



PROGRESS
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European Union
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3rd Interregional Training Workshop

Calculation of the effectiveness of greenhouse gas
and ammonia reduction measures in farms
#EUGreenWeek

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Good Practice and Resources needed

- Good Practice is Greenhouse gas (GHG) and ammonia emission reduction **calculation tool** (hereinafter - Tool), which allows agricultural enterprises to calculate GHG and ammonia emission reductions according to a common methodology after the implementation of the project measures.
- Development time of Tool: **01.06.2018 - 30.11.2018.**
- Development **costs** of Tool: **22 000 EUR**
- The working group consisted of 1 leading researcher, 2 researchers, 3 scientific assistants and 1 IT specialist.
- The Tool is maintained on servers of the Latvia University of Life Sciences and Technologies and maintenance costs are not specified separately.
- Tool was developed within the framework of the project **“Updating the methodology for calculating GHG and ammonia emissions in the agricultural sector for the quantitative assessment of reduction measures”**.

Good Practice

- A **tool** for calculating the effectiveness of GHG and ammonia reduction measures

The screenshot displays a web-based calculator interface for GHG and ammonia reduction. The main heading is 'SEG un Amonjaka Emisiju Aprēķins'. The interface includes a sidebar with 'Sākums' and 'Emisiju Aprēķins'. The main content area is titled 'Kalkulators' and features a progress bar labeled 'Saimniecība' with steps from 'Solis 1' to 'Solis 9'. Below the progress bar, there are two tabs: 'Pirms Projekta' and 'Pēc Projekta'. A 'Dublēt Datus' button is also present. The main input area is divided into three sections: 'Zemes Izmantošanas Veids', 'Izmantotais Fosilais Kurināmais', and 'Izmantotie Atjaunojamie Energoresursi'. The 'Zemes Izmantošanas Veids' section contains a table with the following rows and values:

Land Use Type	Value	Unit
Aramzeme	0	ha
Ganības un Ilggadīgie Zālāji	0	ha
Meža Zeme	0	ha
Purvi	0	ha
tai skaitā organiskā augsne, kas izmantota aramzemei	0	ha
tai skaitā organiskā augsne, kas izmantota zālājam	0	ha
Infrastruktūra (ceļi, laukumi, ēkas)	0	ha
Postījumi (meži)	0	ha

Source: <https://orange.maxapex.net/apex/f?p=125:201:10446113339763:::RP,201,202,203,204,205,206,207,208,209::>

Elements covered by Tool (1)

- **Type of land use** (arable land, pasture, forest land, swamp, infrastructure, damaged forest land)
- **Used fossil fuels** (coal, gas)
- **Used renewable energy sources** (sun, wind, wood, geothermal)
- **Livestock breeding** (cows, cattle, pigs, sheep, goats, horses, hens, turkeys, ducks, geese, fur animals; feed dose planning, improvement of feed quality)
- **Duration of grazing** (h/year)
- **Amount of straw used per animal unit per year** (kg/year)
- **Animal Accommodation** (Corrugated Floor, Optimal Cattle Shed Microclimate with Roof Insulation, Exhaust Air Purification, Manure Surface Cooling, Vacuum system for removing manure, Cage system, Non-cage system)

Elements covered Tool (2)

- **Use of fertilizers** (ammonium nitrate, ammonium sulphate, diammonium phosphate, carbamide and others; pH level of soil)
 - **Crop production** (wheat, potatoes, oats, vegetables, timber, buckwheat, beets, rape, corn, firewood, chips, barley, rye, peas, beans and others)
 - **Manure** (liquid manure, solid manure, biogas production; types of storage; storage and management of manure)
1. **Emission reduction of greenhouse gases (tCO₂ eq./year; %/year)**
 2. **Reduction of ammonia emissions (tNH₃/year; %/year)**

Usage and availability

- The Tool is used by **Latvian and European Union beneficiaries** in the form of open calls for project proposals for the measure "Investment in tangible assets" in the agricultural sector.
 - **Rural Support Service offers project applicants the opportunity to receive additional points for the project evaluation if any of the GHG reduction measures are planned to be implemented and a calculation has been made in this Tool.**
- **Tool is publicly available at: www.llu.lv**
 - **farmers** can calculate GHG and ammonia emissions in the **agricultural enterprise**, as well as calculate the reduction potential of GHG and ammonia emissions.
 - Tool is also used for **educational** and **scientific purposes** to raise public awareness about GHG and ammonia emissions' reduction opportunities
 - The Tool is available for any interested party and is **free of charge**.

Farmers

- The Tool is primarily intended for **farmers**, and it saves both, time and financial resources, as the agricultural enterprises do not have to contract a consulting firm or an expert for assessing the potential GHG and ammonia reduction after implementation of planned reduction measures.
 - Tool offers to save a **PDF printout with the calculation results**.
 - The printout of the Tool is accepted as justification for Rural Support Service when applying for financial support.

Added value

- The use of the Tool contributes to ensuring the implementation of **“Latvian Air Pollution Reduction Action Plan for 2020-2030”**
- The use of the Tool complements the calculation methodology used in the preparation of the **annual report** about the execution of GHG emission reduction and carbon dioxide sequestration commitments.
 - Report of the Ministry for Environmental Protection and Regional Development **“About commitment fulfilment of greenhouse gas emission reduction and carbon dioxide sequester”**
- Tool helps to tackle goals which are determined by **Paris Agreement** and **Convention on Long-range Transboundary Air Pollution**

Potential for Learning and Transfer

- After the **translation** of its interface the Tool could be used by the neighbouring countries of the **temperate climate region**.
- In countries with warmer climate, this would be necessary to **change the GHG and ammonia emission coefficients** used for the calculation algorithm.
- In order to transfer this Good practice to other European regions a new project should be developed, taking into account particular region's **GHG and ammonia emission factors** and **language** of the tool.

Tool is available at:

<https://orange.maxapex.net/apex/f?p=125:1:97428297>

[2471:.....](https://orange.maxapex.net/apex/f?p=125:1:97428297)

www.llu.lv

The screenshot shows the LLU website interface. At the top, there is a navigation bar with links for 'Mans LLU', 'LLU IS', 'E-studijas', 'Bibliotēka', 'Projekti', 'Jelgavas pils', 'E-pasts', and a search icon. Below this, there are social media icons for Facebook, Instagram, YouTube, Twitter, RSS, and LinkedIn. The main content area is divided into several columns:

- Left Column:** Contains the LLU logo and a vertical menu with items: 'Pētījumu virzieni', 'Zinātniskais žurnāls "Rural Sustainability Research"', 'Patenti', 'Konferences', 'Projekti', 'Bioekonomika', 'Bioekonomikas un ilgtspējīgo resursu vadības centrs', 'LLU un Bioekonomikas pētniecības stratēģiskā apvienība', 'Semināri, konferences un citi pasākumi'.
- Middle Column:** Contains 'Klimatam draudzīga lauksaimniecība' with sub-items: 'Augsnes ilgtspējīga apsaimniekošana', 'Alternatīvas tradicionālajai lauksaimniecībai', 'SEG emisijas samazinoši pasākumi', 'SEG un amonjaka emisiju aprēķins', 'Klimata izmaiņas studiju procesā', 'Zinātnieku pakalpojumi uzņēmējiem', 'Pētnieku piedāvātās tēmas uzņēmējiem', 'Veiksmes stāsti', 'Tehnoloģiju un zināšanu pārneses nodaļa', and 'Pakalpojumi'.
- Right Column:** Contains 'Sadarbības jomas' with sub-items: 'Zinātniskā inventāra datu bāze', 'Noderīgas saites', 'Zinātniskie institūti' (Agroresursu un ekonomikas institūts, Dārzkopības institūts, Zemkopības institūts, Augu aizsardzības zinātniskais institūts), and 'Pētījumu izmēģinājumu bāzes' (Meža pētīšanas stacija, Latvijas Augu aizsardzības pētniecības centrs, Mācību un pētījumu saimniecība "Vecauce", LLU mācību un pētījumu saimniecība "Pēterlauki").

At the bottom left, there is a section titled 'AKTUALITĀTES'.



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Thank you for attention!



Questions welcome



Project smedia