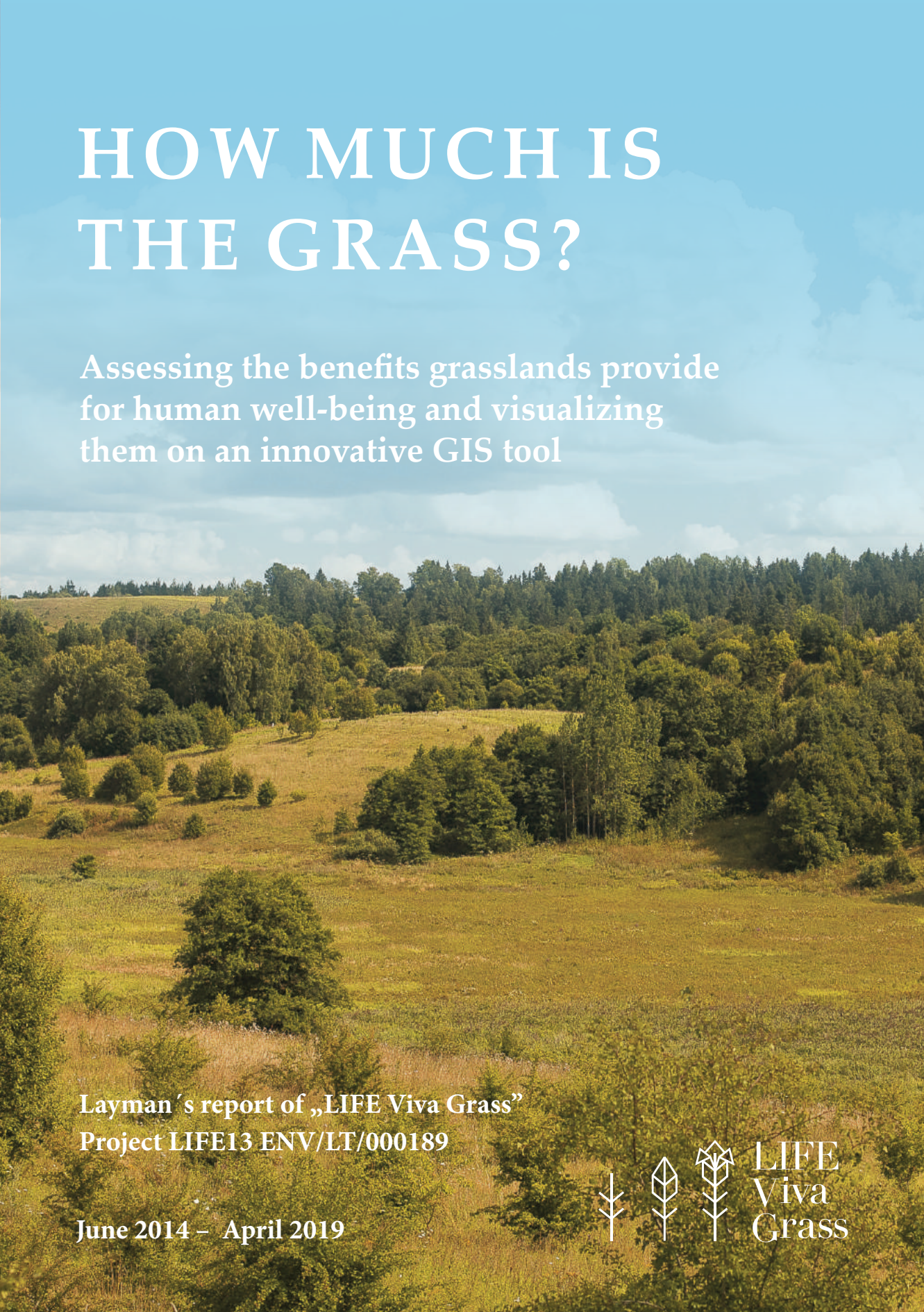
HOW MUCH IS THE GRASS?

Assessing the benefits grasslands provide for human well-being and visualizing them on an innovative GIS tool



Layman´s report of „LIFE Viva Grass"
Project LIFE13 ENV/LT/000189

June 2014 – April 2019

LIFE Viva Grass

How much is the grass? Assessing the benefits grasslands provide for human wellbeing and visualizing them on an innovative GIS tool.

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How much is the grass?

With this intriguing question we invite you to think about grasslands from an ecology and market economy perspective. We want you to see grasslands not only as beautiful meadows, but rather as a special service provider – let´s say, similar to your mobile network provider - which provides amazing and sometimes difficult-to-imagine services for us. Grasslands also provide us many specific services: they are area for grazing and home for many animals and plants. They provide us with food, they form beautiful cultural landscapes and they support CO_2 accumulation, flood prevention and water purification. These are crucial factors for our existence in future. Grasslands help facing the challenges of climate change!

Probably we can survive without mobile phone network but can we survive without these services of grasslands? Maybe we could - but at so high costs that none of us would like to pay.

Grasslands need management to be maintained. The interaction between human and nature has formed them - they are cultural landscapes. But grasslands are disappearing because their management is not profitable anymore. How can we ensure that these services (benefits), which grasslands provide for human well-being, will be maintained for us and for next generations? How to encourage grassland management and make them viable in socio-economic terms? Do we really know their value? If putting a price tag on them - what can be the price for these services? How to put a price tag on such features like a nice walk during sunset or the possibilities to enjoy a concert of thousands of geese during migration? For one person it could be very important while for the other - not at all…

These are the questions we raised to ourselves and which we tried to answer during the project "LIFE Viva Grass". We invite you herewith to read about our main outcomes and get to know more about our major result - the "Viva Grass Integrated Planning Tool". And maybe you will find the answer for yourself to this not so simple question "How much is the grass?".

Grasslands disappear

Even though so-called semi-natural (means: managed via grazing or mowing but with natural vegetation) grasslands are among the most species-rich vegetation types (up to 80 plant species/m^2) in Europe and have great nature conservation[1] as well as socio-economic value, the area covered by semi-natural grasslands has largely decreased in Europe throughout the last century as a result of land conversion to urban territories, arable land, afforestation, while remoter or/and wet areas underwent marginalization and abandonment.

The loss of grassland biodiversity leads to degradation or even destroying of ecosystem services. It would require enormous financial investments to maintain or provide these services artificially.

Ecosystem services are all the benefits that ecosystems provide to humans. Many of them are obvious - like fresh fodder for animals grazing them, or hay, herb and honey production; some of them are complicated to understand - like CO_2 accumulation or flood prevention; and some are impossible-to-see services such as air quality or water purification. We depend on them more than we can imagine!

Ecosystem services provided by grasslands can be divided into 3 groups:

Provisioning services

Products directly used by pepole

Food:
- Wild plants, tea, honey etc.
- Reared and wild animals and their outputs

Materials:
- Hey, fibbers, herbs for medicine etc.
- Genetic material

Energy:
- Biomass for energy

Regulating sevices

Related to the way ecosystems regulate environmental media or process

Mediation of waste, toxics and other nuisances
- Filtration, accumulation

Mediation of flows
- Erosion control and water flow maintenance

Maintenance of nature processes
- Lifecycle and habitat maintenance
- Water conditions, soil formation, climate control etc.

Cultural services

Related to the cultural or spiritual needs of people

Physical and intellectual interactions
- Recreation
- Education and scientific value
- Landscape, cultural heritage

Spiritual, symbolic interactions
- Symbols and traditions
- Existence and bequest value

[1] *European Environment Agency, EU 2010 Biodiversity Baseline, Copenhagen, 2010*

Picturesque landscapes can be opened up when maintaining the grasslands. Project territories after restoration in Pavilniai regional park, Lithuania. Author: Vykintas Augilius

What did we want to achieve?

"LIFE Viva Grass" aimed at preventing the loss of high nature value grasslands and increasing the effectiveness of grassland management by developing an IT Tool for Integrated Planning (further: Tool). This Tool helps planners at municipalities and regional authorities to strengthen the link between social, economic and environmental factors in grassland management. It helps planning and decision making for a sustainable grassland management – for our future and the one of next generations.

The project also wanted to demonstrate options for multifunctional use of grasslands' ecosystem services as a basis for sustainable development of the remote rural areas in the Baltics which suffer greatly from abandonment of semi-natural grasslands.

The main activities of "LIFE Viva Grass" were:

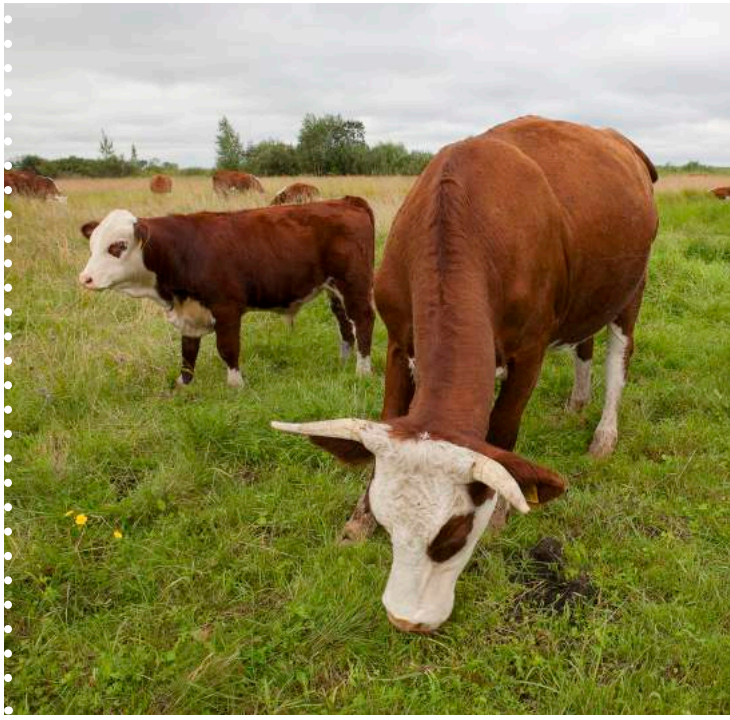
- Analysis of the national policies and other strategic documents that influence the maintenance of grassland ecosystems in the Baltic States;
- Assessment of grassland ecosystem services and development of management recommendations for nine case study areas within the three countries;
- Grassland restoration and business catalytic activities in selected case study areas;
- Communication campaigns, awareness raising and stakeholder involvement activities for better grassland management planning and acceptance of it at local level;
- Development of an Integrated Planning Tool based on the ecosystem approach;
- Capacity building of the relevant stakeholders for operating the Tool at different grassland management levels: national, regional, municipal, protected areas (nature sites) and farm level.
- Development of recommendations for better rural development policies on ecosystem-based planning and grassland management.

Activities in the case study areas

The benefits which can be obtained from each grassland depend on its natural characteristics but also the selected management approach. In order to find the most profitable (profit in a broad sense - not only beneficial for the economy but also for the environment and well-being of society) solution, various factors (biological, geographical, socio-economic etc.) must be taken into account.

The "LIFE Viva Grass" project has chosen nine case study areas (three in each Baltic country) covering 465 600 ha in total. They represent different management levels (small farm, protected areas, municipalities or regions) and have different features of grasslands to enable the project to demonstrate a wide spectrum of land use planning and grassland management solutions. Several of the project sites are part of the Natura 2000 network, which includes the most valuable nature sites in Europe.

In most of the sites the same repetitive activities took place. To increase the awareness, encourage discussions and foster people's involvement notice boards were built up, visitor days, different-scale discussions and meetings were organized; information materials were elaborated and widely distributed. In all case study sites their ecosystem services were assessed, the project´s Tool was tested and recommendations for local management plans or even input to national rural development policy were given. Furthermore, at each case study area concrete site-specific activities were implemented in order to ensure grasslands´ maintenance in a long time run.



Activities in „LIFE Viva Grass" case study areas

Notice board

Testing of the Tool

Bird guide

A watering facility for grazing animals

Report on assessment of grassland management in Lümanda during the last 20 years

Mapping and assessment of ecosystem services by local stakeholders

Recommendations for further grassland maintenance

Restoration of grasslands

Round tables and stakeholder meetings

Visitor days

Main achievements in each of the project sites:

Lithuania:

Šilutė municipality – nature paradise with tourism potential

Šilutė municipality is known as a bird paradise. Nature tourism can demonstrate the monetary value from protecting the nature and encourage local people to maintain the grasslands. Therefore, the goal of the activity was to encourage nature tourism. "LIFE Viva Grass" developed a field guide called "Birding in Lithuania, Nemunas delta region".

It quickly gained huge popularity and a second edition had to be issued within a few months. A survey indicated that after the first year of the book´s release 40 % of Lithuanian readers and 58 % of foreign readers were motivated to go to Šilutė for nature tourism. In the process of composing recommendations for further grassland maintenance in the municipality, the project team facilitated cooperation of local tourism service providers and set up an informal working group for encouraging nature tourism in the region. The group continues to be active.

The meeting of informal working group for encouraging nature tourism in Šilutė region.

Project released the first birding guide in Lithuania with valuable tips for birdwatchers. Author: Artūras Žukas

Dubysa regional park – abandoned land despite intensive farm management

The territories in the middle of Lithuania are situated in an intensively managed agricultural area. Some rare plant species grow here and are threatened to be overshadowed by growing bushes and trees or to be ploughed by farmers. The fantastic scenic view was in danger to be lost. Most of the area is divided into very small land plots owned by a large number of private landowners who had no motivation to maintain the grasslands. One of the reasons for it is that the direct payments from the European Union are economically more favourable and therefore cultivation of crops is more profitable. The other reason is that some landowners are pensioners or live in cities far away and have no interest to manage those small plots, so

they keep them abandoned. „LIFE Viva Grass" wanted to motivate landowners for maintenance activities by demonstrating the ecosystem services of their lands.

The project restored ca. 30 ha of semi-natural grassland. Further maintenance of these grasslands beyond the end of the LIFE project became ensured by long-term management agreements with local farmers. The restored sites meanwhile are also actively used for recreational purposes.

Before grassland restoration

After grassland restoration

Pavilniai regional park – urban area with no agriculture

One of the most picturesque landscapes right in the capital city of Lithuania was little used in any purpose for a few decades. No farmers were left in the urban area, grasslands were abandoned, and breathtaking views were hidden by bushes. Despite the fact, some rare species could still be found in those grasslands.

Traditional agriculture practices cannot be implemented in a city, however, these grasslands had a high potential to serve for education and recreation purposes.

„LIFE Viva Grass" restored 11 ha of semi-natural grassland and opened up the picturesque landscape of the site. The action is highly appreciated by inhabitants of Vilnius: many excursions, walks and events are happening in the newly created Ribiškės trail. The site has also been nominated as Natura 2000 site!

Inhabitant of Vilnius: „The Ribiškės cognitive trail." Everything is right under your nose and you find it after 15 years. Recommended.

Latvia:

Cēsis municipality – open scenic landscape planning

Grasslands play an important role in the landscape of Cesis municipality. However, they are degraded in the quality and impacting the aesthetic value of the landscape. Overgrowing by shrubs and trees due to abandonment is one problem touching 1/5 of the grasslands. Invasion of the Sosnowsky's Hogweed is another problem, which is very specific for the municipality – the invaded area reaches 888 ha or 5.2% of the total area being among the top invasion areas in Latvia.

"LIFE Viva Grass" restored 30 ha of degraded grassland in seven locations and ensured its further maintenance by long-term management agreements with local farmers. The restoration of the grasslands contributed to biodiversity as well as landscape management in the municipality.

Another key outcome of the project is the recommendations on landscape management for the action plan of the Development programme of Cēsis municipality. This was achieved by assessing landscape values based on ecosystem services, setting landscape management priorities, engaging stakeholders in co-creation of knowledge and developing landscape management policy.

Local inhabitants involved in assessment of ecosystem services.

Local inhabitants involved in landscape management planning.

Grassland restoration works in Cesis.

Madliena parish – stakeholder involvement in grassland management based on ecosystem service approach

Madliena parish is a part of Ogre municipality located in the middle of Latvia. Nearly half of the area is occupied by agricultural land – much of it left abandoned. The area got depopulated massively in the recent years, people see their future in towns and not in the country-side.

Madliena parish was selected as "LIFE Viva Grass" pilot area to demonstrate a bottom-up approach in planning management of grasslands at local level. The activities involved mapping

and assessment of grassland ecosystem services by applying a participatory approach and related methods, including participatory GIS. Field visits, interactive task setting and communication, outdoor and indoor exercises created local knowledge important for prioritising grassland management areas and measures in Madliena parish to be considered by development planning by municipal administration in future.

Local inhabitants involved in assessment of ecosystem services during field visits.

"Šovites" farm – enhancing grassland management by restoration and cattle grazing

"Šovītes" farm was keeping a herd of ca 50 meat cows with the aim to produce high quality organic beef. The cattle feeds on 80 ha of grasslands, which is former arable land managed by the local collective farm during the Soviet times. As it was not managed since then, the land was gradually overgrowing with shrubs.

Grassland restoration works in "Šovites" farm.

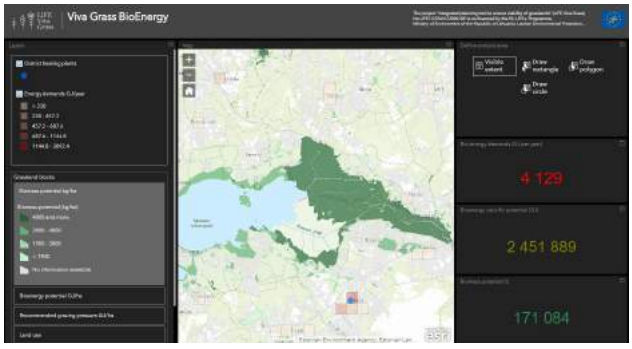
When starting the cattle business, the owner of the farm had to improve the quality of the grassland. The idea was to not only to remove shrubs, but also increase natural diversity of the grassland to improve the quality of grass fodder and make it self-sustaining. The farm owner calculated that natural self-sustaining grassland requires less investment in a long-term compared to a cultivated grassland.

"LIFE Viva Grass" restored 82,6 ha of abandoned grasslands in Vidzeme upland areas by implementing various restoration methods in close cooperation between the farmer and researchers.

Estonia:

Lääne county – nature values as a resource for local community

Lääne county has the largest area covered with the nature protection sites in Estonia: ca 30% of the territory of the county is protected, including the most famous Matsalu NP and semi-natural habitats (including extensive coastal and floodplain meadows). To get the maximum benefit from this high share of nature values it is important to analyse the existing resource potential and find out how to get the best use of the ecosystem services for the local community. As there are large unused biomass resources in the county (from management of the protected semi-natural habitats) their use for bioenergy production has been defined as an important topic to analyse. Lääne county was test case at regional management level for developing the "Viva Grass Integrated Planning Tool", in particular its "Viva Grass BioEnergy" module. The project organised several stakeholder meetings in Lääne County, where the potential for biomass and energy production from semi-natural grasslands in Lääne County was discussed. Also relevant relevant input to the Lääne County's Entrepreneurship Development Plan was provided.



The view of "Viva Grass BioEnergy" module - one of the modules of "Viva Grass Integrated Planning Tool".

The fuel storage of the Lihula boiler house where grass biomass is used for district heating already since 2009.

Saaremaa municipality – case study area that grew from small Lümanda municipality to the whole Saaremaa island

The former Lümanda municipality located at the western edge of Saaremaa island can be characterised as a very remote area with pristine nature. It was selected as a project area because it was one of the pilot areas where agri-environmental subsidies were developed and tested first in Estonia. It has meanwhile 20 years of grassland management experience with agri-environmental subsidies.

"LIFE Viva Grass" carried out an assessment of semi-natural grassland management during the last 20 years in Lümanda municipality in order to find out the most important factors hampering and motivating management of semi-natural grasslands and provide recommendations for their long-term management.

After an administrative reform Lümanda became a part of the larger Saaremaa municipality during the "LIFE Viva Grass" project implementation period. Therefore, also the pilot case area has increased and Saaremaa municipality became a test case for development an application for Green Network planning within the "LIFE Viva Grass" Tool.

The Green Network acts as a spatial planning tool and a coherent system that helps planners identify ecologically valuable areas that should be taken into account when developing regional, general and detailed plans, enhancing the overall ecological coherence of landscape. Natural and semi-natural areas are connected through the Green Network in order to deliver ecosystem services for enhancing the quality of life and help maintain biodiversity and the stability of the environment.

Green network planning with "Viva Grass Planner" module of "Viva Grass Integrated Planning Tool".

Kurese nature farm – sustainable management supporting the ecosystem services

The Kurese nature farm, located in West-Estonia, Pärnu County, was established in order to restore and preserve the cultural and natural values of the former Kurese village. Because of this unique goal, it was selected as a project site. A big part of the farm is located within the boundaries of the Kurese Landscape Protection Area and a great share of it is semi-natural grasslands (alvars, dry and wet grasslands, wooded meadows) managed by cattle grazing. However, the number of cattle was not enough to keep the grasslands open – no sufficient water access was available for the cattle.

Watering facility for grazing animals set during the project.

In the frame of the project, a watering facility for grazing animals – a driven well – was set up to enable the increase of the number of cattle, which is necessary to manage the increased restored area of alvars. The number of cattle has been increased and the grazed area is increasing.

The idea of sustainable management of grasslands of Kurese nature farm is to combine organic beef farming, nature conservation, and, possibly in future, nature tourism.

The “Viva Grass Integrated Planning Tool”

We need to show this tool, this principle to planners. It’s very important they see the bigger picture of spatial planning and its impact on the environment - which can also be positive if done considering ecosystems and their services.

Kristina Simonaityte, Lithuanian Ministry of Environment

The Tool gives a chance for politicians and decision makers to see the potential consequences of their decisions for the ecosystems or/and their private interests. Results of the tool application can suggest arguments to defend nature interests against pragmatic approach, e.g. of farmers’.

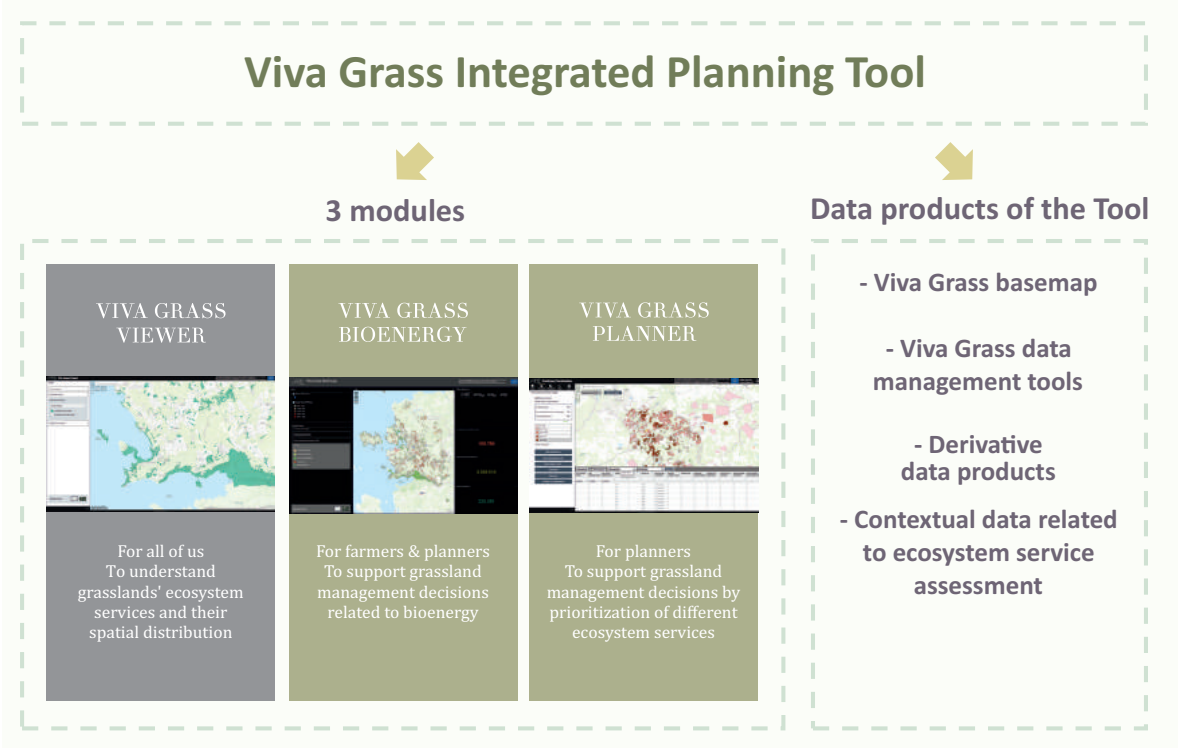
Kęstutis Navickas, Former Minister of Environment of Lithuania

The Tool is useful in the management and control of natural areas. It is comprehensible for logical decision making in planning process.

Andris Širovs, Latvian Nature Conservation Agency

The main outcome of the project is the "Viva Grass Integrated Planning Tool" (further – Tool). It is an IT tool supporting decision making in planning of sustainable use and management of grasslands. It enables integration of grassland ecosystem services into planning and decision making by linking biophysical grassland data (e.g. land quality, relief, land use, habitat types) with estimates of the ecosystem services and with socio-economic context. The tool is integrated into an online GIS-based (Geographic Information System) environment and allows users to assess the supply and trade-offs of grassland ecosystem services in user-defined areas, as well as to develop ecosystem-based grassland management and planning scenarios.

The "Viva Grass Integrated Planning Tool" consists of three modules and a set of data products:



In order to present the Tool for its potential users, capacity building activities – training courses, info days and lectures - took place for students, planning professionals and public authorities in the three Baltic states. Approximately 350 people (students and professionals) have been trained by the end of the project. The teaching material is also included into the curriculum of several programmes at several universities of the Baltic States. They will continue to teach based on the training material after the end of the project and guarantee education of future planning professionals and decision makers.

To reach out to more potential trainees an online self-learning platform was created by the project team. It includes highly illustrative texts with presentations and self-directed practical guidance. One can easily learn how to use the basic functionalities of the Tool.

Developing the "LIFE Viva Grass" Tool has been an intellectual challenge for the project team – when the project started neither in the Baltic States and very little at international arena the ecosystem services concept had been used for IT solutions for planners and decision makers. "LIFE Viva Grass" stepped on unknown territory. In the course of the project the team has grown and we can proudly say that "LIFE Viva Grass" has built a think tank for ecosystem services application in the Baltic States with a great potential for future. This knowledge remains in the region and ideas are evolving for further development.

If you, dear reader, are interested in the topic, contact us!

Input to policy shaping

"LIFE Viva Grass" contributed in the three Baltic States substantially to the national process of Mapping and Assessment of Ecosystems and their Services (called "MAES"), which aims at implementing the EU Biodiversity Strategy. The "Viva Grass Tool" provides a framework and methodology for expert-based assessment of agro-ecosystem services, which can be applied at the national scale ecosystem service assessment. The project work has also contributed to the capacity building of Baltic experts in ecosystem service assessment.

The project has performed an analysis of the policies and regulatory framework influencing the maintenance of grassland ecosystems in the Baltic States, evaluated existing experience in grassland management and studied best practice examples. The policy analysis has revealed that the EU Common Agricultural Policy (CAP) is the strongest driver for the change in land use in the Baltic States, as well as the most influential policy instrument determining the grassland management practices and thus impacting the status of grassland ecosystems and services they provide. At the same time the Baltic national Rural Development Programmes are lacking environmental ambitions and priority is given to agriculture production, which favours transformation of grasslands into arable land.

Based on results of the policy analysis, evaluation of grassland management practices in the Baltic States and other EU countries as well as the experience from the project work in the case study areas the project has developed "LIFE Viva Grass recommendations on ecosystem-based planning and grassland management". The aim of the recommendations is to improve the integrity of the decision-making and governance process for maintaining grassland biodiversity through optimising coordination between nature conservation and rural development policies, as well as integrating an ecosystem-based approach in land use and spatial planning. The recommendations are targeted towards policy-makers from competent authorities, as well as practitioners in Lithuania, Latvia and Estonia.

“LIFE Viva Grass” facts & figures:

Project title: Integrated planning tool to ensure viability of grasslands (LIFE Viva Grass)
Coordinating Beneficiary: Baltic Environmental Forum Lithuania
Associated Beneficiaries:
Lithuania
Pavilniai and Verkiai Regional Park
Dubysa Regional Park
Silute District Municipality
JSC Hnit-Baltic

Latvia
Baltic Environmental Forum Latvia
University of Latvia
Institute for Environmental Solutions
Municipality of Cesis
Farm “Kalnāju Ferma” (rename of the farm “Šovītes”)
Association “Otrās mājas (until 12/2015)

Estonia
Baltic Environmental Forum Estonia
Estonian University of Life Sciences
Saaremaa Municipality (including the original partner Lümanda Municipality) (since 1/2018)
Private Limited Company “Saare Rantso” (“Kurese” nature farm)

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Project Budget: 2 751 426 €
European Commission’s Contribution: 1 370 563 €
Beneficiaries’ own Contribution: 762 638 €

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Estonian Environmental Investment Centre: 144 626 €

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115 EXPERTS – 15 PARTNERS – 3 COUNTRIES

INVOLVED IN THE PROJECT DURING ALMOST 5 YEARS

IMPACT ON NATURE

- 17 ecosystem services related to grasslands and agricultural land assessed and mapped.
- 154 ha of grasslands restored resulting in increased species diversity, habitat structure and its functions.
- The project contributed to the establishment of 1 new Natura 2000 site in Vilnius, Lithuania.

STRATEGY DOCUMENTS

- 2 sustainable grassland management business plans for farms prepared
- 5 sets of recommendations to strategic planning documents prepared:
  1 for county level, 4 for municipalities
- 2 sets of recommendations on applying the Integrated Planning Tool on protected area level prepared

PRESS | MEDIA | COMMUNICATION

- 8 notice boards installed
- 80 media records reached and 8 of them were on TV and radio
- 22 000 unique visitors of project website
- 3 thematic brochures prepared and printed
- 50 other publications and reports prepared
- 2 scientific articles submitted; 1 already published
- 4 study visits organized to Sweden, United Kingdom, Alpine region and Latvia and Estonia, for more than 60 participants
- 5 big-scale international events organized
- More than 1100 participants of round table and stakeholder meetings
- More than 1000 participants of visitor days
- More than 350 people trained on application of the Integrated Planning Tool.

MORE THAN 2800 PEOPLE WERE DIRECTLY INFORMED ABOUT GRASSLAND ECOSYSTEM SERVICES AND SOLUTIONS FOR MAINTENANCE

COOPERATION

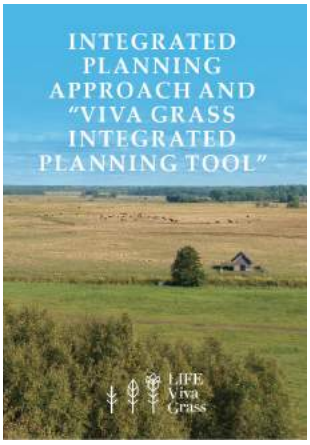
- Constant and intensive cooperation with 5 other LIFE projects implemented and more than 30 other LIFE projects were involved by various means of communication.
- In 8 events, organized by other projects and organizations, the project was presented via presentations or poster
- Established active stakeholders' network of more than 400 members

DIVE INTO GRASSLANDS
AND ECOSYSTEM SERVICES

EN

EN, LT, LV, EE

LT, LV, EE



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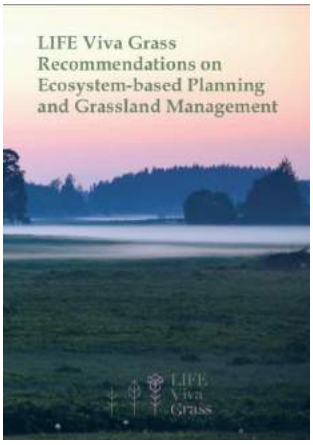

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LIFE Viva Grass

Notes

Notes

„LIFE Viva Grass” aimed at supporting the maintenance of biodiversity and ecosystem services provided by grasslands by encouraging ecosystem based planning and economically viable grassland management.

LIFE Viva Grass