

Project “Development, promotion and sustainable management of the Baltic Sea Region as a coastal fishing tourism destination”

(RETROUT No. R065)

## REPORT

# “ASSESSMENT OF THE IMPACT OF FISHING TOURISM ON THE REGIONAL ECONOMIC”

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## SUMMARY

Fishing tourism is a promising tourism sector in Kurzeme Region. It serves not only as a leisure activity for the Latvian population, but might contribute to the economy of Kurzeme Region also by international tourists.

The method of assessing the economic impact of tourism is not standardised: In the case of Latvia, the method of survey of fishermen and industry businesses/input-output method is used, supplemented by research experience from Latvia, Finland and other countries in the field of assessing the economic impact of tourism, secondary source statistics and the content analysis of binding documents. As an innovation in assessing the economic impact of tourism on the regions, the *overall economic impact rate of tourism* on the regions is used.

Results of the survey show that visitors' expenses for goods and services can have a significant impact on the economy of Kurzeme Region.

## KEY CONCEPTS, TERMS AND DEFINITIONS

This chapter introduces to the concept of tourism, tourist and visitor definitions, the tourism impact on regional development, describes the benefits brought by the fishing tourism visitors in the vicinity of the fishing spots in the sea coastal area.

### ● Tourism, tourists and visitors

**Tourism** is connected with the free movement of people from their life and working place (The Hague tourism declaration, 1989). Instantly tourism includes the activities of persons who “travel and stay outside of their original place of origin not for a longer period of time than one year, which they spend on leisure, business or other purposes” (UNWTO, 1991). In addition tourists can be separated based on their place of origin – in local and foreign tourists. As a result the persons, which time of stay is shorter, i.e., than one day are visitors. These people (**visitors**) cannot be excluded from the research study because they use the same tourism infrastructure and musty the same services as tourists which conform their needs during the travel time.

### ● Tourism as a sector, service.

Tourism is a multispectral branch of economy and a multidisciplinary field of study. Tourism is defined both as an industry and as a process and a phenomenon (Encyclopedia of Tourism, 2000).<sup>1</sup> Tourism is business, which ensures travel, accommodation, catering, leisure and other services (Collin, 2004)<sup>2</sup>. Thus tourism is also a service – a purposeful action for ensuring meeting the interests and needs of the tourists (Tūrisma likums, 1998:1)<sup>3</sup>.

### ● Tourism and recreation

**Recreational tourism** - a type of tourism, with an aim to renew a person's physical and mental potential, making rational use of natural and artificial recreation and recuperation resources (Tūrisma likums, 1998: 1). Its purpose is the active leisure, ensuring of wellness, recreation of work capabilities, health improvements and restoration. Recreation tourism includes different tourism activities, leisure and sport. These are clearly defined, autonomous entities which are interconnected and strengthen each other thus serving the needs of present day societies. Based on the recreation tourism genesis for recreational-tourism resources it can be separated into following: (1) natural and recreation tourism resources and (2) antropogenic leisure and tourism resources (Gjorgievski, Kozuharov & Nakovski, 2012)<sup>4</sup>. In the specific settings of the study it is the recreational tourism.

### ● Recreational fishing tourism

<sup>1</sup> Tourism (2000) In: Jafari J. (eds.) Encyclopedia of Tourism. Routledge, London. 683 p.

<sup>2</sup> Collin, P. H. (2004). Dictionary of Hotels, Tourism and Catering Management (2nd edition)", London: Collin Pub Ltd, p.352.

<sup>3</sup> Tourism law. Adoption: 17.09.1998. Published: Latvijas Vēstnesis, 07.10.1998, Nr.287 (1348). Legal Acts of the Republic of Latvia.

<sup>4</sup> Gjorgievski, M., Kozuharov, S. & Nakovski, D. (2013). Typology of recreational-tourism resources as an important element of the tourist offer. Special issue, *UTMS Journal of Economics* 4 (1): 53–60.

According to the International Council for the Exploration of the Sea (ICES) recreational fishing tourism is described as "fishing of water living resources or fishing attempts mainly for leisure purpose or/and for personal consumption. Also it should be taken into account that Regulation (EC) No 1224/2009 Article 55, second paragraph, states that "selling of the catch acquired during leisure fishing is prohibited " (EP, A8-0191/2018).<sup>5</sup>

In the recreation fishing industry **Recreational fisheries sector** consists of full spectrum of players, which are fully or partially involved (for instance, ministries, NGOs, companies in leisure fishing – boat renters, sellers of fishing attributes, catering and accommodation entrepreneurs. Since on an EU level there is no harmony in terms of a clear and consistent definition of leisure fishing, it is very complicated to control the leisure fishing activities and to collect data on leisure fishing as well as to evaluate its impact on fish stocks, environment, and its economic importance.

#### ● Sustainable tourism

Sustainable tourism takes into consideration the current and future economic, social and environmental impact, paying attention to the needs of visitors, industry, environment, and entrepreneurial groups. Sustainability principles apply to tourism development, environment, sociocultural, economic aspects and it has to ensure sufficient balance between the three dimensions in order to guarantee sustainability in the long-term.

Therefore for sustainable tourism is necessary:

- 1) to ensure optimal use of environment resources, which are the main tourism development element, while ensuring significant ecologic processes and while helping to secure nature heritage and biological diversity.
- 2) to follow the socio-cultural authenticity of the entrepreneurs, while protecting the existing and living cultural heritage and traditional values, as well as to promote the intercultural understanding and tolerance;
- 3) to ensure the longevity of longterm economic activities, employment and income generation capabilities while offering social economic benefits to all involved;
- 4) sustainable tourism development requires informed participation of interested parties, political management, constant impact assessment and in case of necessity preventive and/or correction mechanisms (UNEP& UNWTO, 2005)<sup>6</sup>.

#### ● Tourism importance and impact

According to the (OECD), the economic activity caused by the tourism is responsible for a significant part of economic activity, because tourism is a large, complex and fragmented industry, which is still difficult to define and measure (OECD, 2010).<sup>7</sup> In practice internationally both different type of tourism (and towards tourism directed)

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<sup>5</sup> State of play of recreational fisheries in the EU. A8-0191/2018. Texts adopted: Tuesday, 12 June 2018 – Strasbourg. Retrieved: [http://www.europarl.europa.eu/doceo/document/TA-8-2018-0243\\_LV.html](http://www.europarl.europa.eu/doceo/document/TA-8-2018-0243_LV.html). Access: 22.06.2019.

<sup>6</sup> UNEP&UNWTO (2005). Making Tourism More Sustainable - A Guide for Policy Makers, Paris CEDEX 15, p.11-12

<sup>7</sup> OECD (Organization for Economic Co- operation and Development) (2010).Economic Impact of Tourism. OECD Tourism Trends and Policies 2010. Retrieved: [https://sete.gr/\\_fileuploads/entries/Online%20library/GR/OECD%20TourismTrends&Policies2010\\_pdf.pdf](https://sete.gr/_fileuploads/entries/Online%20library/GR/OECD%20TourismTrends&Policies2010_pdf.pdf) Access: 12.06.2019.

impacts and effects are measured as well as its impact on the economic is assessed. Nonetheless both definitions often are misinterpreted although they are considerably different.

**Significance** is a statistical term (Reeves, 2002)<sup>8</sup>, which can be measured with qualitative and quantitative description of a problem, phenomena, resource or action in a certain moment of time. (ABRC, 2010)<sup>9</sup>.

Meanwhile the **impact** is an action, process and a result (Bāliņa u.c., 2006)<sup>10</sup>. Impact is a dynamic term, which assumes that certain causal-relationships exist (LLC Analytical research and strategy laboratory, 2007)<sup>11</sup>. This means that the impact can be measured towards certain object or bundle that is affected by the impact of certain interaction of a thing or a group of objects (IAIA, 2010)<sup>12</sup>.

#### ● Economic impact

**Economic impact** both on the income and employability is caused by decisions on, activities, actions or policies (Businessdictionary.com, 2010). The total economic impact is comprised of: (1) direct or primary impact; (2) indirect (secondary) impact. The direct economic impact is the revenue, which the companies acquire and use for the purchase of products and services.

The indirect impact is caused when the expenses within economic sectors are spent on the necessary goods and services, salaries. Within the indirect impact the finances are directed for both the purchase of raw products and raw materials by the companies which offer the end product as well as for buying of ready products and services, as well as for paying the employees salaries. The total impact on economic in respect to the direct impact is called the **income multiplier effect**.

This shows a direct connection between the industry and the economy of the rest of the territory (incl. region or state), but does not show the causes – only identifies the connection ties between the companies or the circulation of the spent money (see example Fig. 1) (Analītisko pētījumu un stratēģiju laboratorija SIA, 2007).

For the detection of the tourism multiplier, incl. income multiplier, fundamental three base models are used:

- (1) base;
- (2) Keynesian;
- (3) input/output models.

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<sup>8</sup> Reeves, M. (2002). Measuring the economic and social impact of the arts: a review. Retrieved: [https://is.muni.cz/el/1456/jaro2009/PVEKMAA/um/Impacts\\_of\\_art\\_Michelle\\_Reeves.pdf](https://is.muni.cz/el/1456/jaro2009/PVEKMAA/um/Impacts_of_art_Michelle_Reeves.pdf) Access: 15.06.2019.

<sup>9</sup> ABRC (America's Byways Resource Center) (2010). Vocabulary for Byways. Economic Impact. Retrieved: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5310034.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5310034.pdf) Access: 15.06.2019.

<sup>10</sup> Bāliņa, R., Ēdelmane, I., Grase, I. u.c. (2006). Latviešu valodas vārdnīca. 30 000 pamatvārdu un to skaidrojumu. Rīga: Jumava, 879. lpp.

<sup>11</sup> SIA Analītisko pētījumu un stratēģiju laboratorija (2007). Pētījums par kultūras sektora ekonomisko nozīmi Latvijā. Retrieved: <https://culturelablv.files.wordpress.com/2009/04/kulturas-ekonomiskas-ietekmes-izvertejums-lavija-2007.pdf> Access: 12.06.2019.

<sup>12</sup> IAIA (International Association for Impact Assessment.) (2010). The Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. Retrieved: <http://www.socialimpactassessment.com/documents/IAIA%202015%20Social%20Impact%20Assessment%20guidance%20document.pdf> Access: 14.06.2019.

The base model calculations use the traveler expenses in external and internal market, while the input/output model is based on the data of the timestep dynamic. Most common is the use of Keynesian model which is based on income and employment volumes derived from tourism in a certain territory and its flow as a part of a closed cycle. The only drawback of this model is related to the limited possibility of the geometrical progression, because in each cycle leakage of funds take place (Barcelona Field Studies Centre, 2018)<sup>13</sup>.

**Leakage of funds** – the potential reduction of demand in economy, which takes place if goods and services are imported or the money is invested in savings. The tourism companies tend to import extensively for the needs of foreign tourists, therefore tourism is believed to be an industry which causes leakage of money funds (Database AkadTerm, 2019)<sup>14</sup>. The definition is not precise, because not always this leakage within the field of tourism services causes reduction in demand. Also an opposite effect can take place when, for instance, tourism services which use imported goods can increase the quality of services or to offer lower price, if any of the raw materials is not offered in the local market. Such an approach can increase the economic demand in tourism. The precision of the definition is debatable both in terms of the definition itself and in terms of economic development aspects.

The common economic impact is dependant on the economic activity, which is an outcome of activity within the industry in any of the four sectors of industry: (1) primary (raw material); (2) secondary (recycling and processing of raw materials); (3) tertiary (services) and (4) quaternary (high-technologies and scientific research) (Business Dictionary, n.d.)<sup>15</sup>. Tourism industry is tertiary sector which development includes costs which are derived from state, business structures' and third person activity (Stynes, b.g.)<sup>16</sup>.

#### ● Coastal territory

Eurostat defines the coastal area as municipality, which has a surface area of at least 50% of territory in the 10 km vicinity to the shoreline (Eurostat 2017)<sup>17</sup>.

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<sup>13</sup> Barcelona Field Studies Centre (2018). Tourism Multiplier Effect. Retrieved: <https://geographyfieldwork.com/TouristMultiplier.htm> Access: 26.06.2019.

<sup>14</sup> Datubāze AkadTerm (2019). Definīcija noplūde. leakage Retrieved: <http://termini.lza.lv/term.php?term=nopl%C5%ABde&list=nopl%C5%ABde&lang=LV> Access: 26.06.2019.

<sup>15</sup> Business Dictionary n.d. Definition. Economic sector. Retrieved: <http://www.businessdictionary.com/definition/economic-sector.html> Access: 12.06.2019.

<sup>16</sup> Stynes, D.J. (n.d.). Economic Impacts of Tourism. Retrieved: <https://msu.edu/course/prr/840/econimpact/pdf/ecimpvol1.pdf> Access: 14.06.2019.

<sup>17</sup> Eurostat (2017). Coastal region definition. Retrieved: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Coastal\\_area](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Coastal_area) Access: 14.06.2019.

## METHODS USED FOR THE ASSESSMENT OF ECONOMIC IMPACT

In order to support the tourism decisions, different economic evaluation methods are used. The same methods can be used for every policy or action, however in this research we will define it in tourism context.

It is common for demand analysis of project activities to be included in the economic activity research. In other cases offer is believed to be exogenic while the analysis only defines its impact, if the certain amount of visitors is attached to the territory.

In a comprehensive impact assesment it is necessary to verify the fiscal impact, as well as the social and environmental impact. It should be made aware that the economic impact analysis itself is a narrow and often onesided overview of the tourism impact. On the one hand it is positive that within the researches on the economic impact of tourism the benefits of tourism are underlined. On the other hand the environmental, social, cultural and fiscal impact research is more directed towards the negative impact of tourism. This is situation when on the one hand there is a negative tourism impact on economy (manifesting, for instance, in seasonality and lower salaries) and on the other hand – in many cases there is a positive impact on the environment and social sphere, for instance, terms of environmental and culture resource protection as well as in terms of tourist and local inhabitant education.

There are used three methods in this particular research:

- 1) **Descriptive Research Method (DRM)** – offers general overview and description of the primary and secondary data sources (Babbie, 1992). It can be used to underline the economic value and problems which ought to be resolved.;
- 2) **Economic Impact Assessment (EIA)** – indicates towards changes in economic activity which are caused by external actions. EIA determine which sectors of economic gain benefits from tourism and assess the created changes in income and employment in the certain region. The economic impact assessment procedures do not estimate the economic effect. Depending on the necessary problem solution economic impact assessment analysis is carried out..
- 3) **Coefficient of total economic impact of tourism on the region** - an alternative method proposed by researchers, where the values of the respective coefficient reflect the ratio between the total economic impact (TEI) and municipal investments.

The Economic Impact Assessment (EIA) answers the key question: what is the contribution of tourism to the region's economy? and refers to tourism-related expenditure to determine changes in sales, income, taxes and jobs due to tourism activity (or inactivity). The main indicators and methods are expenditures of tourists and visitors, i.e. primary data obtained from surveys, their analysis, as well as secondary data - national economic statistics or analysis results according to certain calculation methodological models.

Data acquisition methods - surveys, interviews, content analysis of secondary statistical sources and documents (Stynes, b.g. ; Jēgere, b.g.)<sup>18</sup>. The principles of the method are applicable in the study, because it includes the most characteristic indicators, the values of which can be ascertained in a part of the territory of Kurzeme. There, the tourist and the visitor provide primary data in the form of interviews, but the result of the

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<sup>18</sup> Jēgere, S. (b.g.). Kultūras pasākumu centru ekonomiskās ietekmes novērtējuma metožu un modeļu analīze un izvēle. Available: [http://www.turiba.lv/komunikacijas\\_2009/pages/Jegere\\_lv.html](http://www.turiba.lv/komunikacijas_2009/pages/Jegere_lv.html) Skatīts: 14.06.2017.

selection of secondary statistics provides the result of the RETROUT study. Adapted to the methodological approaches used in similar studies in Latvia (Berzina & Grizane, 2011<sup>19</sup>; Bērziņa, 2012<sup>20</sup>; Bērziņa, Grizāne & Jurgelāne, 2014<sup>21</sup>) and abroad, eg in Finland or the Caribbean (Martinique and The Bahamas), where recreational fisheries EIA research is an important practice in an international context. (Kauppila & Karjalainen, 2012<sup>22</sup>; FAO, 2016).<sup>23</sup>

Most often, to calculate the direct impact of EIA, the average daily expenditure per tourist / visitor is determined, multiplied by the total number of visitors per year. Calculations of indirect and induced effects require data on the area's entrepreneurship and employment in tourism (Vogelsong & Graefe, 2001)<sup>24</sup>. Until 2010, Finnish researchers used the derived Nordic Model methodology of input-output analysis, which aims to determine the number and demographics of visitors, the amount of travel expenses, the structure and the impact on employment and income in the area (Huhtala, Kajala & Vatanen, 2010<sup>25</sup>; Stynes, nd). This study uses the sequence of work on determining the economic impact of Stynes tourism with some modifications \*:

- (1) Identify the research area;
- (2) Answer the research questions:
  - (2.1) How much money do fishermen spend visiting the specific area;
  - (2.2) What is the proportion of fishermen's expenditure by identified economic sectors;
  - (2.3) How many jobs are provided by fishing tourism in the area;
  - (2.4) What is the amount of tax revenue generated by tourism;
- (3) Data acquisition in surveys, interviews, etc. sources;
- (4) Calculation of the volume of fishing tourism demand;
- (5) Calculation of regional economic impact;
- (6) Analysis, interpretation and presentation of research results (Stynes, b.g.).

The main indicators for determining the economic impact of tourism:

- (1) fishing tourism demand activity (number of anglers, length of stay, sales, etc.);
- (2) the amount and structure of fishermen's expenses;
- (3) supply (size and nature of business, tax expense, cash outflow, PIT (Wells, 1997; Stynes, b.g. ;

Determining the Local ..., 2011; Mayer, N. & Mayer, D, 2015)

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<sup>19</sup> Berzina, I., Grizane, T. (2011). *Economic Impact of Tourism in Ķemeri National Park*. In: Economic Science for Rural Development: Proceedings of the International Scientific Conference: Resources and Education, No 25, Jelgava: LUA, pp.75-80.

<sup>20</sup> Bērziņa, I. (2012). *Tūrisma ekonomiskā nozīmīguma novērtēšana Latvijas nacionālo parku reģionos*. Promocijas darbs. Jelgava, LLU. 186 lpp.

<sup>21</sup> Bērziņa I., Grizāne T., Jurgelāne, I. (2014). The Tourism Service Consumption Model for the Sustainability of the Special Protection Areas. In: ICTE in Regional Development 2014, December 2014, Vol.43, Valmiera, Latvia, Elsevier: *Procedia Computer Science*, pp.62-68.

<sup>22</sup> Kauppila, P., Karjalainen, T. (2012). A process model to assess the regional economic impacts of fishing tourism: A case study in northern Finland. *Fisheries Research*, Vol.127-128, pp.88-97.

<sup>23</sup> FAO (Food and Agriculture Organization of the United Nations) (2016). *Recreational fisheries economic Impact Assessment manual and application in two Study cases in the Caribbean: Martinique and Bahamas*. Bridgetown: Barbados, 118 p.

<sup>24</sup> Vogelsong, H., Graefe, A.R. (2001). Economic Impact Analysis: A Look at Useful Methods. *Parks & Recreation* (Ashburn) Vol.36, No.3, pp.28-36.

<sup>25</sup> Huhtala, M., Kajala, L., Vatanen, E. (2010). Local economic impacts of national park visitors' spending in Finland: The development process of an Estimation. Pieejams: <http://www.metla.fi/julkaisut/workingpapers/2010/mwp149.pdf> Skatīts: 14.06.2017.

# 1. PROJECT REQUIREMENTS

Taking into concern that the creation of methodology is closely related to the project “Baltic Sea Region as a fishing tourism destination and its development, promotion and sustainable management” under INTERREG programme the following is underlined in this chapter: the main objectives, the objectives sequence, time periods, teritorial coveriālais pārklājums, ka arī metodoloģijas pasūtītāja uzdevumi.

## **Aims and Objectives**

The aim of the project under INTERREG programme “Project “Development, promotion and sustainable management of the Baltic Sea Region as a coastal fishing tourism destination” or RETROUT (No. R065) is:

- to develop and to popularize the Baltic Sea Region as a fishing tourism destination in the coastal area;
- to focus on the sea trout as a coastal fishing product;
- to develop sustainable and effective methods for management of sea trout population;
- to strengthen the fishing tourism management framework in the Baltic Sea Region.

### 1.2. Research area

The work task includes the following research area (Fig.1): Within the Kurzeme region it spreads through the Baltic Sea coastal area from Pape to the Irbe river entry into sea, while inlands it spreads till Pape, Liepāja, Durbe, Tāši and Usma lakes.

## **Tasks by the contracting entity:**

1. To assess the overall economic impact of fishing tourism in the given research area;
2. To assess the industries which have a potential to be included within the fishing tourism activities;
3. To give suggestions on how to promote the industries' participation in fishing tourism activities;
4. To determine the actual employment in the fishing tourism within Kurzeme region;
5. To carry out value chain analysis of the fishing tourism;
6. To develop suggestions for improving of contribution of fishing tourism to the regional economy.

## 2. IMPACT OF FISHING TOURISM ON REGIONAL ECONOMY

In order to assess the impact of fishing tourism on the Kurzeme region similarly to suggestions of Stynes (n.d.) research was structured in multiple stages. The description of the chapter includes steps for assessment of the fishing tourism area, fishing tourism subject – angler determination, defining of both direct/ indirect tourism service sectors, investments in tourism, expenses for tourism administration and for reaching of the main goal of the research task – determination of the fishing tourism impact on the Kurzeme region.

### 2.1. Step 1 – DETERMINATION OF THE AREA TO BE STUDIED

The research area specified in the terms of reference is wide enough, therefore, for the purpose of specifying the research, it is tentatively divided into eight quadrants of the territory (Fig.1, p.13) and researched from the Irbe River estuary to the Baltic Sea, including Liepāja, Lakes Durbe, Tash, Puze and Usma. During the development of the methodology, it was envisaged that if the need for a different division of the fragments-quadrants of the study territory of the region is established, it can also be changed. During the research of the fishing area, the real distribution was changed to 7 quadrants (Fig.2, p.13).

#### **Quadrants of the study area:**

Quadrant 1 - the shores of the Baltic Sea from the mouth of the Irbe River to the Oviši and from Oviši to Lake Bušnieks in Ventspils region

Quadrant 2 - Ventspils port and pier areas

Quadrant 3 - the perimeter of Lake Usma and the surroundings of Lake Puze in Ventspils region

Quadrant 4 combines the quadrants of the originally determined territories 4 and 5. The research takes place from Ventspils in the direction of Užava to Pāvilosta. Quadrant 4 belongs to Ventspils region;

Quadrant 5 - the sea side of Lake Liepāja - at the North and South breakwaters, the Promenade, as well as in the Trade Canal, Lake Tash and Durbe

Quadrant 6 - the coast from Liepāja to Pape, as well as the Pape canal. Quadrant 6 belongs to Nīca and Rucava counties.

Quadrant 7 - Venta river bank and Kuldīga



Initially determined division of the study area into quadrants



Real division of the research area into quadrants

## 2.2. Step 2 – DESCRIPTION OF THE STUDY AREA

In this study, the term region refers to a sub-regional level unit that corresponds to the area defined in the study task. However, the links between tourism clusters extend beyond the study area and the obtained data provide an opportunity to make preliminary calculations covering all Kurzeme regions. In order to get an overview of the study region, it is useful to conduct a joint geographical and socio-economic study of the study area, and to develop a specific description of each specific quadrant area.

### Common geographical and socio-economic description of the study area

This description lists the counties within the study area, identifying those close to the sea coast and those adjoining them. It is important to note the length of the sea line of each county (if any), to characterize the coastal territorial units of Kurzeme planning region.

Taking into account the next tasks of the research - determination of the actual employment in fishing tourism in Kurzeme region, the data



**Administrative territorial division of the Western part of Kurzeme**

and conditions that affect it have been studied. For example, the population density, demographic data and socio-economic indicators of Kurzeme. The background that helps to develop business in the region - roads, transport, IT development and municipal support - has also been clarified. In the conditions of Latvia, in the socio-economic evaluation of regional territories it is useful to use the regional level development level indices (available for the work for 2018), which are based on the Central Statistical Bureau (CSB) data on population and other indicators. (SRS), the State Employment Agency (SEA), the Ministry of Welfare (MoW), the Ministry of the Interior (Mol) and the State Land Service (SLS). In turn, for the analysis of the total economic impact of fishing tourism in the study area, it was important to find out the personal income tax revenue, the statistics of the average monthly gross salary of employees in local governments.

As the calculations also required to know the income of employees (by profession), SRS data (available for 2019) can be used, which can be attributed to Kurzeme coastal fishing tourism.

Task Determining the actual employment in fishing tourism in the Kurzeme region required research and characterization of employment in the Kurzeme region, not forgetting the specifics of tourism and fishing tourism - the effect of seasonality. Taking into account the requirement to identify economic sectors that have the potential to be involved in fishing tourism, it was also necessary to conduct an investigation of the situation of economic sectors in the study area.

### **2.3. Step 3 – ASSESSMENT OF ANGLERS AS THE TARGET AUDIENCE OF FISHING TOURISM**

The task included a survey of anglers and relevant service providers – business operators, interviews at the concentration points of anglers or fishing service providers.

The survey of anglers (n = 65) and businesses (n = 35) was carried out in 2019 – during five days in August and two days in September which were suitable for angling. Place and time of the survey was chosen following information on the website <https://www.copeslietas.lv/> and the weather map of the Latvian Environment, Geology and Meteorology Centre (LVGMC) at <https://www.meteo.lv/laiks/?nid=322> and the marine data portal <http://marine.meteo.lv/>, as well as following advice from the anglers at concentration points of anglers according to natural and weather conditions.

The concentration of anglers in certain sites depends on many climatic conditions, such as wind strength, temperature, sea currents (which determine the presence of algae), time of the day and, of course, the presence of fish. During the survey, these conditions adjusted the visits to the fishing sites. Respondents who fished from shore (lake, river or sea) took part in the survey. Anglers in boats who were within reach were also invited to participate in the interview. Only those who were actually fishing were surveyed, while their trip companions were only counted.

Respondents were interviewed in 14 locations: Lake Durbe, Lake Pape and Pape Canal, Lake Usma and Lake Puze, as well as in the most popular places for sea-fishing – in Jūrkalne, Jūrmalciems, Liepāja (Southern and Northern pier), Lūžņa, Miķeltornis (also called Miķelbāka), Oviši, Pāvilosta, Pitrags, Užava and Ventspils (the Southern Pier and Promenade). However, in the lakes of Bušnieku and Tāšu, no anglers were interviewed during the survey, because there weren't any on the shore or they were too far into the lake in boats.

The questionnaire includes 8 blocks of questions. *Demographic data* block focused on the population involved in fishing tourism, namely, gender, age, family size, profession, place of residence, approximate annual household income. Given that the questions were not always answered or were answered indirectly, the study uses secondary data – average wages in the sector in Latvia. In certain cases, where this could not be identified, the number of questions without responses was excluded from the calculations. For example, no anglers were present in Quadrant 7 – on the banks of the River Venta in Kuldīga. Consequently, this quadrant has not been taken into account in the calculations.

The question block *Travel expenses* sought to find out the mode of transport to reach the fishing destination. The mode of transport was asked or was defined by observation. The Internet tool used to determine the distance travelled (km) is freely available at <https://www.google.lv/maps>. The distance of the local anglers to their destination by foot or passenger car is assumed to be 5 km. The distance travelled by the public bus is calculated in the same way as by car. The distance in boat by the respondent was not registered. The total distance length to the fishing destination was calculated as round-trip; and fuel consumption was also calculated.

The question block *Information on the behaviour of anglers* sought to find the times and seasons when a person goes fishing, which type of fishing is preferred, choice of fishing time and its impact on fishing habits, choice of certain fishing sites, reaching of fishing objectives – to relax, catch fish, or both, as well as the choice of fishing species the anglers preferred, average catch (kg) as well as personal record: number of fish (pcs.) or weight (kg).

Within the question block *Fishing gear* answers were received to questions about approximate costs (equipment on-site and equipment left at home), about the cost of boat, its transport trailer, or rental costs thereof, and about the use and costs of fishing guide services.

The question block *Apparel* covered the costs of clothing. It was concluded that the questions on licenses and fishing cards included in this question block, as well as about the additional costs of the trip to the fishing site, should in future be moved to a separate question block.

The responses to questions from the question block *Accommodation* revealed the criteria for anglers' choice of accommodation, the amount of spendings per accommodation site, satisfaction with its quality and critical comments or suggestions for improving the service.

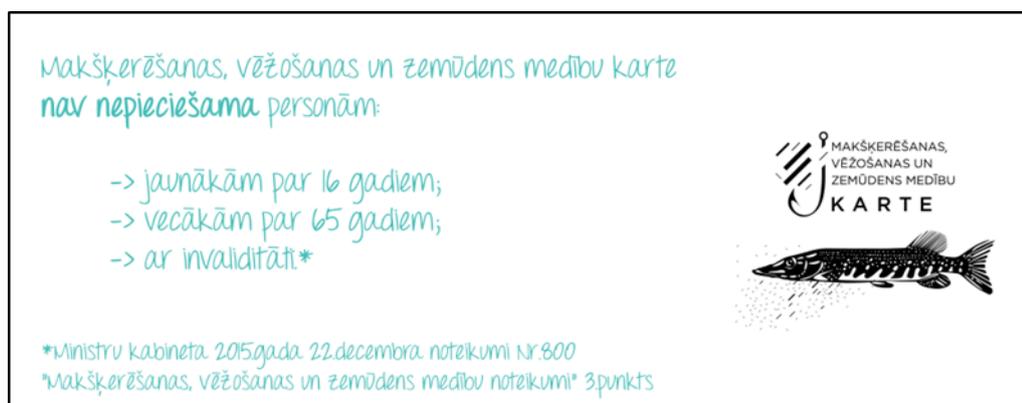
Similarly, the responses to questions from the question block *Catering* revealed the preferred catering site, satisfaction with quality and spending level. It identified the places where anglers had bought food and how much they had spent on it.

The question block *Entertainment* includes a wide range of tourism services (nature trails, sailing, kite-boarding, paintball, sauna, bird watching, cycling, water motorcycle, wind board, horse-back riding and other activities) and includes the possibility to respond – ‘I am not using such services’.

In total, in 6 to 20 % of cases were not answered at all or were answered with the option ‘Not using’.

It has to be said that the questionnaire did not contain three questions concerning the willingness to pay (1) for catering, (2) for accommodation and (3) for entertainment. The respondents were therefore asked on site how willing they would be to pay for these options.

Compared to the methodology developed before, there was also a need to adjust expenditure categories for resident and non-resident anglers. Therefore, the survey included a position of expenditure – *Extra costs*, which could be, for instance, expenditure on fishing bait. The questions on license and fishing card should also be included in this category. In the study, the data on the license and the fishing card were calculated as joint costs. The calculations took into account fishing rules on age limits to purchase cards. According to Article 3 of Cabinet of Ministers Regulations No. 800 “Regulations on fishing, crayfish fishing and underwater hunting” stipulate that individuals younger than 16 years, individuals 65+ years and disabled persons are exempt from buying the fishing card.



Age limits for buying the fishing card, Latvia <sup>26</sup>

The total costs of anglers can be calculated according to the following formula (1):

$$TAEX = NA \times \text{Average FishDay} \times \text{Average EUR/day}$$

where:

TAEX– Total anglers expenditures

NA – Number of anglers\*

Average FishDay – Average day fishing for anglers

Average EUR/day– Average euro spent on a day of fishing

\*each target group is calculated independently and the average value is calculated

<sup>26</sup> Available: <https://www.makskeresanaskarte.lv/products>

Considering the study has shown that the average number of fishing days to achieve the fishing trip objective is 1.8 days, the calculation first took the number of trips into account, and in the end – when the final results of the calculation were achieved – they were re-calculated applying these to the number of days. Thus, formula (1) was adjusted to formula (2):

$$\text{TAEX} = \text{Average Fish/Trip/year} \times \text{NA} \times \text{Average EUR/TRIP}, \quad (2.)$$

where:

TAEX – total annual fishing expenditure;

NA – number of anglers\*

Average fish/trip/year – average number of fishing trips per year

Average EUR/trip – average costs of one fishing trip

\* Each target group (residents and non-residents are calculated separately and described as average

Fishing trip costs per day are calculated according to the formula (3):

$$\text{Average EUR/day} = \frac{\text{TAEX}}{\text{Average FishDay}}, \quad (3.)$$

where:

Average EUR/trip – average costs per one day of fishing

TAEX – total annual costs on fishing trips

Average FishDay – average number of fishing days per year

Given that the tasks also include the determination of the willingness of fishermen to pay for fishing services and gear, the data collected are included in the provisional calculation of the total costs of anglers. The necessary secondary data are derived from external sources such as the Ministry of Economy of the Republic of Latvia, the CSB and other sector-related information sources. Similar arrangements have been followed to replace or supplement primary data gaps.

The responses are grouped by certain area quadrants, the country of residence of respondents (residents and non-residents), while the median, min and max values, or extreme row values, are used to calculate average values. The average values can be calculated for the whole sample (n=65) and also for the number of responses obtained (also those not obtained) at each quadrant. The study uses both approaches.

### **2.3.1. EVALUATION OF ANGLERS AS THE TARGET AUDIENCE OF FISHING TOURISM IN THE ENTIRE STUDY AREA**

According to the definition of fishing tourism, only recreational anglers were interviewed, but sports anglers were excluded from this study.

## **Survey of resident and non-resident fishermen and its results**

### **1. Fishing habits**

When determining the fishing habits of anglers considering responses from the question block Fishing Habits, it was concluded for all 65 respondents, irrespective of the territorial breakdown of the survey in quadrants, that one angler goes fishing on the Baltic Sea coast of the Kurzeme Region 30 times on average spending 1.83 days per one fishing trip. 44.6 % of respondents prefer freshwater and salt-water fishing, but almost a third prefer the sea. 27.7 % of the respondents named the morning and noon and 23.1 % named noon and evening as the most desirable time for fishing. Moreover, 41.5 % believe that weather conditions do not affect their fishing habits, and only 5 % less said the opposite. The most popular fishing site among respondents is Miķeļtornis, Lūžņa and Pape, but almost a fifth did not share this information. The majority, i.e., 55.4 % of the surveyed anglers, consider this activity as both leisure and catching fish for consumption, and only 13.8 % – only for consumption. In fact, 41.5 % of respondents consider the process important, not the species of fish caught. Three are equally popular fish species – pike, flounder and perch. Estimates show that the mean weight of the catch in the coastal area of the Kurzeme Region amounts to 3.3 kg and the average catch is 4.2 fish. 18.5 % of anglers make 2 kg, but rarely, in 1.5 % cases, the catch is 1 kg. Rather frequent, i.e., 7,7–10,8 %, the weight of the catch is 5–7 kg. Most often (6.2 %) 2–3 fish are caught, while 5–10 fish are caught in 3.1 % cases. However, it should be noted that these benefits are not only on the coast, but also in other Latvian fishing sites, although it can be seen that anglers are more willing to conceal their catch, weight and quantity of fish.

### **2. Fishing Gear**

The data obtained on the cost of fishing gear per one angler, which apply for all 65 respondents, showed that different amounts ranging from EUR 15 to 1500 were spent on the fishing gear. It should be noted that 35.4 % have not indicated the cost of fishing gear for the destination of fishing trips. The cost of non-resident fishing gear is lower than that of residents – EUR 355, while for residents – EUR 1489. The fishing gear left at home is also quite valuable – ranging from EUR 589 to EUR 7000. Of the total number of anglers, more than half – 58.5 % have not revealed the cost of fishing gear in the anglers' homes; besides, none of the non-residents responded to this question.

83.1 % of the surveyed anglers do not have their own boat, some of them borrow from friends, relatives, acquaintances. However, non-residents have not provided information whether they own boats or not. If necessary, both residents and non-residents would be ready to rent boats, and for a similar amount of EUR 15 per trip in the waters. While the cost of the cheapest boat is EUR 150, the most expensive boat amounts to EUR 31,000, plus a trailer (EUR 2500) for transporting it. Boat transport trailer is used by only one interviewed angler, and rental is not popular among respondents, and they borrow it whenever needed. None of the respondents has used the services of fishing guides.

### **3. Clothing and other expenditure**

42.5 % of those surveyed do not use special fishing clothes because they consider this to be irrelevant; they wear regular clothes or sportswear; the same applies to non-resident fishermen. All respondents-fishermen held fishing

cards who had to carry these according to fishing rules. 21.5 % of respondents use the Internet to purchase licenses and cards, 7.7 % buy them in a shop, 6.2 % buy them at a petrol station and 3.1 % buy them at fishing destination, and 15.4 % buy them for a whole year. Of all anglers, 67.7 % had no additional spendings for the trip to the fishing site.

#### **4. Travel Costs**

Passenger cars were the most common (64.6 %) mode of transport, 9 anglers went by foot, by bicycle and by boat alone, while others were their company who also took part in fishing. Overall, the fuel consumption of 65 respondents when travelling to the fishing destination is between 2545 and 35,120 L. The highest fuel consumption is due to a longer distance travelled, especially for non-residents, but also for resident anglers it is 1578 L on average, since the travel distance ranged between 304 km and 3512 km (max. distance).

#### **5. Accommodation**

Camping and holiday homes are the main types of accommodation chosen by anglers. However, most of them prefer cheaper accommodation options, such as a tent – 10.8 %, *other* – 18.5 %, local anglers staying in their homes, some non-residents, e.g., from Lithuania, have bought apartments which are rented at other times. One fifth of respondents, mostly residents, stay in their cars over the night. The cost of accommodation for non-resident fishermen is on average more than twice higher than for local anglers, but for all respondents – close to EUR 9, although some resident anglers paid up EUR 70 for accommodation while non-residents – up to EUR 40. The willingness of resident anglers to pay for accommodation does not even reach an increase of a euro, unlike residents who are willing to pay up to almost EUR 20 per night. This may be linked to the quality of the accommodation (although more in-depth analysis would be needed). 25 % of the respondents gave 7–10 points to the quality of accommodation, but 47 respondents, representing 72.3 %, did not reply at all to the question.

Anglers complained about the poor situation of accommodation in colder season in Miķeļbāka Camping, as they have to take their own room heaters with them. The anglers at Lake Usma and elsewhere also noted that the accommodation sites lack clothes hangers and chairs. Those who use Kurzeme's coastal accommodation are generally satisfied, including fishermen from Lithuania. There was a desire for an accommodation site in Oviši.

In all coastal fishing areas, proper waste management is an issue – waste bins and waste sorting are needed (e.g., in Lūžņa, Miķeļtorņis); a similar situation is on/at the Northern Pier in Liepāja, fishing places at the Port of Venta, etc. Similar wishes were expressed about the need for public toilets.

Given that many anglers stay overnight in their cars or in trailers, they criticised access to fishing sites: poor road quality and lack of parking for cars.

#### **6. Catering**<sup>27</sup>

In the vicinity of fishing destinations, most frequently used catering sites are cafés, but in 69.2 % of cases food is carried along and prepared on-site for the purpose of saving. Besides, 17 % of respondents did not reply on the use of catering facilities, which is the reason why an assessment of the quality of catering service providers is not

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<sup>27</sup> The word Catering means both catering services and the purchase of food products

provided. Only 12.3 % of respondents rated the catering services as 'good' and 'excellent'. Consequently, an objective assessment of the quality of catering services for the specific audience is not possible. Usually, anglers bought food on their way to the fishing sites (33.8 %) or they took it from home (30.8 %). 18.4 % of respondents bought food in shops nearby the fishing sites. A total of 65 respondents spent between EUR 5 and EUR 70 on food per day, and on average – EUR 13 per angler. On average, resident-anglers spent just below EUR 13, while non-residents slightly more – EUR 16.5. The willingness to spend money on food in local shops is by a few cents higher, which leads to the conclusion that the availability is sufficient.

### **7. Entertainment**<sup>28</sup>

In many cases, it is difficult to separate the volume of tourism on the Baltic Sea coast from general tourism. It is even more difficult to separate recreational fishing because recreation depends on the condition of the sea, which does not apply to all tourism activities on the coast. This opens up opportunities for greater involvement of anglers in other activities that can be provided by tourism and tourism-related economic sectors in the research area. The survey found that only a fifth (21.5 %) of the anglers at the coast of Kurzeme of the Baltic Sea engage in other recreational activities besides fishing. The most frequent activities are cycling, sailing, and going to the sauna. Other tourism activities, such as hiking on nature trails, horse-back riding, etc., are used only few, but equally – 1.5 %; slightly more – 4.6 % – use various cultural activities offered by tourism entrepreneurs.

If divided among all 65 respondents, money spent for leisure is small – EUR 2.46 per angler per day. By residency, one non-resident pays by EUR 1.5 more for tourism activities per day than a resident, while a resident's maximum spending is by EUR 20 more than the that of a non-resident. The willingness of residents to spend money on entertainment is very close to the established limit, while non-residents are willing to pay by EUR 2 more in the future.

6.2 % of anglers expressed satisfaction with the offered entertainment (by 7–10 points), but 7.3 % of those who have used entertainment and leisure options did not make give any score. 21.5 % of the surveyed anglers used their time for other recreational activities besides fishing. These anglers, and also those who did not make use of the leisure services, expressed their desire for tourism activities and services, such as excursions, hiking, willingness to use the services of a fishing guide, rent of fishing gear, boat rental, fish drying facilities and premises to dry wet clothes.

### **8. Demographic Data**

The target group of the study included all anglers, 87.7 % of them were residents, 12.3 % were non-residents, coming from 25 cities or their neighbourhoods. The largest number of residents – 13.8 % – were from Ventspils and 13 % from Riga, 7.7 % from Ogre, and 6.2 % from Liepāja and Tukums. Non-residents are fishermen predominantly from five Lithuanian cities – with the majority coming from Kaunas and Klaipeda (3.1 %), followed by Akmene, Šiauliai and Telšiai (1.5 %). Regarding gender – mostly, in 93.8 % of cases, they are male anglers, and only four were women. The age ranges from 13 to 76 years; nine or 13.8 % of anglers, had reached retirement age (63–76) years. The residents are largely anglers aged 60–76 years (62.5 %), with the remaining 37.5 % aged 17–

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<sup>28</sup> The word Entertainment means tourism activities

44 years. Overall, the average age of anglers is ca. 46 years. Only 6.2 % of the anglers did not or could not answer the question regarding their profession; in total, they represented 30 professions. Most often respondents were businessmen (7.7 %), car mechanics, cooks and teachers (6.2 %). 64.6 % of anglers replied that their family size in 53.8 % of cases was mostly 2–4 people. The household's estimated income per angler per month is, most often (52.3 % of cases), between EUR 500 and EUR 1100, and a quarter of it even exceeds EUR 2000. This explains the range of expenses presented in the next chapter addressing expenditures by anglers.

### **2.3.2. EXPENDITURE BY FISHERMEN IN THE STUDY AREA**

Tourism is not a separate sector in the NACE classification; thus, the research task is to identify the tourism sector. According to the Tourism Law (1998), tourism is an economic sector whose task is to prepare and provide tourism services. Tourism services thus include targeted actions to meet the interests and needs of tourists. Tourism services are provided by tourism enterprises which carry out economic activities according to the Tourism Law (1998)<sup>29</sup> according to NACE classification, i.e., according to the Statistical Classification of Economic Activities in the European Community, Rev. 2.<sup>30</sup> Those businesses that fall directly within tourism, or tourism companies, provide nearly 100 % of their services to tourists (they can also provide their services to other visitors), will be a direct sector of influence. Tourism, on the other hand, is linked to many economic sectors indirectly if tourists consume goods and services produced by these sectors, thereby generating additional demand.

Groups of expenditure by anglers:

- 1) Travel expenses directly linked to reaching of the fishing destination;
- 2) Expenditure directly linked to trip;
- 3) Equipment and expenditure not directly linked to trip.

Direct travel expenses (Tables 12 and 13) included expenditure on fuel used to get to the fishing destination (round-trip), boat rental, accommodation, catering and entertainment, and additional expenditure, e.g., on fishing bait. The study did not reveal any expenditure on fishing guidebooks, souvenirs and items purchased during the trip to a specific region for fishing purposes.

Equipment and expenditure not directly linked to a fishing trip are expenditure on fishing gear, boat, trailer, clothing, regular boat maintenance and other goods and services not purchased as part of a particular trip.

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<sup>29</sup> Pieejams: <https://likumi.lv/ta/id/50026-turisma-likums>

<sup>30</sup> Pieejams: <https://www.csb.gov.lv/lv/statistika/klasifikacijas/nace-2-red/kodi>

**Travel and trip expenses per fisherman per trip (EUR) (n=65)**

No.	Travel and trip expenses		Weight of indicators			
			Average	Median	Min	Max
1.	Travel distance (km)					
		All	303.7	164	5	3512
		Residents	197.12	128	10	652
		Non-residents	1063.25	484	152	3512
2.	Travel and trip expenses on fuel (EUR)					
		All	31.92	21.44	1.25	440.41
		Residents	18.58	12.04	0	61.32
		Non-residents	126.93	45.52	24.78	440.40

**Expenditure on equipment (gear) per fisherman directly linked to the trip (EUR) (n=65)**

No.	Cost category, indicator		Weight of indicators			
			Average	Median	Min	Max
1.	Extra costs (EUR)					
		All	4.46	12	2	45
		Residents	10.71	9	2	45
		Non-residents	21.67	15	10	40
2.	Boat/canoe rental (EUR)					
		All	12.3	3	3	25
		Residents	12.3	3	3	25
		Non-residents	0	0	0	0
3.	Accommodation (EUR)					
		All	8.92	30	10	70
		Residents	7.81	25	10	70
		Non-residents	16.88	22.5	10	40
4.	Catering					
		All	13.28	10	5	70
		Residents	12.82	10	5	70
		Non-residents	16.5	15	7	25
5.	Entertainment					
		All	2.46	0	10	50
		Residents	2.28	0	10	50
		Non-residents	3.75	0	0	30

**Expenditure on equipment (gear) not directly linked to the trip (EUR) (n=65)**

No.	Cost category, indicator		Weight of indicators			
			Average	Median	Min	Max
1	Costs of fishing gear (EUR)					
		All	108.92	30	15	1500
		Residents	103.86	40	15	1500
		Non-residents	145	0	160	500
2.	Overall fishing gear costs (household) (EUR)					
		All	589.23	1250	50	7000
		Residents	671.93	1300	50	7000
		Non-residents	–	–	–	–
3	Boat costs (EUR)		779.23	0	150	31000
4	Boat transportation trailer costs (EUR)		133.85	0	400	2500

The average direct and indirect expenses of one angler among all respondents (n=65) in the entire study area led to the following results:

**Average spending of one angler in direct and indirect sectors and willingness to pay per one fishing trip (EUR) (n=65)**

Cost category	Expenditure of resident fisherman (EUR)	Resident fisherman willingness to pay (EUR)	Expenditure of non-resident fisherman (EUR)	Non-resident fisherman willingness to pay (EUR)
Direct costs				
Fuel	31.92	35.0	126.93	150.0
Extra expenditure*	10.38	4.95	6.8	1
Boat rental*	12.3	15.0	0	15.0
Accommodation	7.81	9.47	16.88	31.88
Catering	12.82	13.42	16.50	16.88
Entertainment	2.28	2.54	3.75	8.75
Total	<b>77.51</b>	<b>80.38</b>	<b>170.86</b>	<b>223.51</b>
Non-direct costs				
Fishing gear (at destination)	103.86	150.0	145.0	200.0
Fishing gear (at home)	671.93	700.0	0	0
Boat	779.23	800.0	0	0
Boat trailer	133.85	150.0	0	0
Fishing apparel	225.49	250.0	37.5	50.0
Licences and card	15.02	20.0	10.14	10.0
Total	<b>1929.38</b>	<b>2070</b>	<b>192.64</b>	<b>260.0</b>

\* – Boat rental is hereinafter included in tourism activities (entertainment/leisure), and so are extra expenses

Considering the need to compare the results of the Latvian fishing tourism survey with those of other countries, the average daily expenses of one angler in the direct and indirect tourism sectors (Table 16), as well as the willingness of fishermen (resident and non-resident) to pay, taking into account that the average length of fishing trip per angler is 1.83 days.

**Average spending of one angler in direct and indirect sectors and willingness to pay per one fishing day (EUR) (n=65)**

Cost category	Expenditure of resident fisherman (EUR)	Resident fisherman willingness to pay (EUR)	Expenditure of non-resident fisherman (EUR)	Non-resident fisherman willingness to pay (EUR)
Direct costs				
Fuel	17.44	19.13	69.36	81.97
Extra expenditure*	5.67	2.70	3.72	0.55
Boat rental*	6.72	8.20	0	8.20
Accommodation	4.27	5.17	9.22	17.42
Catering	7.01	7.33	9.02	9.22
Entertainment	1.25	1.39	2.05	4.78
Total	<b>42.36</b>	<b>43.92</b>	<b>93.37</b>	<b>122.13</b>
Non-direct costs				
Fishing gear (at fishing destination)	103.86	150.0	145.0	200.0

Fishing gear (at home)	671.93	700.0	0	0
Boat	779.23	800.0	0	0
Boat trailer	133.85	150.0	0	0
Fishing apparel	225.49	250.0	37.5	50.0
Licences and card**	15.02	20.0	10.14	10.0
<b>Total</b>	<b>1929.38</b>	<b>2070</b>	<b>192.64</b>	<b>260.0</b>

\*- Boat rental will be included in tourism activities (entertainment/leisure), and so are additional expenses. \*\* The spending difference between the license and card costs for trip and day was not taken into account.

Given that fishing takes place on average 29.65 times a year and lasts an average of 1.83 days, Table Average spending of one angler per year in direct and indirect sectors and willingness to pay summarises the expenditure per year and per trip.

**Average spending of one angler per year in direct and indirect sectors and willingness to pay (EUR)**  
(n=65)\*

Cost category	Expenditure of resident fisherman (EUR)	Resident fisherman willingness to pay (EUR)	Expenditure of non-resident fisherman (EUR)	Non-resident fisherman willingness to pay (EUR)
Direct costs				
Fuel	307.77	146.77	201.62	29.65
Accommodation	740.06	666.83	813.30	733.84
Catering	2298.17	2383.27	5066.00	6627.07
Entertainment**	3710.70	3641.61	6080.92	7835.31
<b>Total</b>	<b>7056.70</b>	<b>6838.48</b>	<b>12,773.52</b>	<b>15,670.62</b>
Non-direct costs				
Fishing gear (at fishing destination)	103.86	150.00	145.00	200.00
Fishing gear (at home)	671.93	700.00	0.00	0.00
Boat	779.23	800.00	0.00	0.00
Boat trailer	133.85	150.00	0.00	0.00
Fishing apparel	225.49	250.00	37.50	50.00
Licences and card	15.02	20.00	10.14	10.00
<b>Total</b>	<b>1929.38</b>	<b>2070.00</b>	<b>192.64</b>	<b>260.00</b>
<b>Total</b>	<b>8986.08</b>	<b>8908.48</b>	<b>12,966.16</b>	<b>15,930.62</b>

\*- Per 57 residents and 8 non-residents;

\*\* - Boat rental is included in tourism activities (entertainment/leisure), and so are additional expenses, taking into account an average of 29.65 trips per year

**Total expenditure by anglers per category of industry expenditure on trips per year (in EUR)**

Cost category	Expenditure of resident fishermen (EUR)	Resident fishermen willingness to pay (EUR)	Expenditure of non-resident fishermen (EUR)	Non-resident fishermen willingness to pay (EUR)
Direct costs				
Fuel	17,542.72	8365.75	1612.96	237.20
Accommodation	17,112.34	1840.60	7.81	16.88
Catering	130,995.78	135,846.22	40,527.99	53,016.57
Entertainment	173,179.42	173,855.44	48,647.35	48,647.35

Total:	<b>363,901.57</b>	<b>356,076.63</b>	<b>97,294.70</b>	<b>107,771.82</b>
Non-direct costs				
Fishing gear (at fishing destination)	5920.02	8550.00	1160	1600
Fishing gear (at home)	38,300.01	39,900.00	0	0
Boat rental	44,416.11	45,600	0	0
Boat	7629.45	8550	0	0
Boat trailer	12,852.93	14,250.00	300	400
Fishing apparel	856.14	1140	81.12	80
Total:	<b>109,974.66</b>	<b>117,990.00</b>	<b>1541.12</b>	<b>2080</b>
Grand total:	<b>117,031.36</b>	<b>124,828.48</b>	<b>13,702.96</b>	<b>17,305.87</b>

### 2.3.3. EVALUATION OF ANGLERS AS THE TARGET AUDIENCE OF FISHING TOURISM IN THE QUADRANTS OF THE STUDY AREA

The number of respondents to unanswered questions has also been taken into account in the calculation of the results per quadrant (example – explanation: How to calculate the accommodation costs of non-residents for Quadrant 6.

#### Survey of resident anglers and non-residents and results by area quadrants <sup>31</sup>

Most often, local anglers engage in fishing: Quadrant 2 (*Ventspils*), 70 times on average per year; Quadrant 5 (*Liepāja – Durbe*) – 68 times on average per year. Non-residents most often go fishing in Quadrant 6 (*Liepāja – Pape*) and Quadrant 5 (*Liepāja – Durbe*): from 17.6 to 9 times a year. The longest fishing trip lasts for residents of Quadrant 4 (*Užava – Pāvilosta*) and Quadrant 2 – 3.5 and 2.25 days, respectively, while the respondents of Quadrant 1 (*Irbe – Bušnieks*) have fished for up to a whole week. Non-residents used to stay the longest at Quadrant 6 (*Liepāja – Pape*), where, similar as in Quadrant 1, they stayed for a week for fishing.

.62 % of respondents are willing to go fishing both in freshwater and sea; fishing from the sea shore is a habit of less than a fifth of anglers, a third prefer freshwater and 9.23 have not responded at all.

28 % of respondents reported morning and evening as the preferred fishing time and 21 % – evening, which is by 4 % more compared to the previous survey for all 65 respondents. Majority, 26 %, in previous surveys the figure was 23 % (ibid), said that the fishing time was not essential. It is interesting that one in five respondents reported their willingness to go angling is not affected by weather conditions.

Respondents of the Quadrant *Irbe – Bušnieks* preferred fishing in *Miķeļtornis* (43 %) and *Lūžņa* (26.1 %), followed by other places such as *Pāvilosta*, *Jūrkalne*, *Engure*, *Oviši* and *Pitrags* with 4.3 %. Unfortunately, 8.7 % did not name their most popular fishing sites. Even more, 50 % of respondents of Quadrant 2 did not name their preferred fishing sites. Similarly, 40 % of respondents of Quadrant 3 (*Usma – Puze*) did not name their preferred fishing sites. Anglers mostly preferred Lake *Usma* (33.3 %), and the rest preferred *Jūrkalne*, *Ventspils Pier*, the *River Venta*, *Port of Ventspils* (6.7 %). As regards anglers of the Quadrant *Užava – Pāvilosta*, their key fishing sites are Lake *Lūžņa* and Lake *Durbe*. Residents and non-residents of Quadrant 5 (*Liepāja – Durbe*) predominantly

<sup>31</sup> Calculated result for each quadrant, taking into account the number of unanswered question.

prefer to go fishing in Liepāja, both in the lake and on the pier. While anglers of Quadrant 6 (Liepāja – Pape) prefer Lake Pape, and especially the Pape Canal.

55.4 % of respondents mentioned both fishing and recreation as the main objective of the visit, but in 30.8 % of cases fishing as the main goal of the visit was named by less than a sixth of the respondents. It is therefore understandable that most anglers are happy with any fish species caught. Regarding preferred fish species, respondents named three – perch, flounders and pike.

When calculating the average catch of anglers by quadrants, the largest catch is registered by anglers of Quadrant 5 (Liepāja – Durbe) with an average catch of 5 kg. At the Baltic Sea coast, the highest average catch is 4.8 kg, caught by the anglers of Quadrant 4 (*Užava – Pāvilosta*) followed by anglers of Quadrant 1 (*Irbe – Bušnieks*) with a catch of a kilogram less. Debatable is the issue of the reluctance of non-residents from Lithuania fishing on the Pape Lake Canal to respond to the question regarding the size of their catch and the number of fish. According to locals, it is not small and the rising numbers of Lithuanian anglers points to a successful catch in this place. Although the reluctance to provide information on the catch, especially the number of fish caught was also observed among residents in 66 % of cases.

## **2.3.4. EXPENDITURE BY FISHERMEN BY QUADRANTS OF THE STUDY AREA**

### **1. Fishing Gear**

The expenditure on fishing gear (equipment) differs among quadrants. Average expenditure on equipment at the fishing destination differs by as much as EUR 437.50, possibly due to differing household issue (should be clarified in further studies). The highest average spending on fishing gear was reported by anglers from Quadrant 5 and 6, while anglers from Quadrant 4 used the cheapest gear, which, as established before, resulted in biggest catch on average. The expenditure of respondents by quadrant ranges from EUR 125 to EUR 2220.

The expenditure for the average spending of fishing gear (Table 29), located at the respondents' home, ranged from EUR 800 to EUR 2750 (resident anglers from Quadrant 2 and 5). On average, the value of fishing gear at home of one quadrant amounts to EUR 1649.17. The minimum amount is EUR 50 for Quadrant 1, while the maximum – EUR 7000 for respondents from Quadrant 3. And in general, anglers from all quadrants keep rather valuable fishing gear at home.

Boat rental is not popular among respondents, and only 10 respondents rented it on average for EUR 14.71. The highest cost per year on boat rental was paid by anglers from Quadrant 3 – EUR 1000, and the lowest was paid by anglers from Quadrant 5 with EUR 212.50. The lowest rent for boat rental was paid by residents of Quadrant 6 (EUR 20), while anglers from Quadrant 1 did not use such a tourist service at all.

Only 14 respondents own their own boat and costs vary considerably, ranging from a simple rubber boat valued on average at EUR 733.33 to a high-class boat at the cost of EUR 31,000. Thus, the quadrant costs differ from EUR 2000 to EUR 33,000, while respondents of Quadrant 2 (*Ventspils*) do not own boats.

There is a contradiction between boat owners and those owning boat trailers. This is due to mutual agreement between anglers on the use of boats. On average, the expenditure by quadrants per trailer is EUR 856, while the total expenditure is EUR 1740 on average.

## 2. Clothing and other expenditure

The expenditure on fishing apparel (equipment) and other expenditure related to fishing differs by quadrants. The average spending on fishing clothes at Quadrant amounts to EUR 1575 and at Quadrant 1 – EUR 405.63, while it is EUR 0.00 for residents of Quadrant 6. Since fishermen from Germany did not share information on fishing equipment, all data collected from Quadrant 5 and 6 related to Lithuanian anglers, which, compared to local anglers, are small and are around EUR 90–135.

As regards the purchase of fishing licenses, 40 % of all anglers buy it online. Respondents of Quadrant 1 (*Irbe – Bušnieks*) shop online in 43.75 % of cases, respondents of Quadrant 3 (*Usma – Puze*) – up to 50 %. The same situation is with the purchase of a fishing card, and 28.57 % bought it for the entire year.

The price of the license depends on the location and the time of use, with a daily fee of EUR 5 for example on Lake Usma<sup>32</sup> and Durbe<sup>33</sup>, while an annual license for Lake Puze<sup>34</sup> amounts to EUR 45.00. Of those who answered the question, anglers from Quadrant 3 spend the most on cards with EUR 22, the least is spent by Lithuanian anglers from Quadrant 5, and Ventspils anglers reported having zero expenditure on this.

## 3. Licenses and fishing cards

In total, respondents spent EUR 1044.19 on licenses and fishing cards (Table 36). The highest expenditure applies to Quadrant 1, while the lowest – to Quadrant 4, respectively EUR 427.83 and EUR 72.69.

## 4. Extra Costs

In 2010, the additional expenditure per trip to the fishing site, amounted to EUR 10,540.81 (of the 31 respondents, who revealed their expenses). The highest extra costs applies to Quadrant 1, the lowest (EUR 414) – to Quadrant 2, while non-residents of Quadrant 5 had no extra costs at all.

## 5. Travel Costs

In total, 64.62 % of anglers arrived by car and brought 23 other fishermen with them. Of the respondents, the highest proportion arriving by car to a fishing destination applies to anglers from Quadrant 1 (40.48 %), followed by Quadrant 2 with 26.19 %. Among the transportation modes besides car, camper was named by anglers in Quadrant 5, microbus – in Quadrant 6, bus was mentioned by anglers in Quadrant 5, while other used other types of transportation to get to the fishing destination (by bike, boat or feet) account for 27.69 %; this does not apply to non-residents of Quadrant 5.

When calculating the travel distance by respondents in order to reach the destination, the highest number of kilometres accounts for anglers from Quadrants 1, 3 and 2, respectively, 7197.84 km, 3036 km and 2887.92 km, but the lowest, only 20 km – by resident fishermen from Quadrant 5 (locals of Liepāja). In total, respondents have travelled 19,703.69 km and spent EUR 19,379.44 on fuel (Table 41). The highest fuel consumption per trip in a

<sup>32</sup>; <sup>32</sup> [https://www.zm.gov.lv/public/ck/files/Durbes\\_ezera\\_licenc\\_makskeresanas\\_nolikums\\_GALAA.pdf](https://www.zm.gov.lv/public/ck/files/Durbes_ezera_licenc_makskeresanas_nolikums_GALAA.pdf)

<sup>33</sup> <https://www.epakalpojumi.lv/Services/LOMS/Lake.aspx?id=45702>

<sup>34</sup> <http://news.lv/Ventspils-Novadnieks/2018/04/10/nolikums-par-licenceto-makskeresanu-puzes-ezera>

quadrant was due to distance and number of vehicles. Non-resident anglers who had travelled the longest distance were those from Quadrant 6 & 5 and their spendings on fuel were 410.99 L and 227.70 L respectively. Resident anglers from Quadrant 1 & 3 indicated 539.84 L and 216.59 L fuel, which accounted for EUR 12,185.22.

## **6. Accommodation**

When choosing accommodation, 9.23 % of respondents from Quadrant 1 preferred holiday homes, 4.62 % – camping sites and 13.85 % – other accommodation types: and in the case of quadrant *Irbe – Bušnieks* this meant staying overnight in their vehicles. One respondent from Quadrant 2 stayed in a tent while three at their homes, they were residents of Ventspils. 6.15 % of anglers from Quadrant 3 stayed in camping sites and 3.08 % in tents, and an equally high number stayed in their vehicles. Of the five anglers from Quadrant 4 stayed in tents, others stayed at home. Of the seven anglers from Quadrant 5, only one used guest house as accommodation, and two non-residents stayed in tents and a camper. Resident anglers of Quadrant 6 indicated they had stayed at a camping and at holiday houses, while 4.62 % of non-resident anglers had stayed at a guest house, 3.08 % had stayed at a guest house and others (one person in each case) stayed in a hotel or stayed overnight in their campers.

The annual spending of the respondents on accommodation amounted to EUR 16,259.98. Respondents from Quadrant 1 and 2 spent the most on accommodation. Resident anglers from Quadrant 6 spent the least, only EUR 35 for accommodation, while non-resident anglers from Quadrant 4 & 5 did not have any expenses for accommodation. On average, the cost per quadrant per day amounts to EUR 25.36; with EUR 31 at Quadrant 1; EUR 37 at Quadrant 3; EUR 35 at Quadrant 5; EUR 14.06 at Quadrant 6. One respondent spends EUR 31.75 on average.

When comparing the willingness to pay with the actual average spendings per day, the amount of expenditure by quadrant increased from EUR 0.33 in Quadrant 2 to EUR 8.89 in Quadrant 1. The willingness to pay depends on the quality of the accommodation, as indicated by the average satisfaction score by Quadrants 5 & 6.

## **6.Catering**

Of the respondents, 84.91 % preferred to take care of the food by themselves and only 9.43 % preferred cafés and 5.66 % pubs/taverns. The last two options were chosen once by anglers from Quadrant 1, twice by anglers of Quadrant 3, while two Lithuanians from Quadrant 6 preferred cafés. One of the reasons is probably the score the respondents gave to the catering sites, ranging from 6.5 points in Quadrant 1 to 7.75 points in Quadrant 3. The highest score with 8.5 points was achieved by the summer café “Amber wind beach café” in Quadrant 6.

As can be seen, the lack of good catering establishments can be one of the reasons why fishermen buy food in groceries and prepare the meals themselves. Of all the respondents, who answered this question, the figure is 22.95 % in Quadrant 1, which is the highest number of the entire study area. Two respondents in Quadrant 1, 3, 5 and 6 and one in Quadrant 4 replied they buy food products in the vicinity of the fishing sites, i.e., nine in the entire coastal area, which represents 13.87 % of all or 14.75 % of all respondents who replied to this question. A third of anglers, or 33.85 %, buy products on the way to the fishing destination. The majority of these represent Quadrant 3 and 1 or 10.77 % and 9.23 % respectively. Thus, it can be concluded that 13.85 % of respondents buy

food in the areas of Quadrant 1 and 3. Anglers of Quadrant 2 are locals and find it easy to eat at home. Number of respondents from Quadrant 4 buying food here amount to 4.62 %, while in Quadrant 5 – 9.43 % and 9.23 % in Quadrant 6.

The expenditure on purchased food, on average, ranges between EUR 10 in Quadrant 6 for residents to EUR 20.60 for anglers from Quadrant 1. The annual estimates show that the total amount of expenditure on food at fishing destinations within the study area amounts to EUR 3714.17. Anglers from Quadrant 1 spend the most on food (EUR 1487.32 per year) while anglers from Quadrant 6 spend the least (EUR 20 per year). It should be noted that the non-resident anglers from Quadrant 5 and resident anglers from Quadrant 6 spend the least on food, only EUR 6.5 and EUR 10 respectively.

The willingness to spend on food in Quadrant 1 is similar to existing expenditure; respondents from Quadrant 2 did not reply, while anglers from Quadrant 3 increased the spendings by EUR 1.4, anglers from Quadrant 4 – by EUR 0.50, anglers from Quadrant 5 – by EUR 1 and by EUR 3.50 for non-residents, and the willingness of anglers from Quadrant 6 to spend on food remained at the same level.

## **7. Entertainment**

Apart from angling, fishermen are not very keen to actively participate in other activities; they account for only 21.54 % of respondents. However, the adverse conditions for fishing, as well as family members and other passengers, encourage the use of various recreational activities. Respondents of Quadrant 1 preferred nature trails, sauna services and cycling. Ventspils anglers focused only on their main activities, i.e., fishing, while anglers from Quadrant 3 engaged in sailing, wind surfing, horse-back riding, and other events. Respondents of Quadrant 4 took the opportunity to dedicate their free time from fishing to cycling, while resident anglers from Quadrant 6 preferred sauna, but non-resident anglers took part in cycling and other events.

In order to participate in the above-mentioned recreational activities, respondents spent on average between EUR 45 in Quadrant 3 and EUR 30 in Quadrant 6 per day. On annual basis, respondents from Quadrant 4 spent the most – EUR 2594.38. Anglers from Quadrant 2, 5 & 6 and non-resident anglers from Quadrant 5 did not engage in any leisure activities, and therefore did not face any expenses. The study found that respondents stick to their previous spending or slightly raise the rate for recreational activities. An exception is the local anglers from Quadrant 6 who showed no interest in such activities. Non-resident anglers from Quadrant 5 & 6 should be subject to further analysis. The quality of recreational activities is likely to be linked to the willingness to engage in such activities and the willingness to pay more.

### **2.3.5. EVALUATION OF ANGLERS AS THE TARGET AUDIENCE OF FISHING TOURISM IN THE QUADRANTS OF THE STUDY AREA**

Demographic data show that only in two quadrants, namely Quadrant 1 & 2, female anglers were present, representing only 6.15 % of the total number of anglers.

Resident anglers of Quadrant 5 are middle-aged, i.e., aged 36.14 years, but the eldest residents were anglers from Quadrant 6 with an average age of 62.5 years. The youngest angler was 13 years old and

accompanied his father in Quadrant 5, while the youngest non-resident was a 17-years-old Lithuanian heading to Quadrant 6. The eldest angler was 76 years old and the eldest anglers in general were respondents from Quadrant 3 & 6.

Information on the family size was obtained from 66.15 % of respondents: the largest families had anglers from Quadrant 1 & 3 consisting of six people, followed by non-resident anglers from Quadrant 5 and resident anglers from Quadrant 6 with a family consisting of four people.

The survey showed that anglers represented 30 different professions. The most common were businessmen in three quadrants: 1, 2 & 3. Three car mechanics and cooks in Quadrant 1. Two electric mechanics and drivers in Quadrant 3. Nine anglers are pensioners: four from Quadrant 3; three from Quadrant 6 and one from Quadrant 1 and 5.

In total, the largest income per household is represented by Quadrant 1, which is between EUR 18,100 and EUR 28,310, followed by Quadrant 3 ranging between EUR 8405 and EUR 23,100. The most frequent monthly income category is EUR 500–800 and EUR 801–1100, e.g., 63.64 % of anglers in Quadrant 1, while 22.73 % respondents said their income exceeded EUR 2000. A larger share of the last income category represent anglers from Quadrant 3. This means that there is a fairly sharp difference in income between residents, which was also reflected in expenditure. Since non-residents are from economically different countries, their income and expenditure differ.

### **2.3.6. EXPENDITURE OF FISHERMEN BY ECONOMY SECTORS AND BY QUADRANTS**

Expenditure by fishermen was calculated by sectors and quadrants and further subdivided by impact sectors: **Accommodation; Catering; Transport services; Tourism activities** and **Retail**, taking into account the number of respondents who answered the question from the questionnaire.

As regards trip expenditure, the largest increase in expenses, compared to the survey's findings and the expectations revealed by respondents, accounts for *Accommodation* – EUR 59.16. Probably this is linked to the quality of accommodation, as shown in particular by the scoring of respondents from Quadrant 5 & 6. The willingness to spend more on accommodation by anglers from Quadrant 1 is related to their expectations for better quality, as respondents criticised accommodation quality. In reality, as shown by survey results, the highest amount for accommodation was spent by respondents from Quadrant 3 and the lowest – by resident anglers from Quadrant 6. Residents from Quadrant 4 and non-residents from Quadrant 5, i.e., Lithuanian anglers, do not pay for accommodation. However, some of them might use accommodation services in future.

An increase in costs amounting to EUR 11.56 is foreseen for one angler per day in *Catering*, compared to the amount established in reality. An increase of EUR 67 is forecast for *Tourism activities*. On a quadrant basis, the highest annual cost increase per angler is estimated for non-residents of Quadrant 2 and 5, namely, EUR 38.33 and EUR 30.50. As regards *Catering*, the highest spending per angler was reported by respondents from Quadrant 6 and the lowest spendings – by residents of Quadrant 5 & 6. Local residents, anglers from Ventspils, do not spend on food when going fishing.

Resident-anglers from Quadrant 5 who are mostly from Liepāja spend little on transport – only EUR 0.54 per respondent, while local anglers from Ventspils spend slightly more – EUR 2.80. As already noted above, a further distance is linked to higher transport costs; thus, non-residents from Quadrant 5 spend more on transport with an average of EUR 95.18.

Respondents from Quadrant 1 & 3 are most interested in *Tourism activities* (Table 61), EUR 40 and EUR 45 respectively. However, the largest amount of expenditure per fisherman accounts for expenditure in the retail sector.

Resident-anglers from Quadrant 4 spend the most on *Retail* with a total sum per respondent amounting to EUR 1438.36, followed by Quadrant 6, where the expenditure per respondent amounts to EUR 1194.57, although the most is spent by resident anglers, while non-residents pay only a very small amount – EUR 37.12. More attention should be paid to this cohort of fishermen (mostly from Lithuania) to increase income from fishing tourism. If calculated by sectors among all quadrants (Table 61 and 62) the highest economic contribution from one respondent comes from retail – EUR 5153.40.

When calculating the expenditure one angler per day and per fishing trip, the highest amount of expenditure per quadrant is identified. The highest expenditure with EUR 1480.74 per day and per trip applies to Quadrant 4. The largest retail expenditure showed resident anglers from Quadrant 6.

Apart from retail, the smallest amount was spent in other sectors by locals from Ventspils and Liepāja, i.e., anglers from Quadrant 2 and 6, who spent only EUR 2.80 and EUR 27.50 respectively. In order to increase sectoral spending, the development opportunities of these sectors for this group of anglers should be analysed. Spendings by non-resident anglers from Quadrant 5 *Liepāja – Durbe* and Quadrant 6 *Liepāja – Pape* also requires an in-depth analysis, since in these quadrants an angler spent only EUR 122.73 and EUR 158.35 per day. On average, one angler spends EUR 953.71 per day per quadrant and EUR 1025.79 per trip.

An analysis of anglers' willingness to spend per day by sector shows that, compared to the reality, the amounts of changes are small: ranging from an increase of EUR 0.26 in *Transport* to spending EUR 67 on *Tourism activities*. The analysis of the willingness to pay shows that the Quadrants 2 and 5 are estimated winners as regards the sum per fishing day – with the sums of EUR 38.33 and EUR 30.50, while a lower contribution from anglers is represented by Quadrant 3 with only EUR 2.40. Overall, the average increase in spending within the study area from one angler per day is estimated at around EUR 23, while one angler, all quadrants combined, is on average per day ready to spend EUR 976.71 across all sectors.

The breakdown of travel expenditure of one angler by sector shows a similar picture as the expenditure by day, i.e., the biggest expenditure shows Quadrant 4 with EUR 1607.61, while the lowest in Quadrant 3 with EUR 552.38. The average expenses one angler per quadrant by sectors was estimated at EUR 1042.54.

The breakdown of travel expenditure of one angler by sector show that expenditures are higher where more anglers are travelling, or where they travel more frequent, or where the anglers are richer. The highest expenditure applied to respondents travelling to Quadrant 1 (EUR 23,141.66), while the expenditure sum in Quadrant 3 is EUR 11,007.32. The lowest expenditure with only EUR 413.15 were observed in Quadrant 2. Unfortunately, the expenditure spent by anglers from Lithuania at Quadrant 5 are not very high, only EUR 628.37. Moreover, the real expenditure in retail by Lithuanian anglers cannot be estimated due to lack of information. The

total travel costs by sector of all anglers, calculated on the basis of actual recorded data, amounts to EUR 54,094 or EUR 9015.67 on average per quadrant.

A comparison of the actual annual spendings of fishermen against the potential spendings showed a difference in future expenditure of EUR 387,474.44. This shows that the highest potential to generate income would be from Quadrant 1 & 3 as well as from non-residents from Quadrant 5 & 6.

The proportion of angling costs per identified economic sector, applying these to the quadrants of the study area, shows the following:

**Quadrant 1.** Transport services account for the largest share, because anglers travel to Quadrant 1 *Irbe – Bušnieks* not only from Kurzeme but also from Vidzeme, and this implies considerable travel expenses. While some anglers take care of accommodation options on their own (staying overnight in campers, tents and cars), some use the offered accommodation services and therefore around 27 % of the costs apply to accommodation. Given that some anglers are also accompanied by family members, entertainment/leisure is also used, accounting for almost 10 % of the expenditures.

**Quadrant 2.** Fishermen angling in the areas of Port of Ventspils and pier are predominantly locals and consequently the main share of expenses (93 %) applies to their fishing gear and a small proportion – to transport services, such as bus ticket or fuel costs.

**Quadrant 3.** Angling tourist heading to Lake Usma are offered only one municipal resting place free of charge on the lake shore, and therefore accommodation costs account for the largest share of expenses, i.e., 42 %. Fishing and active recreation are often carried out together with family members and these options require around 20 % of the expenses. Often fishermen arrived to Quadrant 3 from more distant locations, such as the capital city Riga, and this was reflected in the proportion of transport costs – 30 %.

**Quadrant 4.** The surveyed anglers in the quadrant *Užava – Pāvilosta* were mainly locals; thus, they had spent little on transport and nothing on accommodation. The highest expenditure was related to leisure and catering services. The share of fishing equipment accounted for 31 %, which apparently resulted in the highest average catch of fish in the research area – 4 kg.

**Quadrant 5.** Since some of the anglers at Quadrant 5 are locals, this explains the small share (only 5.71 %) of expenditure for catering; but some had travelled from remote locations, including abroad, therefore the proportion of transport costs is 15 %, while accommodation required the largest share of expenditure – 57.44 %.

**Quadrant 6.** This quadrant was represented by both locals and Lithuanian anglers and showed a fairly similar share among sectors, i.e., 28.60 % and 29.96 % for transport and accommodation services, as well as 21.94% for tourism activities. It should be noted that tourism activities are not a priority for local anglers and that there is little interest in catering services also by non-resident anglers, only 8.54 %, which is due to the fact that Lithuanian anglers carry food with them mainly from home.

The following situation was identified (breakdown by quadrants) when analysing expenditure of anglers by economic sector, considering their willingness to pay:

**Quadrant 1.** The “willingness to pay” balanced the proportions of the economic sector expenditure for all quadrants, including Quadrant 1. While the proportion of accommodation costs remained unchanged, the projected

growth of spendings for tourism activities, catering and retail set off the transport services expenditure ratio from 52.65 % to 13.09 %.

**Quadrant 2.** Some anglers from Lithuania have purchased real estate in Ventspils and do not need accommodation services, but new anglers, having made sure of the fishing opportunities at Quadrant 2, expressed their willingness to pay for accommodation and this changed the proportion of the costs for accommodation to 29.54 % and consequently increased the proportion of the catering to 11.08 % and the interest in tourism activities to 37.43 %.

**Quadrant 3.** The “willingness to pay” of anglers from Quadrant 3 slightly changed the proportion of expenditure by economic sector; hence, the interest in tourism activities and willingness to pay adjusted the proportion of future expenditure of all sectors by 6.89 %.

**Quadrant 4.** The non-local anglers surveyed in quadrant Užava – Pāvilosta said they anticipated future costs for accommodation and catering, and the estimated amounts of expenditure changed the proportion of expenditure per sector: for accommodation – by 17.17 % and for catering – by 8.73 %.

**Quadrant 5.** Similarly, as at Quadrant 4, the need for entertainment and dining out changed the proportion of expenditure by economic sector, and it was even more remarkable at Quadrant 5. By 17.05 % in the catering sector and by 22.96 % in tourism activities. This is partly due to weather or fishing conditions that are not always favourable for angling.

**Quadrant 6.** The changes in the expenditure proportion by economic sectors for Quadrant 6 were mainly due to some Latvian and Lithuanian anglers whose income was EUR 2000+; they expressed willingness to pay more for high-quality accommodation and for tourism activities, e.g., sauna.

## **2.4. Step 4 – ASSESSMENT OF THE IMPACT OF DIRECT AND INDIRECT SECTORS IN FISHING**

### **TOURISM**

#### **2.4.1. OUTCOME OF THE SURVEY OF BUSINESSES**

A fifth of the companies that serve fishing tourists and where the survey was carried out provided basic services in four sectors: *Accommodation*, *Catering*, *Tourism Services* and *Retail*, while others carried out a combination of multiple services from different sectors. A total of 35 entrepreneurs were surveyed in the study area, of whom 28.6 % provided accommodation, tourism services and retail services as their key business. The combinations of accommodation-catering and tourism sectors accounted for 14.3 % and just as much as for the accommodation services. 5.7 % of companies provided a range of services such as catering, retail, accommodation/catering, accommodation/ catering/ tourism services/ retail, while the rest of the services provided amounted to 2.9 %.

*Accommodation* was provided by 5 companies from Quadrant 1, 8 companies from Quadrant 2, 5 companies from Quadrant 3, 5 companies from Quadrant 4, 1 company from Quadrant 5, and 9 companies from Quadrant 6. *Catering services* were provided by 5 companies from Quadrant 1, 2 companies from Quadrant 3, 3 companies from Quadrant 4, 5 companies from Quadrant 6, and none from Quadrant 5. *Tourism services* were provided by 4 companies from Quadrant 1, 7 companies from Quadrant 3, one company from Quadrant 4 & 5, and

the most, seven companies, from Quadrant 6. *Culture services* for anglers were available only from two companies, one in Quadrant 4 and 6. *Transport services* were provided by one company from Quadrant 1 & 3, while 4 companies were engaged in retail: 2 companies from Quadrant 1, and one company from Quadrant 3 & 4.

Experience of entrepreneurs in managing companies providing services to tourists, including anglers, ranges from 1 to 35 years.

The longest experience in business among the surveyed entrepreneurs report entrepreneurs from Quadrant 7 – two entrepreneurs had an experience of 25–26 years and an experience of 20–25 years from Quadrant 1 & 2. By quadrants, the experience in years is as follows: Median of Quadrant 1 (Me)<sup>35</sup> is 6.0, maximum number of years (max.) is 25 years; Me of Quadrant 3 is 7.5, max. 20 years; Me of Quadrant 4 is 8.5, max. is 16 years; Me of Quadrant 5 is 7, max. is 11 years; Me of Quadrant 6 is 9, max. is 20 years, while entrepreneurs from Quadrant 7 were very experienced: Me is 25.5 years and max. is 25–26 years. In total, 11.4 % of entrepreneurs in the study area have four and 15 years of experience, while five, six, eight and nine years of experience account for 8.6 %, while an experience of up to three years is represented by a small proportion of entrepreneurs, only 14.3 %. This means that most entrepreneurs have relevant experience to assess the situation and its outlook developing fishing tourism.

The study of fishing tourism opportunities showed that the range of services was not wide and accessible. Businesses from Quadrant 3 offer some services, such as angling equipment, free of charge, and businesses from Quadrant 1 offer battery charging. Boat rental is the dominant (57.9 %) service of the designated angler services. Only seven of the services were designated specifically for anglers and were in total offered by 37.14 % of all the companies surveyed; hence, it can be said that two-thirds of the entrepreneurs have not paid special attention to this issue so far.

A comparison of the size of the future vision of fishing tourism of entrepreneurs by quadrants shows that some do not see the possibility of engaging in it on the pretext of poor anglers' behaviour and lack of fish resources. Entrepreneurs from Quadrant 1 & 3 were more willing to take part in fishing tourism, especially entrepreneurs from Quadrant 1 and 3 who, besides the conventional boat rental provide a number of options to support anglers. Of course, fishermen can still use the business offer for tourists, which is quite wide: Sports and leisure equipment, trampolines, water pedal boats, mini-golf, etc., sports and cultural events, excursions, hiking, yoga camps, port services, sauna, exhibitions, sports games, Midsummer festivities, Night of bonfires on the beach (30/AUG–31/AUG) and crafted jewellery trade. The organisation of these events and the provision of services to anglers in all economic sectors requires human resources. In order to determine employment in fishing tourism, both the number of employees, their qualifications and the remuneration to be paid are studied.

In the enterprises of the Kurzeme Region, where the survey was carried out, there are 141 employees or on average 4 persons per company, however, Me is 3, which means that most often companies employ three employees and this accounts for 28.6 % of all employees. The total number of employees declines in the low

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<sup>35</sup> Median (Me) - the average result in a series of numbers in which all elements of the set are arranged in ascending order. The median corresponds to the middle of the set - half of the elements of the set are equal to or less than the median and half of the elements of the set are equal to or greater than the median. The median characterizes a set much more accurately than the arithmetic mean in cases when it contains individual very large or very small elements.

season, of course, not in all companies, but according to businessmen, by about a third, i.e., by about 47 employees. Of all quadrants, the highest number of employees in the surveyed companies is in Quadrant 4, 1 and 6, while the lowest – in companies from Quadrant 5 and 7.

Of all entrepreneurs, 31.4 % did not reveal their profession, while the other businesses represented 15 professions. It is a positive sign that 14.3 % of the managers of the companies have studied business management, but only two of the employees of the company had tourism education. Of course, knowledge of other professions is valuable in business, such as an economist, lawyer, accountant, waiter, doctor, interpreter and even artist. At the same time, fishing tourists can also benefit from specific knowledge that local fishermen can provide. However, the lack of knowledge of tourism management affects tourism business, which is why some entrepreneurs are trying to build their knowledge in tourism sector by attending training courses.

Employees who were most engaged in capacity building courses represented companies from Quadrant 6, slightly less – Quadrant 1, 3 and 4, while employees from companies from Quadrant 5 and 7 were the least active in attending courses. Only a small percentage (17.14 %) of all employees have attended qualification courses, which is a small number and the capacity building should be continued to gain knowledge applicable for fishing tourism.

For the calculation of the impact of fishing tourism, it is important to know the economic benefits to the economy of the area from employees; which is why the remuneration of employees is being clarified.

Of the respondents, 17.14 % of entrepreneurs did not answer the question on gross wage of employees, therefore the missing information will be supplemented from the Latvian statistics data on the gross wages and salaries in tourism corresponding to the reference period. The highest gross wage was represented by employees of tourism businesses from Quadrant 4 – EUR 5015, the lowest (according to data provided by entrepreneurs) was in Quadrant 6 with EUR 1200, but the data from Quadrant 7 were not taken into account since no anglers were met, but these data were perceived as a source of information on fishing tourism in the area. Thus, the average gross wage in the tourist businesses was found to be EUR 471, Me is EUR 500, and the gross wage variation is between EUR 65 and EUR 3000. However, a comparison of the information as regards the number of employees employed in the businesses and the number of employees mentioned on gross wages leads to a difference in 117 employees. For these employees, the average gross wage is calculated according to the Latvian statistics, as the average gross wages by the SRS in *Accommodation and Catering* sector are defined separately at EUR 710 and EUR 542<sup>36</sup>, but the surveyed individuals did not have precise information on the positions of employees, therefore EUR 790 gross remuneration was used for accommodation and catering services<sup>37</sup>. The following table 76 shows the gross monthly and annual salary of employees from all quadrants. The calculations take into account the 30% reduction in the number of seasonal workers reported in the post-interviews.

Since anglers from Quadrant 2 did not use accommodation, secondary and tertiary data were used for fishing tourism offers.

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<sup>36</sup> <https://www.vid.gov.lv/lv/iekaszemes-nodoklu-maksataju-darba-deveju-nodarbinato-darba-nemeju-menesa-videjie-darba-ienakumi-9>

<sup>37</sup> Pieejams: <https://www.csb.gov.lv/lv/statistika/statistikas-temas/socialie-procesi/darba-samaksa/meklet-tema/2446-darba-samaksas-parmainas-2019-gada-3>

#### **2.4.2. GROSS WAGE AND TAX CALCULATION OF EMPLOYEES OF ENTERPRISES IN THE DIRECT IMPACT SECTORS**

The highest gross wage is paid to the employees of tourism companies from Quadrant 4 – EUR 294,294, and the lowest with EUR 70,896 is found in Quadrant 5. As a result, 141 employees from the 35 companies receive a total of EUR 940,086 in gross salary per year.

Fishing tourism companies' labour tax revenues amount to more than half a million euros per year of employees' gross annual wage, including all taxes, such as social insurance contributions by employees, social insurance contributions by employers and personal income tax (PIT).

#### **2.4.3. GROSS WAGE AND TAX CALCULATION OF EMPLOYEES OF ENTERPRISES IN THE INDIRECT IMPACT SECTORS**

Given that fishermen drive to get to their fishing destination, it was necessary to calculate the taxes paid by employees working in these indirect impact sectors.

Thus, in total, during the year, the indirect industry, the fuel station employees and the drivers who take the anglers to and from the fishing sites, earning EUR 351,036, pay a total of EUR 31,677.36 in taxes.

Accounting of labour tax revenues of indirect sectors with an impact on fishing tourism in transport services showed that the annual gross wage of employees in all 7 quadrants amounts to a significant sum, i.e. EUR 328,500, of which the PIT revenue for all employees of the fuel stations amounted to EUR 27,666 per year, but only in two quadrants anglers used public transport, where the gross annual salary of bus drivers (based on the average gross wage of an employee in the transport sector) was EUR 22,536 with EUR 4011.36 being paid in taxes.

#### **2.4.4. INVESTMENT AND EXPENDITURE IN THE ADMINISTRATION AND MAINTENANCE AFFECTING FISHING TOURISM**

According to global practice, investments in tourism incentives are deemed income and are included *in direct economic impact* (DEI). The calculations are based on the expenditure of local authorities within the study area only in the sectors affecting fishing tourism included in the municipal public accounts or any other public document. However, fishing tourism is an integral part of tourism where investment is made, and therefore it is difficult to separate it. Hence, of the seven tourism projects implemented (completed and ongoing) by the Kurzeme Planning Region during 2014–2020 planning period only those are highlighted, which affect fishing tourism the most.

### Investments in fishing tourism in 2014–2019, EUR, per year <sup>38</sup>

Investments	Sponsor or project	EUR
<ul style="list-style-type: none"> <li>• Organisation of seminars (6);</li> <li>• Training of tourism entrepreneurs, local tourism information centre experts, fishing guides</li> <li>• for the development and promotion of sustainable coastal fishing tourism;</li> <li>• Construction of the fish spawning path in the River Rīva in Ventspils municipality;</li> <li>• Five international fishing tourism offers have been created;</li> <li>• Kurzeme Fishing tourism map is issued</li> </ul>	Development, promotion and sustainable management of the Baltic Sea Region as a coastal fishing tourism destination (RETROUT)	349,455
<ul style="list-style-type: none"> <li>• Production of information signs and installation thereof along the entire Baltic Sea coast;</li> <li>• During tourism season, the coast of the Baltic Sea in Pāvilosta municipality was kept clean and maintained;</li> <li>• Facilitated beaches on the coast of Pāvilosta;</li> <li>• Surveyed beaches of Pāvilosta, Saraiķi, Ulmale, Akmeņrags and Ziemepe;</li> <li>• A wooden staircase to safely reach the beach from the car parking area was built in Ziemepe, Vērgale Parish.</li> </ul>	“Implementation of practical coastal management activities”, project contract No. 1-20/49 (LEPF) Latvian Environmental Protection Fund	15,248.00
Total:		<b>364,703.00</b>

And, the costs related to administering fishing tourism include wages of tourism specialists, the costs of maintaining tourism infrastructure and the costs related to marketing fishing tourism.

The information obtained enabled to determine the costs by municipalities spent of expert wages during a calendar year, which was done according to the following formula (Rinne, 1999):

$$\text{Average salary } 600 \times 12 = 7200 / 301 \text{ working days} = 7200 \div 301 + \text{machinery (10 \% of 7200 = 720)} = 7920 \text{ (EUR),}$$

but as employees worked at the specific sites only during the season, this was taken into account in the calculations, i.e.,  $12/4 = 3$  months.

### Expenditure on the maintenance of tourism infrastructure in 2019 (EUR) <sup>43</sup>

Name of the site	Average gross wage/per month (EUR)	Employees' gross annual wage + equipment (EUR)	Number of employees	Social insurance contributions by employees (EUR)	Social insurance contributions by employers (EUR)	PIT 3 months (EUR)	Tax revenue from PIT per year for all (EUR)
The beaches and dune zone of Pāvilosta, Saraiķi, Ulmale, Akmeņrags and Ziemepe are regularly surveyed	790	11,968.50	5	1303.5	2854.67	2370	6528.165
Total:		<b>11,968.50</b>			–		<b>6528.165</b>

Employment of employees (seasonal) for three months per year.

Thus, when calculating the wage costs of tourism experts, the costs of maintaining tourism infrastructure, investment and the costs of marketing fishing tourism, administration and maintenance, costs related to fishing tourism are determined.

<sup>38</sup> Available: <http://www.pavilosta.lv/rightmenu1/-projekti/2018-gads>

## 2.5. Step 5 – ASSESSING THE ECONOMIC IMPACT OF FISHING TOURISM ON KURZEME REGION

The economic impact of fishing tourism was first assessed in the study area and then applied to the entire Kurzeme.

### 2.5.1. THE ECONOMIC IMPACT OF FISHING TOURISM ON THE KURZEME REGION'S STUDY AREA

The evaluation of the total economic impact of tourism (TotalEI) was carried out in successive phases:

- (1) Calculation of direct economic impact (DEI);
- (2) Calculation of the induced economic impact (IndEI);
- (3) Calculation of indirect economic impact (NEI);
- (4) Calculation of total economic impact (TotalEI);

**(1) Direct economic impact (DEI)** consists of the expenditures by tourists/visitors, the remuneration of employees directly employed in tourism and the investments by local authorities in tourism, which is considered to be revenue generated from expenditure by travellers. By summing up these indicators, the direct impact is obtained in monetary terms (EUR).

#### Calculation of direct economic impact, EUR

Indicator of direct economic impact (DEI);	Expenditure and investments (EUR)	PIT per year (EUR)
Quadrant 1 – the Baltic Sea coast from the mouth of the River Irbe to Oviši		
Expenditure by anglers (income to the territory of the municipality)	23,141.66	3205.08
Direct employment in tourism	–	42,369.60
Investment in tourism	49,922.14	–
Total:	73,063.80	45,574.68
Quadrant 2 – Port of Ventspils and pier area		
Expenditure by anglers (income to the territory of the municipality)	413.15	84.49
Direct employment in tourism	–	0
Investment in tourism	49,922.14	–
Total:	50,335.29	84.49
Quadrant 3 – around Lake Usma and Lake Puze		
Expenditure by anglers (income to the territory of the municipality)	11,007.32	1601.95
Direct employment in tourism	–	25,905.60
Investment in tourism	49,922.14	–
Total:	60,929.46	27,507.55
Quadrant 4 – from Užava (on Ventspils side) to Pāvilosta		
Expenditure by anglers (income to the territory of the municipality)	4813.30	993.42
Direct employment in tourism	–	58,858.80
Investment in tourism	65,170.14	–
Total:	69,983.44	59,852.22
Quadrant 5 – Lake Liepāja (North, South Pier, Promenade, Tirdzniecības Canal), Lake Tāšu and Lake Durbe		
Expenditure by anglers (income to the territory of the municipality)	3732.11	539.07

Direct employment in tourism	–	14,179.20
Investment in tourism	49,922.14	–
Total:	53,654.25	14,718.27
Quadrant 6 – from Liepāja to Pape, Pape Canal		
Expenditure by anglers (income to the territory of the municipality)	10,986.45	1728.17
Direct employment in tourism	–	40,706.40
Investment in tourism	49,922.14	–
Total:	60,908.59	42,434.57
Quadrant 7 – Kuldīga, River Venta		
Expenditure by anglers (income to the territory of the municipality)	0	0
Direct employment in tourism	–	5997.60
Investment in tourism	49,922.14	–
Total:	49,922.14	5997.60
Grand total:	<b>418,796.97</b>	<b>196,169.38</b>
<b>DEI:</b>	<b>614,966.35</b>	

Given that the existing and ongoing project by Kurzeme Planning Region in 2014–2020 planning period is implemented for the benefit of the fishing tourism development in the entire study area, the project's investment sum is divided among all seven quadrants, while the realised investment in Quadrant 4 is added to this quadrant (Table 82). Thus, the **DEI** of the study area amounts to **EUR 614,966.35**.

## (2) Calculation of the induced economic impact (IndEI);

The induced economic impact (IndEI) in the study area accounts for expenditure by anglers on catering, transport services, accommodation, etc. The SEIs are created when expenditure by anglers in companies are further spent on necessary goods, services and salaries, which in turn are spent on consumption.

In the calculation of IndEI the cash outflow of funds (COF) plays a significant role; this occurs if goods and services are imported (or the money is invested in stocks). Tourism companies import or purchase a lot of goods and services from economic operators in other administrative territorial units for the purpose of serving tourists. Based on Finland's experience in tourism research in national parks<sup>39,40</sup> the following COF units are applied in the study by sector: (1) accommodation – 25 %; (2) catering – 45 %; (3) transport services – 19 %; (4) tourism services' programmes – 20 %; (5) retail – 75 %.

Value added tax (VAT) is a consumption tax included in the price of a product or service. The standard rate amounts to 21 % as of 1 January 2019<sup>41</sup>. There is also a reduced rate of value added tax, which is 12% at present. It is also applied to domestic public transport services<sup>42</sup> and accommodation services in accommodation sites (hotels, motels, guest houses, camping sites, tourist accommodation) (Article 42 (10) of Value Added Tax Law).<sup>43</sup> The reduced rate of VAT of five per cent applies to supplies of food such as fresh fruit, berries and vegetables (Article 41 (16) of Value Added Tax Law). Since it was not possible to determine the purchase of these food products in the joint food basket of anglers, this rate is not applied and instead a VAT rate of 21 % was into account in the calculations.

<sup>39</sup> <http://www.metla.fi/metinfo/monikaytto/lvvi/esitelmat/2006/2006-huhtala-mvv3.pdf>

<sup>40</sup> <https://www.tandfonline.com/doi/abs/10.1080/15022250510014363?src=recsys&journalCode=sjht20>

<sup>41</sup> [https://www.fm.gov.lv/lv/sadala/nodoklu\\_politika/nodoklu\\_un\\_nodevu\\_sistema\\_latvija/pievienotas\\_vertibas\\_nodoklis/pvn\\_likmes/57359-pvn-likmes](https://www.fm.gov.lv/lv/sadala/nodoklu_politika/nodoklu_un_nodevu_sistema_latvija/pievienotas_vertibas_nodoklis/pvn_likmes/57359-pvn-likmes)

<sup>42</sup> [https://www.vid.gov.lv/sites/default/files/pvn\\_pakalpojumiem.pdf](https://www.vid.gov.lv/sites/default/files/pvn_pakalpojumiem.pdf)

<sup>43</sup> <https://likumi.lv/ta/id/253451-pievienotas-vertibas-nodokla-likums%23p3>

Value added tax is already usually included in the price of a good or service. From the buyer's point of view, it is a tax on the purchase price. From the seller's point of view, it is a tax on the added value of a product, service or material. The producer transfers to the state budget the difference between the cost of production and distribution, keeping the remaining amount of money for themselves in order to compensate for the taxes they have paid in advance on the raw materials.

### Calculation of the induced economic impact, EUR

Sector	Expenditure	VAT (%)	VAT (EUR)	Financial outflow (%)	Financial damage (EUR)	Amount remaining in the area (EUR)
<b>Quadrant 1 – the Baltic Sea coast from the mouth of the River Irbe to Oviši</b>						
Accommodation	6200	12	744.00	25	1550	4092
Catering	1487.32	21	312.34	75	1115.49	293.75
Transport services	12,185.22	12	1462.23	45	5483.35	5897.64
Tourism activities	2253.40	21	473.21	20	450.68	1424.15
Retail	1015.72	21	213.30	19	192.99	649.96
Total:	23,141.66	–	3205.08	–	8792.51	12,357.50
<b>Quadrant 2. kvadrants – Ventspis port and piers</b>						
Accommodation	0	12	0.00	25	0	3468.75
Catering	0	21	0.00	75	0	131.10
Transport services	25.2	12	3.02	45	1466.66	1790.93
Tourism activities	0	21	0.00	20	445.64	1782.56
Retail	387.95	21	81.47	19	70.39	234.11
Total:	413.15	–	84.49	–	3532.23	7407.44
<b>Quadrant 3: Lake Usma and Lake Puze</b>						
Accommodation	4625	12	555.00	25	0.00	0
Catering	524.38	21	110.12	75	413.49	110.3
Transport services	3259.25	12	391.11	45	86.85	58.379475
Tourism activities	2228.2	21	467.92	20	518.88	1701.168
Retail	370.49	21	77.80	19	280.18	1131.4161
Total:	11007.32	–	1601.95	–	1299.39	3001.26
<b>Quadrant 4: Ventspils from Užava to Pāvilosta</b>						
Accommodation	0	12	0	25	535.94	1607.81
Catering	551.32	21	115.78	75	159.75	24.31
Transport services	192.99	12	23.16	45	258.67	303.42
Tourism activities	2594.38	21	544.82	20	0.00	0
Retail	1474.61	21	309.67	19	152.10	397.60
Total:	4813.3	–	993.42	–	1106.46	2333.13
<b>Quadrant 5: Liepāja , Tāšu and Durbe lake</b>						
Accommodation	2143.75	12	257.25	25	64.31	144.70
Catering	213	21	44.73	75	33.55	2.80
Transport services	574.83	12	68.98	45	31.04	20.87
Tourism activities	0	21	0.00	20	0.00	0
Retail	800.53	21	168.11	19	31.94	108.94
Total:	3732.11	–	539.07	–	160.84	277.30
<b>Quadrant 6: Liepāja – Pape</b>						

Accommodation	3291.23	12	394.95	25	98.74	222.16
Catering	938.148	21	197.01	75	147.76	12.31
Transport services	3141.95	12	377.03	45	169.66	114.05
Tourism activities	2410.55	21	506.22	20	101.24	323.98
Retail	1204.57	21	252.96	19	48.06	165.97
Total:	10986.45	–	1728.17	–	565.46	838.47
Pavisam kopä:	44961.63	–	<b>5753.66</b>	–	13537.67	26215.11
<b>IndEI</b>						<b>26215.11</b>

Indirect impacts (NEI) are related to both the DEI and the IndEI. Indirect effects are changes in sales, revenue and employment in companies supplying goods and services to tourism organisations and businesses in the study area. It is calculated according to the formula<sup>44,45</sup>:

$$NEI = DEI + IndEI \times 10 \% \quad (1),$$

where:

NEI – indirect economic impacts;

DEI – direct economic impact;

IndEI – induced economic impact;

0.1 (10%) – the marginal propensity to consume (MPC)<sup>46</sup>. NEI is estimated to be **EUR 64,118.15**.

The total economic impact of tourism (TotalEI) is calculated according to the formula<sup>50</sup>:

$$TotalEI = DEI + IndEI + NEI \quad (2),$$

where:

TotalEI – total economic impacts;

DEI – direct economic impact;

IndEI – induced economic impact

NEI – indirect economic impacts. The final estimate shows that **TotalEI** is **EUR 705,299.60**, which is 3.5 times more than investment in fishing tourism infrastructure and its maintenance in 2019.

Formula of the value of the tourism income multiplier of the study area:

$$K = DEI + IndEI + NEI / DEI \quad (3),$$

where:

K – multiplier factor for tourism income;

DEI – direct economic impact;

IndEI – induced economic impact;

NEI – indirect economic impacts

<sup>44</sup> Available: Rinne P. (1999). Luontomatkailun aluetaloudelliset vaikutukset Kuhmossa. Research 93. University of Joensuu. Faculty of Forestry, Finland

<sup>45</sup> Available: SAARINEN, J.; KERÄNEN, A.; SEPPONEN, P., 1996: Luonnon vetovoimaisuuteen perustuvan matkailun taloudelliset vaikutukset paikallistasolla: esimerkkinä Saariselän matkailu. In: SAARINEN, J.; JÄRVILUOMA, J. (eds) Luonto virkistys- ja matkailuympäristönä. Metsäntutkimuslaitoksen tiedonantoja 619: 79 – 92. Gummerus Kirjapaino, Saarijärvi.

<sup>46</sup> Huhtala, M. (2006) Assessment of Local Economic Impacts of Recreation: The Case of Pallas- Ounastunturi National Park. Pieejams: <http://www.metla.fi/metinfo/monikaytto/lvvi/esitelmat/2006/2006-huhtala-mvv3.pdf>

Thus,  $K = 2.05$ , which indicates that every euro spent by an angler in the study area in Kurzeme Region circulates 2.05 times over a year, generating higher income in tourism-related sectors, thus also in total income of the study area.

However, one gets a completely different picture if willingness to pay by anglers is considered (both residents, non-residents) that other positions remain the same as before. In this respect, the calculation shows:

**DEI is EUR 1,002,440.80,**  
**NEI is EUR 102,865.60,**

**IndEI is EUR 26,215.11**  
**TotalEI is EUR 1,131,521.50**  
**or 1.14 mln. EUR**

It is therefore expected that:

- (1) every euro invested in fishing tourism in one year can have a much greater impact on the study area than actually found;
- (2) the estimated amount of TotalEI is 3.1 times higher than that of investments in fishing tourism in the study area of Kurzeme Region in 2019;
- (3) the study area was visited by a large number of anglers per year, who neither then, nor now are unfortunately being monitored, but who affect the sectors related to fishing tourism and thus on the economy of the study area;
- (4) the total economic impact (TotalEI) of a single angler on the study area is rounded to **EUR 10,851** per year, the forecast is **EUR 17,408**, which is an increase of EUR 6557.

## 2.5.2. IMPACT OF FISHING TOURISM ON THE ECONOMY OF KURZEME REGION

The **value transfer method** (VTM) has been used to determine the economic impact of fishing tourism on the economy of Kurzeme Region, which is an alternative choice considering the limited time and resources in certain situations. Main factors affecting the use of VTM:

- (1) costs of primary data research;
- (2) time needed to perform primary data research;
- (3) time and resource constraints;
- (4) increasing need for economic assessment.<sup>47</sup>

It should be noted that studies meeting the following conditions are useful for comparison:

- (1) environment must be similar;
- (2) services must be similar;
- (3) original studies must contain sufficient representative data.<sup>48</sup>

Taking into account such arguments, it was possible to use the results obtained in the study area to determine the economic impact of fishing tourism on the economy of Kurzeme Region.

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<sup>47</sup> Pakalniete, K., Malzurbis, J. (2008). Ieguvumu pārneses metodes izmantošana ūdeņu ekosistēmu ekonomiskā novērtēšanā. Using the Benefits of the Transfer Method for Economic Valuation of Aquatic Ecosystems. LU Raksti.721.sēj. Vadības zinātne, 312.-331.lpp.

<sup>48</sup> Bergstrom, J.C., Taylor, L.O. (2006). Using Meta-analysis for Benefits Transfer: Theory and Practice. Ecological Economics, Elsevier, Volume 60 (2), p.351-360.

There are no specific transfer procedures for the use of the value transfer method. The following steps are usually taken:

- (1) Description of current situation;
- (2) introduction of criteria and value transfer.

### (1) Characteristics of Kurzeme Planning Region in terms of fishing tourism – an overview of angling tourism offer



The characteristics of the region in terms of fishing tourism describes not only the geographical features but also the angling tourism offer, both in sectors of direct and indirect impact.

Kurzeme Planning Region is rich in waters. These are the four main rivers: Bārta, Venta, Saka and Irbe, as well as many coastal and other small rivers such as Engure, Stende, Rinda, Abava, Vadakste, Imula, Amula, Riežupe, Durbe, Tebra, etc.

River basins in Kurzeme<sup>49</sup>

There are more than 200 lakes in Kurzeme Region, three of which are among the largest in Latvia: Lake Engure (40.46 km<sup>2</sup>) is the third in size, Lake Liepāja is the fifth in size (37.15 km<sup>2</sup>) and Lake Usma is the sixth in size (34.69 km<sup>2</sup>). While Lake Puze ranks 16th in terms of depth reaching 33.6 m.<sup>50</sup>

Kurzeme region has the longest sea border – the coastline stretches for 350 km, which opens up opportunities to catch sea fish. Since fish are undoubtedly the main resource of fishing tourism. Fishermen prefer three fish species: flounder, pike and perch. There is also the option to “catch and release” brown trouts during a certain period. However, 41.5 % of anglers were happy about any species: vimba, zander, tench, crucian carp, needlefish, bream and other, and the catch is just as important to the angler as recreation.

#### Review of fishing tourism offer

In fishing tourism, the range of tourist services and goods received is important, for instance, the range of services **in accommodation, catering, entertainment** and the **products relevant for anglers**.

Firstly, the study took into account the limit of the amount of money to be spent on accommodation for respondents in the study area, and therefore sites were selected, which matched the cost limits: in accommodation – up to EUR 25–3), in catering – up to EUR 28 and in tourism activities – up to EUR 20–40 was carried out. Secondly, accommodation sites close to the fishing destination were selected. Thirdly, the range of offers is grouped

<sup>49</sup> <http://www.upes.lv/k-a-r-t-e/>

<sup>50</sup> Available: <https://www.ezeri.lv/>

according to the location of the accommodation site: Lakes or Sea, and often both are frequent, including rivers, which were not subdivided to avoid overlapping.

The offer of **accommodation** services in Kurzeme Region among Lakes and Sea is evenly spread with 38 accommodation sites near lakes and 32 at the sea.

**Catering** near lakes and sea is predominantly offered by accommodation sites.

As regards Lakes, catering is offered by five guest houses, two holiday homes, two campsites and recreation facilities. As regards Sea, catering is offered by three guest houses and holiday houses, one campsite and, unlike accommodation sites near lakes, catering in Alsunga and Jūrkalne, is also offered by pubs. Of the 70 available accommodation services, only 21 offer catering and 51 do not offer it at all.

However, the range of **tourism activities or leisure is much wider**. When comparing Lakes and Sea, accommodation sites near lakes have a much wider offer – with 70 tourism activities more than in the second group. The number of tents and picnic places is almost similar for Lakes, i.e., 18–19 % of all activities. Sauna and bike rental are next in terms of popularity, which anglers use in accommodation sites near lakes. In turn, the number of tent and picnic places at sea are equivalent in number and represent about 26 % of the total offer. The number of trailer places ranks third for Sea, similar as for Lakes, of all tourist services, and this tourist service accounts for 11 % of the entire offer. There are more tent, picnic and trailer places near lakes than there is at the sea, which is partly due to many restrictions in the coastal area.

There are some leisure options, which differ for these groups: for instance, a jacuzzi, pool, horse riding, water motorcycle, spa, tennis court and water jet bike is offered by accommodation sites in the group Lake, while quad bike rides, mini zoos, motorboat rental and pedal boats can be found among the services offered by accommodation sites at the sea.

Thus, 72 accommodation sites suitable for fishing tourists offer tents and picnic places (21–22 %), sauna (16 %), and bike rental (9 %).

Given the angling tourists use cars to get to their fishing destination, the **network of fuel stations** is critical (fuel stations are part of the indirect impact sector). Of all the fuel stations, 50 % are located in Liepāja and Ventspils. Although the rest are located in different areas, they are mainly located in places with higher traffic intensity. There are sufficient number of fuel stations in the coastal section from Nīca to Liepāja.

In the section Liepāja – Ventspils there is only one petrol station, which is in Jūrkalne. While on the coastal section from Ventspils to Mērsrags, a section of 147 km, there is not a single fuel station, although the western shore of the Baltic Sea in Kurzeme is a favourite choice by anglers. Anglers heading to Lake Engure and other lakes in Talsi municipality refuel their cars at MC Mērsrags, and Viada, Neste and Circle K petrol stations in Talsi. Gotika Auto Usma is the closest fuel station for anglers with their fishing destination at Lake Usma, Lake Puze and other lakes nearby the road E-22. It has to be noted that fuel stations are the place where anglers buy the fishing cards. At the service stations, the fishing card can also be bought at night, which is often done by Lithuanians and Estonians visiting Latvia for angling purposes.

It should be noted that the largest distributors of fishing cards are also Maxima, Narvessen stores, as well as almost every fishing equipment shop in Latvia. The following Table 88 shows the distribution of fishing sites in Kurzeme Region.

In Kurzeme, the largest network of point-of-sales to buy a fishing card is ensured by Latvian Post offices with 71 sites, followed by 'Narvessen' shops – 23, and fuel stations – 11.

In total, around 22 fishing gear stores in Kurzeme offer all the relevant items for fishing along with maps. However, it is not the only option to buy equipment and accessories for fishing. Supermarkets and smaller grocery stores can in some cases step in, since every angler usually already has everything he/she needs for his/her hobby. Of course, much more items for fishing can be found in Riga, but fishing shops in Kurzeme are also able to supply the relevant accessories and equipment. Moreover, no less important is an informed salesperson.

In general, the review of the offer of fishing tourism shows that the range of tourism services and goods is wide, both for accommodation, catering, entertainment/leisure and items relevant for anglers.

## **(2) The introduction of criteria for transfer of values, transfer of values and evaluation**

The *direct choice method* was used as the transfer of value method which allowed the use of data from surveys.<sup>51</sup> It should be understood that both situations are not completely identical and the values used in the transfer are usually adjusted. The transfer method takes into account multiple value transfer approaches. The present document used the transfer of numeric values, which is usually based on a transfer of the average value or value interval from the study situation to the hypothetical situation.<sup>52</sup>

In order to assess the economic impact of fishing tourism on the economy of Kurzeme Region, the following data about Kurzeme and the study area had to be clarified:

- (1) About anglers (fishing habits, costs of gear, clothing, accommodation, food, entertainment/leisure and additional costs, travel costs and demographic data);
- (2) From surveys of businesses, the economic sectors related to fishing tourism, such as accommodation, catering, tourism services and retail;
- (3) Based on the data obtained from anglers, businesses and local municipalities (average gross wages and taxes of employees; gross wages and salaries of direct and indirect impact sectors; taxes, investment and expenditure in administration and maintenance);
- (4) The estimated number of anglers in Kurzeme Region.

Considering that the data of bullet point (1) – (3) were already obtained (see Steps 3 and 4) and can be used to assess the impact of tourism, it is necessary to find out how many anglers visit Kurzeme Region during the year.

Based on the data of the Latvian Rural Advisory and Training Centre (LRATC) (interview with the representative of the LRATC, Miķelis Peisnieks), there are approximately 95,000 anglers in Latvia in 2019; however, the number excludes those who have not reached 16 years or are 65+ years old and who do not need a fishing card. Moreover, more than 1000 and less than 1000 Latvian cards were purchased by Lithuanian and Estonian fishermen. Thus, the approximate number of anglers in fishing tourism in Latvia would be 93,000, which means that based on the

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<sup>51</sup> Pakalniēte, K., Malzurbis, J. (2008). Ieguvumu pārneses metodes izmantošana ūdeņu ekosistēmu ekonomiskā novērtēšanā. Using the Benefits of the Transfer Method for Economic Valuation of Aquatic Ecosystems. LU Raksti. 721.sēj. Vadības zinātne, 312-331.lpp.

<sup>52</sup> Bateman, I.J., Brower, R., Ferrini, S., SchaaFsma, M., Barton, D.N., Dubgaard, A., Hasler, B., Hime, S., Liekens, I., Navrud, S., De Nocker, L., Ščeponavičiute, R., Semeniene, D. (2011). Making Benefits Transfer Work: Deriving and Testing Principles for Value Transfer for Similar and Dissimilar Sites Using a Case Study of the Non-market Benefits of Water Quality Improvements Across Europe. Environmental and Resource Economics, Volume 47(3), p. 365-387.

data of the Latvian Statistical Bureau on the number of people of working age in 2019<sup>53</sup>, **each 13th individual of working age, a resident of Latvia, is an angler**. Similar, a calculation showed **that there are around 11,158 local anglers in Kurzeme**. While the number of foreign anglers accounts for only 2.11% of all anglers visiting Kurzeme, i.e., **235 anglers from Estonia and Lithuania during the year**, but there are anglers visiting Kurzeme also from other countries. The survey in the study area showed that 1/3 of anglers come from abroad; thus, it could be assumed that they would be **78** and a total of **313 foreign anglers**. It can therefore be assumed that in 2019, a total of **11,471 anglers** might have visited Kurzeme for fishing purposes. Hence, the total economic impact (TotalEI) of fishing tourism on the economy of Kurzeme Region amounts to **EUR 124,472,720**, but if you take into account the willingness to pay, the number reaches even **EUR 199,693,235**.

## 2.6. Step 6 – ANALYSIS OF VALUE CHAIN OF FISHING TOURISM

The value chain by Michael Porter was first described in 1985.<sup>54</sup> In principle, it is a sequence of business activities aimed at transforming resources into a final service or product. The idea of the value chain is based on the process view of organisations; the idea of seeing a manufacturing (or service) organisation as a system. The products are sorted along the chain of operation and each operation gives value to the product. The valuable an organisation is, the more beneficial it can be and, by providing a greater value for its customers, a competitive advantage is created. The analysis specifies where the sources of value and the losses in the organisation can be found. In essence, the value chain of Porter is a strategic planning tool that provides a detailed study of the company's activities, which in the case of this study refers to fishing tourism in Kurzeme Region (Fig. 15).



Value chain (according to Porter, M., 1985:37)

<sup>53</sup> Available: [https://data.csb.gov.lv/pxweb/lv/iedz/iedz\\_\\_iedzrakst/IRG010.px/table/tableViewLayout1/](https://data.csb.gov.lv/pxweb/lv/iedz/iedz__iedzrakst/IRG010.px/table/tableViewLayout1/)

<sup>54</sup> Porter, M. E. The Competitive Advantage: Creating and Sustaining Superior Performance. NY: Free Press, 1985.

According to M. Porter, the application of the value chain to tourism from the initial value chain activities requires some changes.<sup>55</sup> Therefore, the initial value chain of Porter must be adjusted from the manufacturing sector to the service sector by applying it to the tourism sector. The value chain of tourism shows a number of sources of competitive advantages in terms of the ability to create and effectively manage all tourism stakeholders supported by local municipalities, which allows for attractiveness of the territory.<sup>56</sup> It is important for all stakeholders in the tourism chain to work together to create value throughout the entire chain and to supply attractive tourism products and services<sup>57</sup>.

Tourism is generally seen as a service sector. Visualising this is difficult because services are “invisible” and “eclectic” and bring together a number of sectors that can have their own value chains.

The negative side of the Porter value chain is the lack of information on costs for businesses, as they are confidential. This makes it difficult to analyse fishing tourism accurately, but the calculations obtained and secondary data were used to accomplish the assignment.

According to M. Porter's settings on the value chain analysis, the value chain analysis was carried out in the following phases:

- (1) To identify sub-activities for each activity;
- (2) To identify the sub-activities of each ancillary activity;
- (3) To identify links;
- (4) To look for opportunities to increase value.

Before carrying the tasks, it is necessary to clarify the situation of fishing tourism in Kurzeme in the context of the value chain analysis. The objective of the INTERREG Project “Development, promotion and sustainable management of the Baltic Sea Region as a coastal fishing tourism destination” or RETROUT (No. R065) is

- to develop the region as a tourist destination for coastal fishing;
- to promote the Baltic Sea Region as a destination for coastal fishing tourism;
- to strengthen the management of fishing tourism in the Baltic Sea Region for it to be sustainable.

In 2012, the significant contribution of tourism has been recognized in the RIO+20 outcome document “The Future We Want”<sup>58</sup>, where it is included as a thematic area and cross-sectorial issue. The document emphasizes that “...well-designed and managed tourism can make a significant contribution to the three dimensions of sustainable development – economic, social and environmental –, has close linkages to other sectors and can create decent jobs and generate trade opportunities ...”

A two-step procedure is recommended for the development of a value chain chart: (1) fundamental mapping and (2) adjusted mapping. Preliminary mapping is based on information from studies and theoretical insight. The second phase includes a review based on interviews and business and parties involved in the examination. Since

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<sup>55</sup> Porter, M. E. *The Competitive Advantage: Creating and Sustaining Superior Performance*. NY: Free Press, 1985.

<sup>56</sup> C. Mottironi and M. A. Corigliano, “Tourist Destination Competitiveness: The Role Of Cooperation,” *Riv. Ital. di Econ. Demogr. e Stat.*, vol. LXVI, no. 2, 2012.

<sup>57</sup> Y. Yilmaz and U. Bititci, “Performance measurement in the value chain: manufacturing v. tourism,” *Int. J. Product. Perform. Manag.*, vol. 5, no. 5, pp. 371–389, 2006.

<sup>58</sup> Available: <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf>

value chain charts are a complex system, the analysis shall even out the need to generalise and the wish to change the details of the chart. To identify the opportunities for improvement of fishing tourism activity in Kurzeme, first, value chain mapping was carried out:

- which helps to illustrate and understand the process of how a product takes several steps until it reaches the end user – the angler;
- the value chain chart serves as a way to identify and classify key market players;
- a value chain chart can help companies focus their activities, i.e., identifying important stakeholders, potential marketing or supply channels, competitors, weak links, etc.

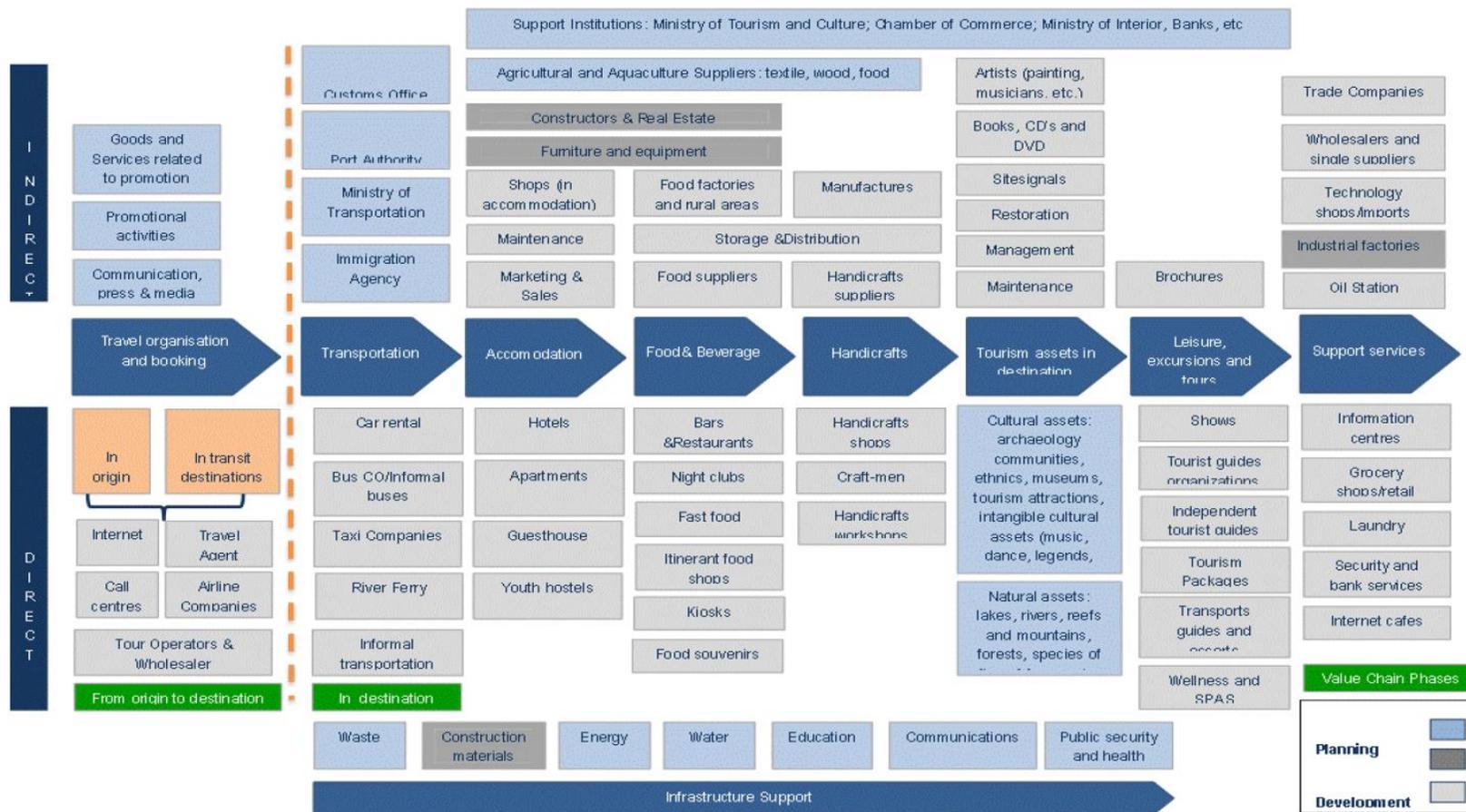


Chart 1 of fishing tourism value chain (according to WTO: 23) <sup>59</sup>

59 [https://www.wto.org/english/tratop\\_e/devel\\_e/a4t\\_e/global\\_review13prog\\_e/tourism\\_28june.pdf](https://www.wto.org/english/tratop_e/devel_e/a4t_e/global_review13prog_e/tourism_28june.pdf)

International tourism (fishing tourism is part of this category) is a complex sector, covering travel related to both business and leisure and entertainment, and it also has mutual links with different sectors of the economy.

Stakeholders of fishing tourism are all those involved in the provision of an angling service at the fishing destination, but each within the limits of its own competence and powers. Briefly, a description of the participants referring it to Kurzeme.

Most countries have three levels of tourism management: national, regional and local. The national level in Latvia is represented by the Ministry of Economics (EM) Department of Sectoral Policy, while the Latvian Investment and Development Agency (LIDA), under the Ministry of Economy, is implementing the tourism policy at national level. EM and LIDA cooperate within the Latvian Tourism Advisory Council with the ministries related to the tourism industry, the Latvian Association of Local and Regional Governments, tourism industry associations, regional tourism associations and planning regions, including the Kurzeme Planning Region. While the offers of regional tourism, besides planning regions, are created by: regional tourism associations; tourist destination management organisations (DMO); municipalities and their associations, such as the Latvian Association of Local and Regional Governments (LALRG), the Association of Latvian Coastal Municipalities (ALCM) and other professional tourism-related NGOs, such as the National Cultural Heritage Administration (NCHA) and the Nature Conservation Authority (NCA). The latter is important in terms of fishing tourism, as one of the options for improving the nature protection system is to transfer the fishing and angling control functions by the NCA to the State Environmental Service (SES)<sup>60</sup>.

The competence of the planning region, i.e., the competence of the KPR, as regards regional development planning, coordination, cooperation between local municipalities and other public authorities, is governed by the Regional Development Law<sup>61</sup>, which also applies to fishing tourism. KPR focusses on the tourism sector as a whole, and therefore the strict separation of the aid for fishing tourism is difficult, as also shown by the information in Table 80.

Support for tourism at local level is implemented through the provision of a specialist in charge of tourism development, support of tourism information centres (TIC) and tourist information points (TIP), involvement in private-public organisations (PPO), as well as involvement in various tourism-related projects.

On the other hand, businesses and individual entrepreneurs, in cooperation with the above organisations, provide fishing equipment, accommodation, catering, leisure, etc. for anglers.

The next step in mapping the value chain was to identify actions. By dividing up the organisation according to its main processes or functions, Porter was able to link classical accounting to strategic opportunities, using value as a basic concept, i.e., ways in which the company can best position against its competitors, taking into account its comparative cost structure, and as a value chain design, this allows a company to differentiate its products for specific customer segments.

Activities in mapping the value chain:

**(1) To identify sub-activities for each activity**

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<sup>60</sup> Available: [http://www.varam.gov.lv/lat/aktual/preses\\_relizes/?doc=28652](http://www.varam.gov.lv/lat/aktual/preses_relizes/?doc=28652)

<sup>61</sup> Available: <https://likumi.lv/doc.php?id=61002>

M. Porter's value chain is divided into direct (primary) and indirect (secondary) business activities. The first directly supplement the cost of the final service or product. While the secondary activities, indirectly, ensure effective implementation of key tasks.

Direct activities: Inbound Logistics, Operations, Outbound Logistics, and Marketing and Sales (Fig. 15) are the primary value chain activities.

Inbound Logistics: These are activities related to the acceptance of material from suppliers and storage.

This includes contacts of a supplier and covers each of the procedures and activities relating to the acquisition, storage and distribution of raw materials. They are raw materials and components used, for example, for catering of fishing tourists.

Operations: These are activities linked to the creation of fishing services. They can be subdivided into a number of specific organisations for fishing tourism, such as accommodation – reception, room service, catering, equipment or boat provision, fishing guide services, etc.

Outbound Logistics: these are all activities related to offering a final product – angling service – to anglers or, for example, how to attract customers to the fishing destination.

Marketing and Sales: this is a practical area, which in principle analyses the needs and preferences of customers and is responsible for raising awareness among the intended interest groups. This activity uses marketing communication tools, such as advertising, sales promotion, etc. – all and any tools to attract customers. It is very important to identify a precise group of customers here: whether these are individual anglers, those angling in groups or with a family, which type of fishing they prefer, whether the customer's purpose is to only go fishing or whether it wants to use various tourist or cultural services, etc. This includes activities such as promotion of advertising, segmentation by choosing distribution channels for pricing and managing relationships with customers.

Services (service): This is the support that the business provides to the customer, for example, training fishing.

## **(2) To identify supporting activities**

The following are deemed supporting activities: Firm Infrastructure, Human Resource Management, Technology, Procurement.

Firm Infrastructure: general management, planning, finance, legal issues, investor relations;

External management is important in terms of policy, by defining the institutional measures that may be needed to improve the capacity of the value chain, prevent distortions and increase the added value of the sector. External management also applies to specific chain legislation and rules, but it also describes the overall public sector intervention in the development of the value chain. The synthesis report "Promoting the development of tourism in the regions of Latvia"<sup>62</sup> highlighted shortcomings in the area of tourism management and the need to define the function-holder of regional tourism management in Latvia. For this reason, joint coordination is also necessary, since tourism is of a cross-sectoral nature.

Since 2014, the KRR has actively participated in a number of tourism development projects, including fishing tourism (see Table 82); KRR engages in tourism planning, policy consultations and represents regional development interests. It can thus be said that local authorities also play an important role in maintaining tourism

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<sup>62</sup> Available: [http://petijumi.mk.gov.lv/sites/default/files/file/Latvijas\\_turisma\\_nozares\\_analize\\_%20BrandTour\\_%20final.pdf](http://petijumi.mk.gov.lv/sites/default/files/file/Latvijas_turisma_nozares_analize_%20BrandTour_%20final.pdf)

infrastructure, providing information and other areas. Professional and regional associations make an important contribution to the planning of tourism and improvement of the regulatory framework.<sup>63</sup>

The KRR and local municipalities operate within the framework of two basic laws: Law on Local Governments<sup>64</sup> and the Tourism Law<sup>65</sup>. The value chain management concerns the relationship structure and the coordination mechanism that exists between the value chain members. Management of the value chain comes about when some actors in the chain operate according to criteria established by other actors in the chain, such as quality standards.<sup>66,67,68</sup> Commercial rules governing commercial relations in global or local value chains<sup>69</sup> can not only restrict business, but also create important learning and re-evaluation of opportunities. Commercial rules can be very specific, e.g., clearly defined and described categories of quality of operation of tourism enterprises.<sup>70</sup>

*Human Resource Management:* recruitment, education, promotion, remuneration systems;

As the data of the study area showed, and the situation in the entire territory of Kurzeme is similar, recruitment in tourism enterprises so far has not been focused on attracting tourism specialists. Although 14.3 % of the surveyed managers of the companies have an educational background in business management, only some employees had vocational tourism education. The education diploma of a business economist, lawyer, accounting officer is, of course, useful in business, but the share of employees who gave participated in training courses to build their capacity in tourism, for example, in the study area in Kurzeme amounts to 17.14 %, and should be further built for fishing tourism entrepreneurs throughout Kurzeme. The average gross wage in tourism varied from EUR 65 to EUR 3000; however, the impact of seasonality must be taken into account. The calculation is based on the EUR 790 gross payment information on accommodation and food services according to the data of CSB of the Republic of Latvia.<sup>39</sup>

*Technology:* research and development, IT, product and process development;

The information and communication technology sector offers a large number of products and services for hotels, museums and other sightseeing sites, through which the tourism industry is able to improve products that give tourists experience and satisfaction.<sup>71</sup> In terms of innovative technologies, however, it is recognised that it is low in tourism, but it is compensated by suppliers.<sup>72</sup> In this respect, the economic development of tourism will be beneficial, namely, the consideration of the value chain in terms of supply chain, not only in terms of the value chain of the tourist destination.<sup>73</sup>

*Procurement:* purchase of raw materials, leasing of property, supplier contracting, procurement.

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<sup>63</sup> EM, 2017. Informatīvais ziņojums "Par Latvijas tūrisma attīstības pamatnostādņu 2014.-2020.gadam īstenošanas 2014. – 2016.gadā starposma novērtējumu"

<sup>64</sup> Available: <https://likumi.lv/doc.php?id=57255>

<sup>65</sup> Available: <https://m.likumi.lv/doc.php?id=50026>

<sup>66</sup> Available: <https://pr.gov.lv/wp-content/uploads/2012/prezentacijas/kvalitate.pdf>

<sup>67</sup> Available: <https://www.lvra.lv/lv/sertifikacija/klasifikacijas-kriteriji-17868/kempingu-klasifikacija-65636.html>

<sup>68</sup> Available: <https://www.lvra.lv/lv/sertifikacija/klasifikacijas-kriteriji-17868/viesu-maju-klasifikacija-18256.html>

<sup>69</sup> Available: <https://likumi.lv/doc.php?id=23309>

<sup>70</sup> Available: [https://www.celotajs.lv/cont/prof/quality/files/Kvalitate/lauku\\_ciemu\\_viesu\\_majas.pdf](https://www.celotajs.lv/cont/prof/quality/files/Kvalitate/lauku_ciemu_viesu_majas.pdf)

<sup>71</sup> Berne, C., Garcia-Gonzalez, M., & Mugica, J. (2012). How ICT shifts the power balance of tourism distribution channels. *Tourism Management*, 33(1), 205–214.

<sup>72</sup> Sundbo, J., Orfila-Sintes, F., & Sørensen, F. (2007). The innovative behaviour of tourism firms – comparative studies of Denmark and Spain. *Research Policy*, 36(1), 88–106.

<sup>73</sup> Rønningen, M. (2010) Innovation in the Norwegian Rural Tourism Industry: Results from a Norwegian Survey. *The Open Social Science Journal*, 2010, 3: 15-29. DOI: 10.2174/1874945301003010015]

The aim is to find quality supplies that meet the company's budget. Any company, including tourism companies, can opt for outsourcing suppliers and cooperation partners. However, studies show that most tourism companies opt for choosing, buying and making a product by themselves<sup>74</sup>; hence, suppliers are rarely the key parts in tourism. Anglers are those tourists who consume quite a lot of foreign-brand fishing gear, boats and trailers for their transport. The same can be said about boats by tourism businesses who serve fishermen. In the study area, this was true for 37.14 % of all surveyed companies and 57.9 % of all services offered, and it shows a growing trend, since in case of need both resident and non-resident-anglers would be willing to rent a boat.

In Latvian tourism companies that serve anglers, unlike the EU<sup>75</sup>, it is not too common to use pre-cooked products intended for tourism catering companies. This does not apply to HoReCa products, in particular by meeting the specific requirements of hotels, restaurants and cafés, mainly by making their use easier. For example, butter, jam, cheese, honey, ketchup is packed in smaller, more user-friendly portions for individual use.<sup>76</sup>

As regards the materials used for services, the trend of globalisation in tourism is being heavily demonstrated through use of foreign materials, which are often cheaper than domestic and are therefore imported.<sup>77</sup> Or the wishes of anglers, for example, for high-quality boats purchased abroad, do not in any way limit economic leakage.<sup>78</sup>

### **(3) Quantification of the value chain of tourism**

The quantitative determination of the value chain of tourism was carried out to illustrate the economic value created by the functional areas of each of the tourism value chains. It is intended for tourism policy makers and businesses to understand:

- the impact of fishing tourism spendings on the economy other than tourism;
- which areas of fishing tourism can be increased.

#### *Accommodation indicators*

The selection of anglers' choice of accommodation (Table 90) was determined in the study area and compared to accommodation offered for fishing tourist in Kurzeme, which is also in line with the envisaged price range. It was found that the choice is made with a large margin in terms of available campsites, guest houses and holiday houses. At least one third of anglers opts for the cheapest accommodation; they are also offered camper and tenting sites. A major drawback, there is no specialised offer for young people.

A third of the anglers from the study areas did not rate the quality of accommodation and 3 % of those who provided a score questioned their quality. Although 25 % of accommodation was in the range 7–10 points, however, covering the entire Kurzeme region, it is a signal that the quality of anglers' accommodation sites should be closely watched.

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<sup>74</sup> Espino-Rodríguez, T. F., Lai, P. C., & Baum, T. (2008). Asset specificity in make or buy decisions for service operations: An empirical application in the Scottish hotel sector. *International Journal of Service Industry Management*, 19(1), 111–133.

<sup>75</sup> Sharma, A., Moon, J., & Strohbehn, C. (2014). Restaurant's decision to purchase local foods: Influence of value chain activities. *International Journal of Hospitality Management*, 39, 130–143.

<sup>76</sup> <http://www.horeca.lv/uznemumi/partikas-razosana-tirdznieciba>

<sup>77</sup> Mitchell, J., Font, X., & Li, S. (2015). What is the impact of hotels on local economic development? Applying value chain analysis to individual businesses. *Anatolia* 26(3), 347–358.

<sup>78</sup> Meyer, D. (2007). Pro-poor tourism: From leakages to linkages. A conceptual framework for creating linkages between the accommodation sector and 'poor' neighboring communities. *Current Issues in Tourism*, 10(6), 558–583.

The study estimates two options of anglers' expenditure: the first one for all 65 respondents and the other for each quadrant of the study area. The correct way would be in future to carry out detailed data studies in order to avoid erroneous figures, which was proved when looking at the difference between the data obtained in favour of the second option, which is why they were used in the calculations, as well as in the calculation of PIT.

### ***Catering indicators***

The study area identified the choice of anglers as regards food and catering. If applied to the entire Kurzeme, only 26 % accommodation sites offer catering, which could essentially satisfy anglers, because nearly 80 % of them did not worry about this issue, since food was taken from home and accommodation sites provided for a freely accessible kitchen or similar facilities, whether indoors or in a picnic place. In two cases, in Alsunga and Jūrkalne, there are local taverns offering catering – “Spēlmaņu krogs” and “Zaķu krogs”. While recreational sites have either a café-bar like in Usma or even a restaurant, as is the case in the recreational site “Libava” in Liepāja. Since around 80 % of anglers probably are not using catering services, attention should be paid to the quality of catering so that those who use these services are satisfied.

The study did not locate the place for purchase of food. Within the study area, a third of anglers in Kurzeme carried food from their homes; similar indicators would apply to the rest of Kurzeme, as well as “purchase on the way”, which probably happened already in the territory of Kurzeme Region. This should be studied in the future. However, 10 % of anglers bought food close to the fishing sites; conditions for increasing this figure should be created.

### ***Entertainment indicators***

In the study area, respondents engaged in the following key types of leisure activities: sailing, nature trails, sauna, cycling, wind-surfing, horse-back riding and other activities. Cycling and sailing were the most frequent answers, which is logical, since the study was carried out on the coast. Accommodation sites in Kurzeme offer a wider range of leisure activities – 20 various activity types. Sauna, steam bath, and hot tub alone are offered in 46 accommodation sites, while bike rental is available in 19.

It should be noted that 30 % of anglers wanted to relax while fishing while 55 % were interested both in angling and relaxation. This indicates that more leisure options can be offered, especially if families accompany the anglers. Tourism providers should implement the services proposed by fishermen and listed in Table 92 below, which are missing from the range of offered services. The calculation of the value chain was based on the average daily spendings on leisure and entertainment (EUR), and taxes were also calculated.

### ***Transport indicators***

Fishing tourism destinations in Kurzeme are predominantly rural, and, at present, they are difficult to access by public transport; and the road quality is also not very good. This limits accessibility not only by local anglers from Kurzeme, but also affects attraction of potential foreign customers.<sup>79</sup> None of the anglers in the study area used

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<sup>79</sup> Skuja, A., Pučeka, I. (2018.06.15). Pētījums par latvijas sabiedriskā transporta pieejamību ārvalstutūristiem. Pieejams: <https://lr1.lsm.lv/lv/raksts/pecpusdiena/petijums-latvijas-lauku-autobusu-tikli-nav-piemeroti-arvalstu-tu.a105261/>

taxi services, but referring to the entire territory of Kurzeme, this possibility cannot be excluded, as some foreign anglers travelling from Riga might use these services. Although car rental would be the most feasible choice by a foreign customer could use; this should be studied in detail in the future. The main transport mode used in the study area was a car (various makes). Considering that the study area was the Western border of Latvia, the approximate distance travelled can be applied to the entire Kurzeme Region. Thus, on average, one angler is travelling around 290–300 km to reach its destination, with resident anglers travelling 90–100 km on average and non-residents 600 km. An average of EUR 30.52 is spent to get to the fishing destination: EUR 9.20 is spent by residents and EUR 63.44 is spent by non-resident anglers.

### ***Fishing gear and equipment indicators***

According to experts selling fishing gear, the purchase sum spent by rookie anglers and long-time anglers can range from EUR 100 to several thousand. In the study area, the average amount for fishing gear at destination was EUR 346.22, for resident anglers it was EUR 207.89 and for non-resident anglers it was EUR 415. However, the sum of fishing gear left at home amounted to an average of EUR 1649.17 for resident anglers; unfortunately, this question was not answered by non-residents. Specialist fishing shops are facing a change in the shopping habits of anglers. The price difference and vast choice makes anglers prefer online shops. Experts believe that around 30 % of anglers bought their gear on the internet, and this figure tends to increase. This means that around 22 fishing gear places in Kurzeme lose income. Moreover, as a side-effect, demographic factor can be observed – emigration and job search abroad, which reduces the number of customers.

The number of boat owners in the study area was small, only 14 % owned a boat with an average price of EUR 4745. However, the range of prices varies from EUR 733 to EUR 16,500. Average price of a boat trailer amounts to EUR 856. Unfortunately, most of them are produced abroad, and often are purchased and imported without leaving a substantial contribution to the Kurzeme value chain. For value chain purposes, the average price of angler equipment is therefore estimated at EUR 456.84; for resident anglers it is EUR 503.20 and for non-resident anglers it is EUR 112.50.

### ***Fishing services' indicators***

Fishing services include the following: fishing gear rental, fishing guide services, bait, and sales of angling cards and licenses. In most cases, tourism operators include the rental of these tools in their service, i.e. It is not a separate position, while boat rental is subdivided. Price for the rental of boats also depends on the value of the boat. In the study area, a resident angler paid EUR 6.72 for boat rental, and their willingness to pay amounted to EUR 8.20; also, non-resident anglers were willing to pay the same amount. Fishing guide service is available at the price of 10–15 EUR/h compared to the service fee abroad of 250–350 EUR/day, or around 30–50 EUR/h.<sup>80 81</sup>

The purchase of fishing bait, depending on the species of fish, varies from EUR 1 to EUR 17 and more. This provision of anglers at the tourism destination can diversify the services provided and attract more rookie fishermen. Within this document, bait and other sudden purchases necessary for fishing are coded under the name

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<sup>80</sup> Pieejams: <https://fishingbooker.com/charters/view/8271>

<sup>81</sup> Pieejams: <https://fishingbooker.com/charters/view/3564>

**Additional expenditure.** The average additional expenditure in the study area were EUR 12.65; EUR 12.45 for resident anglers and EUR 6.80 for non-resident anglers. Fishing services can also include the sale of cards and licenses. The average expenditure on licenses in the study area were EUR 48.30; EUR 47 for resident anglers and EUR 4 for non-resident anglers.

### **Support services' indicators**

Tent sites are both free of charge and at a charge of EUR 5–8/day. The trailer parking fee amounts to 8–20 EUR/day. Laundry service costs EUR 5.<sup>82</sup> For example, standard requirements for a camping site of category II provide for premises for washing, drying and ironing clothes and laundry, but fees may already be included. In tourism companies in Latvia, internet is available free of charge.

### **Indicators of services at fuel stations**

The services of fuel stations, vital for transport, are part of the sector of indirect impact (Table 87). The gross wage of employees was EUR 750 and the PIT was EUR 522 per year.

While the average gross wage in **Accommodation and Catering**<sup>83</sup> was calculated according to the Latvian statistics data, which is EUR 790 gross per month.

In the administration and maintenance of investments and expenses, which affect fishing tourism, EUR 364,703 was invested, and EUR 6528.17 for maintenance in 2019. Tourism companies engaged in fishing tourism are also investing in both development and maintenance, but unfortunately no such data has been collected and made available. During interviews, estimated percentage was provided that was included in the fishing chain calculations.

## **(4) Assessing the results of the analysis of the value chain of tourism**

Quantitative results of the analysis show a number of impacts in Kurzeme Region:

- The value chain of tourism is worth EUR 40,657,154;
- Currently, 97.89 % of resident anglers and only 2.11 % of non-resident anglers are participants in the value chain of tourism, although the number of foreign tourists in Latvia in 2019 amounted to 1,935 thous., and they spent 538.2 million euro.<sup>84</sup> The dominance of local tourism points to the current inability and, at the same time, the opportunity to grow to an international level in the fishing tourism sector.
- The contribution of *Accommodation* and *Entertainment* in the value chain is impressive: EUR 8,910,410 and EUR 9,635,640. Moreover, the willingness of fishermen to pay shows a much higher potential to grow to EUR 1,2120,259 in the accommodation sector and up to EUR 11,872,485 in entertainment/leisure sector;

<sup>82</sup> Available: <https://www.piejuras.lv/lv/naktsmitnes/kempings-hortus-20094/>

<sup>83</sup> Available: <https://www.csb.gov.lv/lv/statistika/statistikas-temas/socialie-procesi/darba-samaksa/meklet-tema/2446-darba-samaksas-parmainas-2019-gada-3>.

<sup>84</sup> Available: <https://www.csb.gov.lv/lv/statistika/statistikas-temas/transports-turisms/turisms/meklet-tema/2678-arvalstu-celotaji-latvija-2019-gada>

however, the offer needs to be updated and satisfy anglers' needs. Innovation (update) may include improving quality and the design of tourism products or diversifying the products to be served, allowing for higher value.

- The value chain shows the value of fishing gear and fishing equipment, in particular equipment, accounting for 17.5 % of the value chain or EUR 7,117,641. Value-binding requires research as to whether an alternative of some fishing gear or equipment exists in the local resources.
- Fishing services in the value chain amount to EUR 1,146,759, which points to intensive use of services, but it is necessary to promote the role of fishing guides, both for foreign tourists and for the local community, by highlighting the training and awareness raising of the young generation.
- The business environment plays an equally important role in the satisfaction of tourists, and the value of HoReCa services and other equipment (furniture, equipment) of EUR 700,000 is therefore important in the value chain.
- Quality food is the basis for healthy catering of tourists, with a value in the value chain of EUR 868,350. Given that fishing tourism businesses are predominantly located in rural areas, it is possible, on the one hand, to supply fresh food and, on the other hand, to contribute to the local economy. Moreover, these possibilities have not yet been exhausted.
- Transport in the value chain now generates EUR 175,028, but by improving the quality of roads and public transport organisation, which is particularly important for attracting foreign anglers, the value might grow.
- The third most valuable item in the value chain is the catering industry with a value of EUR 5,767,589. Based on the willingness of fishermen to pay for quality and healthy food and, of course, good service, this value could increase by EUR 461,164.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

1. Considering the task of assessing the overall economic impact of fishing tourism on the study area, the study found that, by extending the results to all respondents and carrying out more detailed analysis by quadrants, the average figures were more accurate. They provide a more realistic outcome as only the number of respondents who had replied to questions was taken into account in the calculations. This approach is also recommended for future studies of fishing tourism.
2. The total economic impact of fishing tourism (TotalEI) on the study area is EUR 705,297, while the multiplier factor for tourism income (K) is 2.05. This indicates that every euro spent by an angler in the study area in Kurzeme Region circulates 2.05 times over a year, generating higher income in tourism-related industries, thus also in total income.
3. The total economic impact of fishing tourism (TotalEI) is estimated at EUR 1,131,522 in the study area and is 3.1 times higher than the investments made in fishing tourism in Kurzeme Region in 2019.
4. In the study area, 70 tourist accommodation sites have been identified as meeting the demand of anglers in terms of price and expectations: 38 – near lakes and rivers, 32 – near the sea coast. Of these, catering services were offered by 19 accommodation establishments and 2 pubs. Overall, there are 17 leisure or entertainment providers near lakes and rivers, and 8 on the coast. The difference is partly due to the various environmental restrictions of the coastal zone. The proportion of tenting and picnic sites is 21–22 % of the total offer of tourist activities, a sauna in 16 % of cases, and bike rental in 9 % of cases. There are 42 fuel stations. Fishing cards can be bought in 147 sites of the study area, while fishing equipment – in 22.
5. Fishing tourism in Kurzeme Region employs some 945 employees in sectors of direct and indirect impact: 700 in tourist accommodation sites, 40 in catering (restaurants), 44 in angling equipment shops, and 161 in fuel stations.
6. The study found that the accommodation, entertainment and catering sectors have the potential to be involved in fishing tourism on a much wider scale. It is estimated that it can reach up to EUR 12,120,259 in the accommodation sector, up to EUR 11,872,485 in entertainment and EUR 5,767,589 in the catering sector.
7. Attracting value chains requires finding alternative ways of producing individual fishing gear or equipment from local resources, the role of fishing guides shall be strengthened toward training the new generation and raising awareness, improvement of the quality of the fishing tourism environment, improvement of local food, crafts, road infrastructure, transport, use of labour resources and their capacity building.
8. Participants in the fishing tourism value chain are residents in 97.89 % of cases and non-residents in 2.11 % of cases. The value of the value chain for fishing tourism is estimated at EUR 40,657,154 during the study.

## Recommendations

1. The most important first step is to make fishing tourism entrepreneurs, support institutions, tourism operators and, of course, anglers to communicate with each other: to stimulate regular communication, meetings, radio or TV programmes.
2. To encourage experienced tourism companies to consult existing businesses and encourage new local suppliers of products, goods and transport services. To promote and stimulate mentoring schemes that work.
3. To provide the necessary training for fishing tourism operators on tourism standards, business management, marketing and development of specific products.
4. To provide assistance in product innovation (training, exchange of experience, skills on the quality of anglers' products, feedback analysis).
5. To improve market access and marketing skills. It is important to develop skills to understand the fishing tourist market and to be able to connect to the networks of this market.
6. To develop business skills. Given the low proportion of professionals with a tourism and business education background among existing entrepreneurs, there is a need for training on entrepreneurial skills (drawing up a business plan, pricing, reinvestment, recording to get feedback from fishing tourists).
7. Assistance and support for the licensing of companies, compliance with tourism and other regulations. Legal agreements with tourism operators work as a proof of legitimacy in the eyes of tourists and encourage integration into the international fishing tourism market.
8. To address the organisational issues of the fishing guides (category with appropriate training and certification).
9. To promote TIC and TIP to spread information on fishing tourism offers with ready-made materials in the form of maps or other materials, as well as on a national website or in international promotional campaigns. To establish a mechanism to provide information on the regular inclusion and renewal of local services, as well as the assignment of a person in charge of this task.
10. Organising joint events for fishing tourists and fishing tourism operators (festivals, carnival, exhibitions and local events that help fishermen to contact with the local population, enabling them to offer their services. This can make it possible to attract fishing tourists outside the season and away from the usual route, ensuring a nice time and, at the same time, keeping anglers' spendings local).
11. The purchase of souvenirs and pieces made by craftsmen can significantly increase the amount of money that remains in the local economy. Products must be of quality and be tailored to the taste of tourists. Tourists want to buy products that are unique only for their destination. The executive, non-governmental organisations and agencies can cooperate with producers and craftsmen to develop them and ensure that tourists are informed. Information on where it was produced, by how and how it was done, significantly increases the value and thus the price of the product.
12. Local authorities can support and monitor the development of the 'made local' brand. This brand can be applied to a variety of goods and services, giving the products a higher value, and more information and satisfaction for tourists (e.g., helping to advertise local dishes or create points of sale).

13. Employment in the hospitality sector is usually the most widely recognised tourism investment. Expanding the tourism sector, including fishing tourism, also means expanding employment, which has a significant impact on the local economy and thus on the Kurzeme Region.
14. Workers' skills and, consequently, jobs are a factor in helping to integrate non-skilled local people into the labour market. It is therefore important to ensure that those with lower education are also involved in training in order to maximise the opportunities for local people to be employed in sectors related to fishing tourism.
15. The destination partnership is a way to bring together all stakeholders – accommodation, fishing tourism service providers, local and international tour operators, service providers, taxi drivers and transport operators, craftsmen, food suppliers, other tourism businesses, and, of course, local authorities, to make the stakeholders communicate with and learn from each other.
16. Regular collection and analysis of statistical data can solve the question as regards, which tourists are of higher value for fishing tourism businesses. Whether regional tourists who stay in cheaper accommodation places and spend more on shopping, or “high value” tourists – the less of them, the less negative effects on the environment. By contrast, budget tourists can stay in cheaper accommodation places, but can make more use of local food and transport. Higher-quality accommodation sites can use more local dishes, employ more staff for the convenience of guests, better comply with the standards and show more corporate responsibility.