



The diffuse pollution reduction measures proposed to the new RBMPs in Lithuania and experience with implementation so far

Baltic regional thematic workshop

“Agriculture and good water quality: policy and management measures”

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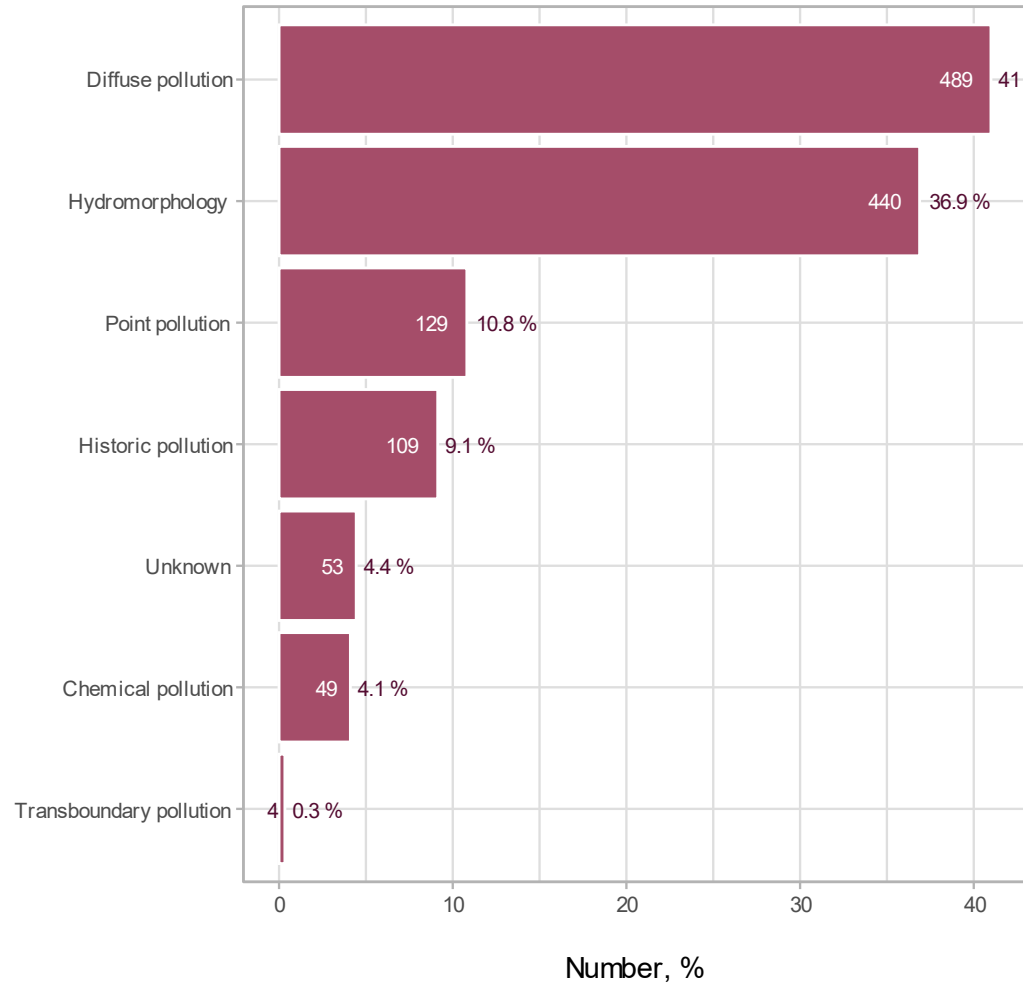


Current Status of 3rd cycle RBMP planning

- Final drafts of RBMPs placed on EPAs website for public consultation on 2021-12-22
- Currently, the draft of RBMPs is being internally „processed“ at the Ministry of Environment before the start of the final public consultation round and coordination with other institutions until the final submission
- In order to make RBMPs legally binding, the summary of the plans and the programs of measures will be included into Water Development Plan for 2022 - 2027



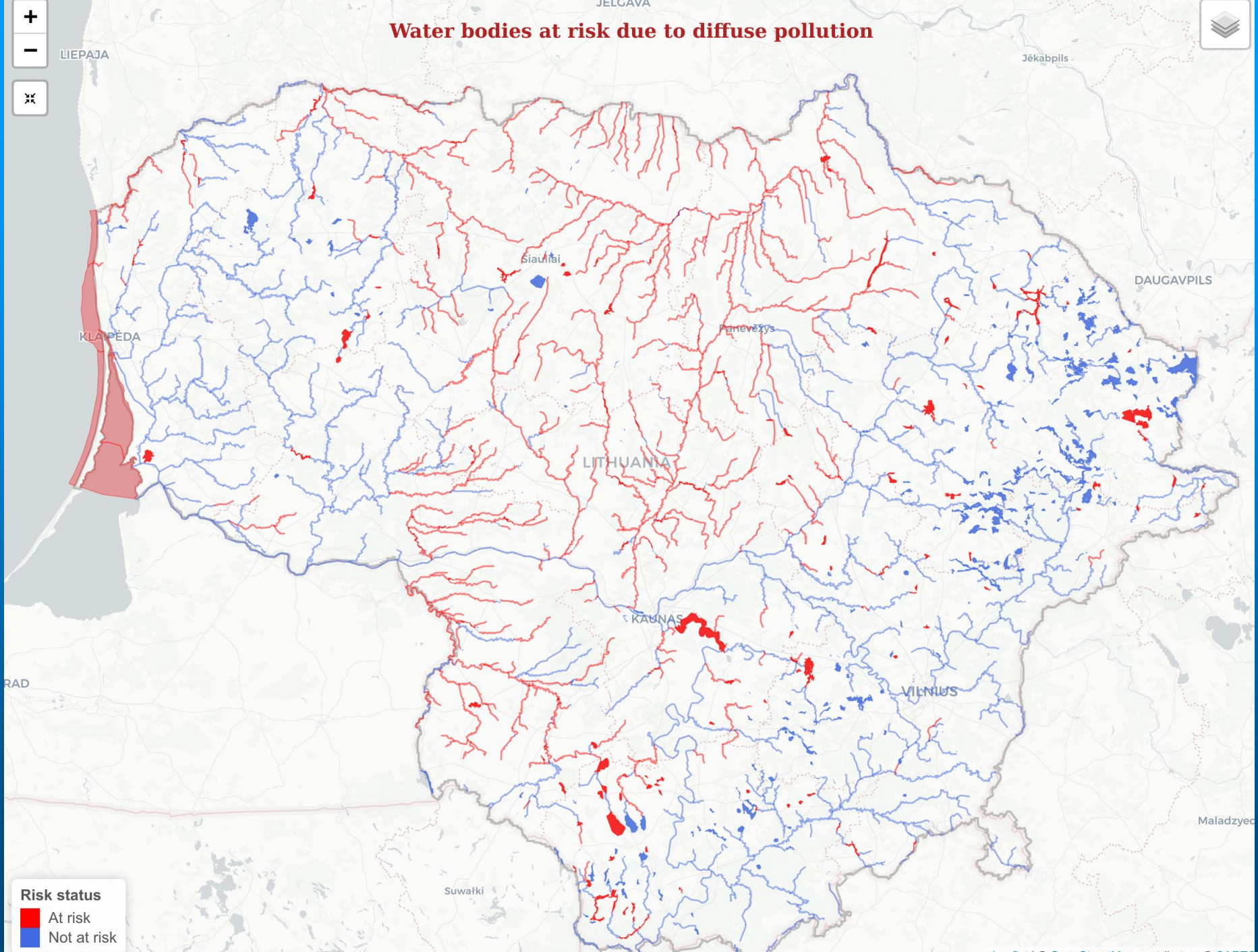
Major pressures and its occurrence frequency in LT water bodies



Source: Environmental Protection Agency



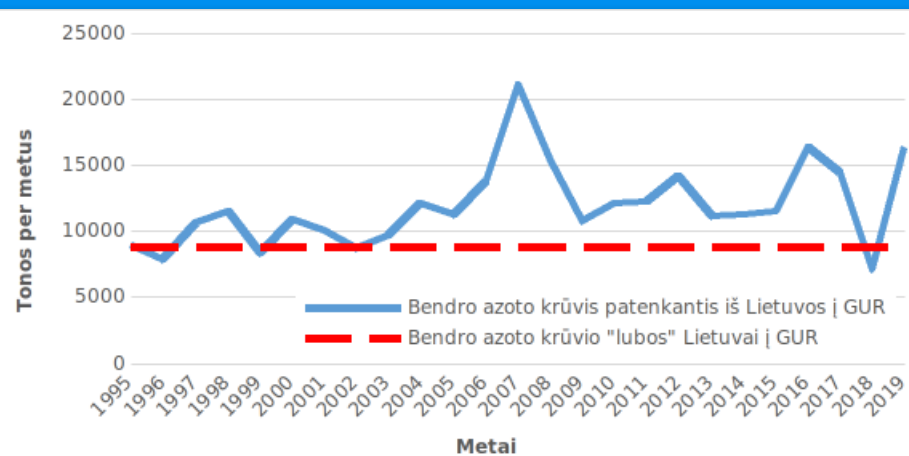
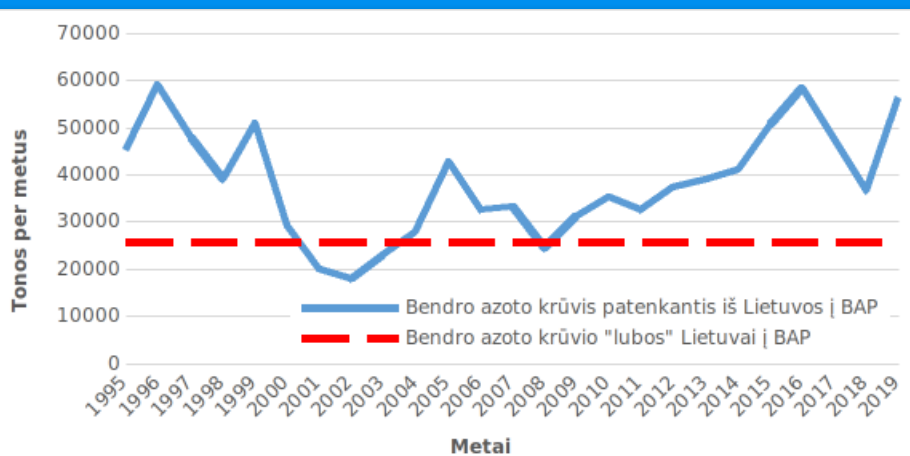
Water bodies at risk due to diffuse pollution



Risk status
■ At risk
■ Not at risk

Trends in pressures (esp. diffuse sources)

Trends in N loads to BAP and GUR respectively

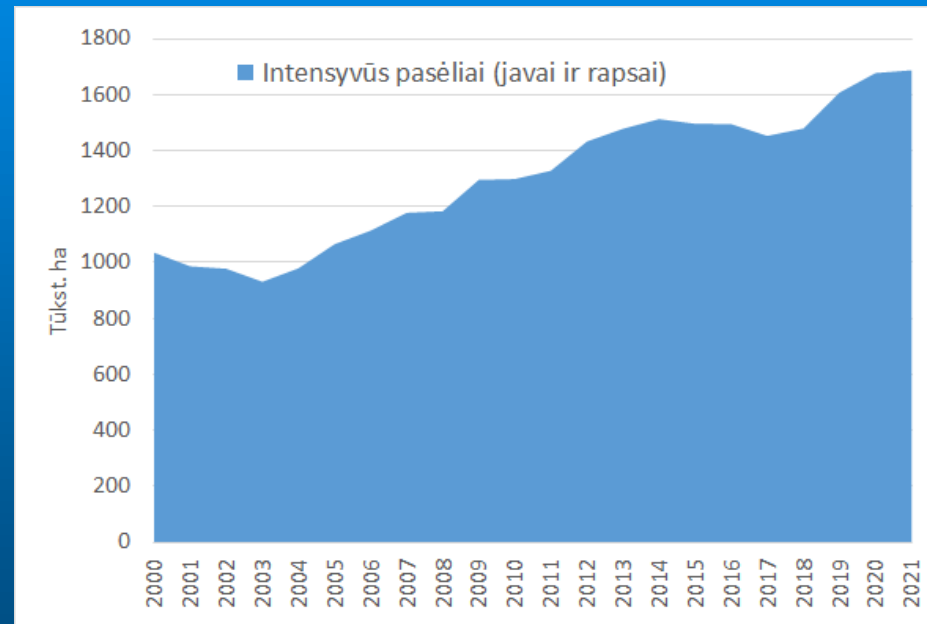
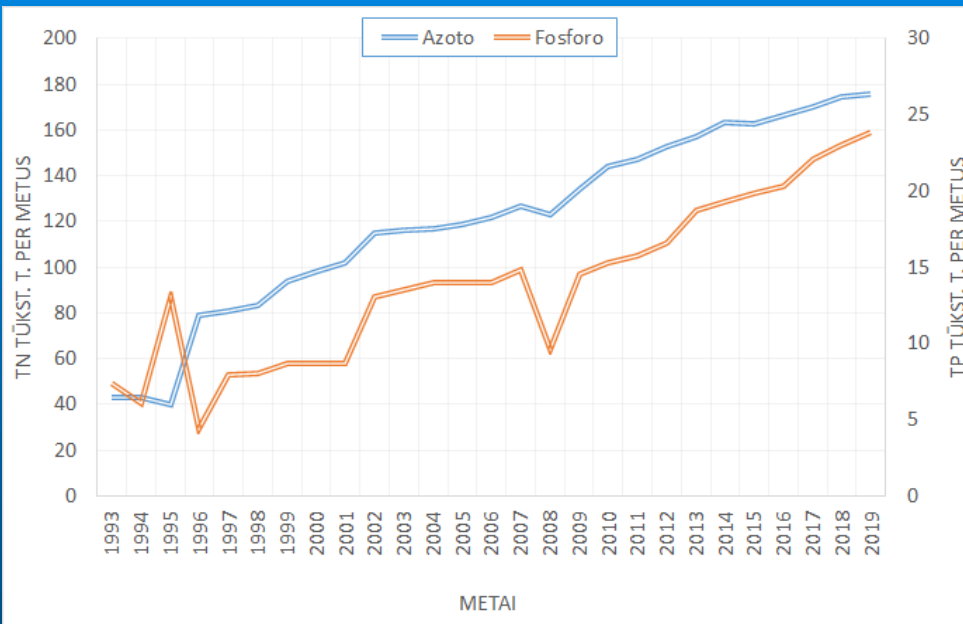


Increase of water bodies in risk due to the diffuse sources by 13 %
(from 28 % in the 2nd RBMP cycle to 41 % in the 3rd RBMP cycle)

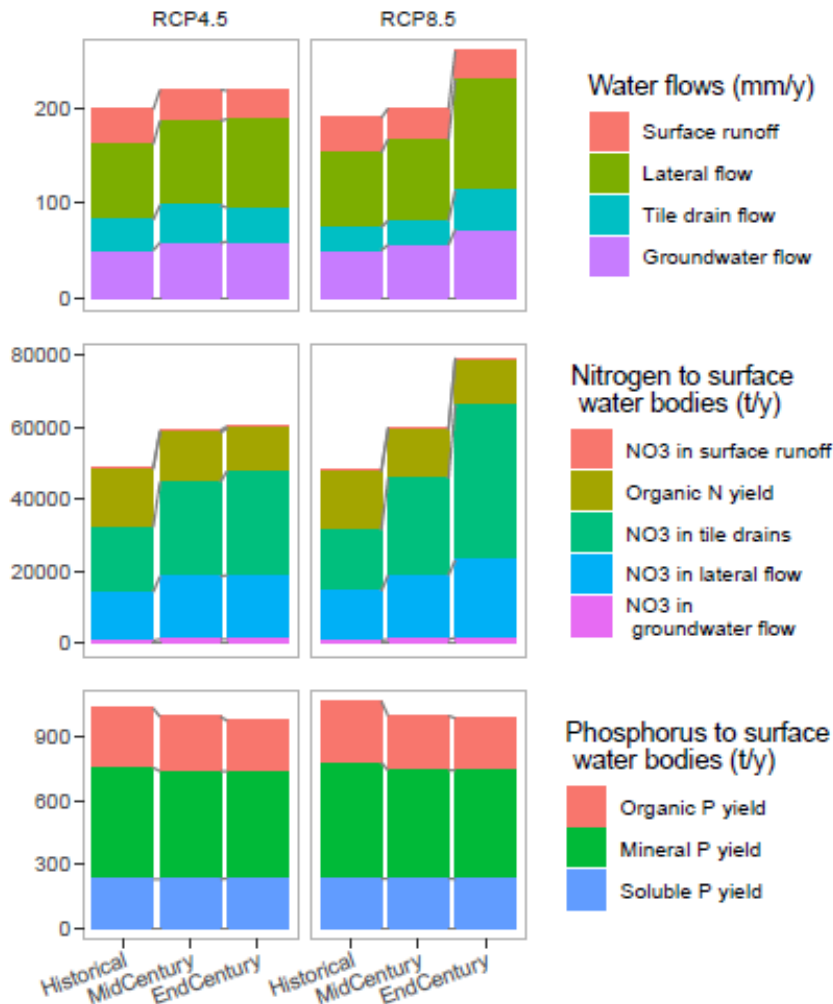


Trends in pressures (esp. diffuse sources)

Trends in mineral fertilizer trade and area covered by “intensive” crops (rapeseed, wheat)



Climate change impacts



- Annual water flows might increase up to 35 % by the end of the century (increased precipitation, esp. in cold season)
- Less surface runoff, more subsurface and groundwater runoff (less snow, more percolation)
- By the end of the century N load might increase by ~ 23 % in „moderate“ (RCP4.5) climate change scenario, and by ~ 65 % in „extreme“ (RCP8.5) scenario (more water and leaching in winter; higher t-driven mineralization)
- P and sediment transport might slightly decrease (less spring precipitation, less erosion)
- Larger climate instability



Practical experience dealing with diffuse pollution so far



2014–2020 National CAP diffuse pollution reduction measures and implementation

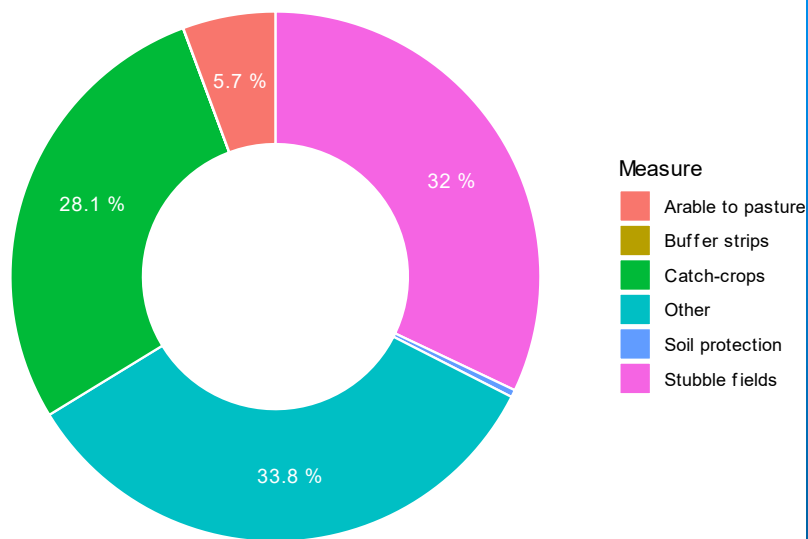
- Stubble fields left through winter – up to 50 ha and up to 30% area suitable for stubble fields, but no less than 0,1 ha, no mineral fertilizer and plant protection products (PPPs) while stubble fields
- Arable land conversion to pastures – within risk water body catchments with no less than 30% of arable land, no mineral fertilizers and PPPs, limited livestock (<1 LU/ha)
- Planting catch-crops – no less than 1 ha, remaining during winter, no mineral fertilizers and PPPs with catch-crops
- Soil protection in buffer zones – planting multiannual grass inside the zone up to 10 m

Main **preconditions**: <170 kg N/ha; no fertilizer on frozen/soaked soil



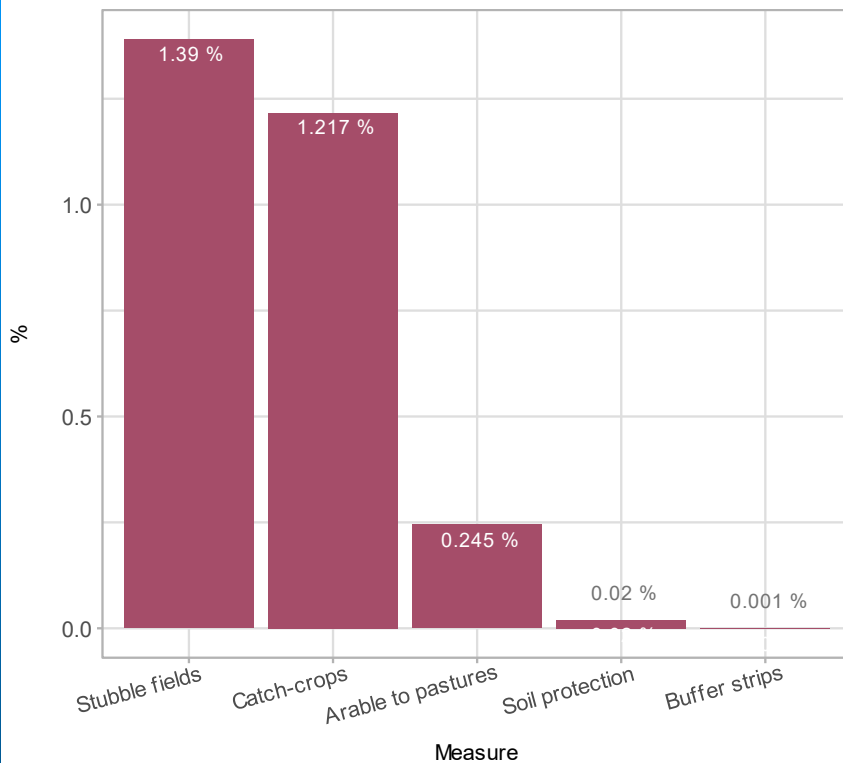
Scale of CAP measure implementation

Measure application scale relative to other environmental CAP measures



Source: Center for Environmental Policy

Measure application scale as % of total applicable area



Source: Center for Environmental Policy

Catch-crops and arable land conversion to pastures with fastest applications scale growth, yet still not widespread; total application scale - only 4.3 % of applicable area



Other planned agro-environmental support for RDP

- Controlled drainage
- Innovative manure management (incl. biogas production)
- Precision fertilization (still under discussion)



Planned 2023–2027 National CAP diffuse pollution reduction measures (ongoing)

Essential eligibility requirements to receive CAP support (GAEC standard):

- Compulsory cover of at least 50 % of arable land during winter (stubble fields, any crops, exception for vegetables, potatoes, beats)
- Establishment of buffer zones along water courses - the minimum width of the buffer zone must be 3 m; No fertilizer and PPPs application in buffer zones
- No >5 % loss of pastures to arable land (current to reference year), in NATURA2000 – total tillage ban
- No drainage of swamps for agriculture



Planned eco-schemes

Complex eco-scheme:

- No-till agriculture
- Catch-crops („regular“ or N-fixing; no fertilizer and PPPs; no grazing)
- Plant strips (planting trees; or planting multi-annual grass; or expanding buffer zones; no fertilizer and PPPs)
- Crop rotation (higher standard, min. 4 fields)

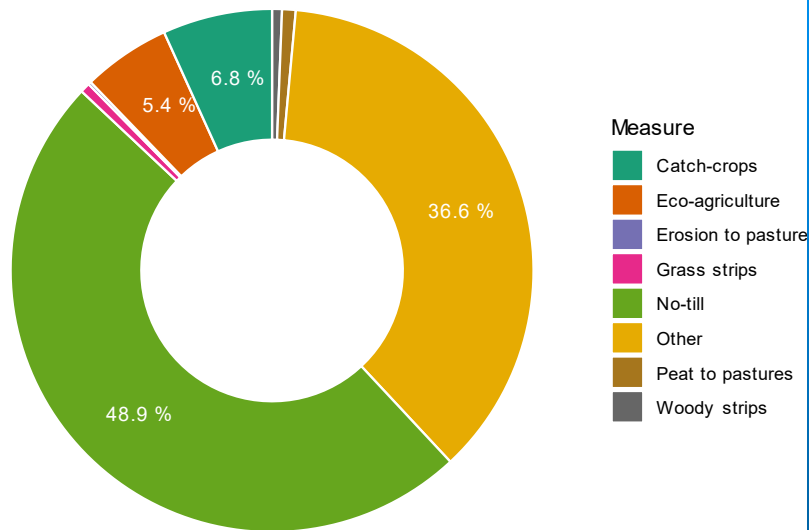
Conversion to ecological agriculture

Converting arable land to pastures (peatland or eroded arable land to pastures)



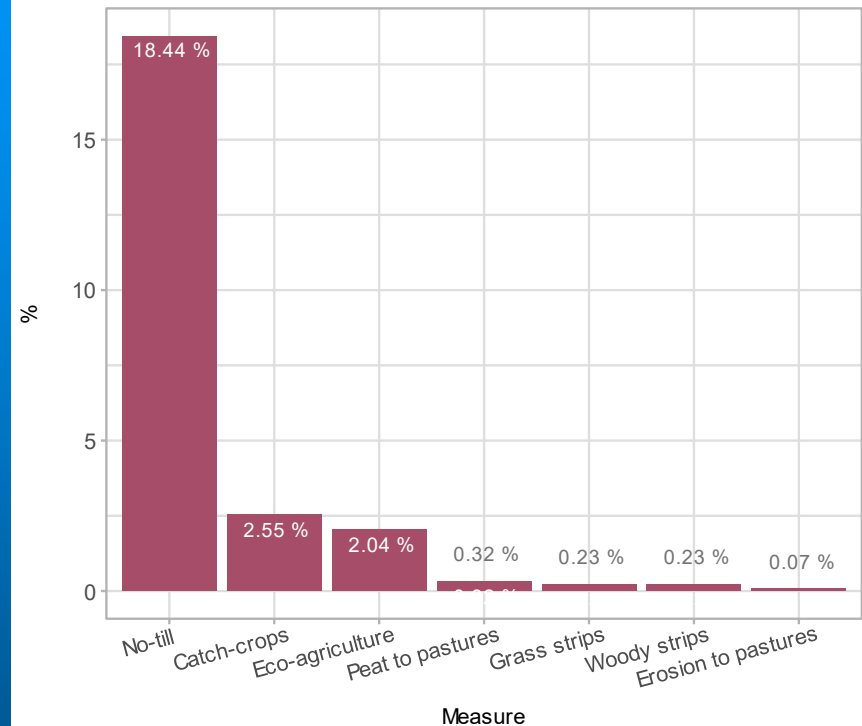
Planned scale of new CAP measure implementation

Planned measure application scale relative to other environmental CAP measures



Source: Center for Environmental Policy

Planned measure application scale as % of total applicable area

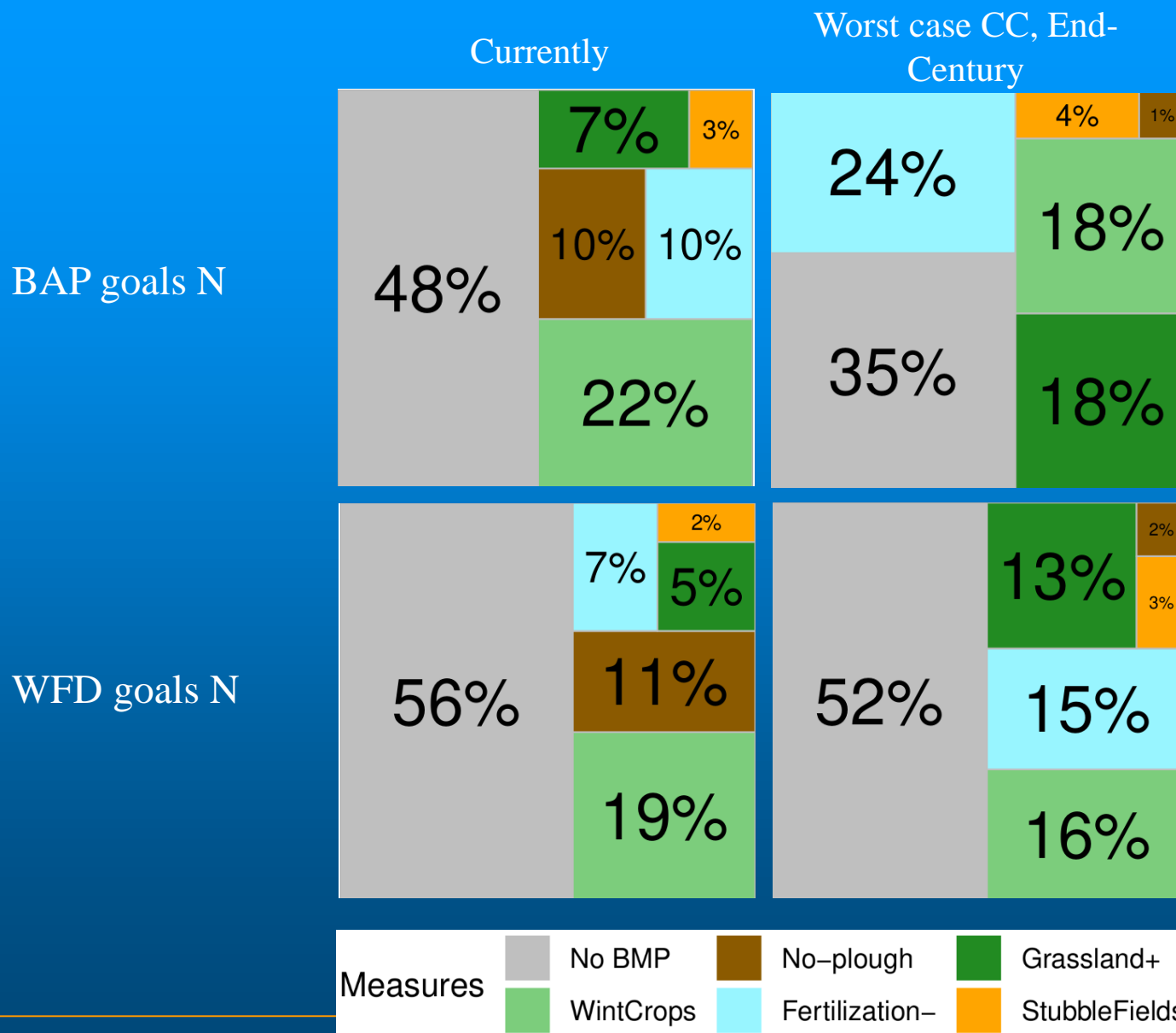


Source: Center for Environmental Policy

Catch-crops to double, but No-till “at the centre stage”, while Stubble fields as a pre-condition. Potential total application scale – to soar from 4.3 % to 38 % of applicable area



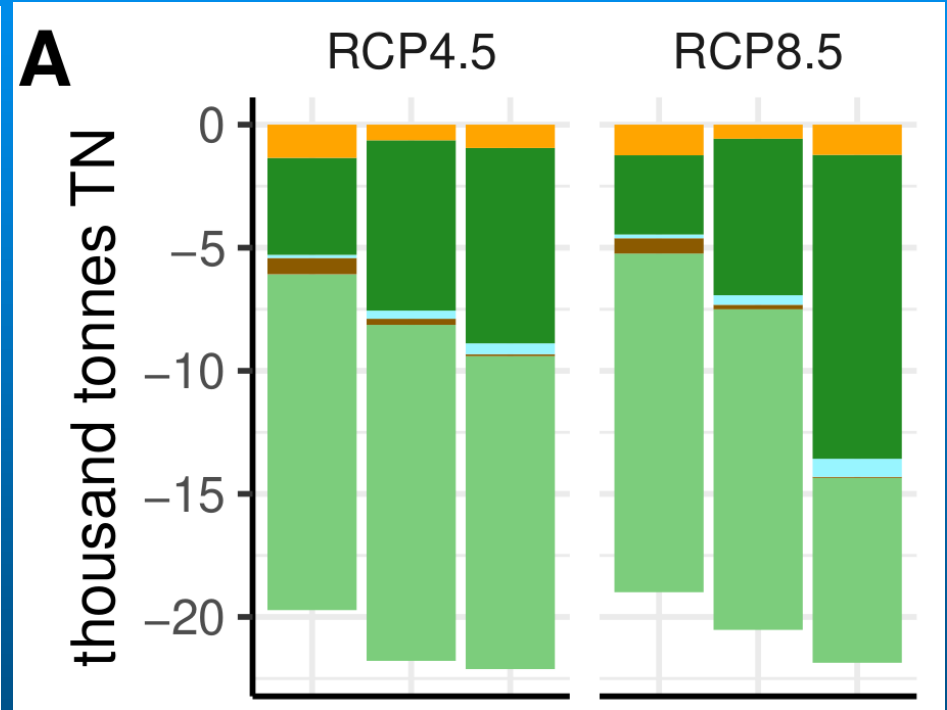
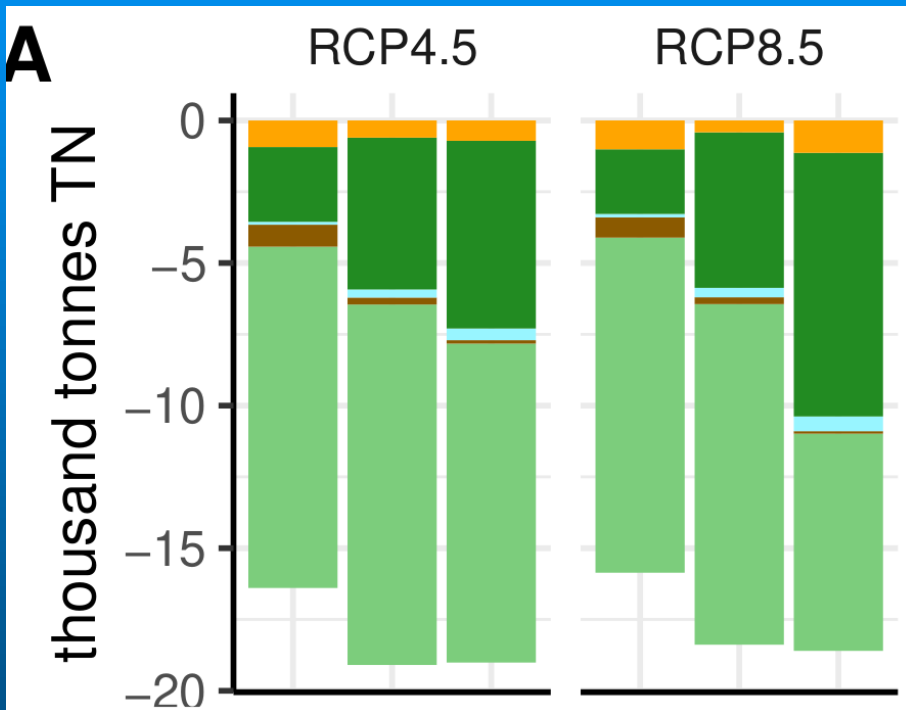
Real needs for agricultural BMP scale in arable land



Real needs for agricultural BMP scale in reduction loads

WFD goals N

BAP goals N

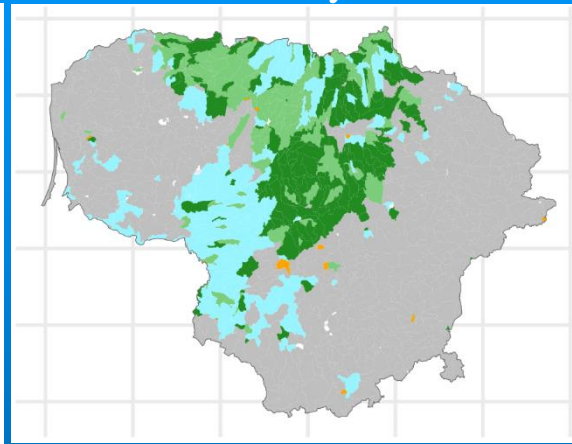
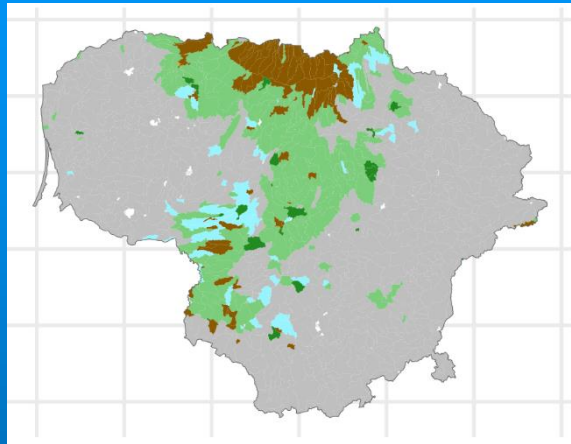


Real needs for agricultural BMP scale spatially

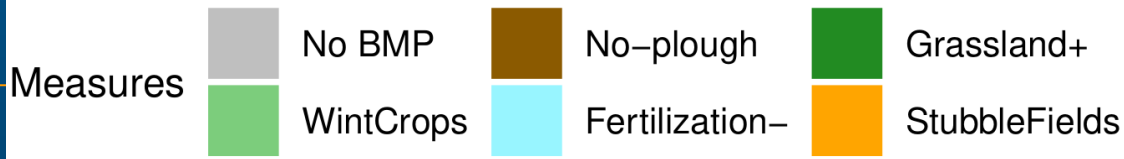
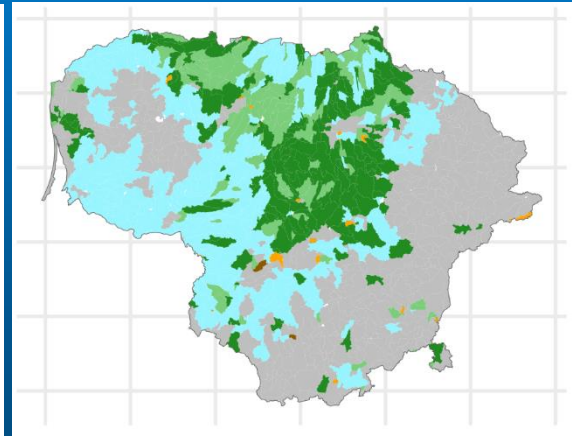
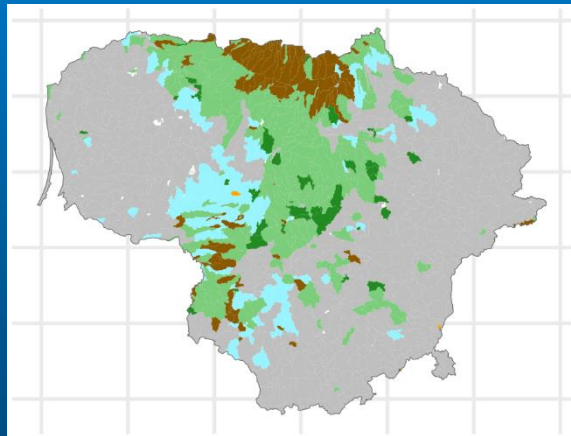
Currently

Worst case CC, End-Century

WFD goals N



BAP goals N



Pilot diffuse pollution reduction at source measures

Joint LT-LV Intereg LLI-49 Catch POLLUTION project „Optimal catch crop solutions to reduce pollution in the transboundary Venta and Lielupe river basins“ (01.04.2017 - 30.09.2019)

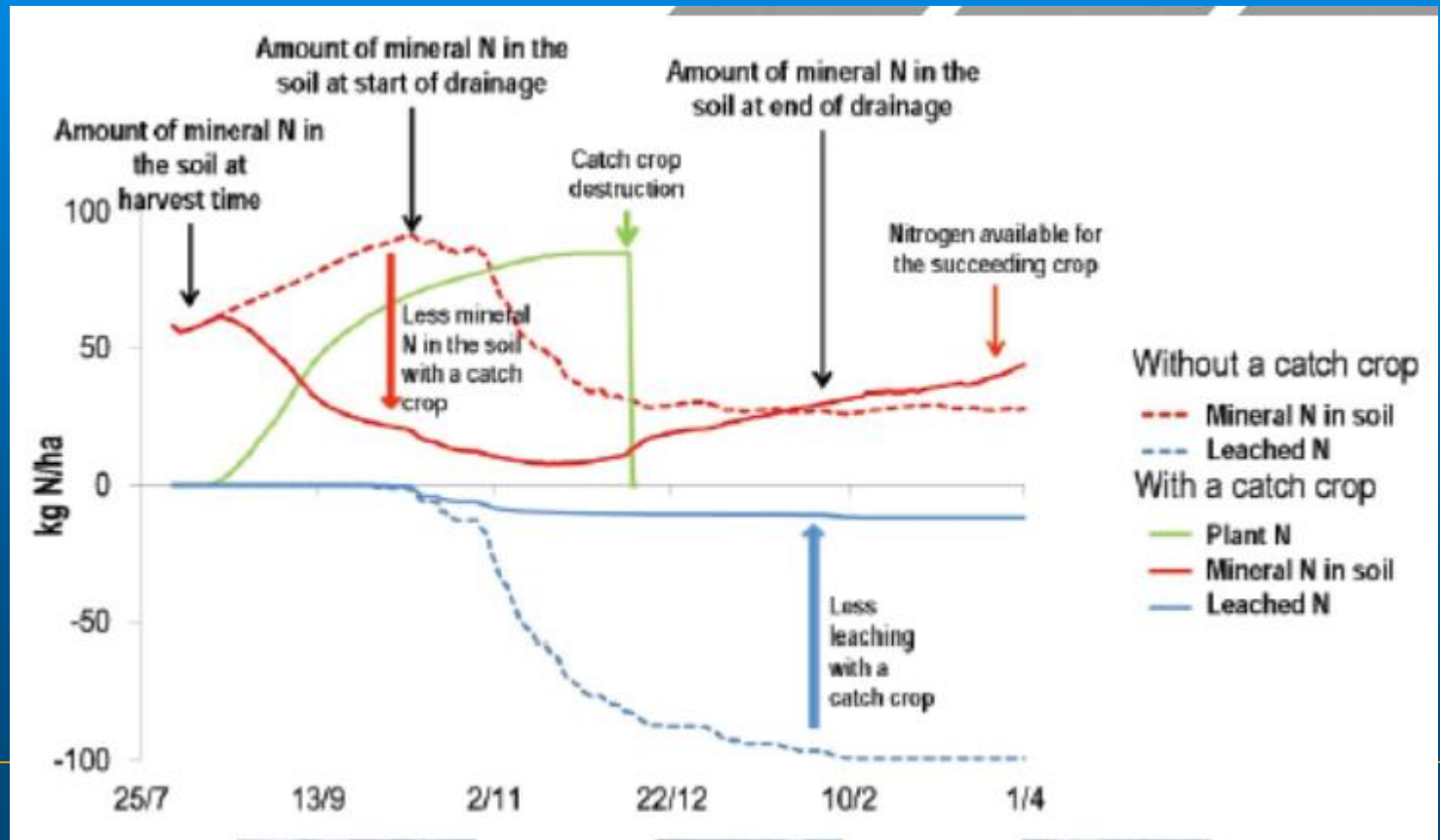
Aims/results:

1. Assess catchcrops effectiveness, costs and benefits for the environment (water, climate, soil) and farmers (costs, pests and weed control etc.)
2. Demonstration fields
3. Recommendations and tools for selecting proper catchcrops

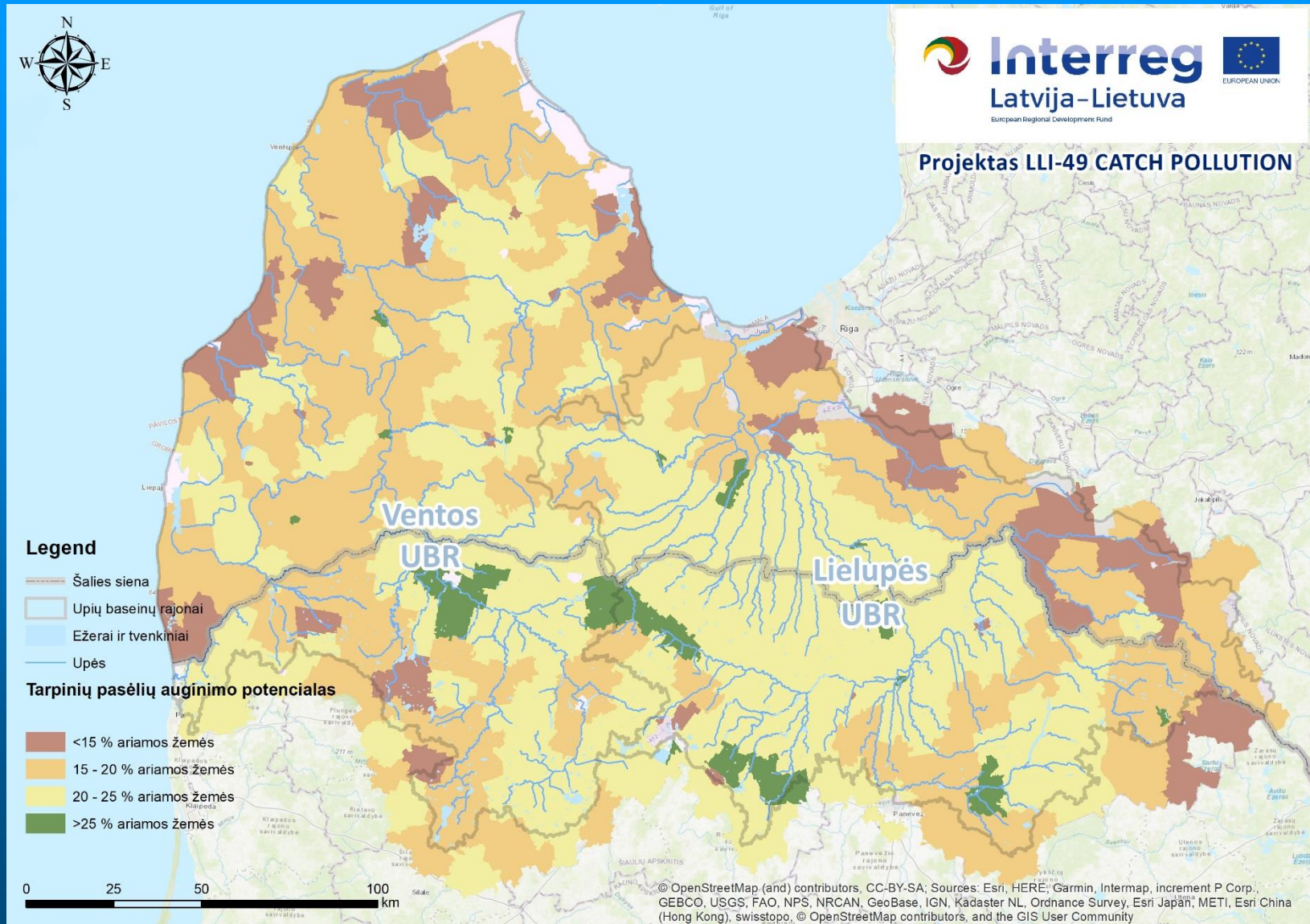


Catch POLLUTION project

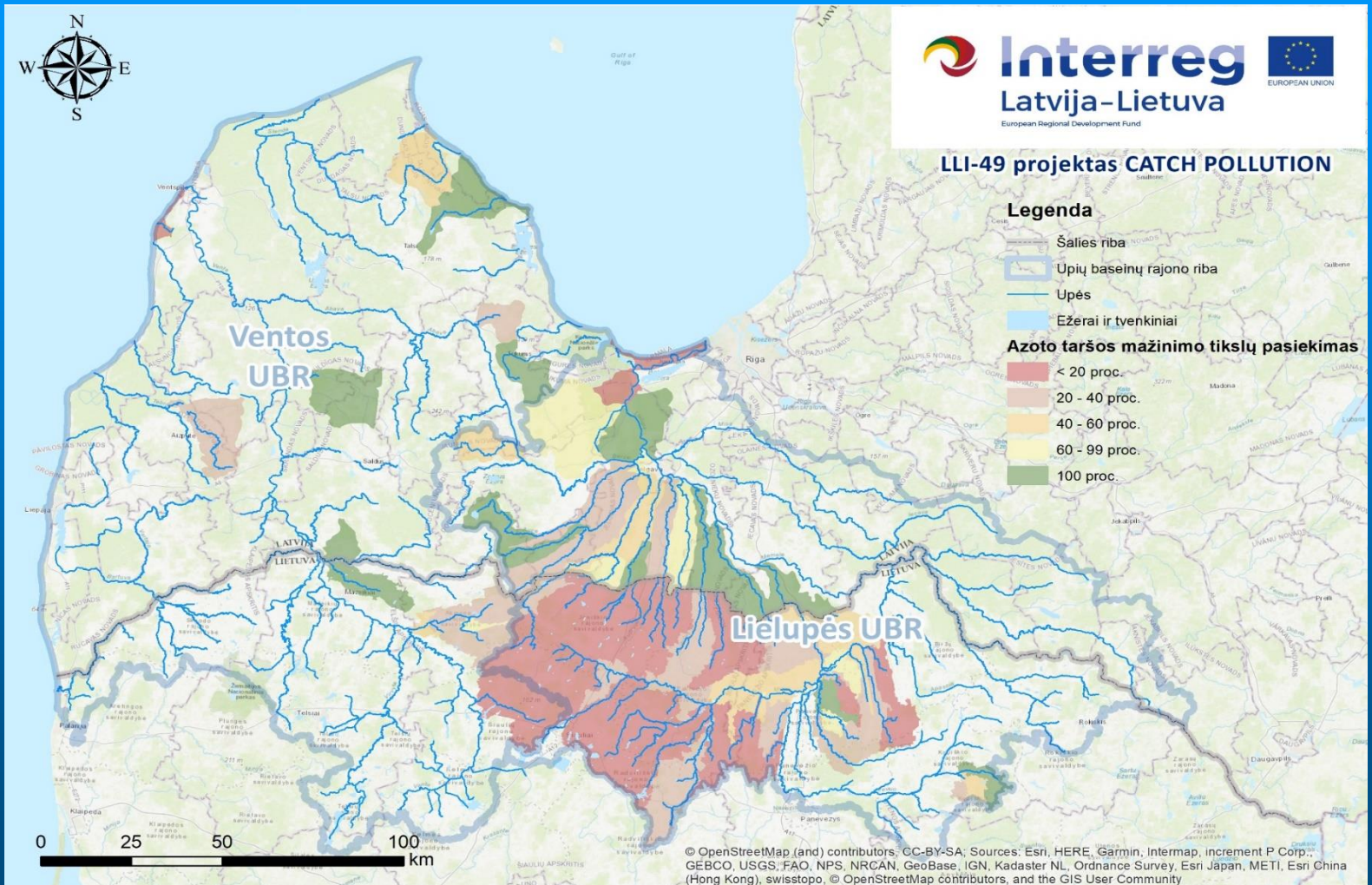
- N leaching reduction by catch-crops from 30 to 90 %, in most cases ~ 60 proc. or 12 kg N/ha
- Weed density reductions by catch-crops by >70 %
- Soil erosion potential in Lielupe/Venta RBD calculated, spatial zones identified



Catch-cop growing potential



Catch-cop real potential to achieve N goals



Pilot retention measures

- During 2014-2016 period LEPA installed the following retention measures for testing effectiveness:
- 1 swamp (impounding a small rivulet)
- 3 sedimentation ponds
- 10 regulated drainage system wells

- 3-year effects measurements are underway (2020 and 2021 data already available)



Swamp retention effectiveness

- Total N reduction 8-21 %
- Total P very unstable: from reduction by 20 % (2020) to increase by 21 %



- Beaver – might be a partial answer to P problems.....

Retention effectiveness of sedimentation ponds

- Total N reduction up to 4 – 12 %
- Total P unstable: from reduction up to 25-36 % to increase up to 133 %
- Possible investigated reason for P – overflowing by eroded sediments, calculation method



Retention effectiveness of controlled drainage systems

- Total N reduction up to 66 %
- Total P increase by 52-56 %



Diffuse pollution reduction measures in the 3rd RBMP cycle



Agricultural pollution reduction measures

- Set requirements for mandatory fertilization plans for both mineral and organic fertilizer application (comes from the 2nd RBMP);
- Approval of the recently developed methodology for preparation of fertilization plans (comes from the 2nd RBMP);
- Set requirements for farmers (>10 ha) to collect and provide information to the recently created **database (IS)** on mineral and organic fertilizer consumption (extended from 2nd RBMP)



Agricultural pollution reduction measures in RBMPs

- CAP financial schemes set an obligatory requirement to „cover“ the land during non-vegetation season in risk water bodies basins (catchcrops, no-plough, stubble fields)
- Finding the solution to avoid the build-up of surplus manure in its storage facilities (evaluate the feasibility to use appropriate technical, financial and legal instruments to ensure farmers have got installed bigger manure and slurry storage capacities)
- Enlarged (to 15 m) buffer zones around diffuse risk rivers and lakes where appropriate
- Water retention measures around diffuse risk lakes where appropriate
- Information campaigns to promote diffuse pollution reduction and its opportunities
- ~~Create pesticide use electronic data collection and storage system~~



Thank You for Your
attention!

