmental and animal rights issues are generally also important subjects for them – 47% felt that and 17% disagreed with the statement. 33% of the respondents do not understand many of the chemical food ingredients' effects on the environment, while 38% feel they do. Respondents feel that food production related information is too contradictory to understand it – 44% of adults and 36% of the students agree with this statement, and 13% of adults and 23% of pupils disagree.

Those adults, who have heard more about food related environmental risks, also understand more the effects of food chemical ingredients on the environment ( $r = -0.24$ ,  $p > 0.01$ ) and they are also more interested in those issues ( $r = -0.28$ ,  $p < 0.01$ ). Those who are interested in environmental issues in general, are also more interested in learning more about them ( $r = -0.37$ ,  $p < 0.01$ ). These findings indicate that more knowledge in these issues means also more interest in it and more knowledge in other aspects related to it.

Most of this kind of information for adults comes from television or from paper media and these sources are also most important ones for those adults, who have knowledge about these risks. Most important and frequently used sources of information for students are family, the Internet and TV. Frequently used source for pupils was also school, but it was not one of the most important ones.

**Table 23.** Sources of information about food related environmental risks, adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	8%	8%	14%
<b>Friends / acquaintances</b>	10%	11%	10%	10%
<b>Family members</b>	<b>7%</b>	<b>15%</b>	<b>8%</b>	<b>21%</b>
<b>Internet sites</b>	15%	16%	17%	16%
<b>TV</b>	20%	18%	20%	17%
<b>Radio</b>	2%	-	2%	-
<b>Public lectures</b>	0,3%	-	0,7%	-
<b>Educative organizations</b>	0,3%	-	0,7%	-
<b>Newspapers/ magazines</b>	<b>18%</b>	<b>9%</b>	<b>19%</b>	<b>7%</b>
<b>Work/ Study place</b>	<b>5%</b>	<b>12%</b>	<b>4%</b>	<b>9%</b>
<b>Advertisements/ pamphlets</b>	6%	6%	4%	2%
<b>State institutions</b>	2%	-	2%	-
<b>EU institutions</b>	1%	-	1%	-
<b>Books</b>	5%	4%	6%	4%
<b>Something else</b>	0,3%	0,5%	0,1%	0,1%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

There were 53% of adults and 33% of children, who wanted to learn more about the environmental impacts, while 25% of adults and 37% of students do not want to learn more about it, and 22% of adults and 30% of students could not answer to this question.

The most effective ways for learning more about the environmental risks of eating and food production for adults are related to the shops and food labelling: people want clearer distinctions from regular foods and also larger choice, availability of environmentally friendly foods and same price as regular foods have. In addition, 36% of the adults agree that the price of a food product is usually more important than its effects on the environment, while 27% disagree with this statement.

Students were more critical towards the different learning ways, whereas there were much more young respondents that found different ways to be ineffective and fewer who valued listed ways to be very effective for them. The least effective ways were more books and organizations working on food related environmental risks. The most effective ways for students are providing more and easier information through general and trusted sources of information (like school). Those youngsters who were interested in learning more about the environmental risks were more assure what ways are effective for them – they would mostly

be affected by almost all options, except by providing more books or TV shows, because the interested students were not so determined that these are the ways for them. Those who were not interested in learning more about the environmental risks do not have so clear understanding which would work for them or not.

Almost all ways of learning about food related risks were connected with the desire of learning more about it – those, who were interested in learning more about these issues, found listed ways to be more effective for them than those, who did not want to learn more. More information in other languages, more support from intimates and same price as regular foods were not very strongly connected with the desire to learn. Strongest correlation among adult respondents could be found between the desire to learn and more information on the food product and more TV coverage (somewhat also more environmentally friendly food market actors for both age groups). Students' desire for learning was strongly connected with more educating or youth organizations and environmentally friendly government dealing with this issue. Interested students would also like to have more information about these issues in class and in general. They also think that more distinct labels could help. These could therefore be the most effective ways to engage the most interested ones.

**Table 24.** Evaluation of effectiveness of different learning ways, countries together

	Average		% of respondents finding it to be quite or very important		% of respondents finding it to be not very or not at all important	
	Adults*	Students**	Adults	Students	Adults	Students
<b>More information on the food product</b>	3,9	2,7	74	52	7	32
<b>More information that is easy to understand</b>	4,1	3,0	82	69	5	16
<b>More general information about these issues</b>	3,7	2,8	67	60	10	24
<b>More information about it in class</b>	-	2,8	-	58	-	25
<b>More books about these issues</b>	2,8	2,0	23	20	36	62
<b>More TV coverage about these issues</b>	3,6	2,6	63	45	15	38
<b>More educational activities</b>	3,1	2,7	37	51	26	33
<b>More research results available</b>	3,3	2,5	46	42	24	40
<b>More organizations working on these issues</b>	2,9	2,4	26	32	33	47
<b>More environmentally friendly manufacturers, producers and salesmen</b>	4,1	2,7	80	52	7	32
<b>More environmentally friendly government</b>	3,6	2,7	78	48	15	34
<b>More distinct labels on the food products about environmental aspects</b>	4,0	2,7	68	48	9	33
<b>More support, activities, information in different languages also.</b>	2,8	-	23	-	36	-
<b>More support, information from my family/friends.</b>	3,2	2,7	36	50	22	31
<b>Same price as regular foods</b>	4,3	-	86	-	4	-
<b>Larger availability in local shops</b>	4,4	-	89	-	3	-
<b>Larger choice in shops.</b>	4,3	-	88	-	4	-
<b>Clear distinction in the shop between environmentally friendly foods and regular foods</b>	4,2	-	80	-	5	-

\*- 5-points scale (5 highest ranking, 1 lowest ranking)

\*\*- 4-points scale (4 highest ranking, 1 lowest ranking)

Adults feel that general public and their intimates encourage or support them favouring or following an organic lifestyle and diminishing environmental risks in their food choices.

Organic lifestyle is also encouraged by the food market. 16% of respondents do not follow or know about the environmental risks in their food choices and 17% of them do not favour or follow an organic lifestyle.

18% feel none of the mentioned actors support them to act upon those aspects that allow them to diminish environmental risks or favour organic lifestyle, whereas 30% of those who answered felt none of these actors encourage or support vegetarian lifestyle. Although adults are rather trusting towards producers, sellers and manufacturers to consider the environmental impacts for their part, respondents could roughly be divided to 3 groups – those who trust (41%), those who don't (29%) and impartial (31%). Students rather not trust manufacturers and sellers considering environmental impacts – 39% don't trust, 26% trusts, and 35% are impartial.

#### **4.1.4. Conceptions of Baltic Sea and its region**

Adults get information about the environmental developments of the Baltic Sea mostly from TV, newspapers or magazines and from Internet sites. These are also most popular sources of information for them. Here, friends and family did not play that important part, but rather public sources. At the same time, students appreciate more information from family and school than adults do, but pupils use also TV and the Internet.

**Table 24.** Sources of information about Baltic Sea’s environmental developments, adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	9%	9%	12%
<b>Friends/acquaintances</b>	8%	9%	7%	9%
<b>Family members</b>	<b>6%</b>	<b>11%</b>	<b>6%</b>	<b>16%</b>
<b>Internet sites</b>	16%	17%	19%	20%
<b>TV</b>	22%	19%	27%	20%
<b>Radio</b>	3%	-	3%	-
<b>Public lectures</b>	0,4%	-	0,2%	-
<b>Educative organizations</b>	0,3%	-	0,1%	-
<b>Newspapers/magazines</b>	<b>20%</b>	<b>11%</b>	<b>21%</b>	<b>9%</b>
<b>Work/ Study place</b>	<b>4%</b>	<b>12%</b>	<b>3%</b>	<b>11%</b>
<b>Advertisements/pamphlets</b>	5%	6%	3%	2%
<b>State institutions</b>	3%	-	2%	-
<b>EU institutions</b>	1%	-	1%	-
<b>Books</b>	3%	3%	1%	2%
<b>Something else</b>	1%	1%	0,4%	0,3%
<b>Don’t follow</b>	-	2%	-	0%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Adults evaluate the state of the Baltic Sea rather poorly. Most positively valued aspect of it is its coastal area in general – mean average is 2.9 in a 4-points scale. Baltic Sea’s water area and fish were estimated with lower points. At the same time, more people answered to the questions concerning the sea’s water and coastal area than for the questions about its fish and pollution levels. Students had even more difficulties to evaluate the state of Baltic Sea’s different aspects. Students feel that the pollution levels are rather bad, water and fish about average, and the coastal area in a relatively better situation than its different elements (Table 25). Significant gender, age nor grade or educational level differences could be found. Overall, respondents found difficult to evaluate the state of Baltic Sea’s different aspects.

**Table 25.** Evaluation to Baltic Sea’s water, fish, pollution levels and coastal area, adults and students

	Average*		% of missing responses**	
	Adults	Students	Adults	Students
<b>State of water</b>	2,4	2,5	12%	15%
<b>State of fish</b>	2,4	2,6	17%	23%
<b>State of pollution levels</b>	2,5	2,3	24%	19%
<b>State of coastal area in general</b>	2,9	2,7	13%	19%

\*- 4-points scale (4 highest ranking, 1 lowest ranking)

\*\*- % of all answers

Adults found it rather difficult to estimate how certain aspects affect the Baltic Sea or its region, and some aspects from the provided list were more difficult to assess than others. Most people left unanswered the effect of establishing wetlands (64% missing), acidification (41% missing), alien species (31% missing), biodiversity loss (30% missing) and eutrophication (29% missing). Of those who answered, they found eutrophication, acidification, littering and industries in the area are affecting the Baltic Sea or its region most negatively, and establishing wetlands or protected areas most positively (see also Table 1). Fishing has somewhat more positive or neutral affect than professional fishing for the adult respondents. The same difference occurred between regular and organic farming, whereas organic farming was estimated to have rather a positive or neutral affect to the Baltic Sea or its region.

**Table 26.** Evaluation of different aspects' effects on the Baltic Sea or its region, countries together

	Average *	% of respondents finding it to affect very or relatively positively	% of respondents finding it to affect very or relatively negatively	% of respondents finding it to have none or neutral affect
a) <i>Acidification (affects the pH-level of the water)</i>	2,0	8	43	16
b) <i>Climate changes</i>	2,4	10	49	27
c) <i>Fishing</i>	3,1	27	24	50
d) <i>Professional fishing for business purposes</i>	2,6	16	49	29
e) <i>Farming in the region (using fertilizers)</i>	2,1	9	73	19
f) <i>Organic farming in the region</i>	3,6	50	6	44
g) <i>Fishing limitations</i>	3,7	67	7	26
h) <i>Biodiversity loss</i>	2,1	8	72	20
i) <i>Establishing wetlands</i>	4,0	71	6	23
j) <i>Sea and coastal traffic</i>	2,4	9	64	27
k) <i>Eutrophication (input of too much nutrients, phosphorus and nitrogen)</i>	1,7	5	84	11
l) <i>Littering</i>	1,6	6	89	5
m) <i>Alien species (species coming from other areas)</i>	2,1	7	74	19
n) <i>Housing on the coastal area</i>	2,1	8	72	20
o) <i>Recreational activity opportunities in the region</i>	3,1	28	23	49
p) <i>Industries in the region</i>	2,0	7	78	15
q) <i>Tourism in the region</i>	3,1	31	27	42
r) <i>Establishing a protected area</i>	4,2	84	3	13
s) <i>Current governmental laws of environment protection</i>	3,9	72	5	23

\*- 5-points scale (5 highest positive ranking, 1 lowest negative ranking)

When comparing different countries, some differences occur in this matter. There are some differences in the average mean scores and also in the percentage of people who could not answer which is the effect of listed aspects on the Baltic Sea or its region. Adults in Finland have mostly less cannot say answers (more knowledgeable) than in Estonia or Latvia, except concerning the fishing limitations, housing, tourism and recreational activities. Quite a big



part of Finns were also not sure of which effect has the current governmental laws of environmental protection. Latvians were somewhat more knowledgeable about fishing, tourism and housing effects than other two countries, but overall had a little more of those who could not answer to the different aspects. They assessed also the first two aspects as rather positive effects and the last aspect as rather a negative effect. Estonians assessed current governmental laws most positively and were the least knowledgeable about the effect of climate changes, when compared to other countries. People in Latvia feel that fishing limitations, organic farming, establishing wetlands and a protected area are affecting most positively the Baltic Sea and its region. There were many missing and cannot say answers. Latvians were least aware of how alien species, biodiversity loss, eutrophication, acidification, and especially establishing wetlands affect the Baltic Sea and its region.

**Table 26b.** Evaluation of different aspects' effects on the Baltic Sea or its region, by country

	Average *			% of Cannot say answers		
	EE	FI	LV	EE	FI	LV
<i>a) Acidification (affects the pH-level of the water)</i>	2,1	1,7	2,3	38%	14%	39%
<i>b) Climate changes</i>	2,5	2,0	2,5	21%	10%	15%
<i>c) Fishing</i>	2,8	3,1	3,1	16%	16%	9%
<i>d) Professional fishing for business purposes</i>	2,4	2,6	2,6	17%	17%	11%
<i>e) Farming in the region (using fertilizers)</i>	2,1	1,7	2,4	11%	7%	15%
<i>f) Organic farming in the region</i>	3,7	3,5	3,6	12%	14%	15%
<i>g) Fishing limitations</i>	4,0	3,9	3,5	13%	17%	12%
<i>h) Biodiversity loss</i>	2,1	1,8	2,3	21%	13%	22%
<i>i) Establishing wetlands</i>	4,2	3,9	4,0	41%	30%	53%
<i>j) Sea and coastal traffic</i>	2,3	2,1	2,6	12%	8%	16%
<i>k) Eutrophication (input of too much nutrients, phosphorus and nitrogen)</i>	1,8	1,4	1,9	17%	7%	26%
<i>l) Littering</i>	1,5	1,5	1,6	7%	5%	9%
<i>m) Alien species (species coming from other areas)</i>	2,1	1,9	2,2	19%	17%	23%
<i>n) Housing on the coastal area</i>	2,1	2,5	1,9	10%	13%	9%
<i>o) Recreational activity opportunities in the region</i>	3,1	2,9	3,2	14%	15%	11%
<i>p) Industries in the region</i>	1,8	1,6	2,2	10%	7%	12%
<i>q) Tourism in the region</i>	3,0	2,6	3,4	11%	13%	10%
<i>r) Establishing a protected area</i>	4,4	4,3	4,2	9%	9%	10%
<i>s) Current governmental laws of environment protection</i>	4,2	3,7	3,9	15%	26%	15%

\*- 5-points scale (5 highest positive ranking, 1 lowest negative ranking)

## 4.2. ESTONIA

### 4.2.1. Dietary habits of Estonians

Estonians eat mostly different food products, including meat, meat products and fish (98%), 2 persons do not eat red meat (semi-vegetarian) and 1 person eat fish, but not meat (pesco-vegetarian). Only 6% of Estonian adults follow a special diet, whether low-carbohydrate, lactose-free diet or something else, but not gluten-free diet. 24% of adults and 22% of students have noted that they or someone of their family members have some kind of allergies, illnesses or other limitations that affect their food habits.

Estonians like fruits, cheese and other milk products the most. Pupils eat white and black bread very often (73% and 62% accordingly), while white bread is more often eaten by adults and students. Chicken is most popular meat among children, then pork, and beef is not that popular. Adults like pork meat the most, chicken is also popular, but beef is quite rarely eaten. Fresh vegetables are eaten a lot more than frozen ones. Potatoes are more often eaten than pasta products or rice by both age groups. Estonian students' favourite foods from the provided list are chicken and fruits, least favourite are eggs and mushrooms. Students like also hamburgers, pizzas and pastas. Water is most often drunk liquid, but juice is the most favourite one. Soft drinks and juice are drunk more often than among Latvian and Finnish students.

Estonians eat home-made foods regularly – 94% of adults and students very often, only 6 persons eat home-made foods rarely. Ready or pre-cooked meals are mostly eaten some times a month, while 31% eat it at least once a week and 18% rarely. 28% of Estonian adults and students eat out regularly, 47% of adults and 52% of pupils few times a month, 25% of adults and 20% of youngsters rarely. Most students eat 2-3 times a day (67%), some 4 times or more (31%). 5 pupils have stated that they sometimes eat nothing in a day. 88% of pupils eat at school at least 1 time a week.

Most Estonian youngsters have noted that they have started to eat healthier (36%) and 16% have also started to control their weight, whereas 30% have not changed their diet for the past few years. Adults from Estonia have stated that they have whether started to eat healthier or have not changed their diet in the past few years. Fewer adults than students have begun to control their weight (7% of the cases).

Most frequently eaten or known fish from the provided list for Estonian students are salmon and sea trout, but they also eat fish sticks quite much. Estonian adults eat herring, sea trout and canned tuna the most, vendace, burbot and whitefish the least. Estonian students do not eat herring very much. 2 adults and 41 students have stated that they do not eat fish at all. Local water areas are mostly preferred when buying or catching fish (36% of respondents), while 34% of adults cannot answer this question or don't prefer any specific location.

**Table 27.** Fish species eaten during last 6 months, Estonian adults and students

	% of responses	
	Adults	Students
<b>Pikeperch</b>	4%	-
<b>Perch</b>	7%	8%
<b>Salmon</b>	8%	20%
<b>Farmed salmon</b>	9%	-
<b>Herring</b>	12%	5%
<b>Roach</b>	2%	-
<b>Bream</b>	3%	-
<b>Whitefish</b>	1%	-
<b>Flounder</b>	5%	-
<b>Cod</b>	4%	-
<b>Pike</b>	6%	7%
<b>Sea trout</b>	12%	13%
<b>Rainbow trout</b>	3%	-
<b>Burbot</b>	1%	-
<b>Sprat</b>	9%	8%
<b>Vendace</b>	1%	-
<b>Coalfish</b>	-	-
<b>Canned tuna</b>	11%	9%
<b>Tuna filet</b>	-	-
<b>Fish sticks / fish burgers</b>	-	24%
<b>Something else</b>	4%	5%
<b>Don't eat fish</b>	0,2%	2%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

Most important features of food shopping choices for Estonian adults were delicious (3.7 points average in a 4-points scale), previous experience (3.3), and good for health (3.2). Least important aspects were amount of energy (2.3), producer or label (2.3), and environment, animal rights protected (1.9). Most important features of food products for Estonian students were delicious (3.8 average on a 4-points scale) and good for health (3.1). Low sugar and low salt are least important for youngsters (both 1.9 points average). Pupils are not also basing

their food choices on producer or label (2.0) or whether it is a national product (2.0). Animal rights and environment protection is not very important feature for students – 72% of Estonian youngsters found it to be unimportant, and only 8% very important.

Estonian adults and youngsters get information about diets and dietary recommendations most often from friends, family and the Internet. These are also the most important sources for both groups. Specialists are more important sources than school for students, while for adults, newspapers and magazines are more important than specialists. State and EU recommendations are used the least among adults. Books are also somewhat important and frequently used by adults, but Estonian students use and value TV more than books.

**Table 28.** Sources of information about diet and dietary recommendations, Estonian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	9%	10%	11%
<b>Friends/acquaintances</b>	12%	13%	14%	15%
<b>Family members</b>	11%	18%	14%	28%
<b>Internet sites</b>	12%	14%	14%	14%
<b>TV</b>	10%	14%	7%	12%
<b>Radio</b>	5%	-	1%	-
<b>Public lectures</b>	2%	-	1%	-
<b>Educative organizations</b>	2%	-	1%	-
<b>Newspapers/magazines</b>	12%	9%	13%	5%
<b>Work/Study place</b>	4%	10%	3%	7%
<b>Advertisements/pamphlets</b>	6%	6%	3%	2%
<b>State recommendations</b>	2%	-	1%	-
<b>EU recommendations</b>	1%	-	1%	-
<b>Books</b>	11%	7%	17%	5%
<b>Something else</b>	1%	1%	0,5%	1%
<b>Don't follow</b>	2%			
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Estonian students' healthy lifestyle is mostly supported by their intimates (49%), but also by recreational clubs they go to (19%) and by school (14%). Youngsters feel less support by the general public (5%) and food market (6%). Only 4% of respondents think none of the mentioned actors support them to follow a healthy lifestyle and 3% don't follow or know about it at all.

Adults were asked to assess which actors encourage or support them to follow a vegetarian, organic lifestyle and diminish environmental risks in their food choices. Most have said that they don't follow a vegetarian lifestyle or none of the actors mentioned support this kind of lifestyle (in sum 70%). Some have said that their intimates support it (12%). Much less adults have said that they don't follow an organic lifestyle (15%) or none of these actors support this (16%). Quite many people who answered this question have stated that food markets support them following an organic lifestyle (18%), but mostly it is supported by their intimates.

Estonian adults split into 3 groups on the basis of how often they eat organic foods – 30% eat them rarely, 36% some times a month and 34% at least once a week. 93% of Estonian adults feel they want to use more organic food products (45% definitely) and 63% are willing to pay more for them (4% definitely). Estonians would most often like to use more organic vegetables, fruits and berries, while they are willing to pay more for meat products as well as for the previously mentioned food products. Half of the Estonians does some agriculture and the other half doesn't. 7 persons farm, harvest or do gardening for non-personal use, whereas 3 of them do it for both, personal and non-personal purposes. Most people grow vegetables, fruits and berries. Eggs and honey are also produced rather much. 75% of the students have stated that their household is dealing with some kind of an agricultural or farming activity.

**Table 29.** Wanted consumption of organic food products and Estonians' production of food products

	<b>Want to use more*</b>	<b>Willing to pay more*</b>	<b>Self-produced*</b>
<b>Grain products</b>	12%	12%	1%
<b>Milk products</b>	12%	11%	4%
<b>Other drinks</b>	3%	3%	3%
<b>Meat products</b>	12%	15%	4%
<b>Fish products</b>	10%	12%	0,4%
<b>Vegetables</b>	15%	14%	36%
<b>Fruits and berries</b>	14%	13%	35%
<b>Eggs</b>	12%	10%	8%
<b>Honey</b>	10%	9%	8%
<b>Something else</b>	0,9%	0,9%	2%

\*- Possible to mark down several answers, % of respondents answering the question with the option

Estonians do agriculture, because it is thought to be cheaper and they have a land where to do it. 22% of the respondents want to provide better food for their family and 17% to eat healthier. Mostly Estonians, who farm, harvest or does gardening are rather satisfied with

food in markets, whereas only 6% feel that because foods in markets do not meet their needs, they produce their own foods.

**Table 30.** Reasons to farm, harvest or do gardening oneself, Estonia

	<b>% of responses*</b>
<b>To eat healthier</b>	17%
<b>To protect the environment</b>	2%
<b>Land ownership</b>	23%
<b>Foods in markets do not meet my needs</b>	6%
<b>To protect animal rights</b>	0%
<b>To provide better food for my family</b>	22%
<b>Cheaper</b>	24%
<b>Some other reason</b>	7%

\*- Possible to mark down several answers, % of respondents answering the question with the option

Estonians are using quite many substances in their own land. They are not used very often, though. Manure fertilizers are used more often than other substances. Chemical fertilizers are also used somewhat more often, when compared to other listed substances (45% of the respondents do not use them at all, while other substances are not used at least 55% of the cases).

**Table 31.** Uses of substances in Estonians' agricultural land

	<b>Very often</b>	<b>Quite often</b>	<b>Not so often</b>	<b>Not at all</b>	<b>TOTAL</b>
<b>Pesticides / bug sprays</b>	1%	4%	39%	55%	100%
<b>Poisons</b>	1%	3%	37%	58%	100%
<b>Chemical fertilizers</b>	2%	2%	51%	45%	100%
<b>Manure fertilizers</b>	28%	41%	19%	12%	100%
<b>Plant protective agencies / herbicides</b>	1%	4%	38%	57%	100%

#### 4.2.2. Estonians' conceptions about food related environmental risks

Estonian adults are not very well informed about environmental risks related to food (18% did not know about these issues at all). At the same time, they are rather interested in learning more about it. Estonian pupils are somewhat more aware of the risks, but they are less willing

to learn about these issues or are in a hesitating position. There were no very relevant differences between boys and girls, whether they know anything about risks, but girls had slightly more knowledge in their opinion than boys. Girls were rather more interested in learning more about these issues (correlation -0.34,  $p < 0.01$ ).

**Table 32.** Knowledge and learning desire about food related environmental risks, Estonian adults and students

	<b>Knowledge about food related environmental risks</b>		<b>Want to learn about food related environmental risks</b>	
	Adults	Students	Adults	Students
<b>Yes</b>	76%	85%	56%	43%
<b>No</b>	18%	12%	21%	32%
<b>Cannot say</b>	4%	2%	20%	25%

Learning more about the environmental risks related to food can be achieved mainly through food market, as Estonians have stated – they wish to have larger availability and choice in shops, more environmentally friendly manufacturers and same price as the regular foods have. Another good way to approach Estonians in these matters is to enhance the quality of information (more understandable and distinctive information about the risks), but rather not the quantity of information that is not conveniently reachable to people (not books, research results, but for example information on the food product or TV) or the actors dealing with these issues. Students would learn most, when there is easily understandable general information about it and they value also specific actors and their example to students.

**Table 33.** Evaluation to the effectiveness of different learning ways, Estonian adults and students

	Average		% of respondents finding the way being effective		% of respondents finding the way being ineffective	
	Adults*	Students**	Adults	Students	Adults	Students
<i>More information in class</i>	-	2,8	-	69%	-	31%
<i>More information on the food product</i>	3,8	2,7	80%	63%	20%	37%
<i>More information that is easy to understand</i>	4,1	3,2	88%	85%	12%	15%
<i>More general information about these issues</i>	3,6	2,9	72%	74%	28%	26%
<i>More books about these issues</i>	2,5	2,0	29%	21%	71%	79 %
<i>More TV coverage about these issues</i>	3,5	2,6	66%	57%	34%	43%
<i>More educational activities</i>	2,7	2,7	39%	58%	61%	42%
<i>More research results available</i>	2,7	2,6	38%	54%	62%	46%
<i>More organizations working on these issues</i>	2,6	2,5	36%	45%	64%	55%
<i>More environmentally friendly manufacturers, producers and salesmen</i>	4,0	2,8	84%	64%	16%	36%
<i>More environmentally friendly government</i>	3,4	2,7	61%	60%	39%	40%
<i>More distinct labels on the food products about environmental aspects</i>	3,6	2,6	71%	54%	29%	46%
<i>More support, activities, information in different languages also.</i>	2,5	-	30%	-	70%	-
<i>More support, information from my family/friends.</i>	3,1	2,8	55%	69%	45%	31%
<i>Same price as regular foods</i>	4,3	-	90%	-	10%	-
<i>Larger availability in local shops</i>	4,3	-	91%	-	9%	-
<i>Larger choice in shops.</i>	4,3	-	89%	-	11%	-
<i>Clear distinction in the shop between environmentally friendly foods and regular foods</i>	4,1	-	84%	-	16%	-

\*-5-points scale (5 highest ranking, 1 lowest ranking); \*\*-4-points scale (4 highest ranking, 1 lowest ranking)

Estonians use most often Internet and TV for sources of information about food related environmental risks. For Estonian youngsters, the most important sources are family members, for adults TV and also paper media. Advertisements or pamphlets and books are not used very often and they are not very important sources.



**Table 34.** Sources of information about food related environmental risks, Estonian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	9%	8%	12%
<b>Friends/acquaintances</b>	9%	11%	10%	11%
<b>Family members</b>	7%	15%	7%	21%
<b>Internet sites</b>	14%	15%	12%	16%
<b>TV</b>	18%	18%	19%	18%
<b>Radio</b>	10%	-	7%	-
<b>Public lectures</b>	2%	-	3%	-
<b>Educative organizations</b>	1%	-	3%	-
<b>Newspapers/magazines</b>	14%	10%	16%	8%
<b>Work/Study place</b>	3%	10%	3%	9%
<b>Advertisements/pamphlets</b>	5%	7%	3%	3%
<b>State recommendations</b>	1%	-	1%	-
<b>EU recommendations</b>	1%	-	0,4%	-
<b>Books</b>	7%	5%	8%	3%
<b>Something else</b>	0,1%	0,5%	0,4%	0,2%
<b>Don't follow</b>				
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Diminishing environmental risks is supported by intimates (23% of the cases) and general Estonian public (19%). Somewhat the food market supports it also (14%). 20% of the adults do not follow this in their everyday lives, while 17% feel none of the mentioned actors support them doing it. Students do not trust that manufacturers and sellers provide them only safe foods (53% not trusting and 17% trusting) and that they consider environmental impacts from their part (51% not trusting and 16% trusting). Adults are more trusting in these matters – 45% trusts food market actors to provide safe foods and 37% trusts that they consider environmental impacts. Pupils and adults also feel that information about food production is quite difficult to understand (31% of students and 34% of adults), but they are rather interested in environmental and animal rights issues (45% of youngsters and 52% of adults).

Estonian adults have heard mostly about healthy eating related issues (fish beneficiaries and which foods are healthy in which kind of uses). Both adults and students have heard relatively little about that people's consumption choices affect the Baltic Sea. Pupils have also heard a lot about waste management related issues. Nor adults or students have a clear understanding, whether Estonians are a healthy or not very healthy, and whether Estonians are or are not very

environmentally concerned nation according to others – both opposite statements were heard from other people. There are no relevant differences between adults and students in this matter, but somewhat larger difference is with the statement “*It is not healthy to eat frozen or pre-cooked meals*” – students stated to have heard about it more than the adults have.

#### 4.2.3. Estonians’ conceptions about Baltic Sea region

For information about Baltic Sea, Estonians use most often Internet and TV and these are also the most important sources for them (Table 33). Youngsters use also family members, while adults use newspapers and magazines. Other sources are not valued to be that important, but specialists and friends are also used.

**Table 35.** Sources of information about Baltic Sea’s environmental developments, Estonian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	10%	9%	12%
<b>Friends/acquaintances</b>	7%	10%	6%	12%
<b>Family members</b>	5%	12%	4%	15%
<b>Internet sites</b>	15%	17%	17%	20%
<b>TV</b>	20%	17%	27%	19%
<b>Radio</b>	15%	-	13%	-
<b>Public lectures</b>	2%	-	1%	-
<b>Educative organizations</b>	1%	-	1%	-
<b>Newspapers/magazines</b>	15%	11%	15%	9%
<b>Work/Study place</b>	3%	9%	3%	8%
<b>Advertisements/pamphlets</b>	3%	6%	1%	2%
<b>State recommendations</b>	2%	-	1%	-
<b>EU recommendations</b>	1%	-	0,3%	-
<b>Books</b>	3%	4%	1%	2%
<b>Something else</b>	1%	2%	0,3%	-
<b>Don’t follow</b>	-	4%	0,3%	1%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

The states of Baltic Sea’s different parts are valued rather poorly. Coastal area in general got the highest grade – 2.8 points in a 4-points scale. 7% of Estonian adults find the coastal area to be in a very good state, and 72% in a good state. Baltic Sea’s water has been valued to be rather good (2.5 points average). Estonians had difficulties assessing the state of fish and

pollution levels, whereas there were 27% and 22% of missing answers for these questions. In addition, those who thought the state of fish and pollution levels to be good and those who thought them to be bad, were quite a similar amount, which indicates that Estonians do not have a clear and mutual understanding, which the state of Baltic Sea's different parts are. In comparison with other two countries, Finnish and Latvian adults valued for example the pollution levels with a much more of certainty.


Estonian students also valued the coastal area most positively – 2.7 points in a 4-points scale. Most missing answers occurred with Baltic Sea's fish and pollution levels questions (21% and 23% accordingly). About half (52%) of Estonian students evaluate the state of water to be rather bad and another half that it is rather good. Baltic Sea's fish has been noted to be in a rather good state – 2.6 points average. One should also notice that the percentage of students who did not answer to the question about fish, was the highest when considering this list of aspects, which may indicate that students with more knowledge answered to this question and the results are more trustworthy or that it was difficult for pupils to answer this, so the results are rather not intentional.

#### 4.2.4. Food label analysis

Estonian questionnaires included 11 food labels, of which 5 were specifically related to Estonian production or food quality (category "National"). There were also 3 healthy eating and 2 organic production related labels. "Fairtrade" label belongs to the group "Others". There are no labels in Estonia, referring exactly to environmental friendliness.

"National":



1.  - the label refers to foods of which all the raw material comes from Estonia. All enterprises can apply for this status, but the origin of material must be proved. (The Estonian Chamber of Agriculture and Commerce)



2. - the label confirms that food product is produced in Estonia (Association of Estonian Food Industry).



3. - this label is given to new Estonian products every year. The purpose is to introduce new tasty, healthy, interesting or otherwise special products to Estonians and to inspire producers to create healthy and innovative foods. (Association of Estonian Food Industry)



4. - the label is both natural and national. It is given to those producers who provides fresh and unprocessed foods (Estonian Horticultural Association).



5. - this label indicates that a meat product do not contain boan meat, whereas containing more meat (Estonian Association of Meat Processors).

„Health“:



6. - this label cannot be found on the food products. It was part of a campagne in 2006 to increase fish consumption among Estonians. (Estonian Association of Fishery)



7. - the label is given to certified and controlled foods, produced in the European Union. This refers to European food quality (The Estonian Chamber of Agriculture and Commerce).



8. - the label indicates that the food product do not contain preservatives. The purpose is to make it easier and more effective to differ those products from the ones that contain extra substances. (Estonian NGO – MTÜ Puhtama Toidu Nimel – *in the sake of purer food*).

„Organic“:



9. - the label quarantees that the foods are products of nationally acceptable organic farming (at least 70% is organic) that have an outside control organ for certification. The requirements for this label are high. (Estonian Organic Farming Foundation)



10. - the label indicates that the foods are products of organic farming. This is used in the European Union and is connected mainly with international products.

“Others”:



11. - this label is used for assuring that the product is socially ethical, meaning that the working and payment contitions for people from the developing countries are enough to support the present and future well-being of small enterprises. (Estonian Green Movement)

Estonians have seen and follow mostly national food labels. „Fairtrade“ is fairly poorly familiar to Estonians. Some have suggested they have seen the fish campagne label on the food products that indicate to mistaken conceptions (not found in a food product), but also to a rather succesful campagne (familiar image). European Union’s ecological marking is rather poorly known.

## 4.3.FINLAND

### 4.3.1. Dietary habits of Finns

95% of Finnish adults are eating varying foods, 7 persons are semi-vegetarians, 1 person a pescovegetarian and 1 person a vegan. Finnish students have mostly not changed their diet in the past few years (44%). The same is with adults (55% of the cases). 28% of students and 28% of adults have started to eat healthier, whereas 9% of the adults have started weight control.

Most popular meat among Finnish students is beef (4.0 average in a 6-points scale), then pork (3.5) and chicken (3.0). Seafood is also eaten quite often (3.5 average and 57% of students eat it at least once a week). Adults favour more chicken meat (3.9), then beef (3.8) and pork (3.6). Adults eat seafood rather often – 46% of them 1-7 days a week and 3% very rarely. Finnish students are eating seafood more often than Estonians and Latvians. Black bread is eaten more often than white bread among adults, but not among pupils, fresh vegetables more than frozen ones among both groups. Hamburger and chips are not so popular among adults, but when compared to other two countries, they are eaten more often than in Latvia and Estonia. Cheese and milk products are loved as well – 53% of adults eat cheese, and 73% of adults and 50% of pupils eat other milk products daily. Potatoes are eaten more often than rice or pasta products among both groups. Finnish adults and youngsters drink rather more often milk than respondents from other countries.

80% of Finnish adults are following a special diet, mostly lactose-free or low-lactose diet. Some have also stated to follow low-fat, no-fish, gluten-free and low-carbohydrate diet. 27% of adults and 20% of students had some kind of a limitation that affects their food habits.

Finnish pupils like or know best salmon and canned tuna, while fish sticks are popular as well. Adults enjoy farmed salmon, canned tuna and rainbow trout the most, while coalfish and herring are quite popular as well. Adults prefer local waters and the Baltic Sea for buying or catching fish, but also fish farms. 30% do not prefer any place or cannot answer to this question.

**Table 36.** Fish species eaten during past 6 months, Finnish adults and students

	% of responses	
	Adults	Students
<b>Pikeperch</b>	7%	-
<b>Perch</b>	8%	10%
<b>Salmon</b>	7%	22%
<b>Farmed salmon</b>	10%	-
<b>Herring</b>	9%	9%
<b>Roach</b>	0,3%	-
<b>Bream</b>	1%	-
<b>Whitefish</b>	7%	-
<b>Flounder</b>	1%	-
<b>Cod</b>	2%	-
<b>Pike</b>	4%	7%
<b>Seatrout</b>	1%	3%
<b>Rainbowtrout</b>	14%	-
<b>Burbot</b>	1%	-
<b>Sprat</b>	1%	1%
<b>Vendace</b>	4%	-
<b>Coalfish</b>	9%	-
<b>Canned tuna</b>	14%	17%
<b>Tuna filet</b>	1%	4%
<b>Fish sticks / fish burgers</b>	-	20%
<b>Something else</b>	1%	6%
<b>Don't eat fish</b>		1%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

Finnish respondents eat mostly home-made foods (93% of adults and 97% of pupils eat it 4-7 days a week). Compared to Estonian and Latvian respondents, Finnish people eat ready or pre-cooked meals more often – 39% eat it 1-7 times a week and 20% very rarely. Finns do not eat out very often, but more often than Latvian and Estonian adults (25% of adults and 15% of youngsters eat out very rarely, 41% of adults and 61% of students some times a month, 34% and 24% often).

Most frequently used and also the most important sources of information about eating and diets for adults are newspapers, magazines, TV and Internet sites, while least frequently used are state and EU recommendations. Finnish students think that for them most important sources that they also use most often are family, TV and school. 38% of Finnish adults and 49% of students think that food related information changes too fast to believe it.

**Table 37.** Sources of information about food related environmental risks, Finnish adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	8%	7%	8%	6%
<b>Friends/acquaintances</b>	10%	13%	9%	14%
<b>Family members</b>	6%	17%	5%	23%
<b>Internet sites</b>	13%	13%	16%	13%
<b>TV</b>	14%	14%	17%	16%
<b>Radio</b>	5%	-	3%	-
<b>Public lectures</b>	2%	-	1%	-
<b>Educative organizations</b>	2%	-	2%	-
<b>Newspapers/magazines</b>	15%	9%	22%	8%
<b>Work/ Study place</b>	6%	15%	6%	15%
<b>Advertisements/pamphlets</b>	7%	6%	4%	3%
<b>State recommendations</b>	4%	-	3%	-
<b>EU recommendations</b>	1%	-	0,2%	-
<b>Books</b>	7%	6%	5%	3%
<b>Something else</b>	0,4%	0,7%	0,4%	0,4%
<b>Don't follow</b>	0,5%			
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Most important features of food shopping choices for Finnish adults were delicious (3.5 in a 4-points scale), previous experience (3.4), national product (3.3) and good for health (3.2). Least important aspects were organic origin (2.3), socially ethical (2.3), producer or label (2.4), and environment, animal rights protected (2.4). At the same time, Finnish adults feel more that environment or animal protection is important in their food shopping choices than adults in Estonia and Latvia. Most important features of food products for pupils were delicious (3.6 on a 4-points scale), good for health (2.9) and that they would be especially suitable for children (2.8). Least important characteristics for students were producer or label (2.0), own produced (2.0) and low salt (2.1). Low sugar and no additives were unimportant as well, but low fat was somewhat more important for Finnish youngsters. Animal rights and environment protection is not very important feature when choosing a product – 62% of students found it to be unimportant, 29% quite important and 9% very important.

Finnish students feel that mostly their intimates (37% of the cases), school (24%) and general public (18%) are supporting or encouraging them to follow a healthy lifestyle. Somewhat less



encouraging are recreation clubs (9%) and food market (5%). 4% of the respondents feel that none of these actors encourage them to follow it and 3% do not follow it anyways.

Finnish adults do not follow a vegetarian lifestyle at all in 59% of the cases. Of those who have answered, are sceptical about recreational clubs and food market supporting this (accordingly only 3% and 1% of the cases). At the same time, intimates and work or school place are supporting it.

Organic lifestyle is supported by intimates (17% of the cases) and general Finnish public (14%). Food market in Finland is supporting it moderately (11%), as well as work or school place (9%). 35% do not follow organic lifestyle and 14% feel none of these actors support it. Finns eat a little less organic food products than Estonians and Latvians (37% of Finns eat them rarely), but 30% of them still eat it 1-7 times a week. Finns are rather less willing to use and pay more for organic products (9% not at all and only 32% definitely want to use more, 35% not at all and 3% willing to pay more). Those who want to use more of them, would like to use more organic meat products and vegetables. Finns are willing to pay more for them as well.

**Table 38.** Wanted consumption of organic food products and Finns production of food products

	Want to use more*	Want to pay more*	Producing oneself*
<b>Grain products</b>	13%	13%	7%
<b>Milk products</b>	11%	9%	1%
<b>Other drinks</b>	3%	3%	1%
<b>Meat products</b>	16%	17%	3%
<b>Fish products</b>	9%	11%	1%
<b>Vegetables</b>	17%	17%	31%
<b>Fruits and berries</b>	14%	15%	54%
<b>Eggs</b>	12%	11%	2%
<b>Honey</b>	6%	4%	0%
<b>Something else</b>	0,4%	0,3%	2%

\*- Possible to mark down several answers, % of respondents answering the question with the option

People use rather few substances in their land and less often. Chemical and manure fertilizers are somewhat more often used. Overall the uses of substances are rather low.

**Table 39.** Uses of substances in Finns' agricultural land

	Very often	Quite often	Not so often	Not at all	TOTAL
<b>Pesticides/bug sprays</b>	1%	5%	27%	68%	100%
<b>Poisons</b>	0%	1%	7%	92%	100%
<b>Chemical fertilizers</b>	4%	12%	34%	50%	100%
<b>Manure fertilizers</b>	11%	22%	27%	40%	100%
<b>Plant protective agencies/ herbicides</b>	3%	8%	26%	63%	100%

There are many Finns who relate producing their own foods with a healthier, better and cheaper way to eat. People also farm because of being a land owner.

**Table 40.** Reasons to farm oneself, Finland

	% of responses*
<b>To eat healthier</b>	23%
<b>To protect the environment</b>	0,4%
<b>Land ownership</b>	23%
<b>Foods in markets do not meet my needs</b>	1%
<b>To protect animal rights</b>	0%
<b>To provide better food for my family</b>	15%
<b>Cheaper</b>	15%
<b>Some other reason</b>	23%

\*- Possible to mark down several answers, % of respondents answering the question with the option

Most Finnish adults do not limit their dietary habits or it is not an important issue for them (41%), 2% find it hard to follow them and others follow some medical recommendations of a healthy diet (37%). Some follow other guidelines (19%). 12% of respondents follow medical recommendations regularly. 64% of adults and 52% of students agree that food related health risks interest them and 42% of adults and 46% of students follow actively notifications concerning the healthiness of food. Finnish youngsters feel that they are more informed about healthy eating than Estonians or Latvians feel – 76% know about it much, 21% know something and 3% know little or nothing about it.

### 4.3.2. Finns' conceptions about food related environmental risks

14% of Finnish adults do not diminish environmental risks in their food choices or don't know about it. General public (26%) and intimates (19%) are major supporters of diminishing risks. Work or school place and food market are less frequently mentioned as supporters (10% and 14% accordingly). 16% of adults and 33% of pupils do not trust the manufacturers, producers and sellers considering environmental risks from their part, while 58% of adults and 30% of youngsters do.

Adults have quite good knowledge about food related environmental risks, while there are less than half of respondents who wants to learn more about these issues. At the same time, 68% of Finnish adults say that food related environmental risks interest them, 5% are not interested and 27% have a hesitating position in this matter. Finnish students feel they know quite a lot about food related environmental risks – 13% of respondents said they know very much and 43% that they know somewhat about these issues. A very large part of pupils did not want to learn more about it, while 29% did not know.

**Table 41.** Knowledge and learning desire about food related environmental risks, Finnish adults and students

	Knowledge about food related environmental risks		Want to learn about food related environmental risks	
	Adults	Students	Adults	Students
<b>Yes</b>	93%	84%	48%	23%
<b>No</b>	3%	9%	25%	46%
<b>Cannot say</b>	1%	4%	23%	29%

Most effecting ways learning about environmental risks for adults are related to food market – larger availability and choice in shops, same price as regular foods, more environmentally friendly manufacturers and sellers, and more distinct labels on the food product. Price is more important than environmental impacts of the foods for 40% of adults respondents, while not for 29% of Finns. Adults feel that more books or organizations working with this issue is not enough – only 2% think more books and 1% that more organizations are very effective for them.

Students feel that more information (in class and in general that is understandable) help them learn more about food related environmental risks. More books and organizations about these issues are most unpopular for Finnish students as well as for adults. Although family is one of the most often used source of information about environmental risks for pupils only 26% of them find that more support or information from family or friends would be an effective learning method.

**Table 42.** Evaluation of the effectiveness of different learning ways, Finnish adults and students

	Average		% of respondents finding the way being effective		% of respondents finding the way being ineffective	
	Adults*	Students**	Adults	Students	Adults	Students
<i>More information in class</i>	-	2,7	-	65%	-	35%
<i>More information on the food product</i>	3,9	2,6	78%	54%	4%	46%
<i>More information that is easy to understand</i>	3,9	2,9	83%	75%	5%	25%
<i>More general information about these issues</i>	4,0	2,7	81%	67%	3%	33%
<i>More books about these issues</i>	2,8	1,9	16%	16%	30%	84%
<i>More TV coverage about these issues</i>	3,7	2,4	66%	45%	8%	55%
<i>More educational activities</i>	3,0	2,6	24%	53%	22%	47%
<i>More research results available</i>	3,4	2,4	51%	42%	14%	58%
<i>More organizations working on these issues</i>	2,9	2,2	20%	28%	25%	72%
<i>More environmentally friendly manufacturers, producers and salesmen</i>	4,0	2,6	79%	53%	6%	47%
<i>More environmentally friendly government</i>	3,3	2,5	41%	48%	10%	52%
<i>More distinct labels on the food products about environmental aspects</i>	4,0	2,6	82%	53%	4%	47%
<i>More support, activities, information in different languages also.</i>	2,8	-	17%	-	31%	-
<i>More support, information from my family/friends.</i>	3,0	2,5	26%	52%	21%	48%
<i>Same price as regular foods</i>	4,4	-	91%	-	2%	-
<i>Larger availability in local shops</i>	4,2	-	88%	-	3%	-
<i>Larger choice in shops.</i>	4,2	-	86%	-	2%	-
<i>Clear distinction in the shop between environmentally friendly foods and regular foods</i>	3,8	-	86%	-	4%	-

\*- 5-points scale (5 highest ranking, 1 lowest ranking); \*\*- 4-points scale (4 highest ranking, 1 lowest ranking)

Most important sources of information about food related environmental risks for adults were newspapers, magazines, TV and Internet. Finnish students feel that TV and Internet are important as well, also school and family.

**Table 43.** Sources of information about food related environmental risks, Finnish adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	10%	10%		
<b>Friends/acquaintances</b>	9%	11%		
<b>Family members</b>	4%	14%		
<b>Internet sites</b>	14%	14%		
<b>TV</b>	21%	17%		
<b>Newspapers/ magazines</b>	21%	10%		
<b>Work/Study place</b>	6%	14%		
<b>Advertisements/pamphlets</b>	7%	6%		
<b>State recommendations</b>	3%	-		
<b>EU recommendations</b>	2%	-		
<b>Books</b>	3%	4%		
<b>Something else</b>	0,2%	0,5%		
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

#### 4.3.3. Finns' conceptions about Baltic Sea region

Finnish adults assess the state of Baltic Sea's water and pollution levels a little less good than Estonians and Latvians. There are a distinctively larger group who left the question about state of fish unanswered (33% of all respondents). Adults evaluate the state of Baltic Sea's coastal area with an average mean of 2.7 on a 4-points scale, state of fish, pollution levels and water rather negatively (2.4 average, 2.2 average and 2.1 accordingly). 16% of adults and 16% of students feel that the state of water is very bad and 11% of adults and 16% of students that the pollution levels are very bad. Students assessed both fish and coastal area quite positively – both with a 2.6 average. State of water and pollution levels were evaluated more negatively (2.3 and 2.2 accordingly).

Both, Finnish adults and students have heard statements “*It is healthy to eat fish at least twice a week*”; “*It is healthy to eat food products that do not contain preservatives*” and “*Fish is a good source for n-3 fatty acids and D-vitamin*” most frequently. Those statements are also most

frequently discussed issues in general. Finns have less knowledge about the unhealthiness of frozen or pre-cooked meals, about that fish from ocean are purer than from the Baltic Sea and that meat should be eaten at least twice a week. They have somewhat heard of the statement “*People’s consumption choices affect the Baltic Sea environment*”. Respondents feel that they have heard both arguments: Finns are, and, on the other hand, is not a healthy nation. At the same time, more people stated to have heard rather that Finns are an environmentally concerned rather than a not concerned nation.

For Finnish adults, most used and important sources of information about Baltic Sea were newspapers, magazines and TV, while for students they were Internet and TV. For this kind of information, family was not so often used source for students as for the other two topics.

**Table 44.** Sources of information about Baltic Sea’s environmental developments, Finnish adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	11%	11%	10%	11%
<b>Friends/acquaintances</b>	5%	8%	4%	6%
<b>Family members</b>	3%	10%	2%	10%
<b>Internet sites</b>	14%	16%	15%	19%
<b>TV</b>	25%	19%	30%	24%
<b>Newspapers/magazines</b>	25%	13%	31%	13%
<b>Work/ Study place</b>	4%	14%	3%	13%
<b>Advertisements/pamphlets</b>	7%	7%	4%	4%
<b>State recommendations</b>	3%	-	1%	-
<b>EU recommendations</b>	1%	-	0%	-
<b>Books</b>	1%	3%	0%	1%
<b>Something else</b>	1%	0,5%	1%	0,2%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

#### 4.3.4. Food label analysis

Finland had 10 food labels in their questionnaires. There were no food labels in the category of “Health”.

1.  - organic product label that is granted by Finnish Safety Authority Evira
2.  - national product label – meaning that it is 100% domestic and high quality product
3.  - national product, granted by Finnish Organic Union
4.  - environmentally friendly internationally recognized product label „Dolphin Safe“, by Earth Island Institute
5.  - Marine Stewardship Council's international wild fish label
6.  - Organic product label that is for products from Biodynamic Agriculture. Only strictly controlled and contractually bound partners have a right to use the label.
7.  - Internationally recognized socially ethical product; an alternative approach to conventional trade and based on a partnership between producers and consumers.
8.  - Internationally recognized organic product label, European Union's logo for organic products
9.  - national product label for the Nordic environmental label



10. - environmentally friendly product label, meant for saving the rainforests

National food labels are mostly recognized on the food labels among Finns. Organic labels are also noticed by many. Adults follow mostly national labels when purchasing food. Other labels are not so much used. Differences between adults and students or urban and rural persons were minor. Food label analysis results also show (as expected) that well-known labels are more familiar and also used more than not so well known labels (based on other studies).



## 4.4. LATVIA

### 4.4.1. Dietary habits of Latvians

As suspected, most adults are omnivores (96% of total respondents). 9 people (2%) are semi-vegetarians, meaning they do not eat meat. Some had a special diet: 2 were pesco-vegetarians, 1 was lacto-ovo vegetarian and 3 had some other diet.

From the meats, most frequently eaten meat by adults is pork (average – 4.0 points on a 6 point scale), then chicken (3.8 points) and then beef (2.7 points). Seafood is also eaten quite often (3.4 points), but less than pork or chicken. Black bread (5 points) is loved more than white bread (4.6 points) by Latvian adults. Fresh vegetables (4.8), fruits (4.8) and different milk products (cheese 4.7; other milk products 5.0; milk 4.9) are also a big part in Latvians' diets. Water, tea and coffee are most frequently used drinks.

Students in Latvia are eating most often pork (average 3.8), then chicken (3.6) and beef (3.5) from meats. Tea is more popular drink than coffee among children, but water is still most frequently drunk liquid. Latvian students' favourite foods are chicken and fruits, but also hamburgers, pizzas or kebabs. Compared to adults, seafood is eaten less often (10% never, 27% 1-7 days a week). Nuts and seeds are eaten quite often by Latvian youngsters – 65% of them eat them daily. 37% eat sweets every day.

Most Latvians found that their diet has not changed in the last few years, but many also thought they needed or wanted to eat healthier. Latvian students have mainly the same diet as always (35%) or have started to eat healthier (32%). 15% have started weight control. Somewhat more adults than pupils have not changed their diet in the past few years (46% of the cases). At the same time, 33% of adults have noted to have started a healthier diet.

11% of the respondents or their household member had some special diet to follow, but 89% had no such household member. 13% had a household member that had some kind of allergies/illnesses/ limitations/beliefs that affect their food habits. 14% of the students had some kind of limitation that affects food habits, whereas 20% could not say whether they had any such limitations.

From the mentioned fish species, most popular fish among Latvian adults are herring and sprat, but also salmon, flounder, cod and canned tuna. Only 2 persons out of the total 577 did not eat fish at all, according to this question. Latvian students like or know mostly salmon, herring and sprat. Fish sticks are also popular among Latvian youngsters. Only 2 Latvian students do not eat fish.

The most popular origin of fish for adults is the Baltic Sea (47% of all), but also local water areas (27%). Other seas, ocean and fish farms, other waters were less popular. 7 persons do not buy or catch fish at all, while 11% cannot say or do not prefer any place.

**Table 45.** Fish species eaten during the last 6 months, Latvian adults and students

	<b>% of responses</b>	
	Adults	Students
<b>Pikeperch</b>	3%	-
<b>Perch</b>	5%	8%
<b>Salmon</b>	11%	22%
<b>Farmed salmon</b>	8%	-
<b>Herring</b>	17%	15%
<b>Roach</b>	1%	-
<b>Bream</b>	0,5%	-
<b>Whitefish</b>	3%	-
<b>Flounder</b>	10%	-
<b>Cod</b>	9%	-
<b>Pike</b>	4%	6%
<b>Sea trout</b>	2%	4%
<b>Rainbow trout</b>	1%	-
<b>Burbot</b>	0,3%	-
<b>Sprat</b>	14%	10%
<b>Vendace</b>	0%	-
<b>Coalfish</b>	0,2%	-
<b>Canned tuna</b>	8%	6%
<b>Tuna filet</b>	1%	3%
<b>Fishsticks / fishburgers</b>	-	17%
<b>Something else</b>	4%	7%
<b>Don't eat fish</b>	0,1%	0,1%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>

Latvian adults eat mostly home-made foods (88% at least once a day), but sometimes also ready and pre-cooked meals (46% some times a month and 34% very rarely). Most people eat out rarely (35% of adults and 41% of students some times a month, 40% of adults and 23% of students few times a year or never), 6% of adult and 9% of student respondents eat out daily,

18% of adults 1-6 times a week. Most students eat 2-3 times a day, while 35% eat at least 4 times, 3% one time a day and 4 students eat some days nothing. 82% of Latvian adults eat home-made food daily, 3% rarely. 68% of pupils eat at school every school day, 14% 1-3 days a week and 12% eat there occasionally, 7% never.

Latvian people are either not limiting their dietary habits (37% of the cases) or they follow other guidelines for their diet than medical recommendations of a healthy diet (22%). 13% of adult respondents found this issue to be unimportant for them, while 7% finds it hard to follow medical guidelines. 21% follow the medical recommendations.

Most important features in food shopping choices for adults were: delicious (average mean 3.7 points in a 4-points scale), national product (3.2) or own produced (3.2), good for health (3.3) no additives (3.3), previous experience (3.4) and with no genetically modified ingredients (3.4). Least important features were socially ethical foods (2.4) and animal rights or environment protected (2.1), but also producer or label (2.6). Most important food features for children were: delicious (average mean 3.7 points in a 4-points scale), good for health (3.1) and especially suitable for me / children (2.9). The least important features were low salt or sugar (both 2.1) and producer or label (2.2), but also that animal rights or environment is protected (2.2).

Latvian adults eat rather often organic foods – 35% eat it weekly, 30% some times a month and 22% very rarely. 96% of respondents want to use more organic foods, whereas there were 77% of those, who definitely want to use more of them. Mainly they want to eat more organic meat products, vegetables, fruits and berries, but also milk products. At the same time they are not so willing to pay for them – only 11% agreed to pay more for them definitely, 19% were not at all agreeing with it and 70% are somewhat willing to pay more. Mostly they want to pay more for those they want to use more.

303 adult respondents farm, harvest or garden for themselves. 47% are farming, harvesting, gardening for their personal use, 6% for non-personal use and 43% are not farming, harvesting or gardening themselves. 5 persons are doing agriculture for personal and non-personal use. People are themselves mostly producing vegetables, fruits and berries. 22% of the students do not farm, garden or harvest with their family members, 15% do it very often and the other 63% do it less frequently.

**Table 46.** Wanted consumption of organic food products and Latvians production of food products

	Want to use more*	Want to pay more*	Self-produced*
<b>Grain products</b>	10%	10%	2%
<b>Milk products</b>	14%	14%	4%
<b>Other drinks</b>	3%	2%	3%
<b>Meat products</b>	15%	16%	6%
<b>Fish products</b>	9%	9%	2%
<b>Vegetables</b>	16%	17%	36%
<b>Fruits and berries</b>	15%	15%	33%
<b>Eggs</b>	11%	10%	9%
<b>Honey</b>	8%	6%	4%
<b>Something else</b>	0,2%	0,4%	1%

\*- Possible to mark down several answers, % of respondents who answered the question with the option

People use more manure fertilizers than chemicals in their garden or farm. 61% of Latvian respondents do not use pesticides, 69% poisons, 44% chemical fertilizers, 42% herbicides and only 4% manure fertilizers at all.

**Table 47.** Uses of substances in Latvians agricultural land

	Very often	Quite often	Not so often	Not at all	TOTAL
<b>Pesticides/bug sprays</b>	0,4%	5%	34%	61%	100%
<b>Poisons</b>	0%	2%	29%	69%	100%
<b>Chemical fertilizers</b>	0,4%	7%	49%	44%	100%
<b>Manure fertilizers</b>	39%	39%	19%	4%	100%
<b>Plant protective agencies/ herbicides</b>	3%	9%	46%	42%	100%

Students of Latvia feel that they are quite well informed about healthy eating and foods (2.3 points in a 5-points scale, where 1 means “Very well informed” and 5 that “I know nothing”). Most important sources of information for students are friends, family and Internet, the least used and important were advertisements / pamphlets and books. Most important sources of information about diets and dietary recommendations for adults were friends / acquaintances, newspapers / magazines and Internet sites. These were also the most frequently used sources. The least used sources of information were state and EU recommendations.

**Table 48.** Sources of information about diets and dietary recommendations, Latvian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	9%	9%	9%	0,3%
<b>Friends/acquaintances</b>	13%	11%	15%	15%
<b>Family members</b>	<b>9%</b>	<b>20%</b>	<b>10%</b>	<b>16%</b>
<b>Internet sites</b>	12%	14%	16%	25%
<b>TV</b>	11%	14%	9%	20%
<b>Radio</b>	5%	-	2%	-
<b>Public lectures</b>	2%	-	1%	-
<b>Educative organizations</b>	2%	-	1%	-
<b>Newspapers/magazines</b>	<b>15%</b>	<b>8%</b>	<b>18%</b>	<b>7%</b>
<b>Work/ Study place</b>	<b>5%</b>	<b>14%</b>	<b>4%</b>	<b>12%</b>
<b>Advertisements/pamphlets</b>	4%	5%	2%	2%
<b>State recommendations</b>	0,4%	-	-	-
<b>EU recommendations</b>	0,4%	-	0,1%	-
<b>Books</b>	10%	5%	11%	2%
<b>Something else</b>	2%	0,5%	0,1%	0%
<b>Don't follow</b>	0,5%			
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Following a healthy lifestyle is supported by intimates – 41% of the cases Latvian students found them to be encouraging in this matter. School (20% of the cases), recreation clubs (14%) and general Latvian public (11%) are also mentioned quite frequently, but food market tends to be less of a supporter – shops were mentioned only 5% of the cases. 4% do not follow it and 5% think none of the mentioned actors support them to follow a healthy lifestyle.

Latvian adults mostly feel that none of the mentioned actors support them to follow a vegetarian lifestyle, while only 11% have stated they do not follow it at all. Those who have stated an actor, think their intimates and general Latvian public are supporters in this matter. Food market is quite less frequently mentioned (10% of the cases). Only 7% of Latvian adults who have answered the question about organic lifestyle supporters, do not follow it themselves. At the same time, 22% feel none of the stated actors support them to follow this. Intimates and general Latvian public are mentioned, but also Latvian food market (25%, 21% and 17% accordingly).

#### 4.4.2. Latvians' conceptions about food related environmental risks

Diminishing environmental risks in food choices is mostly supported by general public (27% of the cases), but 21% feel none of the actors supports them doing it and 15% of adults said that they do not follow it themselves. Intimates play a big part in this as well (18%). There are 3 major groups, when talking about trusting the manufacturers, producers and sellers to consider environmental impacts for their part: the biggest group are the untrusting ones (36% of adults and 38% of students), second is the trusting group (33% of adults and 29% of pupils) and then the hesitating one, who has a neutral position in this matter (31% of adults and 32% of students).

Latvians are mostly heard about food related environmental risks (20% a lot and 42% in some extent), but there are also quite many who have heard about it little (24%) or none at all (8%). At the same time, 6% did not answer or could not say anything about it. 43% agreed that they understand the effect of food chemical ingredients on the environment. At the same time, 30% think that food products' price is more important than their effect on the environment. Latvian adults are mostly interested in learning more about food related environmental risks. They do not think that food related environmental risks are clearly visible to the public (36%), but a large part also could not take a position in this matter (49%). Students feel that they know something about food related environmental risks (62% of all students, 26% not very much), 4% could not answer to this question. Latvian students are rather keen on learning more about these issues, but there are quite a lot of student who don't want to do it or cannot say.

**Table 49.** Knowledge and learning desire about food related environmental risks, Latvian adults and students

	Knowledge about food related environmental risks		Want to learn about food related environmental risks	
	Adults	Students	Adults	Students
<b>Yes</b>	86%	88%	55%	42%
<b>No</b>	8%	7%	27%	27%
<b>Cannot say</b>	6%	4%	19%	31%

The most effective ways for learning more about these issues for Latvian adults were: larger availability in local shops, larger choice in shops, and clear distinction in the shop between regular and environmentally friendly foods. Over all, the requirements were related to shop keepers, manufacturers and food distinction (labels, separation from regular foods etc). The least effective were more books or organizations that concern these issues. Most effective ways for learning about these issues for students were: more understandable information (3.1 points average mean on a 4-points scale), more environmentally friendly government (3.1) and manufacturers (3.0). The least effective ways were more books about these issues (2.5) and more educative or youth organizations working on it (2.8). Students would also like more information and distinct labels on the product.

**Table 50.** Evaluation about the effectiveness of different learning ways, Latvian adults and students

	Average		% of respondents finding the way being effective		% of respondents finding the way being ineffective	
	Adults*	Students**	Adults	Students	Adults	Students
<i>More information in class</i>	-	3,0	-	81%	-	19%
<i>More information on the food product</i>	3,9	3,0	68%	81%	4%	19%
<i>More information that is easy to understand</i>	4,1	3,1	79%	88%	3%	12%
<i>More general information about these issues</i>	3,7	3,0	57%	80%	7%	20%
<i>More books about these issues</i>	3,0	2,5	25%	48%	25%	52%
<i>More TV coverage about these issues</i>	3,7	2,9	60%	74%	10%	26%
<i>More educational activities</i>	3,4	3,0	44%	79%	14%	21%
<i>More research results available</i>	3,4	2,9	47%	73%	15%	27%
<i>More organizations working on these issues</i>	3,0	2,8	25%	67%	25%	33%
<i>More environmentally friendly manufacturers, producers and salesmen</i>	4,2	3,0	80%	80%	4%	20%
<i>More environmentally friendly government</i>	3,9	3,1	62%	80%	6%	20%
<i>More distinct labels on the food products about environmental aspects</i>	4,2	3,0	77%	80%	4%	20%
<i>More support, activities, information in different languages also.</i>	2,9	-	22%	-	25%	-
<i>More support, information from my family/friends.</i>	3,3	3,0	34%	78%	12%	22%
<i>Same price as regular foods</i>	4,3	-	82%	-	2%	-
<i>Larger availability in local shops</i>	4,4	-	90%	-	1%	-
<i>Larger choice in shops.</i>	4,4	-	88%	-	1%	-
<i>Clear distinction in the shop between environmentally friendly foods and regular foods</i>	4,4	-	86%	-	1%	-

\*- 5-points scale (5 highest ranking, 1 lowest ranking)

\*\* - 4-points scale (4 highest ranking, 1 lowest ranking)

Most important sources of information for adults about food related environmental risks were specialists and TV. The most frequently used sources of information were TV, newspapers /



magazines and Internet sites. Most important sources of information for youngsters about food related environmental risks were TV, Internet sites and family, but also specialists.

**Table 51.** Sources of information about food related environmental risks, Latvian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	6%	4%	7%	16%
<b>Friends/acquaintances</b>	11%	10%	10%	9%
<b>Family members</b>	<b>8%</b>	<b>15%</b>	<b>9%</b>	<b>21%</b>
<b>Internet sites</b>	16%	21%	18%	16%
<b>TV</b>	20%	23%	21%	16%
<b>Newspapers/magazines</b>	<b>18%</b>	<b>9%</b>	<b>20%</b>	<b>7%</b>
<b>Work/Study place</b>	<b>5%</b>	<b>12%</b>	<b>4%</b>	<b>10%</b>
<b>Advertisements/pamphlets</b>	6%	5%	4%	1%
<b>State recommendations</b>	2%	-	2%	-
<b>EU recommendations</b>	1%	-	0,5%	-
<b>Books</b>	5%	2%	5%	5%
<b>Something else</b>	0,4%	0,6%	0%	0%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

People farm, harvest, and garden themselves mostly because they have land ownership, they want to provide better food for their family, they want to eat healthier and it is cheaper. So, they relate producing their own food with cheaper and healthier outcomes. Mostly the reason is not protecting animal rights (only 1 person thought it is the reason) or the environment (5 persons thought that).

**Table 52.** Reasons to farm, harvest or do gardening oneself, Latvia

	% of responses*
<b>To eat healthier</b>	22%
<b>To protect the environment</b>	1%
<b>Land ownership</b>	25%
<b>Foods in markets do not meet my needs</b>	5%
<b>To protect animal rights</b>	0,1%
<b>To provide better food for my family</b>	24%
<b>Cheaper</b>	21%
<b>Some other reason</b>	3%

\*- Possible to mark down several answers, % of all adult respondents who answered the question with the option

#### 4.4.3. Latvians' conceptions about Baltic Sea region

Most important sources of information about Baltic Sea's environmental developments for adult were Internet, TV and newspapers or magazines; for youngsters family, Internet and TV. School is also quite frequently used source of information about Baltic Sea for students, but it is not so important one.

**Table 53.** Sources of information about Baltic Sea's environmental developments, Latvian adults and students

	% of uses		% of importance	
	Adults	Students	Adults	Students
<b>Specialists</b>	7%	6%	9%	12%
<b>Friends/acquaintances</b>	10%	9%	9%	11%
<b>Family members</b>	8%	13%	9%	20%
<b>Internet sites</b>	18%	20%	21%	20%
<b>TV</b>	22%	21%	24%	17%
<b>Newspapers/magazines</b>	19%	8%	19%	6%
<b>Work/Study place</b>	4%	13%	3%	11%
<b>Advertisements/pamphlets</b>	5%	4%	3%	2%
<b>State recommendations</b>	3%	-	2%	-
<b>EU recommendations</b>	1%	-	1%	-
<b>Books</b>	3%	3%	2%	2%
<b>Something else</b>	1%	1%	0,2%	
<b>Don't follow</b>		3%		
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Most frequently Latvian adults have heard statements “*It is healthy to eat fish at least twice a week*”; “*Fish is a good source for n-3 fatty acids and D-vitamin*”; and “*It is healthy to eat food products that do not contain preservatives*”. The least frequently they have heard that “*Fish from the ocean is purer than that from the Baltic Sea*”; “*People's consumption choices affect the Baltic Sea environment*”; and “*Latvians are not a very environmentally concerned nation*”. Students found that they have heard most often fish and garbage related statements: “*It is healthy to eat fish at least twice a week*”; “*Fish is a good source for n-3 fatty acids and D-vitamin*”; “*One should limit his/her littering*”; and “*One should recycle the garbage*”, but also that “*It is healthy to eat food products that do not contain preservatives*”. These are also topics that are mostly broadcasted and dealt with. Latvian students have heard least frequently that “*People's*

*consumption choices affect the environment of the Baltic Sea*”, so these topics are important to handle.

Adults in Latvia find that food related health (3.8 points on a 4-points scale and 70% agree with this statement) and environmental risks (3.5) concern them. They are also keen on fishing or buying rather local fish (3.5). They find that information about food healthiness and environmental friendliness is too contradictory to believe (both 3.5 points average mean). Students also feel that food related information is too contradictory to believe something (55% of the respondents agree with this statement). Pupils feel that it is important for them to think about environment and animal protection (51%). Adults rather not follow actively notifications concerning the healthiness of foods (9% does it and 38% does it moderately, while 42% are in a hesitating position in this matter).

Latvian adults find that the state of the Baltic Sea coastal area is better (2.9 points average mean in a 4-points scale) than the state of its fish (2.4), water (2.6) or pollution levels (2.6). People are least aware of the state of fish and pollution levels – missing answers (Cannot say + Left blank) were accordingly 100 and 78 respondents. Pupils are also most positive about Baltic Sea’s coastal area (2.8 points average in a 4-points scale), but most negative about state of Baltic Sea’s pollution levels (2.4). They found that state of Baltic Sea’s water and fish is quite good (both 2.7 points average). Students were the least aware of the state of Baltic Sea’s fish and coastal area (96 and 98 missing answers accordingly), but 77 respondents could not also answer neither what is the state of BS water nor about pollution levels.

#### 4.4.4. Food label analysis

Latvia included 9 food labels in their questionnaires of which 6 were national labels, 2 organic, 2 environmentally friendly and 2 related to health issues.

1. **The label „Latvian Eco-Product” (national; organic; environmentally friendly).** This



label is owned by the Association of Latvian Organic Agriculture and it certifies that the product is produced of ecologically clean raw materials.

2. **The label „The Quality Product of Latvia” (national; quality label; locally produced)**



(also known as „The Green Spoon”) has been introduced to ensure recognisability of the products grown and produced in Latvia. This label is awarded to products containing at least 75% of its ingredients grown/produced in Latvia and meeting the required quality standard.

3. **The EU official environmental label (international; environmentally friendly)**



4. **The label „Healthy Product” (national; health)** indicates that the product so labelled is



recommended by the Latvian Diet Doctors Association. Product manufacturers must comply with the standards for healthy products (with a lower content of sugar, salt, fat etc.).

5. **The label “Quality Product of Latvia” (national; quality label; locally produced)** is



introduced to award a quality label to the products produced in Latvia, thereby fostering recognition of products and companies, certifying their quality and promoting export of the products.

6. **The label „Natural Product” (national; health)** certifies that the products so labelled



meet the criteria of containing no harmful food additives or genetically modified organisms, and that their production meets the requirements of the environment and the production process making no negative impact to the quality and naturalness of the product.

7. **The EU organic farming label (international; organic).** For consumers buying products



with this label, it certifies that at least 95% of the product’s agricultural ingredients are produced organically.

8. The label „Product of Latvia” (national; quality label; locally produced) indicates quality Latvian products and services and allows the local residents to recognise and purchase the local products.



9. The label “Fairtrade” (social fairness) certifies that the producers receive a fair and proper price for their work.



Similar to Estonians and Finns, national food labels are the most well-known to Latvians. “Quality Product of Latvia” (also national) label was not so well known among Latvians, because it is meant for export products in the international markets. “Healthy product” label is less familiar to students, while adults know it better. European Union organic farming label is more known to adults than students. Other age differences were small. “Fairtrade” is the least familiar label to Latvians.

## 5. Conclusions

This report gave an overview of FOODWEB Awareness Study: background information about the study areas, methodology behind the study and preliminary results. The study is part of the FOODWEB project.

One of the main goals of the project “The Baltic environment, food and health: from habits to awareness – FOODWEB” is: “to raise public awareness about the links between food quality and its origin focusing on the Baltic Sea and its surrounding” (Vorne *et al* 2011). To raise public awareness, we have to know the state of awareness of the people we are trying to reach through the project FOODWEB. As part of the project, FOODWEB Awareness Study aims to reflect food consumption habits related to Baltic Sea issues, awareness of consumption risks to the environment and relations between these factors. Also, other stages of FOODWEB project benefits from the results and knowledge we gain from the study. It connects with different stages of FOODWEB, other studies (allowing us to further analyze the results), with societal and state issues, and therefore giving an opportunity to interpret the study results furthermore later on.

The study consisted of two parts – expert interviews and questionnaires – of which the report focused on the latter. Questionnaires were divided into adult and student questionnaire forms. Questions were divided into four sections:

- 1) Dietary habits (food consumption, knowledge of eating and healthy food);
- 2) Conceptions of the food related risks (respondents’ beliefs and knowledge);
- 3) Conceptions of the Baltic Sea region (knowledge and beliefs basis that is related to the Baltic Sea);
- 4) Basic information (background knowledge about the respondent).

Each country chose their study areas according to the FOODWEB project area and considering mainland and sea region principle. Finland and Latvia had both 4 major regions, Estonia 5. All in all, adult and student questionnaires had 3310 respondents from Estonia, Finland and Latvia. One of the major target groups for FOODWEB project and therefore for

Awareness Study were young students, mostly from grade 7-9, but Latvia also included 6<sup>th</sup> graders.

As for the results, the study show that people want more information about environmentally friendly foods related issues, whereas the knowledge about these issues are rather poor, while about health topics somewhat better. There were some differences between countries, mostly noticeable in percentage distributions.

One of key aspects in studying awareness, are the sources of information people use to get information about food related environmental issues. Internet was found to be one of the most important sources in every aspect (dietary habits, food related environmental risks, the Baltic Sea development) and for both age groups. TV and family were second and third most important sources for students; newspapers and magazines for adults.

Food choices are not so much connected with environmental thinking, but rather with health, experiences and financial status as other studies also show. For both adults and students, most important food product features were delicious, good for health, previous experience and especially suitable for children. When looking at features more directly related to environmental issues, some differences between generations could be found. National, local or own production was more important features for adults than for pupils. At the same time, animal rights and environment protection is considerably more important for students than for adults. Socially ethical production is not that relevant for adults when making food decisions. Environment related food features that also related to health issues were found to be more relevant than those aspects that are not so closely connected with health image. The study also showed that adults want to use more organic foods (94%), but they are not so willing to pay more for them (93%). When comparing different countries, some differences can be found in the importance of different food characteristics. Estonians do not value national production so much as Latvians and Finns do. Finns think that ease of preparation is more important for them than for other nations. Producer or label, also no additives and GMO content are valued food features by Latvians more than by other countries' respondents.

Respondents felt to be quite aware of healthy eating, while most found that they want to learn more about environmental aspects related to food (53% of adults and 33% of children) or do not have a clear opinion (22% of adults and 30% of students). The most effective ways for

learning more about the environmental risks of eating and food production for adults are related to the shops and food labelling: people want clearer distinctions from regular foods and also larger choice, availability of environmentally friendly foods and same price as regular foods have. The most effective ways for students are providing more and easier information through general and trusted sources of information (like school). The least effective ways for both age groups were more books and organizations working on food related environmental risks.

Respondents value the state of the Baltic Sea above average. Most positively valued aspect of it is its coastal area in general (2.9 points in a 4-point scale). Students feel that the pollution levels are rather bad, water and fish about average, and the coastal area in a relatively better situation than its different other elements. At the same time, there was quite relevant amount of missing and in between answers among questions related to Baltic Sea development, indicating that these issues are not that familiar and should be more dealt with.

Study revealed connections between knowledge, interest and effective learning ways. Those adults, who have heard more about food related environmental risks, also understand more the effects of food chemical ingredients on the environment and they are also more interested in those issues. Respondents who are interested in environmental issues in general, are also more interested in learning more about them. Those, who were interested in learning more about these issues, found listed ways to be more effective for them than those, who did not want to learn more. The findings indicate that more knowledge in environmental issues means also more interest in it; and more knowledge in other environmental aspects is related to what people know. Interested people are also more opened to learning, finding learning ways to be more likely effective for them.

Concluding remarks about FOODWEB Awareness Study results:

- Respondents relate to health issues more than to environmental food issues, therefore having fewer knowledge and less interest in latter.
- Country differences are not distinct in any major issue.
- Adults value national or local own production without genetically modified ingredients – pure and known foods (traditional and conditional valuing).
- Students value animal rights and environment (ethical values).



- Both age groups value more information, but Internet as the most important information source and TV as an important media source.
- Both age groups hope to see more environmentally friendly manufacturers, producers and salesmen.
- Both age groups look for environmentally distinct and labelled food products in shops.
- Both age groups look for food of feasible price, larger availability and clear distinction in the shop between environmentally friendly foods and regular foods.
- Easiness of shopping is important to both age groups.
- People want more information and distinct and easily understandable information about environmental issues.
- People feel they want more support from different actors involved in the process – whether for accessing to more information or to more environmentally friendly products.

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## Appendixes

### Appendix 1. Adult questionnaire

(in brown marked the same questions that in the student ones; in red the answer options that were not included in the student questionnaire)

***I Dietary habits.*** First some questions about your and your household member's dietary habits and food preferences. Please circle **the best suited** answer (if not instructed differently) or write the answer if asked. Household means persons living together, who share money and/or food resources and who define themselves as a household. It can also be just one person.

#### **Q1) What is your diet like?**

1. Omnivore (I eat all, including fish and meat)
2. Semivegetarian (I eat all, but not red meat)
3. Pesco vegetarian (do not eat meat, but do eat fish)
4. Lakto-ovo vegetarian (eat eggs and milk products, but not meat)
5. Vegan (eat only vegetables, not meat, eggs or milk products)
6. Something else ..... (please write)

66. Cannot say

#### **Q2) Has your diet changed in the last few years and why? (Possible to note down multiple answers)**

1. Yes, to eat healthier
2. Yes, doctor's orders/ suggestions
3. Yes, weight control
4. Yes, foods in markets do not meet my needs or wants
5. Yes, protecting animal rights/ environment
6. Yes, beginning to produce food products myself/ ourself (with household members)
7. Yes, some other reason ..... (please write)
8. No, my diet has not changed

#### **Q3) Do you or someone in your household follow a special diet, because of medical reasons?**

1. Yes
2. No → Please move on to the **Q4**

66. Cannot say

#### **3a) If yes, then which special diet? (Possible to note down several answers)**

3. Low-carbohydrate diet
4. Gluten-free diet
5. Lactose-free diet
6. Something else ..... (please write)
66. Cannot say

**Q4) Do you or any of your household members have some kind of allergies/ illnesses/ limitations/ beliefs that affects food habits?**

1. Yes. Which ones? ..... (please write)
2. No
  
66. Cannot say

**Q5) Where do you get the information about diets and dietary recommendations? Which source of information is most trustworthy to you? (Please circle all sources you have used and then put a tick “√” next to 3 sources that you follow the most)**

- |  |  |
|--|--|
| 1. Medical workers .....                   | 12. State recommendations .....              |
| 2. Friends/ acquaintances .....            | 13. European Union recommendations .....     |
| 3. Family members .....                    | 14. Books (about food, diets) .....          |
| 4. Internet sites .....                    | 15. Something else .....                     |
| 5. TV .....                                | .....  |
| 6. Radio .....                             | .....  |
| 7. Public lectures .....                   | (please write)                               |
| 8. Educational organizations .....         |  |
| 9. Newspapers/magazines .....              | 88. I do not follow this kind of information |
| 10. Work/study place .....                 |  |
| 11. Advertisements/posters/pamphlets ..... |  |

**Q6) How often do you eat the following foods? (Please circle the best suited answer for each option):**

	<i>Every day at least once</i> (6)	<i>4-6 times a week</i> (5)	<i>1-3 times a week</i> (4)	<i>1-2 times a month</i> (3)	<i>Few times a year or less</i> (2)	<i>Never</i> (1)	<i>Cannot say</i> (66)
<i>a) Seafood (including fish and its products)</i>	6	5	4	3	2	1	66
<i>b) Beef</i>	6	5	4	3	2	1	66
<i>c) Chicken</i>	6	5	4	3	2	1	66
<i>d) Pork</i>	6	5	4	3	2	1	66
<i>e) Whole-grain products (including whole-grain pastas etc)</i>	6	5	4	3	2	1	66
<i>f) White bread</i>	6	5	4	3	2	1	66
<i>g) Black bread/ bread with seeds</i>	6	5	4	3	2	1	66
<i>h) Nuts and seeds</i>	6	5	4	3	2	1	66
<i>i) Muesli/ breakfast cereals</i>	6	5	4	3	2	1	66
<i>j) Fresh vegetables or roots</i>	6	5	4	3	2	1	66
<i>k) Frozen vegetables or roots</i>	6	5	4	3	2	1	66

<i>l) Fruits</i>	6	5	4	3	2	1	66
<i>m) Hamburgers/pizzas/kebab</i>	6	5	4	3	2	1	66
<i>n) Chips</i>	6	5	4	3	2	1	66
<i>o) Eggs</i>	6	5	4	3	2	1	66
<i>p) Berries</i>	6	5	4	3	2	1	66
<i>q) Rice, noodles or pasta</i>	6	5	4	3	2	1	66
<i>r) Cheese</i>	6	5	4	3	2	1	66
<i>s) Other milk products</i>	6	5	4	3	2	1	66
<i>t) Potatoes</i>	6	5	4	3	2	1	66
<i>u) Fries</i>	6	5	4	3	2	1	66
<i>v) Mushrooms</i>	6	5	4	3	2	1	66
<i>w) Sweets</i>	6	5	4	3	2	1	66
<i>x) Water</i>	6	5	4	3	2	1	66
<i>y) Soft drinks</i>	6	5	4	3	2	1	66
<i>z) Juice</i>	6	5	4	3	2	1	66
<i>aa) Milk</i>	6	5	4	3	2	1	66
<i>bb) Tea</i>	6	5	4	3	2	1	66
<i>cc) Coffee</i>	6	5	4	3	2	1	66
<i>dd) Beer, cider</i>	6	5	4	3	2	1	66
<i>ee) Wine</i>	6	5	4	3	2	1	66
<i>ff) Strong alcohol</i>	6	5	4	3	2	1	66

**Q7) What kind of fish have you eaten during the last 6 months? (Possible to note down several answers)**

- |                    |                      |                      |
|--------------------|----------------------|----------------------|
| 1. Pikeperch       | 10. Cod              | 19. Tuna (file)      |
| 2. Perch           | 11. Sea trout        | 20. Something else   |
| 3. Baltic salmon   | 12. Rainbow trout    | .....                |
| 4. Farmed salmon   | 13. Pike             | (please write)       |
| 5. Baltic herring  | 14. Burbot           |                      |
| 6. White fish      | 15. European sprat   | 66. Don't know/Don't |
| 7. Roach           | 16. Vendace          | remember             |
| 8. Bream           | 17. Coalfish/pollock | 88. Don't eat fish   |
| 9. Baltic flounder | 18. Tuna (canned)    |                      |

**Q8) Which origin do you prefer the most, when buying or catching fish?**

1. Local lakes, rivers, ponds
2. The Baltic Sea
3. Other seas
4. Ocean
5. Fish farmeries
6. Other ..... (please write)
88. Do not buy or catch fish
66. Cannot say

**Q9) How important are the following characteristics in your food shopping choices? (Please circle the best suited answer for each option):**

	<i>Very important</i> (4)	<i>Quite important</i> (3)	<i>Not very important</i> (2)	<i>Not at all important</i> (1)	<i>Cannot say</i> (66)
<i>a) Cheap or special sales offer</i>	4	3	2	1	66
<i>b) Attractive appearance</i>	4	3	2	1	66

c) <i>Delicious</i>	4	3	2	1	66
d) <i>Easy or fast to prepare</i>	4	3	2	1	66
e) <i>National/ local production</i>	4	3	2	1	66
f) <i>Socially ethical production (e.g. fair trade)</i>	4	3	2	1	66
g) <i>Good for my or my household member's health or weight</i>	4	3	2	1	66
h) <i>Amount of energy</i>	4	3	2	1	66
i) <i>Animal rights/ environment protected</i>	4	3	2	1	66
j) <i>Own production/ production of an intimate</i>	4	3	2	1	66
k) <i>Producer or label</i>	4	3	2	1	66
l) <i>No food additives, preservatives</i>	4	3	2	1	66
m) <i>Low salt content</i>	4	3	2	1	66
n) <i>Low sugar content</i>	4	3	2	1	66
o) <i>Low fat content</i>	4	3	2	1	66
p) <i>Previous experience</i>	4	3	2	1	66
q) <i>Without genetically modified ingredients</i>	4	3	2	1	66
r) <i>Organic production</i>	4	3	2	1	66
s) <i>Especially suitable for children</i>	4	3	2	1	66
t) <i>Something else</i> ..... ..... (please write)	4	3	2	1	66

**Q10) How often do you usually eat home-made food?**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q11) How often do you usually eat ready or pre-cooked meals, that are available in the shops?**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q12) How often do you usually eat out (in a cafeteria, restaurant, fast-food places, work place etc)**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q13) How often do you usually eat organic food products (including in a package and frozen products)?**

Organic food is made without using synthetic plant protective agents, chemical fertilizers and genetically modified organisms.

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q14) Would you like to use organic food products more often?**

1. Yes, definitely
2. Yes, somewhat
3. Not at all → Please move on to the **Q15**

66. Cannot say

**14a) If yes, then which ones?** (Possible to note down multiple answers)

- |                   |                    |
|-------------------|--------------------|
| 1. Grain products | 8. Eggs            |
| 2. Milk products  | 9. Honey           |
| 3. Other drinks   | 10. Something else |
| 4. Meat products  | .....              |
| 5. Fish products  | (please write)     |
| 6. Vegetables     | 66. Cannot say     |
| 7. Fruits         |                    |

**Q15) Are you willing to pay more for organic food products than for regular foods?**

1. Yes, definitely
2. Yes, somewhat
3. Not at all → Please move on to the **Q16**

66. Cannot say



**15a) If yes, then for which ones?** (Possible to note down multiple answers)

- |                   |                    |
|-------------------|--------------------|
| 1. Grain products | 7. Fruits          |
| 2. Milk products  | 8. Eggs            |
| 3. Other drinks   | 9. Honey           |
| 4. Meat products  | 10. Something else |
| 5. Fish products  | .....              |
| 6. Vegetables     | (please write)     |
|                   | 66. Cannot say     |

**Q16) Do you or any of your household members farm, harvest or does gardening?** (Possible to note down several answers)

1. Yes, for personal use
2. Yes, for non-personal use
3. No → Please move on to the **Q17**
66. Cannot say

**16a) If yes, then how big is the area to farm, harvest or garden?** ..... ha (please write)

**16b) If yes, then which food products you or any of your household members produce?** (Possible to note down several answers)

- |                   |                    |
|-------------------|--------------------|
| 1. Grain products | 8. Berries         |
| 2. Milk products  | 9. Eggs            |
| 3. Other drinks   | 10. Honey          |
| 4. Meat products  | 11. Something else |
| 5. Fish products  | .....(please       |
| 6. Vegetables     | write)             |
| 7. Fruits         |                    |

**16c) If yes, then which and how much do you or a member of your household use the following substances?** (Please circle the best suited answer for each option)

	<i>Very often</i> (4)	<i>Quite often</i> (3)	<i>Not so often</i> (2)	<i>Not at all</i> (1)	<i>Cannot say</i> (66)
<i>a) Pesticides/bug spray</i>	4	3	2	1	66
<i>b) Poisons</i>	4	3	2	1	66
<i>c) Chemical fertilizers</i>	4	3	2	1	66
<i>d) Manure fertilizers</i>	4	3	2	1	66
<i>e) Plant protective agents/ herbicides</i>	4	3	2	1	66

**16d) Which are the reasons for you or your household member to farm, garden or harvest yourself?**

1. To eat healthier
2. To protect the environment
3. Land ownership
4. Foods in markets do not meet my needs
5. To protect animal rights
6. To provide better food for my family
7. Cheaper
8. Some other reason ..... (please write)
66. Cannot say

**Q17) Do you or any of your family members keep animals?**

1. Yes. Which ones? .....  
(please write)
2. No
66. Cannot say

**Q18) Could you say that meal decisions (which foods, how to prepare, where to eat) are mainly based on one person in your household (due to needs, limitations, preferences etc)?**

1. Yes, mostly on myself
2. Yes, mostly on my spouse/partner
3. Yes, mostly on my child
4. Yes, mostly on someone else.
5. No, it's not usually based on one particular person
66. Cannot say

**Q19) How would you describe your dietary habits as a whole?**

1. I regularly follow the medical recommendations of a healthy diet.
2. I follow some of the medical recommendations of a healthy diet.
3. It is quite hard for me to follow the medical recommendations of a healthy diet.
4. I follow other guidelines for my diet.
5. I do not limit my dietary habits.
6. It is not an important issue for me.
66. Cannot say

**Q20) Do you recognize the following labels? (Please circle the numbers next to the labels you know):**

HERE DIFFERENT FOOD LABELS RELATED TO FOOD, DIFFERENT IN EVERY COUNTRY. The criteria for choosing the labels were as follows: mostly known and the ones that are not so known (according to other studies); related to food and being on the food products; such as national food labels, fish labels, national recognition labels and the internationally used ones.

**20a) Which labels from the previous list you have seen on the food products** (please list the numbers next to the labels from the previous list): .....

**20b) Which labels from the previous list you have followed, when buying a food product** (please list the numbers):  
.....

***II Conceptions of the food related risks. Here follows some questions about food choice decisions and conceptions about the related environmental and health risks.***

**Q21) In your opinion and in your own words, please describe, what are "environmentally friendly foods" (try to describe as much as you know):**

.....  
.....  
.....  
.....  
..... (please write)

**Q22) Have you heard something about environmental risks related to food production/ storage/ consumption?**

1. Yes, a lot
  2. Yes, in some extent
  3. Not very much
  4. Not at all → If you answered “Not at all”, please move on to the **Q23**
66. Cannot say

**22a) Where do you get the information about food related environmental risks? Which source of information is most trustworthy to you?** (Please circle all sources you have used and then put a tick “√” next to 3 sources that you follow the most)

- |  |  |
|--|--|
| 5. Specialists .....                       | 14. European Union recommendations .....     |
| 6. Friends/aquitances .....                | 15. Books (about food, environment) .....    |
| 7. Family members .....                    | 16. Something else .....                     |
| 8. Internet sites .....                    | .....  |
| 9. TV .....                                | .....  |
| 10. Newspapers/magazines .....             | (please write)                               |
| 11. Work/study place .....                 | 88. I do not follow this kind of information |
| 12. Advertisements/posters/pamphlets ..... |  |
| 13. State recommendations .....            |  |

**Q23) Which of the following statements you have heard others talk about? Which of these statements you also agree with?** (Please circle all statements you have heard of and then put a tick “√” next to all the statements you also agree with)

1. *It is healthy to eat fish at least twice a week. ....*
2. *It is healthy to eat meat at least twice a week. ....*
3. *One should constantly vary the fish species eaten. ....*
4. *One should limit everyday meat eating. ....*
5. *Fish is a good source for n-3 fatty acids and D-vitamin. ....*
6. *Meat gives valuable protein that cannot be found anywhere else. ....*
7. *It has been proven that beneficial fatty acids in fish reduce the risk of heart and vasculature diseases in humans. ....*
8. *It is healthy to eat food products that do not contain preservatives. ....*
9. *Fish from the ocean is purer than that from the Baltic Sea. ....*
10. *People's consumption choices affect the Baltic Sea environment. ....*
11. *It is not healthy to eat frozen or pre-cooked meals. ....*
12. *Industrial wastes harm the Baltic sea environment. ....*
13. *Estonians/Latvians/Finns are not a very healthy nation. ....*
14. *Estonians/Latvians/Finns are quite a healthy nation. ....*
15. *Estonians/Latvians/Finns are not a very environmentally concerned nation. ....*
16. *Estonians/Latvians/Finns are quite an environmentally concerned nation. ....*
17. *There is not very much organic farming in Estonia/Latvia/Finland. ....*
18. *There is much organic farming in Estonia/Latvia/Finland. ....*

**Q24) Would you be interested to learn more about environmental impacts/risks of eating and food production?**

1. Yes
2. No

66. Cannot say

**Q25) What would make it easier to know more about environmental impacts/risks of eating and food production?** (Please circle the best suited answer for each option):

	<i>Very effective for me (5)</i>	<i>Quite effective for me (4)</i>	<i>Neutral (3)</i>	<i>Ineffective for me (2)</i>	<i>Not at all effective for me (1)</i>	<i>Cannot say (66)</i>
<i>a) More information on the food product</i>	5	4	3	2	1	66
<i>b) More information that is easy to understand</i>	5	4	3	2	1	66
<i>c) More general information through media about these issues</i>	5	4	3	2	1	66
<i>d) More books about these issues</i>	5	4	3	2	1	66
<i>e) More TV coverage about these issues</i>	5	4	3	2	1	66
<i>f) More educational activities</i>	5	4	3	2	1	66
<i>g) More research results available</i>	5	4	3	2	1	66

<i>h) More organizations working on these issues</i>	5	4	3	2	1	66
<i>i) More environmentally friendly manufacturers, producers and salesmen</i>	5	4	3	2	1	66
<i>j) More environmentally friendly government</i>	5	4	3	2	1	66
<i>k) More distinct labels on the food products about environmental aspects</i>	5	4	3	2	1	66
<i>l) More support, activities, information in different languages also.</i>	5	4	3	2	1	66
<i>m) More support, information from my family/friends.</i>	5	4	3	2	1	66
<i>n) Same price as regular foods</i>	5	4	3	2	1	66
<i>o) Larger availability in local shops</i>	5	4	3	2	1	66
<i>p) Larger choice in shops.</i>	5	4	3	2	1	66
<i>q) Clear distinction in the shop between environmentally friendly foods and regular foods</i>	5	4	3	2	1	66

**Q26) How much do you agree that the following statements describe your actual actions/beliefs? (Please circle the best suited answer for each option):**

	<i>Agree very strongly (5)</i>	<i>Agree moderately (4)</i>	<i>Neutral (3)</i>	<i>Disagree (2)</i>	<i>Disagree strongly (1)</i>	<i>Cannot say (66)</i>
<i>a) I follow actively notifications concerning the healthiness of food</i>	5	4	3	2	1	66
<i>b) I find out on what kind of information (e.g. research) the notifications on food or eating habits are based on</i>	5	4	3	2	1	66
<i>c) Food related health risks interest me</i>	5	4	3	2	1	66
<i>d) Food related information changes so fast that I don't know what to believe</i>	5	4	3	2	1	66
<i>e) Food related environmental impacts interest me</i>	5	4	3	2	1	66
<i>f) I trust that the producers, manufacturers and sellers are responsible</i>	5	4	3	2	1	66

<i>for their part on food safety</i>						
<i>g) I trust that the producers, manufacturers and sellers consider the environmental impacts for their part</i>	5	4	3	2	1	66
<i>h) Food production related information is so contradictory that i don't know what to believe</i>	5	4	3	2	1	66
<i>i) I find that information about related environmental risks of the foods is clearly visible.</i>	5	4	3	2	1	66
<i>j) I am an environmental activist (belonging to an environmental association, movement or actively taking part in environmental activities)</i>	5	4	3	2	1	66
<i>k) I understand many of the chemical food ingredients' effects on my health</i>	5	4	3	2	1	66
<i>l) I understand many of the chemical food ingredients' effects on the environment</i>	5	4	3	2	1	66
<i>m) The price of the food product is usually more important than its effects on my health</i>	5	4	3	2	1	66
<i>n) The price of the food product is usually more important than its effects on the environment</i>	5	4	3	2	1	66
<i>o) I like catching my own fish or buy it from local fishermen</i>	5	4	3	2	1	66

**Q27) Which of these actors encourage or support you into favouring or following vegetarian lifestyle?** (Possible to note down several answers)

1. My intimates
2. Workplace/school
3. Leisure time centres/ sport clubs I go to
4. General public
5. Food market and shopping places
6. None of these actors
7. I do not favour or follow a vegetarian lifestyle

66. Cannot say

**Q28) Which of these actors encourage or support you into favouring or following organic lifestyle?** (Possible to note down several answers)

1. My intimates
2. Workplace/school
3. Leisure time centres/ sport clubs I go to
4. General public
5. Food market and shopping places
6. None of these actors
7. I do not favour or follow an organic lifestyle

66. Cannot say

**Q29) Which of these actors encourage or support you into diminishing environmental risks in your food choices?** (Possible to note down several answers)

1. My intimates
2. Workplace/school
3. Youth centres/ sport clubs I go to
4. General public
5. Food market and shopping places
6. None of these actors
7. I do not follow or know about environmental risks in my food choices

66. Cannot say

**III Conception of Baltic Sea region.** Now some questions about your conceptions about food production, pollution and the region of the Baltic Sea. Some of the question's main focus is on Baltic Sea region. It is always stated in the question if it concerns particularly the Baltic Sea region, so please take that into account when answering.

**Q30) How many days a year approximately do you usually are, visit or spend time in the Baltic Sea coastal area?**

Approximately ..... days a year (please write)

**30a) What is the main reason of your visit?** (Possible to note down several answers)

1. Residential
2. I am from that region/ I feel like home there
3. Recreation
4. Fishing
5. Vacation
6. Visiting friends/ family members
7. Summer house in the Baltic Sea coastal area
8. Work place in the Baltic Sea coastal area
9. School in the Baltic Sea coastal area
10. Something else ..... (please write)

66. Cannot say

**Q31) In your opinion, what is the state of the Baltic Sea's ...** (Please circle the best suited answer for each option)

	<i>Very good</i> (4)	<i>Good</i> (3)	<i>Bad</i> (2)	<i>Very bad</i> (1)	<i>Cannot say</i> (66)
a) ... water? (clean, clear)	4	3	2	1	66
b) ... fish?(amount of fish; different species)	4	3	2	1	66
c) ... pollution levels? (clean air, water, coastal area; few trash)	4	3	2	1	66
d) ... coastal area in general? (clean; few trash; beautiful scenery)	4	3	2	1	66

**Q32) Where do you get the information about the Baltic Sea environmental developments?**

**Which source of information is most trustworthy to you?** (Please circle all sources you have used and then put a tick “√” next to 3 sources that you follow the most)

1. Specialists ..... (please write)
  2. Friends/aquaintances .....
  3. Family members .....
  4. Internet sites .....
  5. TV .....
  6. Newspapers/magazines .....
  7. Work/study place .....
  8. Advertisements/posters/pamphlets .....
  9. State institutions .....
  10. European Union institutions .....
  11. Books (about food, environment) .....
  12. Something else .....
88. I do not follow this kind of information



**Q33) Based on your knowledge, how the following aspects affect the Baltic Sea or its region?**

	<i>Very positivel y (5)</i>	<i>Relativel y positively (4)</i>	<i>Neutral/n o impact (3)</i>	<i>Relativel y negativel y (2)</i>	<i>Very negativel y (1)</i>	<i>Canno t say (66)</i>
<i>t) Acidification (affects the pH-level of the water)</i>	5	4	3	2	1	66
<i>u) Climate changes</i>	5	4	3	2	1	66
<i>v) Fishing</i>	5	4	3	2	1	66
<i>w) Professional fishing for business purposes</i>	5	4	3	2	1	66
<i>x) Farming in the region (using fertilizers)</i>	5	4	3	2	1	66
<i>y) Organic farming in the region</i>	5	4	3	2	1	66
<i>z) Fishing limitations</i>	5	4	3	2	1	66
<i>aa) Biodiversity loss</i>	5	4	3	2	1	66
<i>bb) Establishing wetlands</i>	5	4	3	2	1	66
<i>cc) Sea and coastal traffic</i>	5	4	3	2	1	66
<i>dd) Eutrophication (input of too much nutrients, phosphorus and nitrogen)</i>	5	4	3	2	1	66
<i>ee) Littering</i>	5	4	3	2	1	66
<i>ff) Alien species (species coming from other areas)</i>	5	4	3	2	1	66
<i>gg) Housing on the coastal area</i>	5	4	3	2	1	66
<i>hh) Recreational activity opportunities in the region</i>	5	4	3	2	1	66
<i>ii) Industries in the region</i>	5	4	3	2	1	66
<i>jj) Tourism in the region</i>	5	4	3	2	1	66
<i>kk) Establishing a protected area</i>	5	4	3	2	1	66
<i>ll) Current governmental laws of environment protection</i>	5	4	3	2	1	66
<i>mm) Something else ..... ..... (please write)</i>	5	4	3	2	1	66

**Q34) To which region do you feel closeness, connection the most?**

1. I feel closeness/ connection to the city I live in
2. I feel closeness/ connection to another city
3. I feel closeness/ connection to the countryside I live in
4. I feel closeness/ connection to another countryside
5. I feel closeness/ connection to the coastal sea area I live in
6. I feel closeness/ connection to another coastal sea area
7. I feel closeness/ connection to another country
8. Something else .....(please write)

66. Cannot say

**IV Basic information.**

**Q35) Gender:** 1. Male 2. Female

**Q36) Age:** ..... (years old)

**Q37) Living place, Region and country:** .....  
(please write)

**Q38) Marital status:**

1. Single
2. Living with partner
3. Married
4. Married, but separated
5. Divorced
6. Single parent
7. Widowed

**Q39) Nationality:** 1. Estonian 2. Russian 3. Other ..... (please write)

**Q40) Mother tongue:**

1. Estonian
2. Russian
3. English
4. Other ..... (please write)

**Q41) Education:**

1. Primary or less
2. Basic
3. Secondary
4. Vocational
5. Unfinished academic
6. Academic

**Q42) Main occupation:**

1. Full-time employee
2. Part-time employee
3. Employer
4. Enterpriser
5. Farmer
6. Fisherman
7. Unpaid worker in family business
8. Student
9. Unemployed
10. Retired
11. Managing the household

**Q43) Please write, how many persons in your household (including yourself) are ...**

**a) ... working adults?** ..... (please write, how many)

- b) *... not working adults?* ..... (please write, how many)  
c) *... children (under 18)?* ..... (please write, how many) *How old are the children?* .....

**Q44) What is the average monthly income of your household (without taxes the sum of all incomes, including pensions, allowances etc)?**

1. ... – 300 euros
2. 300 – 800 euros
3. 800 – 1300 euros
4. 1300 – ... euros

66. Cannot say

## Comments

(regarding the topic, issues handled or the questionnaire)

## Appendix 2. Student questionnaire

(in brown marked the same questions that in the adult ones; in red answer options that are different from the adult ones)

**I Dietary habits.** First some questions about your dietary habits and food preferences. Please circle **the best suited** answer (if not instructed differently) or write the answer if asked. Try to find an answer to each question – it is very important for us to know what you think.

**Q1) How often do you eat the following foods and drinks?** (Please circle the best suited answer for each option) **Which are your favourite foods and drinks from the list?** (Pick 4 foods and 1 drink and circle them)

	<i>Every day at least once (6)</i>	<i>4-6 times a week (5)</i>	<i>1-3 times a week (4)</i>	<i>1-2 times a month (3)</i>	<i>Few times a year or less (2)</i>	<i>Never (1)</i>	<i>Cannot say (66)</i>
<i>a) Seafood (including fish and its products, like fish sticks)</i>	6	5	4	3	2	1	66
<i>b) Beef</i>	6	5	4	3	2	1	66
<i>c) Chicken</i>	6	5	4	3	2	1	66
<i>d) Pork</i>	6	5	4	3	2	1	66
<i>e) White bread</i>	6	5	4	3	2	1	66
<i>f) Black bread/ bread with seeds</i>	6	5	4	3	2	1	66
<i>g) Nuts and seeds</i>	6	5	4	3	2	1	66
<i>h) Muesli/ breakfast cereals</i>	6	5	4	3	2	1	66
<i>i) Fresh vegetables or roots</i>	6	5	4	3	2	1	66
<i>j) Frozen vegetables or roots</i>	6	5	4	3	2	1	66
<i>k) Fruits</i>	6	5	4	3	2	1	66
<i>l) Hamburgers/pizzas/kebab</i>	6	5	4	3	2	1	66
<i>m) Chips</i>	6	5	4	3	2	1	66
<i>n) Eggs</i>	6	5	4	3	2	1	66
<i>o) Berries</i>	6	5	4	3	2	1	66
<i>p) Rice, noodles or pasta</i>	6	5	4	3	2	1	66
<i>q) Cheese</i>	6	5	4	3	2	1	66
<i>r) Other milk products (yoghurt, ice-cream etc)</i>	6	5	4	3	2	1	66
<i>s) Potatoes</i>	6	5	4	3	2	1	66
<i>t) Fries</i>	6	5	4	3	2	1	66
<i>u) Mushrooms</i>	6	5	4	3	2	1	66
<i>v) Sweets</i>	6	5	4	3	2	1	66
<i>w) Water</i>	6	5	4	3	2	1	66
<i>x) Soft drinks</i>	6	5	4	3	2	1	66
<i>y) Juice</i>	6	5	4	3	2	1	66
<i>z) Milk</i>	6	5	4	3	2	1	66
<i>aa) Tea</i>	6	5	4	3	2	1	66
<i>bb) Coffee</i>	6	5	4	3	2	1	66

**Q2) What kind of fish or fish products have you eaten during the last 6 months?** (Please circle all the suitable answers)

1. Perch
2. Salmon
3. Baltic herring
4. Pike
5. Trout
6. European sprat
7. Tuna (canned)
8. Tuna (file)
9. Fish stick/ fish cutlet
10. Something else ..... (please write)

66. Don't know/Don't remember

88. Don't eat fish

**Q3) Has your eating changed in the last few years and why?** (Possible to note down multiple answers)

1. Yes, to eat healthier
2. Yes, doctor's orders/ suggestions
3. Yes, weight control
4. Yes, foods in markets do not meet my needs or wants
5. Yes, protecting animal rights/ environment
6. Yes, beginning to produce food products myself/ourself (with household members)
7. Yes, some other reason ..... (please write)
8. No, my eating has not changed at all

**Q4) Do you have some kind of allergies/illness/limitations/beliefs that affects your food choices/eating?**

1. Yes. Which ones? ..... (please write)
2. No

66. Cannot say

**Q5) How many times do you usually eat during a day?**

1. 4 times or more
2. 2-3 times
3. 1 time
4. Some days 0 times

66. Cannot say

**Q6) How often do you usually eat home-made food?**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q7) How often do you usually eat out (in a cafeteria, restaurant, fast-food places)**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4-6 times a week
6. Every day at least once

66. Cannot say

**Q8) How often do you usually eat at school?**

1. Never
2. Few times a year or less
3. Some times a month
4. 1-3 times a week
5. 4 times a week
6. Every school day

66. Cannot say

**Q9) How important are the following characteristics in your food choices?<sup>1</sup> (Please circle the best suited answer for each option):**

	<i>Very important</i> (4)	<i>Quite important</i> (3)	<i>Not very important</i> (2)	<i>Not at all important</i> (1)	<i>Cannot say</i> (66)
<i>a) Cheap</i>	4	3	2	1	66
<i>b) Easy or fast to prepare</i>	4	3	2	1	66
<i>c) Attractive appearance</i>	4	3	2	1	66
<i>d) Delicious</i>	4	3	2	1	66
<i>e) National/ local production</i>	4	3	2	1	66
<i>f) Good for my health</i>	4	3	2	1	66
<i>g) Animal rights/ environment protected</i>	4	3	2	1	66
<i>h) Own production/ production of an intimate</i>	4	3	2	1	66
<i>i) Producer brand</i>	4	3	2	1	66
<i>j) No food additives, preservatives</i>	4	3	2	1	66
<i>k) Low salt content</i>	4	3	2	1	66
<i>l) Low sugar content</i>	4	3	2	1	66
<i>m) Low fat content</i>	4	3	2	1	66
<i>n) Previous experience</i>	4	3	2	1	66
<i>o) My intimate/friend suggested the product</i>	4	3	2	1	66
<i>p) Especially suitable for me</i>	4	3	2	1	66
<i>q) Something else ..... (please write)</i>	4	3	2	1	66

<sup>1</sup> For adults it was „food shopping choices“, while students have just „food choices“.

**Q10) What do you think, how well are you informed about healthy foods and healthy eating?**

1. I'm very well informed
2. Quite well informed
3. I know something
4. I do not know much
5. I do not know anything

66. Cannot say

**Q11) Where do you get the information about eating and healthy eating recommendations?**

**Which source of information is most trustworthy to you?** (Please circle all sources you have used and then put a tick "✓" next to 3 sources that you follow the most)

1. Medical workers .....
2. Friends/aquaintances .....
3. Family members .....
4. Internet sites .....
5. TV .....
6. Newspapers/magazines .....
7. **School .....**
8. Advertisements/posters/pamphlets .....
9. Books (about food, diets) .....
10. Something else .....(please write)

88. I do not follow this kind of information

89. I am not given this kind of information

**Q12) Which of these actors encourage or support you into favouring or following a healthy lifestyle?** (Possible to note down several answers)

1. My intimates
2. **School**
3. **Youth centres/ sport clubs I go to**
4. General public
5. Food market and shopping places
6. None of these actors
7. I do not favour or follow a healthy lifestyle

66. Cannot say

**Q13) How often do you or your family members farm, harvest or do gardening?**

1. Very often
2. Quite often
3. Sometimes
4. Rarely
5. Not at all
6. We do not own a land to farm, harvest or garden

66. Cannot say

**Q14) Do you recognize the following labels?** (Please circle the numbers next to the labels you know and have seen on the food products):

HERE DIFFERENT FOOD LABELS RELATED TO FOOD, DIFFERENT IN EVERY COUNTRY.

The criteria for choosing the labels were as follows: mostly known and the ones that are not so known (according to other studies); related to food and be on the food products; such as national food labels, fish labels, national recognition labels and the internationally used ones.

***II Conceptions of the food related risks.** Here follows some questions about food choice decisions and opinions about the related environmental and health risks. Please circle **the best suited** answer (if not instructed differently) or write the answer if asked. Try to find an answer to each question – it is very important for us to know what you think.*

**Q15) In your opinion and in your own words, please describe, what is "environmentally friendly"<sup>2</sup> (try to write as much as you know):**

.....  
.....  
.....  
.....  
..... (please write)

**Q16) Have you heard something about environmental risks related to food production/ storage/ consumption?**

1. Yes, a lot
  2. Yes, in some extent
  3. Not very much
  4. Not at all → If you answered “Not at all”, please skip 16a) and move on to the **Q17**
66. Cannot say

**16a) Where have you got the information about food related environmental risks? Which source of information is most trustworthy to you?** (Please circle all sources you have used and then put a tick “√” next to 3 sources that you follow the most)

5. Specialists .....
6. Friends/aquaintances .....
7. Family members .....
8. Internet sites .....
9. TV .....
10. Newspapers/magazines .....
11. **School** .....
12. Advertisements/posters/pamphlets .....
13. Books (about food, environment etc) .....
14. Something else ..... (please write)

66. Cannot say

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<sup>2</sup> Here, the wording somewhat differed with adults’ same question. Adults had „environmentally friendly foods“, while student have just „environmentally friendly“ for an easier understanding. This does not greatly change the possibility to make comparisons between the student and adult answers in this issue.



**Q17) Would you be interested to learn more about environmental impacts of eating and food production?**

1. Yes
2. No
66. Cannot say

**Q18) Which of the following statements you have heard others talk about? (Please circle all the statements you have heard of)**

1. It is healthy to eat fish at least twice a week.
2. It is healthy to eat meat at least twice a week.
3. One should constantly vary the fish species eaten.
4. One should limit everyday meat eating.
5. Fish is a good source for n-3 fatty acids and D-vitamin.
6. Meat gives valuable protein that cannot be found anywhere else.
7. It is healthy to eat food products that do not contain preservatives.
8. People's consumption choices affect the environment of the Baltic Sea.
9. It is not healthy to eat frozen or pre-cooked meals.
10. Most food industries' wastes harm the sea environment.
11. One should limit his/her littering.
12. One should recycle the garbage.
13. Estonians/Latvians/Finns are not a very healthy nation.
14. Estonians/Latvians/Finns are quite a healthy nation.
15. Estonians/Latvians/Finns are not a very environmentally concerned nation.
16. Estonians/Latvians/Finns are quite an environmentally concerned nation.

**Q19) What do you think, what would make it easier for you to learn more about environmental risk issues? (Please circle the best suited answer for each option):**

	<i>Very effective for me (4)</i>	<i>Quite effective for me (3)</i>	<i>Ineffective for me (2)</i>	<i>Not at all effective for me (1)</i>	<i>Cannot say (66)</i>
<i>a) More information about these issues in classes</i>	4	3	2	1	66
<i>b) More information that is easy to understand</i>	4	3	2	1	66
<i>c) More information about these issues in general</i>	4	3	2	1	66
<i>d) More information about these issues on food products</i>	4	3	2	1	66
<i>e) More books about these issues</i>	4	3	2	1	66
<i>f) More TV coverage about these issues</i>	4	3	2	1	66
<i>g) More educational and fun activities about these issues</i>	4	3	2	1	66
<i>h) More research results available</i>	4	3	2	1	66
<i>i) More educative or youth organizations that share information about these issues with me</i>	4	3	2	1	66
<i>j) More environmentally friendly manufacturers, producers and salesmen</i>	4	3	2	1	66
<i>k) More environmentally friendly government</i>	4	3	2	1	66

<i>l) More distinct labels on the food products about environmental aspects</i>	4	3	2	1	66
<i>m) More support, information from my family/friends.</i>	4	3	2	1	66

**Q20) How much do you agree that the following statements describe your actual actions and beliefs? (Please circle the best suited answer for each option):**

	<i>Agree very strongly (5)</i>	<i>Agree moderately (4)</i>	<i>Neutral (3)</i>	<i>Disagree (2)</i>	<i>Disagree strongly (1)</i>	<i>Cannot say (66)</i>
<i>p) I have heard about the suggestions of healthy eating, but I do not usually follow them</i>	5	4	3	2	1	66
<i>q) Food related health risks interest me</i>	5	4	3	2	1	66
<i>r) There is so much different food related information so I don't know what to believe</i>	5	4	3	2	1	66
<i>s) I trust that the producers, manufacturers and sellers provide us only safe foods</i>	5	4	3	2	1	66
<i>t) I trust that the producers, manufacturers and sellers consider the environmental impacts</i>	5	4	3	2	1	66
<i>u) Food production related information is too complicated to understand</i>	5	4	3	2	1	66
<i>v) I find that my school gives me enough information about environmental risks of food consumption</i>	5	4	3	2	1	66
<i>w) It is important to me to think about environmental and animal rights issues in general</i>	5	4	3	2	1	66
<i>x) I understand the chemical food ingredients that are on the product label</i>	5	4	3	2	1	66
<i>y) I understand other labels on the food products</i>	5	4	3	2	1	66

**III Conception of food production.** Now some questions about your opinions about food production, pollution and the region of the Baltic Sea. A map of the Baltic Sea region is included. Please circle **the best suited** answer (if not instructed differently) or write the answer if asked. Try to find an answer to each question – it is very important for us to know what you think.

**Q21) How many days per year do you usually spend in the Baltic Sea coastal area?** (See the MAP)

Approximately ..... days a year

**Q22) In your opinion, what is the state of the Baltic Sea's ...** (Please circle the best suited answer for each option)

	<i>Very good</i> (4)	<i>Good</i> (3)	<i>Bad</i> (2)	<i>Very bad</i> (1)	<i>Cannot say</i> (66)
e) ... water? (clean, clear)	4	3	2	1	66
f) ... fish?(amount of fish; different species)	4	3	2	1	66
g) ... pollution levels? (clean, clear air, water, coastal area; few trash)	4	3	2	1	66
h) ... coastal area in general? (clean; few trash; beautiful scenery)	4	3	2	1	66

**Q23) Where do you get information about the Baltic Sea environmental developments? Which source of information is most trustworthy to you?** (Please circle all sources you have used and then put a tick “√” next to 3 sources that you follow the most)

1. Specialists .....
  2. Friends/aquitances .....
  3. Family members .....
  4. Internet sites .....
  5. TV .....
  6. Newspapers/magazines .....
  7. **School** .....
  8. Advertisements/posters/pamphlets .....
  9. Books (about food, environment etc) .....
  10. Something else .....(please write)
88. I do not follow this kind of information

**IV Basic information.** Here follows some questions about you and your family.

**Q24) Gender:** 1. Boy 2. Girl

**Q25) Age:** ..... (years old)

**Q26) Living place (town, village), county (district), country:**  
.....  
..... (please write)

**Q27) To which region do you feel closeness, connection the most?**

1. I feel closeness/ connection to the city I live in
2. I feel closeness/ connection to another city
3. I feel closeness/ connection to the countryside I live in
4. I feel closeness/ connection to another countryside
5. I feel closeness/ connection to the coastal sea area I live in
6. I feel closeness/ connection to another coastal sea area
7. I feel closeness/ connection to another country
8. Something else .....(please write)

66. Cannot say

**Q28) Nationality:** 1. Estonian 2. Russian 3. Other ..... (please write)

**Q29) Mother tongue:**  
1. Estonian  
2. Russian  
3. English  
4. Other ..... (please write)

**Q30) Grade:** ..... (please write)

**Q31) How many persons are living with you?** ..... (please write, how many, including yourself)

**Q32) Please write, how many persons living in your home (including yourself) are ...**

d) ... **adults?** ..... (please write, how many)

e) ... **children?**

.....  
..... (please write, how many and how old are they all)

## Comments

(regarding the topic, issues handled or the questionnaire)