



Funded by the  
Erasmus+ Programme  
of the European Union



## **Circular Economy in Wooden Construction (Wood in Circle)**

**Project code: 2020-1-LT01-KA203-077939**

# **REGENERATION OF AREA NEAR “MAZA JUGLA”, LATVIA**

**Case Study**

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**Riga, 2022**



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## INTRODUCTION

The case study presents territory, which is located in the rural territory of Salaspils district, near the border with Stopini district. Salaspils district is located in the central part of Latvia, in the Riga county, on the right coast of the Daugava river, in the Ropaži plain of the central Latvian lowlands. The Maza Jugla river flows in the north part of the territory.

A residential building with six auxiliary buildings is deployed on the plot of land, total a complex of 7 buildings.

After analyzing the available information and visual inspection of the building complex, it should be concluded that they are dangerous for use and need to be dismantled.

Taking into account the interests of the residents of Salaspils and Stopini districts, 3 development scenarios are proposed for the future development of the territory:

- 1) Recreational place “Pie Mazās Juglas”;
- 2) Mini Zoo “Pie Mazās Juglas”;
- 3) Guest house or holiday house “Pie Mazās Juglas”.

Residents of the area were surveyed and 44% of the residents living in the neighbourhood of the pilot territory would support the creation of active recreation areas with outdoor exercise equipment and playgrounds, firepits and picnic areas. 22% of respondents would support the creation of an open-air Zoo. On the other hand, 21% of respondents would support the construction of a holiday or guest house near the coastline of the Maza Jugla river.

The case study was prepared in frames of the EU funded project “Circular Economy in Wooden Construction” (Wood in Circle), which aims at delivering innovative student-centered transdisciplinary education in circular economy-based wooden construction to postgraduate students across the European countries (<https://woodincircle.eu/>).

Objectives of the project:

- ✓ To integrate innovative student-centered phenomenon based, research based, blended learning and social leadership approaches into Master’s degree study programmes.
- ✓ To develop a new course, educate and involve postgraduate students and teachers in scientific research on the whole life cycle of wooden construction.
- ✓ To ensure strategic transdisciplinary transnational cooperation among higher education institutions and business enterprises in development of new learning methodology and the course.
- ✓ To increase academic and public awareness and promote sustainability and circular economy in the construction sector.

*The European Commission’s support for the production of this report does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.*



## 1. DESCRIPTION OF THE AREA

### 1.1. Location

The territory of the project's object is located in the rural area of Salaspils district, near the border with Stopini district. Salaspils district is located in the central part of Latvia, in the Riga region, located on the right coast of the Daugava river, in the Ropaži plain of the Central Latvian lowlands. The Maza Jugla river flows in the northern part of the territory.

Research area – a site of a residential building with six auxiliary buildings located on a single plot of land.

Although legally the territory belongs to the Salaspils district, it is within interest area for the residents of the Saurieši and Upeslejas areas of the Ropaži district, as it is located close to these inhabited places.

The project area is located approximately 15 kilometers from the center of Riga (capital city of Latvia), on the shore of Maza Jugla river (see Figure 1). Project area. The objects in the area are located on the coast of the river. Project area has a 130 metre long coastline along the Maza Jugla river with access to the water.

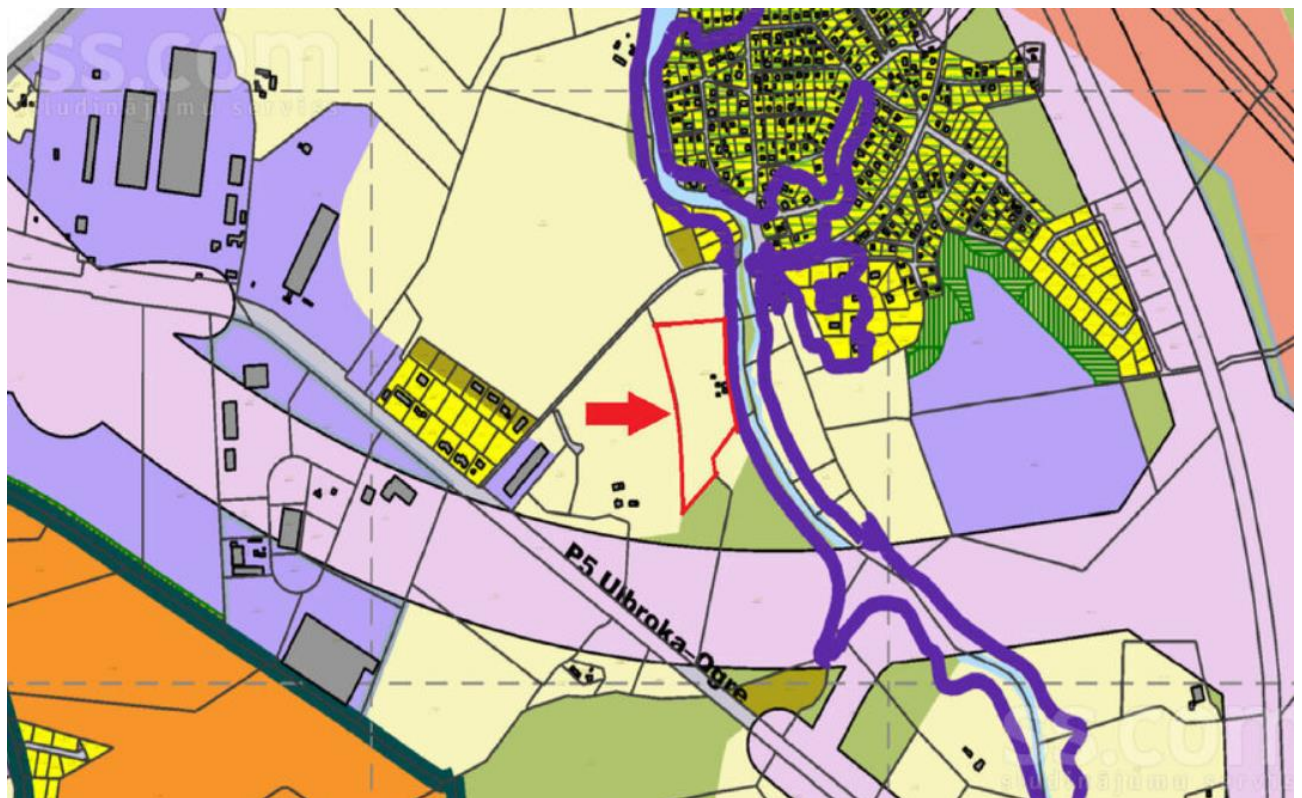


Figure 1. Project area

Figure 2 reflects ortophoto view of project area.



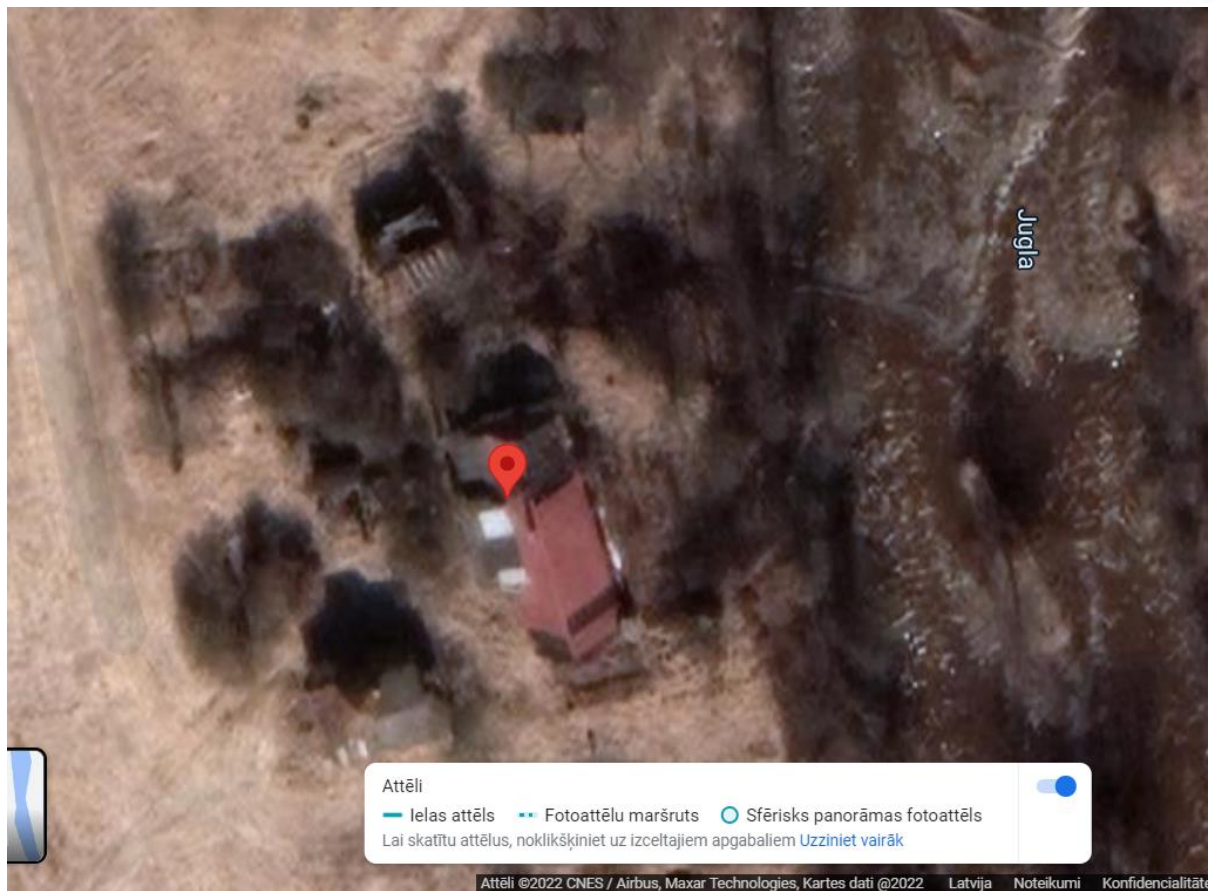


Figure 2. Ortophoto view of project area

Site is approximately 500 meters away from the regional road P5. Driveways are in average technical condition. Access to the research area is burdened. Figure 3 illustrates neighborhood map of project area.



Figure 3. Neighborhood map of project area

Project area is a private property, which is unmaintained and in poor technical condition. The size of the territory is 3.2 ha. Photo view of project area can be seen in Figure 4.



Figure 4. Photo view of project area

The territory of project area divided by the purpose of use can be seen in Table 1.

Table 1. Land purpose classification of project area

| Criteria                          | Area (ha) |
|-----------------------------------|-----------|
| Agricultural land:                | 2.4       |
| incl. pasture area:               | 0.4       |
| incl. arable land area:           | 2.0       |
| Scrubland area:                   | 0.3       |
| Water-related object area:        | 0.1       |
| incl. area under water:           | 0.1       |
| Area of land under buildings:     | 0.1       |
| Area of land under roads:         | 0.2       |
| The area of the rest of the land: | 0.1       |

It should be noted that the land plot of the project area has certain burdens which are consolidated in the Table 2.



Table 2. Registered burdens of project area

| No. | Type (LV)  | Description  | Area | Measurement |
|-----|------------|--|------|-------------|
| 1   | 020501     | The area of the protective lane along the overhead lines of electric networks outside cities and villages, as well as in urban-rural areas | 0.05 | ha          |
| 2   | 020801     | The territory of the protective zone along the pressurized gas pipeline  | 0.09 | km          |
| 3   | 7315030100 | Road easement area   | 0.32 | km          |
| 4   | 110201     | The territory of the watercourse protection zone   | 0.13 | km          |

The last measurements were carried out in 1999 on the basis of a photo plan by a certified surveyor.

A plot of land is with a great potential both for a private residence and for the development of various projects in areas of agriculture, light industry, manufacturing, vehicle repair and trade, tourism and recreation.

## 1.2. History

Stopini parish is a parish in Ropaži district, in the west of Vidzeme, on the eastern outskirts of Riga. The center of the parish and district is Ulbroka. It borders with Garkalne and Ropaži parishes of Ropaži district, as well as Salaspils district and the city of Riga. Stopini parish is crossed by national roads A4 (Riga bypass), A6, P2, P4 and P5, as well as the Riga-Daugavpils railway line and the closed Riga-Ergli line. There are three railway stations in the region - Acone, Saurieši and Rumbula, as well as the former train station Cekule.

From 2004 to the administrative territorial reform of 2021, it existed as Stopini district. In 2021, Stopini district was included in the new Ropaži district, with the center Ulbroka. The territory of the district remained as a territorial unit Stopini parish.

The project area is located between two historical objects dedicated to the memory of the Latvian Riflemen. On one side of the territory, near the P5 highway, there are the graves of fallen Latvian, Russian and German soldiers, which nowadays are set up as a memorial (see Figure 5).



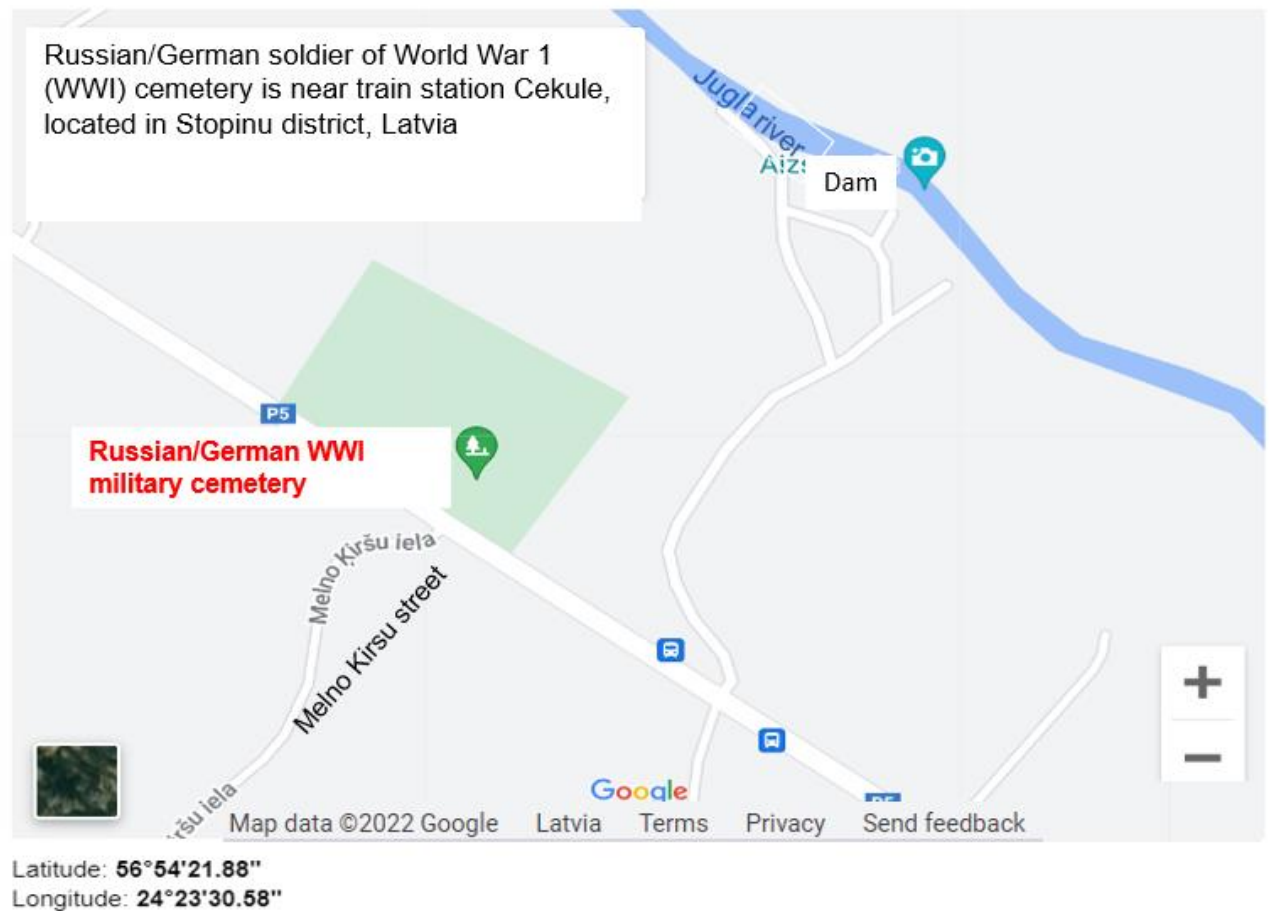


Figure 5. Deployment of Russian/German soldier cemetery

On the other side of the project area, near the Pornīcas houses (additional names in various information sources - Spornīcas, Cekuļi, former Cekule mill) approximately 120 metres from the pedestrian bridge, there is a Grave of Brothers with a monument to the Estonian soldiers who died in World War 1 and in the battles for the Latvian independence. This cemetery was established in 1938 with a consecrated oak plate (see Figure 6).<sup>1</sup>

<sup>1</sup> Mēs stāstām par Stopiņu novadu / [sastādītāja un priekšvārda autore Biruta Zvaigznīte ; redaktore Agrita Grīnvalde]. [Rīga] : Pētergailis, ©2005 263, [1] lpp. : ISBN 9984331431, 45-47. lpp



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Figure 6. Memorial sign of soldiers

The former Cekule mill (Jauncekuļi mill) used to be located on the Maza Jugla river. Currently, the mill bridge, sluice and foundation of mill have been preserved on the Maza Jugla river. Figure 7 reflects reference of Cekule mill in historical books.

[illegible]

Figure 7. Reference of Cekule mill in historical books



The mill was destroyed in World War 1, but references of it can be found in various sources of information.<sup>2</sup>

As indicated above, there are 7 different types of structures and auxiliary buildings on the project area.

The construction of the residential house was started in 1910 and completed 1911. Initially, it was built of wood as a temporary residential house for the worker who serviced the Jauncekuļi mill, but over time his whole family moved here. According to what the residents of the nearby houses told (Rudīte Lapsīņa, a resident of the neighbor house), the mill worker liked the surroundings and decided to stay here with his family. During World War 1, he had to flee, because the battle line ran directly across his land. On the way back from the refugee movements, it was concluded that the house was partially destroyed, and other building materials were used to restore it. During World War 1, the mill also ceased to operate as it was destroyed.

According to cadastral data (see Table 3), the main building is a residential house, which is in poor technical condition. As of June 2022, no one lives in the building. It has been uninhabited for five years, since the last owner died, and the heirs do not take care of the property.

Table 3. Technical data of residential house

| Parameter                   | Living house   |
|-----------------------------|--|
| Main type of use            | 1110 - One apartment houses  |
| Construction type           | 11100103 - Individual residential houses and summer houses with masonry or masonry-wood exterior walls |
| Year of commissioning       | 1911   |
| Year(s) of re-commissioning | No data  |
| Date of cadastral survey    | 24.09.2002   |

Distribution of the total area use of residential house can be seen in Table 4.

Table 4. Area use of residential house

| Description                 | Units          | Area |
|-----------------------------|----------------|------|
| Total area:                 | m <sup>2</sup> | 76.4 |
| Usable area:                | m <sup>2</sup> | 76.4 |
| Total living area:          | m <sup>2</sup> | 76.4 |
| Flat area:                  | m <sup>2</sup> | 76.4 |
| Living area:                | m <sup>2</sup> | 17.4 |
| Area of auxiliary premises: | m <sup>2</sup> | 59   |

<sup>2</sup> Jauncekuļu dzirvanas [tiešsaiste]. Pieejams: <http://genealogyindexer.org/view/1940Lat/1...%20-%200241.pdf>



The cadastral survey data (see Table 5) of the building confirm that the building is in poor technical condition as depreciation reaches 70%.

Table 5. Parameters of residential house

| Description                    | Unit           | Data |
|--------------------------------|----------------|------|
| Number of room groups:         | Unit           | 1    |
| Number of above-ground floors: | Unit           | 1    |
| Number of underground floors:  | Unit           | 0    |
| Depreciation:                  | Percentage (%) | 70   |

The structural elements of the residential house according to the Land Registry records are reflected in Table 6.

Table 6. Condition of structural elements of residential house

| Element                   | Material                | Depreciation (%) |
|---------------------------|-------------------------|------------------|
| Foundation                | Field stone             | 70               |
| Exterior walls and frames | Silicate bricks, timber | 70               |
| Overlays                  | Timber                  | 70               |
| Roof                      | Asbestos-cement, timber | 70               |

### 1.3. Demographic indicators

Due to the fact that the territory is located in Salaspils district, but its borders are with Stopini parish, the population living in both Salaspils and Stopini districts were analyzed.

The total population in the period from 2020 to 2022 with a growth trend can be seen in Figure 8.<sup>3</sup>

<sup>3</sup> Dati par iedzīvotāju skaitu un tā izmaiņām Salaspils un Stopiņu novados. - <https://stat.gov.lv/lv/metadati/5911-iedzivotaju-skaitis-un-galvenie-demografiskie-raditaji> TARGET=\_blank>Metadati</A>

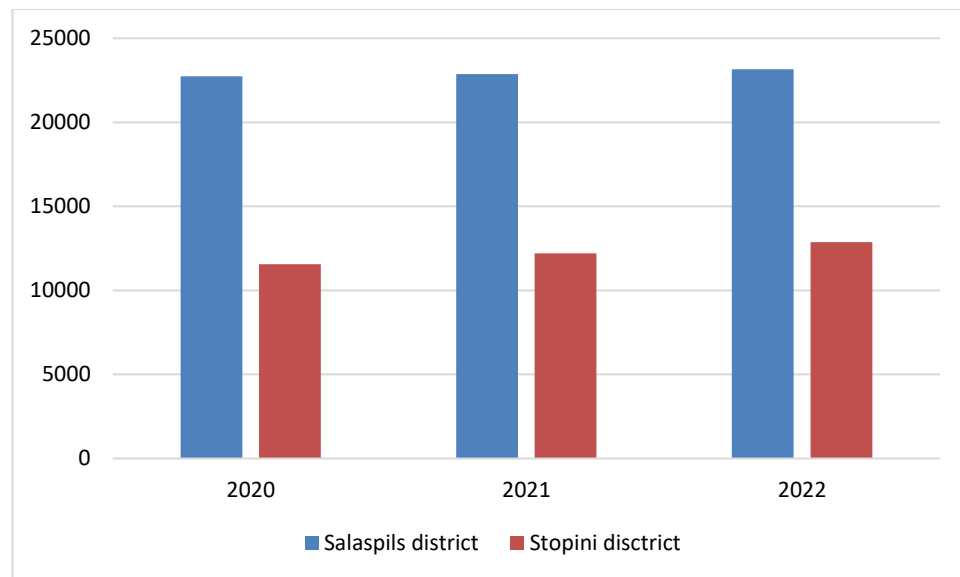


Figure 8. Demography data of Salaspils district and Stopini district from 2020 to 2022

Both districts together had a total of 34,301 inhabitants in 2020. In 2021 number increased to 35,069 inhabitants, and as of 01.06.2022. – 36,027 inhabitants. There is a gradual increase in the population. In 2021, the population of Salaspils district increased by 130 people compared to 2020, and in 2022 - by 280 people compared to 2021. In Stopini district, the number of inhabitants increased by 638 inhabitants in 2021 compared to 2020, and by 678 inhabitants in 2022. compared to 2021.

Analyzing the drivers of natural population growth, it can be concluded that in Stopini district both in 2021 and in 2022, these indicators show a growth trend, while in Salaspils district there is a significant decrease observed in 2021 (see Figure 9).

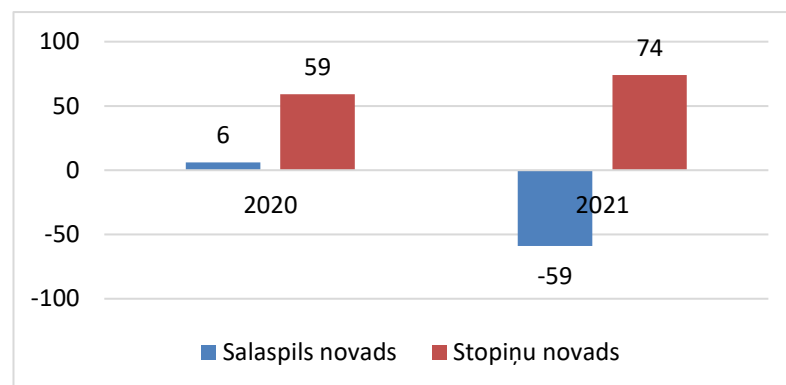


Figure 9. Demography dynamics of Salaspils and Stopini districts in 2021 and 2022

According to the data of the Central Statistical Office on the number of inhabitants by gender and age, it should be noted that Salaspils district is represented by 47% of men and 53% of women, while in Stopini district these indicators are respectively 47.8% and 52.2%.

Analyzing the distribution of the population by age according to the international age distribution, it should be noted that in the Salaspils district, 19.1% of the total population is under the age of 14, 63.3% of the population is between the age of 15 and 64, and 17.6% is over the age of 65.





In Stopini district, 22.9% of the total population is under the age of 14, 63.9% of the population is between the age of 15 and 64, and 13.2% is over the age of 65.

Analyzing the distribution of the population by age, it can be concluded that in both regions, 20.34% of the total population is under the age of 14, 63.51% of the population is between 15 and 64 years old, and 16.14% of the population is over the age of 65.

#### 1.4. Buildings and their current state

Project area is a residential building complex of 8 buildings. Buildings and area have not been maintained for almost 5 years. Figure 10 illustrates the view of the property in 2018.



Figure 10. View of the property in 2018

Figure 11 reflects the deployment of residential house “Kaudzites”.



Figure 11. Building No. 1. Residential house “Kaudzites”

Figure 12 reflects the view of building No. 1.



Figure 12. View of building No. 1, 2022

Main parameters of building No. 1 are following:

- Year of commissioning – 1911;
- The foundations of the building are made of boulder;
- Exterior walls and frames – silicate bricks and timber;
- Covers - timber materials;
- Roof covering – asbestos-cement, timber;
- Depreciation – 70%;
- State - unfit for living.

Figure 13 illustrates sketch of building No. 1.

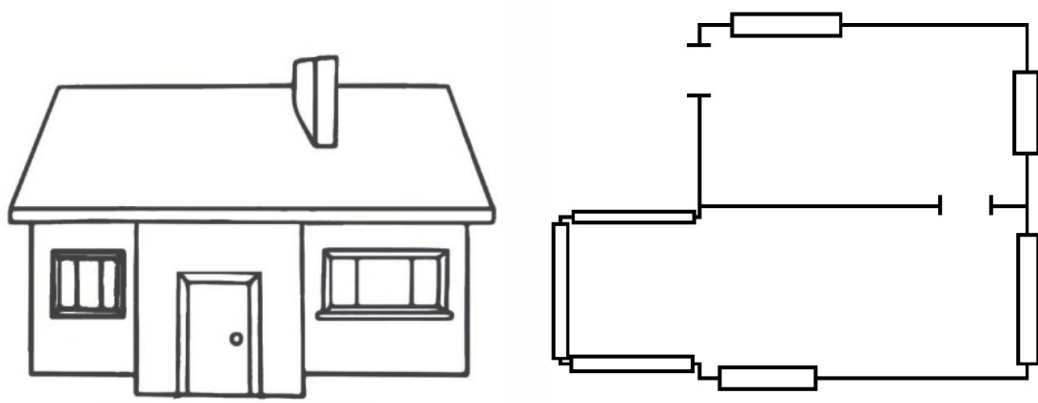


Figure 13. Sketch of building No. 1



### Building No. 2, Barn

Main parameters of building No. 2 (barn) are following:

- Year of commissioning – 1911;
- Area of the real estate object: 50.4 m<sup>2</sup>;
- Main type of use: 1274 - Other, previously unclassified, buildings;
- Construction type: barns with a total area of up to 60 m<sup>2</sup>, household buildings, basements and public toilets

Figure 14. reflects the view of building No. 2.



Figure 14. View of building No. 2, 2022

Constructive elements of building No. 2 can be seen in Table 7.

Table 7. Constructive elements of building No. 2

| Element                   | Material                 | Depreciation (%) |
|---------------------------|--------------------------|------------------|
| Foundation                | Boulder                  | 75               |
| Exterior walls and frames | Silicate bricks, timber  | 75               |
| Overlays                  | Timber                   | 75               |
| Roof (cover)              | Flexible sheet materials | 75               |





Figure 15 illustrates sketch of building No. 2.

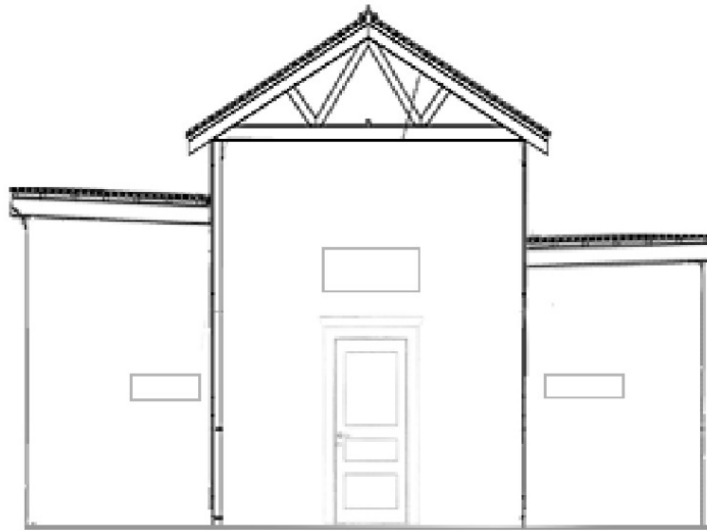


Figure 15. Sketch of building No. 2

### Building No. 3, Cellar

Main parameters of building No. 3 (cellar) are following:

- Year of commissioning – 1911;
- Area of the real estate object: 46.3 m<sup>2</sup>;
- Main type of use: 1271 - Agricultural non-residential buildings;
- Construction type: 12710103 - Freezers and cellars.

View of the building No. 3 can be seen in Figure 16.



Figure 16. View of building No. 3 (cellar), 2022

Constructive elements of building No. 3 can be seen in Table 8.



Table 8. Constructive elements of building No. 3

| Element                   | Material                 | Depreciation (%) |
|---------------------------|--------------------------|------------------|
| Foundation                | Boulder                  | 70               |
| Exterior walls and frames | Boulder, timber          | 70               |
| Overlays                  | Boulder, timber          | 70               |
| Roof (cover)              | Flexible sheet materials | 70               |

Figure 17 illustrates sketch of building No. 3.

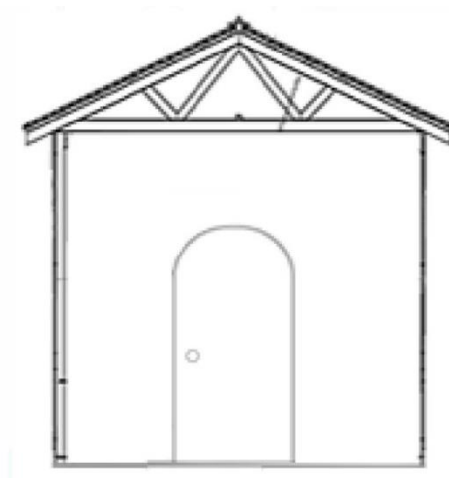


Figure 17. Sketch of the building No. 3

As a result of the visual inspection of the building, it is concluded that in the reality view does not correspond to the data of the State Land Service, which states that the foundations, external walls and frames, as well as coverings are made of boulder.

#### Building No. 4, Farm building

Main parameters of building No. 4 (farm building) are following:

- Year of commissioning – 1980;
- Area of the real estate object: 41.4 m<sup>2</sup>;
- Main type of use: 1274 - Other, previously unclassified, buildings;
- Construction type: barns with a total area of up to 60 m<sup>2</sup>, household buildings, basements and public toilets.



Figure 18 reflects the view of building No. 4.



Figure 18. View of building No. 4, 2022

Constructive elements of building No. 4 can be seen in Table 9.

Table 9. Materials building No. 4

| Element                   | Material        | Depreciation (%) |
|---------------------------|-----------------|------------------|
| Foundation                | Ferroconcrete   | 40               |
| Exterior walls and frames | Silicate bricks | 40               |
| Overlays                  | Timber          | 40               |
| Roof (cover)              | Asbestos-cement | 40               |

Figure 19 illustrates sketch of building No. 4.

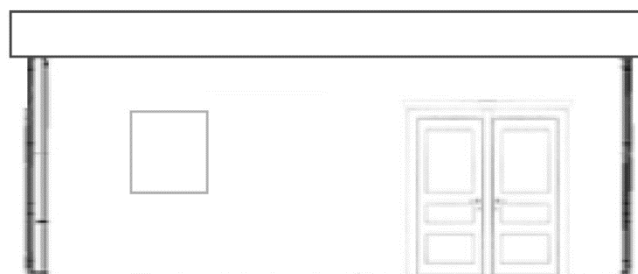


Figure 19. Sketch of building No. 4



As a result of the visual survey of the building, it can be concluded - situation on the site does not correspond to the register data of the State Land Service, and the actual deterioration of the building is 100% as it is collapsed.

### Building No. 5, Barn

Main parameters of building No. 3 (cellar) are following:

- Year of commissioning – 1980;
- Area of the real estate object: 11.8 m<sup>2</sup>;
- Main type of use: 1274 - Other, previously unclassified, buildings;
- Construction type: barns with a total area of up to 60 m<sup>2</sup>, household buildings, basements and public toilets.

Figure 20 reflects the view of building No. 5.



Figure 20. View of building No. 5, 2022

Constructive elements of building No. 5 can be seen in Table 10.

Table 10. Constructive elements of building No. 5

| Element                   | Material                   | Depreciation (%) |
|---------------------------|----------------------------|------------------|
| Foundation                | Boulder                    | 50               |
| Exterior walls and frames | Silicate bricks and timber | 50               |
| Overlays                  | Timber                     | 50               |
| Roof (Cover)              | Asbestos-cement            | 50               |



Figure 21 illustrates sketch of building No. 5.

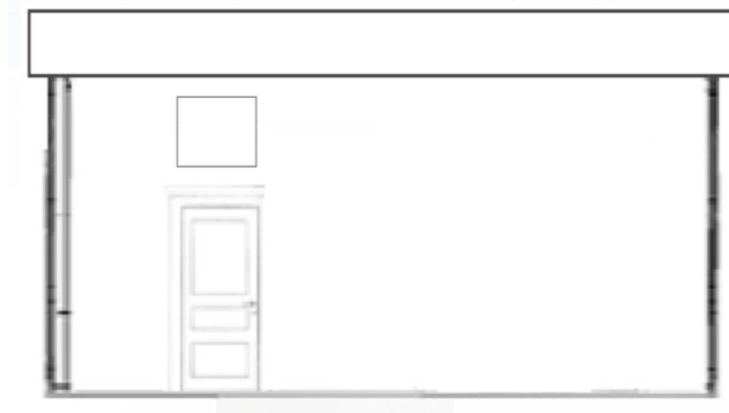


Figure 21. Sketch of the Building no. 5

As a result of the visual survey of the building, it is concluded - situation on the site does not correspond to the register data of the State Land Service. Actual deterioration of the building is 100%. Building is partially collapsed.

#### Building No. 6, Bathhouse

While visually surveying the property, it was concluded that near the building complex there is a bathhouse, which is not registered in the database of the State Land Service. Therefore, it can be stated that it was built arbitrarily.

Figure 22 reflects the view of building No. 6.

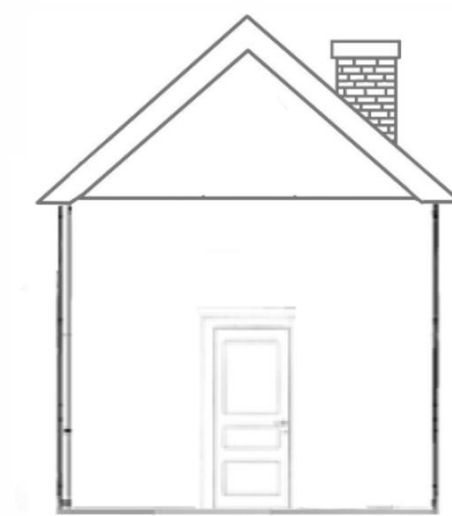


Figure 22. View of building No. 6, 2022





Figure 23 illustrates sketch of building No. 6.



**Figure 23.** Sketch of building No. 6

During the visual survey it was concluded that it is not possible to evaluate the structure of the building, because it is not possible to access the building for inspection. Having a visual look from the distance it can be stated that building is built from timber and it is provided with electric wires. The building is located 5 meters from the coastline of Maza Jugla river.

#### Building No. 7, auxiliary building

When surveying the property, it was discovered that there is another auxiliary building in the building complex, which is not registered in the database of the State Land Service. Therefore, it can be stated that it was built arbitrarily.

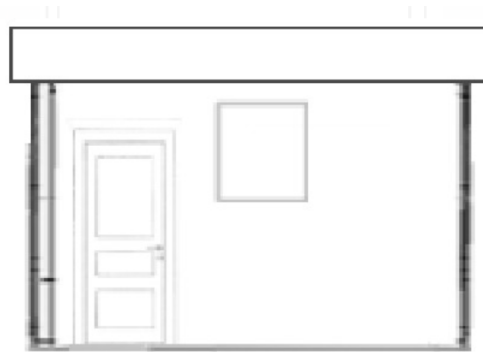
Figure 24 reflects the view of building No. 7.



**Figure 24.** View of building No. 7, 2022



Figure 25 illustrates sketch of building No. 7.



**Figure 25.** Sketch of building No. 7

During the survey, it can be stated that it is not possible to evaluate the structure of the building, because it is not possible to access it for inspection. Visually evaluating, it can be stated that building is built from timber, it has a glass window and it is provided with electric cables.

General conclusion after the visual inspection of the building complex: **buildings are dangerous for exploitation and need to be dismantled.**



## 2. SUSTAINABLE REGENERATION SOLUTIONS, BASED ON CIRCULAR ECONOMY PRINCIPLES

### 2.1. Social Regeneration

#### 2.1.1. User needs

Before developing scenarios for the improvement of degraded areas, it is necessary to find out the opinion of the residents about their needs in order to improve life in the project area.

The opinion of inhabitants was surveyed using the possibilities provided by modern technologies. Closed Facebook and Whatsapp groups of residents of certain areas have become increasingly popular and provide sufficient representative samples of residents. Using both of these platforms, the residents of both Salaspils district and Stopini parish were asked questions about what should be developed 1) in the territory of Salaspils district and Stopini parish; 2) and in the project area.

Total amount of 90 respondents from Salaspils and Stopini districts, who live in the neighborhood of the project area, took part in the survey. 16% of respondents who participated in the survey are under 14 years old; 29% of respondents belong to the age group from 15 to 25 years; 32% of respondents are aged between 26 and 60, while 23% of respondents are over 60 years old.

Responses show that 36% of respondents have their permanent place of residence in Stopini parish, 38% of respondents have their permanent place of residence in Salaspils district, 23% of respondents have their permanent place of residence in Riga, while 3% of respondents gave the answer "elsewhere". Results reflect that 26% of respondents spend their free time near the project area.

Respondents were asked various questions about their leisure habits, about what is missing in the closest neighborhood in order to spend free time in a more qualitative way.

The most popular answers about spending free time were: "I go for a walk" (specified 64 times), "meet with friends" (specified 48 times), "do sports" (specified 38 times), "choose active recreation" (32 times), "spend time with children and grandchildren" (specified 24 times). Respondents go on trips both around Latvia (specified 24 times) and to foreign countries (specified 35 times). It can be seen that more respondents choose to spend their free time outside of Latvia. Such answers as "watching TV and movies", "attending cultural events", "doing housework", "going to nature", "visiting relatives and friends" are also indicated.

The respondents were asked about what are the disadvantages for spending free time in the closest neighborhood.

In the Long-Term Strategy of Salaspils District 2014-2030, it is indicated that natural capital and the external environment are integrated in the territories of Salaspils district, creating an attractive living space for residents - recreation areas in forests and public gardens in populated areas. Local pride is tidy properties and beautiful gardens.

Natural and cultural landscapes are used for the development of tourism with emphasis on one-day tourism. The development of active recreation as a field of tourism is facilitated by the proximity of the capital city Riga, meaning that there is sufficient demand for short-term active recreation, which can be provided by the use of the water objects and their adjacent area, boat rental and bicycle paths. 41 respondents indicate that there is a lack of recreation places in forest areas.



38 respondents stated that not only in the closest neighborhood, but also in Stopini parish and Salaspils district in general, there is a very limited offer of accommodation and catering services for tourists and other interested parties.

The growing number of tourists is gradually developing the tourist service sphere - catering, transport, entertainment and other services.

In the Riga region, the Salaspils district, in accordance with the sustainable development strategy, positions itself as a diverse recreational place for different generation residents of the Salaspils district and Riga. Therefore, the recreational space plays an important role in creating an attractive living environment. The recreational space can be used for recreation, entertainment and cognitive processes of the inhabitants of Salaspils district and Stopini parish, as well as for ensuring tourism entrepreneurship. 27 respondents indicated that there is a lack of an active recreational area with outdoor exercise equipment. 47 respondents indicated that there is a lack of recreational area by the river with possibilities to make bonfires and play sports games. Consequently, recreation opportunities near public waters in Salaspils district should be improved and expanded, for example, the second largest river that flows through the territory of Salaspils district - Maza Jugla.

The opinion expressed by the respondents points to a slightly different situation: the governance of Salaspils district puts the main emphasis on the city of Salaspils and Dole island, paying less attention to the residents who live in the peripheral areas. Similar is the case with Stopini parish (after the Territorial Reform, Stopini parish is part of Ropaži district), where the main focus is on the villages - Ulbroka, Saurieši, Upeslejas, etc. - paying less attention to other populated areas. This fact was indicated by 32 respondents.

Both in Salaspils district and Stopini parish, there are few guest or holiday houses where people can go on one or two-day leisure trips, and there are too few places for active recreation. For example, local young people gather in the forest near Saurieši or Upeslejas, or organize “events” at the memorial site of Latvian-Estonian soldiers of World War 1.

In the summertime young people go to look for recreational places near the river, where they can make bonfires, play sports, etc. However, most of these places are on private properties, where there is resistance from the owners of the territories against such gatherings of young people.

In wintertime young people are looking for opportunities to create ice rinks, ice hockey fields, ski tracks or sleigh tracks for the youngest residents.

Historical constructions located outside of the cities or villages can be classified as summer house construction, and is basically allowed for the development of construction intended for seasonal living (in the summer period), and is also allowed for the construction of retail (except fuel and gas filling), public catering buildings, as well as for the construction of structures related to the improvement of public outdoor space. The development and equipment of these territories with the necessary engineering communications is the responsibility of the private owners, considering the binding regulations for the use and construction of the territory.

Taking care of a family-friendly environment, it is necessary to improve common areas and neighborhoods to create active areas for children, young people, adults and pensioners.

One of the development directions of the spatial perspective is preservation of natural and cultural-historical heritage and sustainable development, promoting diverse recreational opportunities for different age group residents of Salaspils district, Stopini parish and Riga.





It is necessary to improve the environmental quality of populated areas - Salaspils, Saulkalne, Acone, Jaunsaurieši, Bajari and Silabrieži. Project area is located near the village of Jaunsaurieši. Therefore, it is possible to create a harmonic living environment with public outdoor spaces - parks, squares, playgrounds, pedestrian sidewalks, roadways and access to public waters. As an additional benefit, there is the promotion of the creation of environmental objects which could contribute to the increase of society's environmental awareness.

In sustainable development program of Salaspils district it is determined that it is necessary to promote the revitalization and beautification of populated areas, diversifying and supplementing the use of the territory without hindering access to public water objects. Therefore, it must be concluded that the effective use of the existing technical infrastructure, unused buildings and structures and the tidying of degraded areas is supported.

Respondents indicated that they lack running and cycling paths. Most of the time they have to cycle or run along the P5 highway with high intensity traffic, which is a safety and health hazard. This issue was brought up by 35 respondents.

Respondents were introduced with four possible territory development models that would allow the revitalization and beautification of the territory. The responses of the respondents show that preference is given to the creation of active recreation areas with outdoor exercise equipment and playgrounds as the main option for the development of the territory, which was indicated by 44% of the respondents. 22% of respondents expressed their desire to place an open-air zoo in the project area, while 21% suggested creating a holiday or guest house near the coast of Maza Jugla river. 13% proposed the creation of a walking, running and cycling pathway along the Maza Jugla river.

Further analysis will tackle 3 most popular development options of the project area: recreational site, creation of an open-air zoo, construction of holiday or guest house.

### 2.1.2. Regeneration solutions (alternatives)

As indicated above, in the Long-Term Strategy of Salaspils District 2014-2030, it is expected that natural capital and the outdoor environment structures will be integrated in the territory, which can be realized by creating recreational areas in forests and rural areas, and by creating gardens in populated areas.

According to the territory planning for the Salaspils district, the project area in the coming years is intended for agricultural activities. Consequently, the managers of the territory will need to change the development plans of the territory. This territory is not intended for industrial or manufacturing activities. Nearby areas are intended for mixed construction or construction of mansions.

The use of environmentally degrading territories is economically inefficient; places are visually unattractive and create a negative impression on the surroundings.

These areas are unattractive to investors as there are still enough available undeveloped "green" areas in Pierīga region. Reasons for the existence of degraded territories are various:

- socio-economic factors – lack of funds, which denies the renovation of old residential buildings;



- administrative obstacles - for example, the protection of cultural heritage prevents free management and handling of the historical building; and situation in which the plans of owners are in conflict with the regulations;
- speculative interests contribute to the degradation of historical buildings, because buildings and territories might not be managed for a long time;
- municipal resources/capacity - some buildings are without basic engineering infrastructure: there is no sewerage and heat supply;
- availability of free territories, opportunities to acquire them (there are not sufficiently strict restrictions on the use of “green” territories and, accordingly, there is a lack of prioritization and support for the restoration of degraded territories).<sup>4</sup>

### Scenario No. 1

#### Improvement of historical territory and objects

The environment, objects and values of the territory were identified and evaluated. The classification and intended use of the territory as well as cultural traditions have changed in different periods of history. All these aspects form the environment determining the spatial relationship and proportions of the elements.

Various elements - buildings, bridges, monuments, fences, walkways, paths and other objects form a functional space of cultural-historical and aesthetic heritage, for example, the Railway Bridge over Maza Jugla river.

The area around the specific cultural monuments can be considered a well-cleaned, “undamaged” environment and space, since in general no objects degrading the environment have been found. However, during the survey of the territories, some environmentally degrading objects were found in close proximity of the cultural monuments.

Based on the previously evaluated answers of the survey respondents, it can be concluded that it is necessary to improve the quality of the environment in the populated areas. The project area is located near the Jaunsaurieši village. Thus, it is possible to create a harmonic living environment with available public outdoor spaces - parks, playgrounds, pedestrian sidewalks, walking, running and cycling pathways, roads, etc., while ensuring access to public waters. As an additional benefit, there is the promotion of the creation of environmental objects which could contribute to the increase of society’s environmental awareness.

### Scenario No. 2

#### Development of recreational areas

An important aspect indicated is the development of recreational areas, which include the forests of Riga, Saurieši and Upeslejas recreational areas, spatially tackling Stopini parish and Salaspils district.

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<sup>4</sup>[https://www.vbf.lv/sites/vbf/files/files/lapas/Gramata%20-%20vadlinijas\\_ar%20elektronisko%20ISBN\\_13.03.2020.\\_compressed.pdf](https://www.vbf.lv/sites/vbf/files/files/lapas/Gramata%20-%20vadlinijas_ar%20elektronisko%20ISBN_13.03.2020._compressed.pdf)



It is necessary to develop outdoor gym areas for active recreation, open-air skating options and potential hockey fields for activities in winter, and running, walking or cycling routes for summer activities in Salaspils district and Stopini parish.

Another recreational development option could be the creation of a public beach near Saurieši quarry, which can be considered as a historical object. Saurieši and Upeslejas villages formed because of operations of Saurieši gypsum quarries.

In the Riga region, the Salaspils district, in accordance with the sustainable development strategy, is positioned as a diverse recreation place for different generation residents of the Salaspils district and Riga. Therefore, the recreation space plays an important role in creating an attractive living environment. The recreational space can be used for recreation, entertainment and cognitive processes of residents of Salaspils district and Stopini parish, as well as for ensuring tourism entrepreneurship. Analyzing the current situation, it can be concluded that there is a need for improvement and expansion of recreational areas near public waters in Salaspils district and Stopini parish. For example, river Maza Jugla, which flows through the territories of Salaspils district and Stopini parish, and adjoining areas of Maza Jugla river contain development potential of recreational areas.

### Scenario no. 3

#### Promotion of the tourism industry

It is necessary to improve the management and marketing of the tourism industry, whereas one of the directions of action is the creation of thematic videos about the most significant objects and events. As a result, approximately 2-3 minutes long videos could be created for Latvian and international events in Salaspils district and Stopini parish, considering the experience of Ķekava district as a good practice.

It is important to restore touristic places and objects belonging to municipalities. Therefore, it is important to determine the state of touristic places and objects and to develop technical projects.

Both Salaspils district and Stopini parish have various tourist attractions, but the information on various tourism-related websites is different. Therefore, it is necessary to gather information about touristic objects, the number of visitors and satisfaction level of these touristic objects.

It is important to promote nature trails, tourism routes along Maza Jugla river, Daugava river and other water objects in municipal level. In the sustainable development strategies of municipalities, this issue is considered in general, but there are no natural objects specified, and it is not indicated which routes are planned to be developed, improved or rebuilt.

Natural and cultural landscapes are used for the development of tourism. The development of active recreation as a field of tourism is facilitated by the proximity of the capital city Riga, meaning that there is sufficient demand for short-term active recreation, which can be provided by the use of the water objects and their adjacent area, boat rental and bicycle paths.



### 2.1.3. Assessment of alternatives

Table 11, Table 12 and Table 13 reflects SWOT analysis of each development scenario.

Table 11. SWOT analysis of Scenario No. 1

| <b>Strengths</b>   | <b>Weaknesses</b>   |
|--|---|
| The surrounding environment  | Registered purpose of land use  |
| Spatial relationship and proportions of elements                                     | Some environmentally degrading objects  |
| Historical cultural traditions   | Less popular places from the residents' point of view   |
| Culturally-historically and aesthetically valuable functional space                  | Private properties  |
| Availability of free areas   | Disorganized engineering systems: no water supply and sewage system                                     |
| Location of the territory in Pieriga   | Lack of interest from municipalities  |
| <b>Opportunities</b>   | <b>Threats</b>  |
| Improving the environmental quality of populated areas                               | Lack of financial resources   |
| Application of circular economy principles   | Changes in the legal framework  |
| Ensuring free access to public waters  | Low percentage of reusable materials  |
| Creation of harmonic outdoor space   | Tax policy changes  |
| Opportunities of using environmentally friendly materials in the restoration process | Lack of interest of the municipality regarding investment in the improvement of the engineering systems |
| Creation of publicly accessible outdoor space  | Speculative interests   |
| Development of tourism entrepreneurship  |   |





Table 12. SWOT analysis of Scenario No. 2

| <b>Strengths</b>   | <b>Weaknesses</b>  |
|--|--|
| Availability of free areas   | Some environmentally degrading objects   |
| Cultural-historical attractions  | Lack of interest from municipalities   |
| Forest infrastructure  | Less popular places from the residents' point of view                          |
| The infrastructure of P5 road  | Disorganized engineering systems: no water supply and sewage system            |
| Spatially, several municipalities are involved                                       | Private properties   |
| Location of the territory in Pieriga   | Mutual communication between municipalities in revitalization of the territory |
| <b>Opportunities</b>   | <b>Threats</b>   |
| Improving the environmental quality of populated areas                               | Lack of catering places  |
| Application of circular economy principles   | Changes in legal framework   |
| Ensuring free access to public waters  | Changes in the <i>Rail Baltic</i> construction process                         |
| Creating a harmonic outdoor space  | Lack of financial resources  |
| Opportunities of using environmentally friendly materials in the restoration process | Low percentage of reusable materials   |
| Recreational and educational opportunities   | Lack of accommodation places   |
| Creation of publicly accessible outdoor space – Beach near Saurieši quarry           | Tax policy changes   |
| Creation of running, walking or cycling infrastructure                               | Speculative interests  |
| Creation of sports fields for summer and winter activities                           | Inability of entrepreneurs to adapt to market conditions                       |
| Development of tourism entrepreneurship  |  |



Table 13. SWOT analysis of Scenario No. 3

| <b>Strengths</b>  | <b>Weaknesses</b>   |
|---|---|
| Aesthetics of the surrounding environment   | Some environmentally degrading objects  |
| Nature trails and nature tourism routes along Maza Jugla river, Daugava river and other water objects in municipal level              | Lack of interest from municipalities  |
| The proximity of the capital city Riga  | Information differences in different information sources  |
| Touristic places and objects belonging to the municipality  | There are no complete data on tourist attractions, the number of visitors, satisfaction level with the service provided |
| Possibilities of using water objects and the adjoining territory  | Incomplete management and marketing of the tourism industry   |
| Location of the territory in Pieriga  | Lack of technical projects for the restoration of tourist sites and objects   |
| Historical cultural traditions  | Registered purpose of land use  |
| <b>Opportunities</b>  | <b>Threats</b>  |
| Improving the environmental quality of populated areas  | Changes in legal framework  |
| Application of circular economy principles  | Lack of control over the consistency of information in different information sources                                    |
| Promotion of nature trails and nature tourism routes along Maza Jugla river, Daugava river and other water objects in municipal level | Lack of funds for evaluating the state of touristic sites and objects belonging to municipalities                       |
| Consistency of information in different information sources   | Low percentage of reusable materials  |
| Possibilities of using environmentally friendly materials in the restoration process  | Tax policy changes  |
| Creation of new nature trails and routes  | Lack of interest of the municipality about investment in engineering systems  |
| Determination of the state of tourist sites and objects belonging to municipalities   | Speculative interests   |
| Development of technical projects for the reconstruction of tourist sites and objects   |   |
| Creation of thematic videos about the most remarkable objects and events  |   |
| Development of tourism entrepreneurship   |   |
| Development of one-day tourism  |   |



Analyzing the current situation, it can be concluded that there is a need for improvement and expansion of recreational areas near public waters in Salaspils district and Stopini parish. For example, river Maza Jugla, which flows through the territories of Salaspils district and Stopini parish, and adjoining areas of Maza Jugla river contain development potential of recreational areas.

The project area is located near the Jaunsaurieši village. Thus, it is possible to create a harmonic living environment with available public outdoor spaces - parks, playgrounds, pedestrian sidewalks, walking, running and cycling pathways, roads, etc., while ensuring access to public waters. As an additional benefit, there is the promotion of the creation of environmental objects which could contribute to the increase of society's environmental awareness.

## 2.2. Urban Regeneration

### 2.2.1. User needs

Before developing scenarios for the improvement of degraded areas, it is necessary to find out the opinion of the residents about their needs in order to improve life in the project area.

The growing number of tourists is gradually developing the tourist service sphere - catering, transport, entertainment and other services. There is a limited offer of accommodation and catering services for tourists in the Salaspils district. By researching the information available on the Booking.com website, it can be stated that there are 5 accommodation options in Salaspils and its neighborhood (see Figure 26), while in Stopini parish there are 6 accommodation options with a small number of beds.

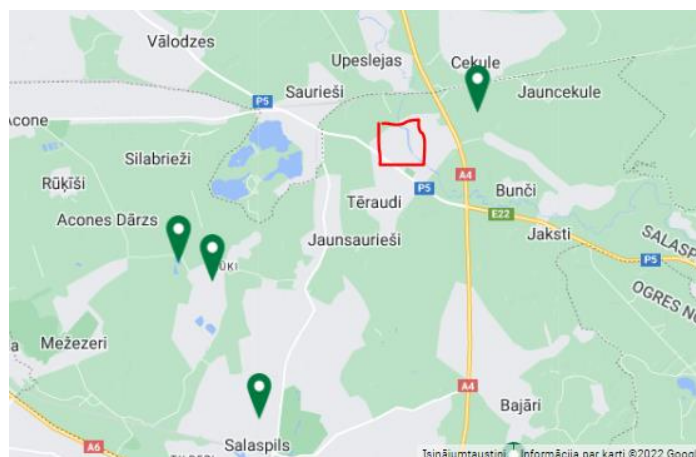


Figure 26. Deployment of accommodation options around project area<sup>5</sup>

Salaspils tourist information website shows that there are 13 accommodation places in Salaspils and Salaspils area. Majority of them are concentrated around Salaspils and are located near the Riga - Daugavpils highway. The closest accommodation option to project area is the guest house “Pie Kārļa”, which is 5 km away from project area.

As it can be seen from Figure 27, catering places are concentrated in the city of Salaspils.

<sup>5</sup> <https://visit.salaspils.lv/lv/kur-naksnot/>

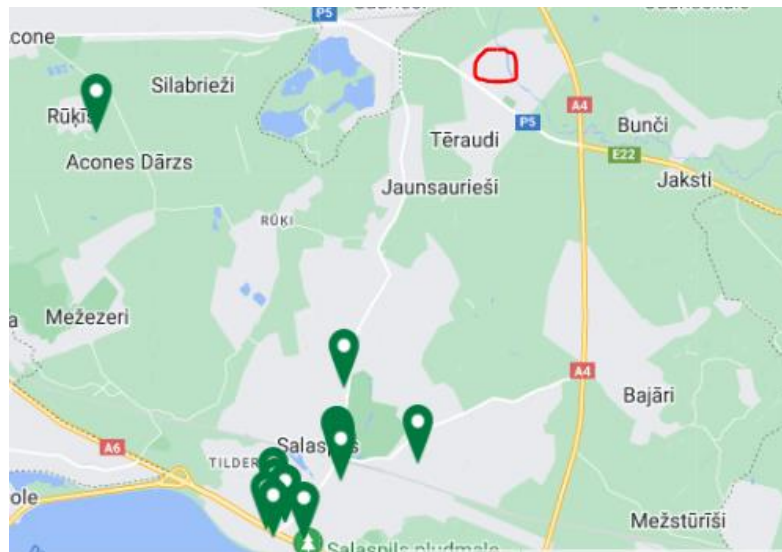


Figure 27. Catering places in Salaspils and Salaspils district<sup>6</sup>

Analyzing data presented by the Salaspils tourism website, it can be stated that there are 14 catering places in Salaspils and 3 active catering places in the Salaspils district, which are located far from the project area. Analyzing the information about catering and accommodation options in Stopini parish, information on the website of Ropaži district reveals that there are 11 places providing these services and they are placed around Ulbroka, which is the center of Stopini parish.<sup>7</sup>

In the Riga region, Salaspils district and Stopini parish position themselves as diverse recreational places for the different age residents of the Salaspils district, Stopini parish and Riga, therefore, recreational space with landscape value plays an important role in creating an attractive living environment.

It should be noted that in the research area buildings have historically been built outside of the populated centers and can be classified as summer houses. They are basically allowed for seasonal living - for the development of buildings intended for the summer period, retail sales (except fuel and gas refilling), public catering and for the construction of structures related to the improvement of public outdoor space. In connection with the fact that the majority of territories are private properties, it must be concluded that the development and equipment of territories with the necessary engineering communications as well as compliance with the binding regulations for the use and construction of the territory is the responsibility of the private owners of these territories.

The planned activities will improve the quality of residents' active recreation, expand the opportunities for physical activities in the open air not only in summer, but also in winter, motivate more and more residents to focus on active recreation and a healthy lifestyle, which will promote healthy and positive thinking and perception of life.

It is necessary to create a well-maintained, safe and modern recreational area, while integrating recreational functions into existing environment, improving and developing building infrastructure facilities, as well as significantly increasing the intensity and diversity of the area's use. Therefore, in order to develop family-friendly environment, it is necessary to improve common areas and

<sup>6</sup> <https://visit.salaspils.lv/lv/kur-paest/>

<sup>7</sup> <https://www.ropazi.lv/lv/edinasana-un-naktsmitnes>





neighborhoods, emphasizing development of active areas for children, young people, adults and seniors.

One of the development directions of the spatial perspective is the preservation of the natural and cultural-historical heritage and sustainable further development, promoting diverse recreational opportunities for the different age residents of the Salaspils district, Stopini parish and Riga.

As already stated above, the sustainable development programs of both Salaspils district and Stopini parish state that it is necessary to promote the revitalization and attractiveness of populated areas, diversifying and intensifying the use of the territory and ensuring the access to public water objects. Therefore, it can be concluded that the effective use of the existing technical infrastructure, unused buildings and structures as well as regeneration of degraded areas are supported. Based on the conducted survey of inhabitants of Salaspils district and Stopini parish, three potential development options in project area are proposed: recreational site; creation of an open-air zoo; construction of holiday or guest house.

### 2.2.2. Regeneration solutions (alternatives)

According to the territorial planning of the Salaspils district, the project area is intended for agricultural activities. In order to implement some other activities that are not related to agriculture, the managers of the territory will need to change the development plans of the territory. This area is not intended for industrial or manufacturing activity. Nearby areas are intended for mixed construction or construction of mansions.

While developing the proposed scenarios, the principles of the circular economy are taken into account, considering the minimization of waste generation and the potential reuse of materials from buildings of project area.

The use of environmentally degrading territories is economically inefficient; places are visually unattractive and create a negative impression on the surroundings.

#### **Scenario No. 1**

##### **Recreational place “*Pie Mazās Juglas*”**

On the coast of Maza Jugla river, picnic areas with tables and benches can be created, as well as fire places, which will provide additional opportunities for recreation.

Admirers of active recreation would have the opportunity to do sports on the outdoor gym or play beach volleyball on a specially equipped sand court.

Children's playgrounds with swings and other attractions can be installed from the recovered materials that can be obtained from the dismantling of buildings in project area.

This would be another beautiful recreational place on the coast of Maza Jugla river, where families with children and groups of young people can sunbathe and enjoy picnic. Despite the fact that Maza Jugla river is relatively shallow, it is possible to set up a swimming place.

During wintertime, it is possible to create an open-air ice skating and ice hockey field, sleigh tracks for the youngest children as well as ski tracks for admirers of skiing.



It is possible to create a running or cycling route that would cross two municipalities - Salaspils district and Ropaži district (Stopini parish), - connecting the territory with already established cycling lanes in Upeslejas and Saurieši.

#### Example of good practice – “Salaspils beach”

Historically around 1380, a church was built in this area, named after the spiritual defender of Livonia, Saint Juris. The church was repeatedly destroyed in various wars, but afterwards - restored. Unfortunately, after the World War 2, it was left without supervision and ended up being gradually demolished. During the construction of the hydroelectric power plant (HPP) in 1973, the remains of the church were blown up, but the ruins remained outside of the flooded zone and 3 years later they were recognized as an architectural monument of local importance and can still be visited nowadays.

There are changing cabins and a lifeguard station on Salaspils beach, where lifeguards are on duty during the swimming season. Recreational place on the coast of the Daugava river offers sunbathing, swimming and picnic opportunities (see Figure 28).



Figure 28. Views of Salaspils beach<sup>8</sup>

<sup>8</sup> <https://visit.salaspils.lv/lv/ko-apskatit/salaspils/salaspils-aktiva-atputa-un-izklaide/salaspils-pludmale/>



Figure 29 reflects the location of Salaspils beach.

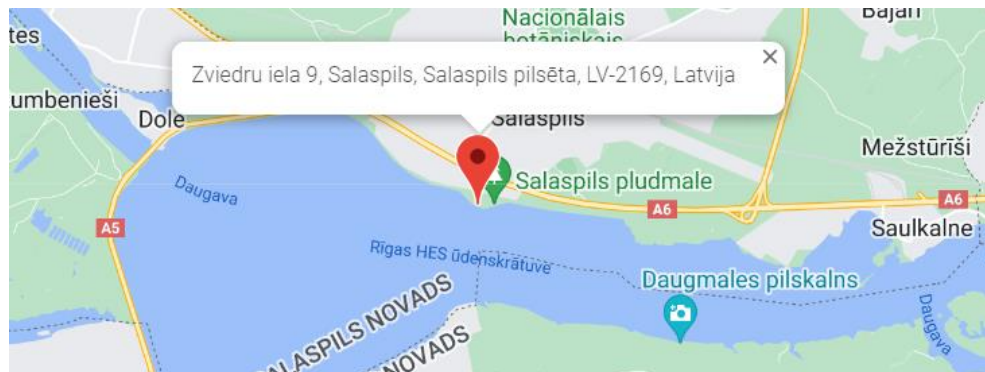


Figure 29. Location of Salaspils beach

For the convenience of visitors, Salaspils beach has picnic areas with tables, benches, and bonfire places. Admirers of active recreation have the opportunity to do sports on the outdoor gym, and children can enjoy playgrounds with swings and other attractions.

The beach paths are passable for people in wheelchair with an assistant (stones and a slope at the beginning of the beach path can be a bit of a nuisance).

## **Scenario No. 2**

### ***Mini Zoo “Pie Mazās Juglas”***

Although there is a backyard zoo in the neighborhood (3 km from Saurieši), it is possible to create a mini zoo with domestic and wild animals and a walking trail with horses in the project area.

Useable buildings of project area can be converted into animal shelters. Dismantling materials can be used to create cages and paddocks for various birds and animals.

On the coast of Maza Jugla river picnic areas with tables and benches can be created, as well as fire places, which will provide additional opportunities for recreation.

### **Example of good practice - Backyard Zoo “Brieži”**

The backyard zoo “Brieži” was founded in 2013. The zoo was created in a private meadow where a half-ruined building was located, which was renovated, and the zoo was created in its adjoining area. Amenities available in the backyard zoo: free parking, picnic areas with and without sheds, garden grills, children’s playground, dry toilet.<sup>9</sup>

Views of the backyard zoo “Brieži” can be seen in Figure 30.

<sup>9</sup> <https://www.zbriezi.lv/par-mums/>





Figure 30. Views of the backyard zoo "Brieži"

### **Scenario no. 3**

#### **Guest house or holiday house "*Pie Mazās Juglas*"**

The project area is rich in natural landscapes. A guest house built from logs will visually fit into the landscape of the project area. With minor adjustments it can be built on the foundations of existing buildings. It is possible to build a terrace with a view on Maza Jugla.

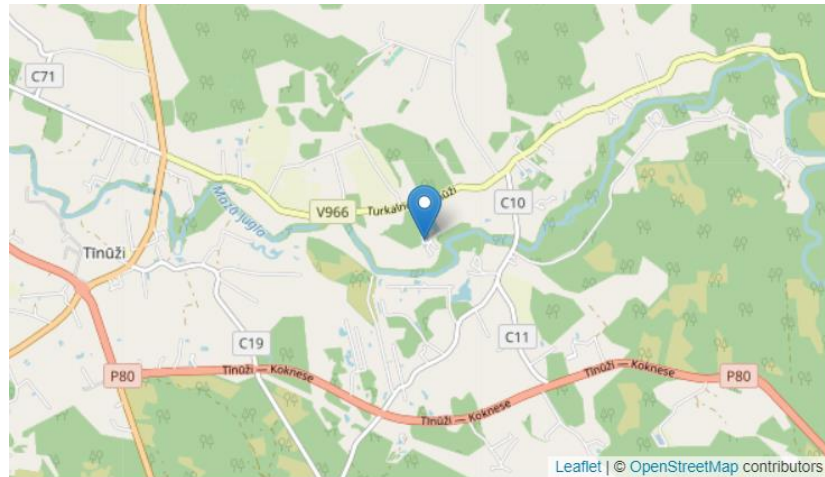
The size and layout of the territory allows the installation of a children's playground and the construction of a separate bath house (sauna). It could be considered to use the materials of the dismantled buildings, for example, silicate bricks could be used in the development of car parking areas.

The electricity and gas supply lines are already marked in the plan of territory.

#### **Example of good practice - Holiday house "Krauklīši" (Tīnūži)**

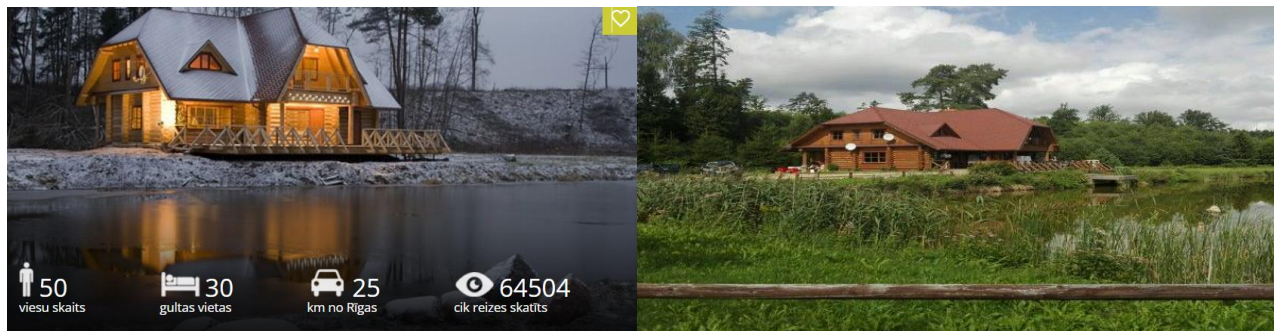
Holiday house "Krauklīši" is located in Tīnūži village. Riga is 32 km from holiday house "Krauklīši", while Jūrmala is at distance of 49 km. Riga International Airport is 38 km from the holiday house. Location of holiday house "Krauklīši" is reflected in Figure 31.





**Figure 31.** Location of holiday house “Krauklīši”<sup>10</sup>

The holiday house has 7 bedrooms, a living room, a flat-screen TV, equipped kitchen with fridge and oven, and 3 bathrooms with jacuzzi. There is a sight on the lake from the holiday house. Figure 32 illustrates the views of holiday house “Krauklīši”.



**Figure 32.** Views of holiday house “Krauklīši”<sup>11</sup>

A shared lounge, garden and terrace are at guests' disposal. Accommodation facilities include air conditioning, free WiFi and private on-site parking.

A children's playground is available for guests of the holiday house.

<sup>10</sup> <https://viesunamiem.lv/krauklisi>

<sup>11</sup> <https://viesunamiem.lv/krauklisi>



### 2.2.3. Assessment of alternatives

#### Scenario No. 1: Recreational place “Pie Mazās Juglas”

##### Strengths:

- active and passive recreation opportunities;
- possibilities of using natural materials;
- demolition of degraded buildings;
- potential reuse of existing materials;
- assuring infrastructure for people with special needs;
- possibilities for setting up a swimming place;
- landscaped natural space;
- possibilities of using the territory in wintertime;
- regeneration and beautification of the territory.

##### Weaknesses:

- potential low quality of materials obtained from the demolition of degraded buildings;
- necessary to create a lifeguard station where a lifeguard will be on duty during the swimming season;
- investment in the demolition of degraded buildings;
- expenses related to regeneration of the territory;
- necessity to ensure public order;
- necessity to ensure the management of territory;
- changes in the purpose of land use.

#### Scenario No. 2: Mini Zoo “Pie Mazās Juglas”

##### Strengths:

- recreation opportunities;
- possibilities of using natural materials;
- demolition of degraded buildings;
- creation of animal shelters;
- potential reuse of existing materials;
- development of walking trail with horses;
- picnic areas with tables, benches, bonfire places;
- landscaped natural space;
- regeneration and beautification of the territory.

##### Weaknesses:

- potential low quality of materials obtained from the demolition of degraded buildings;
- ensuring the creation of animal shelters;
- provision of food for animals;
- expenses related to maintenance and well-being of animals;
- creation of residence premises for animal keepers;
- investment in the demolition of degraded buildings;
- expenses related to regeneration of the territory;
- necessity to ensure public order;



- necessity to ensure the management of territory;
- changes in the purpose of land use.

### **Scenario No. 3: Guest house or holiday house “Pie Mazās Juglas”**

#### **Strengths:**

- recreation opportunities;
- aesthetic natural landscape;
- possibilities of using natural materials;
- demolition of degraded buildings;
- potential reuse of existing materials;
- possibilities of using foundations of existing buildings;
- infrastructure for people with special needs;
- terrace with the sight on the river;
- landscaped natural space;
- regeneration and beautification of the territory;
- electricity and gas supply lines are marked.

#### **Weaknesses:**

- potential low quality of materials obtained from the demolition of degraded buildings;
- poor technical condition of the foundations of the existing buildings;
- necessity of large financial investments;
- investment in the demolition of degraded buildings;
- expenses related to regeneration of the territory;
- necessity for the construction of engineering systems;
- necessity to ensure public order;
- necessity to manage territory both during summertime and wintertime;
- compliance with fire safety regulations;
- changes in the purpose of land use.

According to the answers of the residents living in the neighbourhood of the project area, majority (44%) would support the creation of active recreation areas with outdoor exercise equipment and playgrounds, firepits and picnic areas. 22% of respondents would support the creation of an open-air Zoo, and 21% of respondents would support the construction of a holiday or guest house near the coastline of the Maza Jugla river.

## **2.3 Urban and social regeneration: relationships**

### **Scenario No. 1**

In the case of implementation of Scenario no. 1, the availability of recreational places in the nearby area for the residents of Salaspils district and Stopini parish will be improved. Picnic and bonfire areas with tables and benches, a fitness area and a beach volleyball court would be an attractive recreation area for representatives of different generations, which would leave a positive impact on the quality of life. Although Maza Jugla river is shallow, there is an opportunity to set up a swimming place that would supplement the recreation opportunities among the residents of Salaspils district and Stopini parish.



### Scenario No. 2

In case of implementation of Scenario No. 2, a mini zoo “*Pie Mazās Juglas*” would be created in the project area, which would be a good place of recreation and entertainment for the residents of Salaspils district and Stopini parish, especially for families with children.

### Scenario no. 3

The implementation of Scenario No. 3 would increase the availability of accommodation opportunities in the neighborhood and promote recreational opportunities among the residents of Salaspils district and Stopini parish. At the same time, it would promote the potential of tourism development in the territories of Salaspils district and Stopini parish as the availability of guest houses/accommodation is one of the factors influencing the development of tourism.





## CONCLUSION

The case study presents territory, which is located in the rural territory of Salaspils district, near the border with Stopini district. Salaspils district is located in the central part of Latvia, in the Riga county, on the right coast of the Daugava river, in the Ropaži plain of the central Latvian lowlands. The Maza Jugla river flows in the north part of the territory.

Although legally the territory belongs to the Salaspils district, it is of interest for the residents of the Saurieši and Upeslejas areas of the Ropaži district, as it is located close to these inhabited places.

A residential building with six auxiliary buildings is currently deployed on the project area.

After analysis of the available information and visual inspection of the building complex, it was concluded that buildings are dangerous for exploitation and need to be dismantled.

Taking into account the interests of the residents of Salaspils and Stopini districts, 3 development scenarios are proposed for the future development of the territory:

- 1) Recreational place "*Pie Mazās Juglas*";
- 2) Mini Zoo "*Pie Mazās Juglas*";
- 3) Guest house or holiday house "*Pie Mazās Juglas*".

For each territory development scenario, an example of good practice is offered, the positive experience of which can be used for the development of project area. In addition, the principles of the circular economy are integrated into the development scenarios, considering the minimization of waste generation and the potential reuse of materials from buildings of project area. Evaluation of the strengths and weaknesses of each scenario is were carried out.

According to the answers of the residents living in the neighbourhood of the project area, majority (44%) would support the creation of active recreation areas with outdoor exercise equipment and playgrounds, firepits and picnic areas. 22% of respondents would support the creation of an open-air Zoo, and 21% of respondents would support the construction of a holiday or guest house near the coastline of the Maza Jugla river.