LIFE EcosystemServices

ASSESSMENT OF ECOSYSTEMS AND THEIR SERVICES FOR NATURE BIODIVERSITY CONSERVATION AND MANAGEMENT

LAYMAN'S REPORT

ASSESSMENT OF ECOSYSTEMS AND THEIR SERVICES FOR NATURE BIODIVERSITY CONSERVATION AND MANAGEMENT

LIFE13 ENV/LV/000839

Project duration: June 1, 2014 until March 31, 2020.

Beneficiaries:
Nature Conservation Agency / www.daba.gov.lv
Association "Baltic Coasts" / www.baltijaskrasti.lv
Saulkrasti Municipality / www.saulkrasti.lv

Budget: 753 290 EUR
EU LIFE programme contribution: **376 641 EUR**
Contribution of State Regional Development Agency Republic of Latvia, Latvian Environmental Protection Fund Administration: **277 430 EUR**
Contribution of project partners: **99 219 EUR**

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Project web site: https://ekosistemas.daba.gov.lv

EkosistemasLv

ekosistēmas

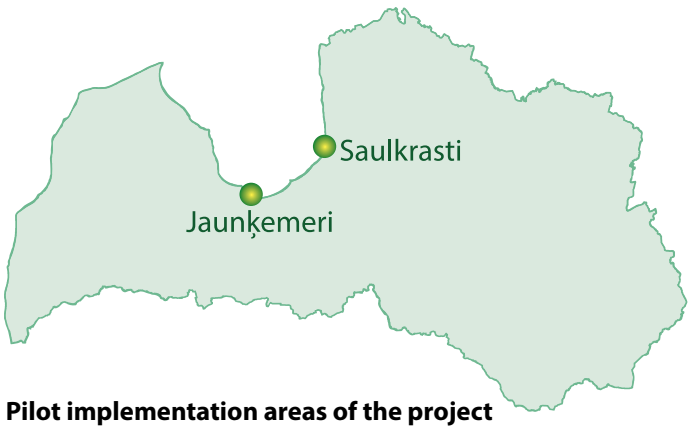
Valsts reģionālās attīstības aģentūra

Dabas aizsardzības pārvalde

BALTIJAS KRASTI

Saulkrasti

About LIFE EcosystemServices



Pilot implementation areas of the project

Nature provides wide range of benefits to society called ecosystem services. Ecosystems provide source for different materials, maintain natural and essential processes on Earth, as well as contribute greatly to aesthetic enjoyment.

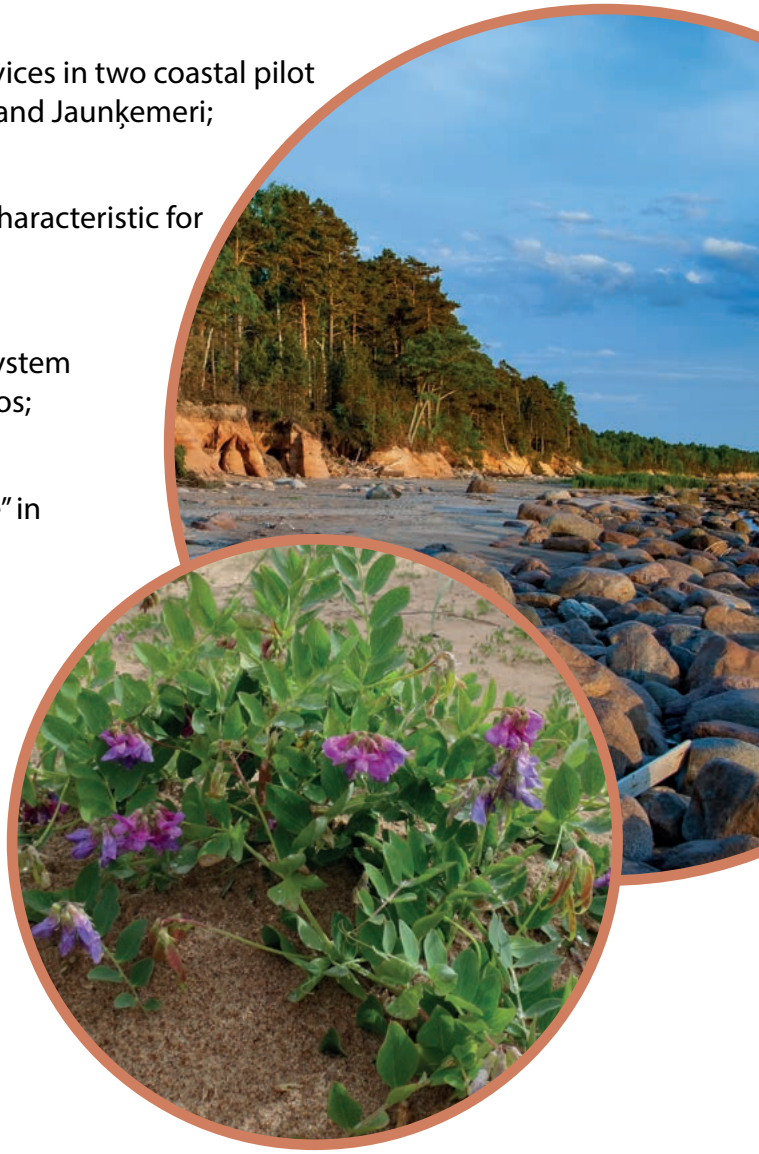
Ecosystems are capable of self-preservation and can adapt to man-made changes, but their capability isn't infinite.

Human made choices on land management have an impact on the range and extent of the benefits of ecosystems.

The aim of LIFE EcosystemServices project is to promote application of ecosystems and their services assessment in spatial and nature conservation planning in Latvia.

MAIN ACTIVITIES:

- Assessment and mapping of ecosystem services in two coastal pilot implementation areas in Latvia – Saulkrasti and Jaunķemeri;
- Economic valuation of ecosystem services characteristic for coastal part of Latvia;
- Assessment of changes in the value of ecosystem services by modelling development scenarios;
- Creation of Nature Design Park "White Dune" in Saulkrasti;
- Elaboration of the recommendations and update of Saulkrasti municipality spatial planning document – Development Programme;
- Elaboration of the recommendations and update of nature conservation planning document - Nature Management Plan of Nature Park "Piejūra";
- Elaboration of the recommendations for application of ecosystem services approach in spatial planning processes in Latvia.



Nature benefits provided by coastal areas

The coast of Latvia is a combination of both – economic activity boosted by sea-ports and tourism related services and varied, sensitive and dynamic environment providing high-quality ecosystem services.

The coastal area is a source of recreation, nature experience and spiritual revitalisation.

The vegetation and the dunes form a natural buffer providing protection from floods and storms.

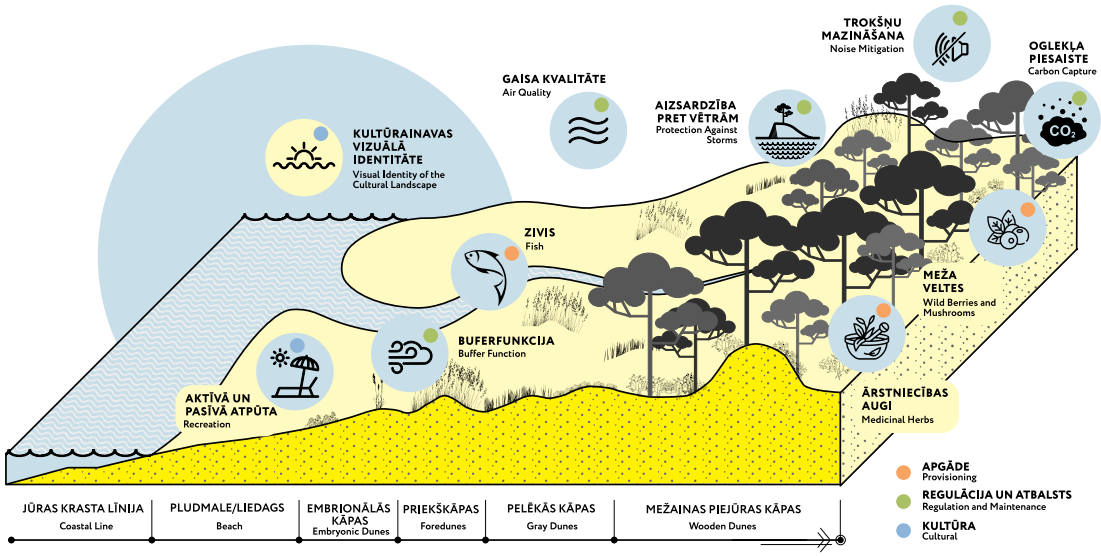
Nature is a source of food, raw materials and oxygen, climate regulator and home for species.

We have identified **22** ecosystem services in Saulkrasti and Jaunķemeri coastal areas and elaborated indicators for the assessment of them.

- **4** provisioning
- **13** regulation and maintenance
- **5** cultural

EKOSISTĒMU PAKALPOJUMI SAULKRASTU PIEKRASTĒ

ECOSYSTEM SERVICES IN THE SAULKRASTI COASTAL AREA



Economic value

Economic valuation of the ecosystem services gives an opportunity to show the socio-economic value of the nature. Different methods can be used to finally achieve a value expressed in **EUR/ha/year.** Economic valuation makes it possible to compare different ecosystem services between themselves.

Within LIFE EcosystemServices project three methods for economic valuation of the ecosystem services have been used:

- **Direct Market Pricing, DMP** – monetary value which is determined and paid for goods and services on the market;
- **Benefit Transfer Method, BT** – is used to estimate economic values by transferring information available from other studies performed in a similar location/context;
- **Travel Cost, TC** - the total costs of time and travel that people have spent during their visit to a place.

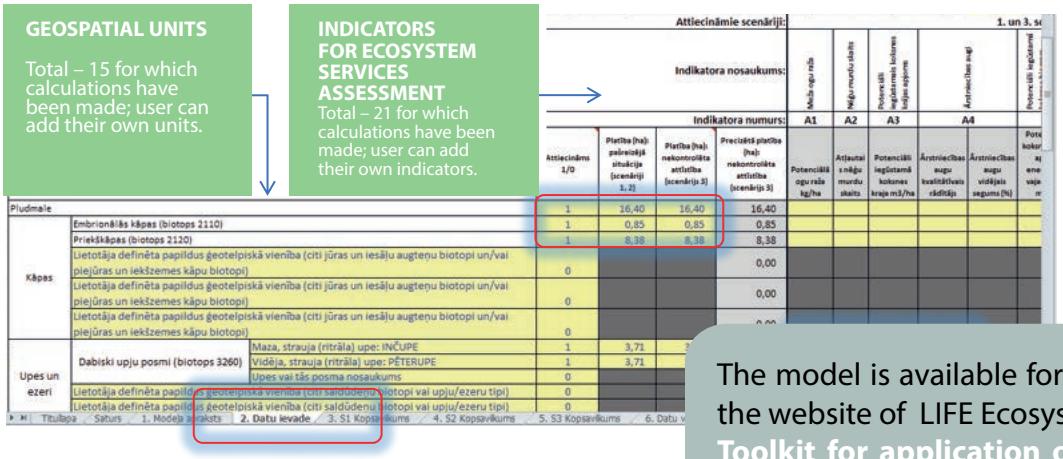
***Ecosystem Services Economic Valuation Model* was elaborated and used for calculation of the monetary value of ecosystem services in Latvia's coastal areas.**

GEOSPATIAL UNITS

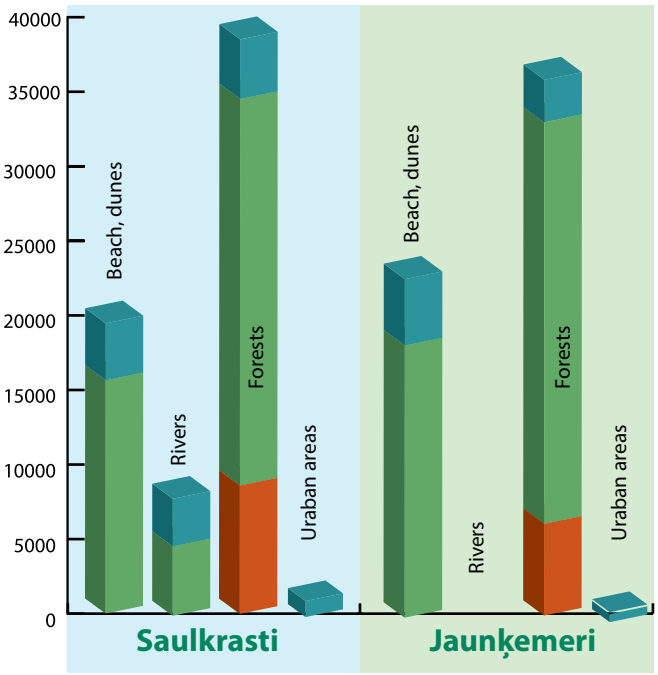
Total – 15 for which calculations have been made; user can add their own units.

INDICATORS FOR ECOSYSTEM SERVICES ASSESSMENT

Total – 21 for which calculations have been made; user can add their own indicators.



The model is available for download and use on the website of LIFE EcosystemServices project **Toolkit for application of ecosystem services approach in planning: http://riks.ekosistemas.daba.gov.lv**



Ecosystem Services Economic Valuation Model was used for economic valuation of ecosystem services in Saulkrasti and Jaunķemeri.

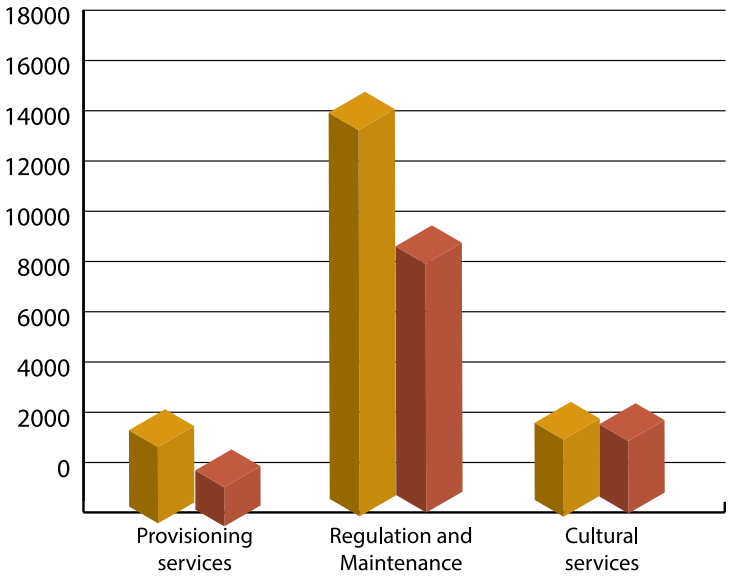
Assessment of development scenarios

Scenario modelling can help assess and demonstrate potential benefits and risks by choosing one or another direction of development of the territory. Such an assessment provides solid base for argumentation and debate in cases where different interests clash, increasing chances of reaching a compromise and agreement on planning the development of the area by striking balance between nature and ecosystem potential/ capacity and society needs.

We assessed **3** development scenarios for Saulkrasti un Jaunķemeri areas to show possible changes in the supply and economic value of ecosystem services:

- **Basic scenario or current situation;**
- **Development by improving environmental education and recreation opportunities;**
- **Development by increasing building territories.**

CHANGES IN ECONOMIC VALUE OF ECOSYSTEM SERVICES (EUR/ha/year) FOR SAULKRASTI:



Substantial decrease in economic value of ecosystem services is predictable if part of the existing forests would be transformed into building areas.

Current situation

Development by increasing building zone

Two additional tools were elaborated within LIFE EcosystemServices project to support ecosystem services approach in decision – making:

- ***Management Strategy Module*** – shows predictable changes in the supply and quality of the ecosystem services depending on the chosen type of the territory management.
- ***Territory Planning and Modelling Module*** – shows predictable changes in the value of ecosystem services by changing the areal proportions of different types of land use/ ecosystems in the territory.

EKOSISTĒMU PAKALPOJUMU RĪKKOPA

Elaborated models are available for download and use on the website of LIFE EcosystemServices project

Toolkit for application of ecosystem services approach in planning:

http://riks.ekosistemas.daba.gov.lv

Nature Design Park in Saulkrasti

In 2016 we established Nature Design Park "White Dune – Saulkrasti" in Saulkrasti town.
Creation of the Park in the territory of Saulkrasti landmark White Dune was one of the development scenarios for Saulkrasti. Assessment of the scenario showed that **Nature Design Park as the development direction is sustainable development scenario – value of the cultural ecosystem services would increase and there would be no decrease in other groups of ecosystem services.**

Nature Design Park consists of educational, innovative, sustainable and multi-functional environmental design objects, information boards, signs and other elements to regulate the flow of visitors and to educate on nature value.

Recommendations and update of planning documents

Assessment results on the current and future supply and economic value of ecosystem services in LIFE EcosystemServices project areas highlight the priorities of ecosystem services on the coast:

Provisioning services ensured by forests – added value each time when cultural services are used.

Cultural services – advantage for economic development.

Regulating and maintenance services ensured by forests and dunes – basis for public safety and possibility to use cultural services.

Results of ecosystem services assessment were used for update of planning documents related to LIFE EcosystemServices project areas:

- recommendations **for Saulkrasti municipality Development Programme 2014 – 2020** elaborated and the document updated; the results will be used for the following planning period as well;
- recommendations for **Nature Management Plan for Natura 2000 site - Nature Park "Piejūra"** elaborated and the document updated.

Nature Management Plans describe the needed human inputs in ecosystems. Use of ecosystem services approach in elaboration of Nature Management Plans offers a way of implementation of the requirements for the assessment of the protected area, not only in terms of nature protection but also in terms of public interest.

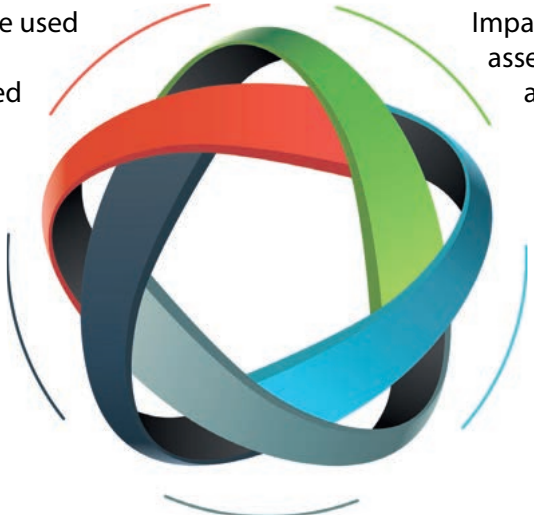
RECOMMENDATIONS:

SOCIO-ECONOMIC VALUE

Ecosystem services approach can be used for socio-economic assessment of habitats and species in the protected area.

IMPACT OF THE DEVELOPMENT

Impact on ecosystem services should be assessed when justifying the necessary amendments in the spatial planning of the municipalities.



TARGETS

Priorities of ecosystem services should be taken into account when setting and justifying targets of protected area management.

PROTECTION REGIME

Concentration sites of ecosystem services should be taken into account when justifying proposed regulations on conservation and use of specially protected areas.

MANAGEMENT ACTIONS

Assessment results of the potential of the current and future supply of ecosystem services should provide basis for justifying management actions.

Recommendations are available:
https://ekosistemas.daba.gov.lv/public/download.php?id=124
https://ekosistemas.daba.gov.lv/public/download.php?id=126

Recommendations for planning specialists and Toolkit

Ecosystem services approach provides an opportunity to implement strategic approach and Knowledge-based Decision Making, as well as promotes balanced development and use of nature capital. This approach analyses the benefits and losses from the implementation of different development scenarios and serves as a planning and forecasting tool.

Within LIFE EcosystemServices project we have elaborated recommendations for specialists involved in spatial planning processes in Latvia. Recommendations are available:

- as printed brochure;
- integrated in the Toolkit.

The Toolkit provides opportunity of implementing ecosystem services approach in practice – assess the supply, potential and monetary value of ecosystem services, as well as value changes in case of different development scenarios.

Recommendations:
https://ekosistemas.daba.gov.lv/public/download.php?id=203

Toolkit for application of ecosystem services approach in planning:
http://riks.ekosistemas.daba.gov.lv

Within the LIFE EcosystemServices project, we have worked out an **8** step conceptual framework for integration of ecosystem services approach into planning processes.

1. Assessment of ecosystems *(mapping of ecosystems and assessment of ecosystem condition)*

2.Assessment of ecosystem services *(assessment and mapping of ecosystem services)*

3. Economic valuation of the ecosystem services *(benefits of ecosystem services, determination of monetary, non-monetary value and trade-offs)*

4. Assessment of existing management and alternatives

5. Involvement of stakeholders

6. Support mechanisms and
7. Decision-making *(support mechanisms, aggregating and integrating of information)*

8. Implementation and monitoring *(implementation of the concrete land use and management solutions; assessment of implementation)*

Communication and cooperation

Within the LIFE EcosystemServices project we have done a lot to educate and inform the public about ecosystem services, their value and importance in human well-being and sustainable planning.

All materials elaborated within the LIFE EcosystemServices project can be found on the project website **https://ekosistemas.daba.gov.lv** .

- more than **40 000** unique website visitors
- **2** notice boards installed
- **3** short documentaries made
- **250 000** audience reached on social media
- **8** e-newsletters published
- **3** thematic brochures prepared and printed
- **4** scientific articles submitted and published
- **100** other publications and reports prepared and published
- **1** international conference organised
- travelling prize **"Ecosystem Services"**
- more than **400** USB data carriers with project results prepared and distributed
- **42** different events organised with more than **1500** participants
- constant and intensive cooperation with **6** other LIFE projects
- project results presented in **12** different international events

Long-term investment of LIFE EcosystemServices project

LIFE EcosystemServices project is the first project in Latvia, devoting such significant part of its work to the assessment of the economic value of ecosystem services. Results of the project can be used for ecosystem services assessment and sustainable planning in other coastal areas of Latvia.

- **methodology of assessment and mapping** of ecosystem services
- **22** indicators for ecosystem services assessment
- methodology and tool - Ecosystem Services Economic Valuation Model for **ecosystem services economic valuation**
- Spatial Planning and **Modelling tools**
- ecosystem services assessment results used for **updating planning documents** – municipality level and nature management
- **proposal for update of regulations** on elaboration of nature management plans prepared - to include ecosystem services assessment as one of the obligatory requirements
- new site for environmental education and awareness raising in Saulkrasti - **Nature Design Park "White Dune – Saulkrasti"**
- **TOOLKIT** for integration of ecosystem services approach into planning processes in Latvia
- **diverse range of publications and other materials** available on the ecosystem services topic

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