LATVIJAS VIDES, ĢEOLOĢIJAS UN METEOROLOĢIJAS CENTRS

GOOD EXAMPLES OF PLANNED MEASURES IN LATVIA – INTEGRATED LIFE PROJECT „IMPLEMENTATION OF RIVER BASIN MANAGEMENT PLANS OF LATVIA TOWARDS GOOD SURFACE WATER STATUS“

LIFE GOODWATER IP
LIFE18 IPE/LV/000014

JĀNIS ŠĪRE, LINDA FĪBIGA

LATVIAN ENVIRONMENT, GEOLOGY AND METEOROLOGY CENTRE

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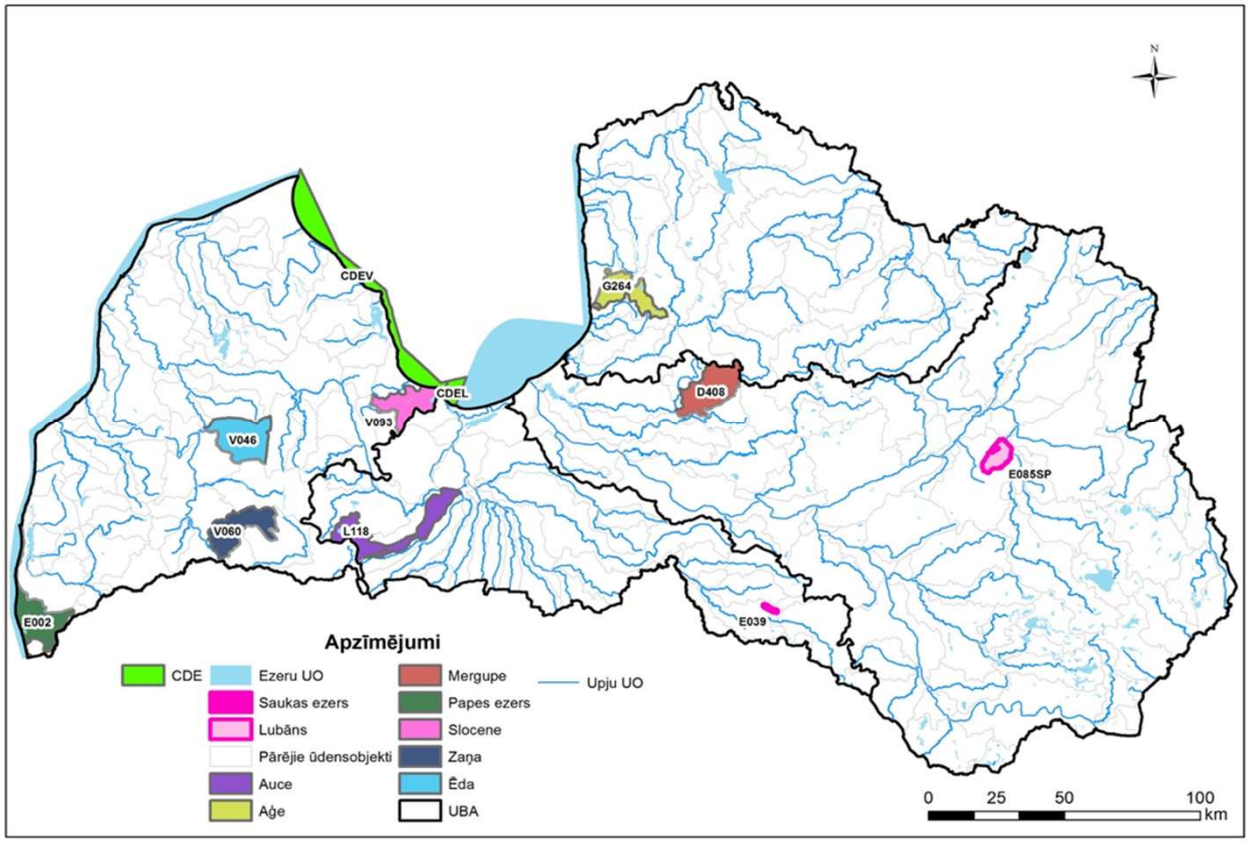
PROJECT AREA

LOCATION:
LATVIA

BUDGET INFO:
Total budget:
14 463 050 EUR

Complementary funds:
101 890 569 EUR

DURATION:
01.01.2020. – 31.12.2027.



PARTNERSHIP

- **Coordinating beneficiary: Latvian Environment, Geology and Meteorology Center (LEGMC)**

Public authorities

- The Ministry of Environmental Protection and Regional Development of the Republic of Latvia (MoEPRD)
- The Ministry of Agriculture of the Republic of Latvia (MA)

Scientific organizations

- Latvia University of Life Sciences and Technologies (LLU)
- Latvian State Forest Research Institute "Silava" (Silava)
- University of Latvia (LU)
- Institute of Food Safety, animal health and environment (Bior)
- Center of Processes' Analysis and Research, Ltd." (PAIC)

Local/regional level organizations

- Engure County Council (ECC)
- Limited liability company "Jelgavas novada KU" (JMUC)

Companies managing the State property

- State Limited Liability Company “Real Estates of Ministry of Agriculture” (REMA)
- JSC "Latvia's State Forests" (LVM)

Non-governmental organzations

- Latvia water and waste water works association (LWWWWA)
- NGO Farmer's Parliament (FP)
- World Wide Fund Latvia (WWF Latvia)
- Latvian Fund for Nature (LFN)
- Association “Baltic Coasts” (Baltic Coasts)
- Baltic Environmental Forum - Latvia (BEF - LV)
- Latvian Rural Advisory and Training Centre (LRATC)

THE OVERALL AIM

- The overall aim of the LIFE GoodWater IP **is to improve the status of water bodies at risk in Latvia by means of the full implementation of the measures laid down in the Daugava, Gauja, Lielupe and Venta river basin management plans**

WATER BODIES AT RISK IN RBMPs

POINT SOURCE POLLUTION

58 RIVERS
61 LAKES

HYDRO – MORPHOLOGICAL ALTERATION

63 RIVERS
18 lakes

DIFFUSE POLUTION

44 RIVERS
31 LAKE

Currently 89 rivers, 75 lakes, 1 transitional water body, and 4 coastal water bodies are designated as being at risk of failing the environmental quality objectives identified in each RBMP and officially approved by the Cabinet Regulation No. 418 "Regulations Regarding Water Bodies at Risk".

PRESENT GAPS AND SHORTCOMINGS

- Insufficient consideration of adverse impacts of the activities on water quality
- Ineffectual coordination of stakeholder engagement and shared responsibility in water management
- Insufficient coordination between policy frames in the development and funding of programmes of measures
- Inefficient use of the available resources for improvement of water quality
- Lack of replication and transfer of the knowledge

SPECIFIC OBJECTIVES

- to reduce the pollution of water bodies at risk caused by urban waste water and to diminish the loads of nutrients brought in by wastewater discharges and accumulated in water bodies at risk
- to reduce the runoff of nutrients and other pollutants from agricultural and forestry lands, especially in the winter period, with a special focus on reduction of phosphorus inputs
- to reduce or mitigate the effects of hydrological and morphological alterations of water bodies at risk, including those caused by renovation and reconstruction of land drainage systems
- to improve river basin management planning and its implementation mechanisms
- to increase the awareness of various stakeholders and to promote their involvement in the implementation of the RBMPs
- to provide support to respective authorities for improvements of respective legislative and regulatory documents and policies

COMPLEMENTARY ACTIONS

- The overall aim of the complementary actions **is to contribute to the improvements of status of water bodies at risk and therefore support full implementation of the RBMPs**

- complete the set of measures necessary for improvement of status of the waterbodies at risk by implementation of water status improvement related activities, planned by various stakeholders
- transfer and apply on a wider scale the demonstration activities and best practices, which would be found efficient for improvement of water status during the LIFE GoodWater IP and may be useful also for the waterbodies outside the scope of the Project

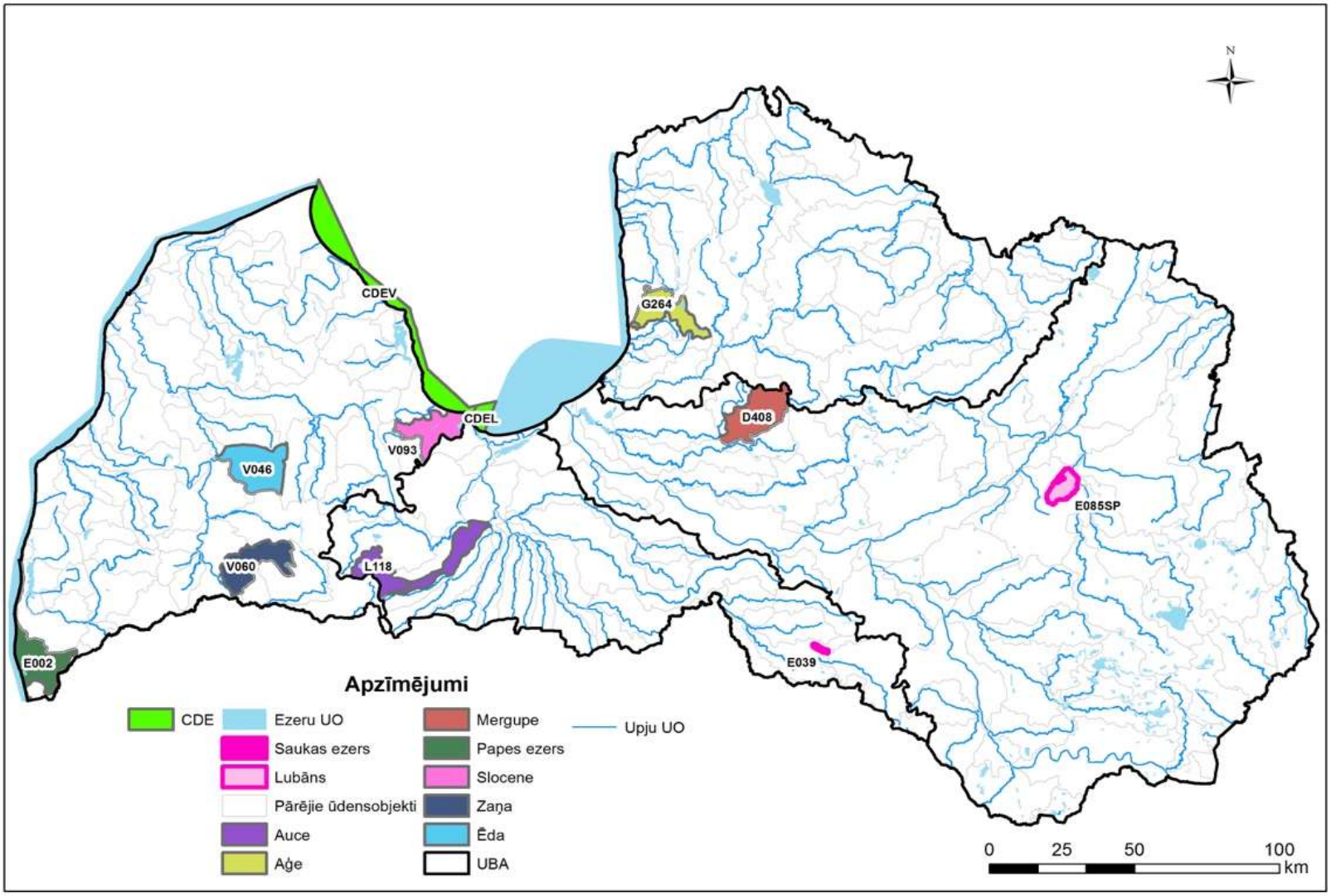
EXPECTED RESULTS

- LIFE GoodWater IP will address **164 water bodies at risk in Latvia** (*89 rivers and their sections and 75 lakes*). LIFE GoodWater IP expects to achieve good status for 5 % (9) of the surface water bodies currently at risk directly during the project

- In the long term, up to 50 water bodies (30 %) affected by similar pressures and other common characteristics are expected to reach good status as an indirect result of the Project

DEMO OBJECTS AND ACTIONS WITHIN PROJECT

LOCATIONS OF DEMO OBJECTS



DEMO WATER OBEJECT AT RISK	ACTIONS RELATED	POLLUTION COUSES	RESTORATION/IMPROVEMENT ACTIVITIES PLANNED
G264 Aģe	A1, C5, A2, C6, A5, C9, C3	Diffuse pollution and hydro-morphological alterations (flood risks). The catchment of G264 Aģe contains comparatively high percentage of forestland	Sustainable and environmentally friendly drainage system elements Green infrastructure elements in forestlands and agriculture lands established Fish passes, reconstruction of culverts, reconstruction of riverbed in streams incorporated in drainage system
L118 Auce	A1, C5, A5, C9, C3, A3, C7	Point source pollution from waste water and hydromorphological alterations	Reconstructed of small waste water treatment plant, additional section for reduction of phosporus and nitrogen, treatment of bio ponds Developed supplementary green infrastructure for WWT treatment and awareness raising (green garden, ponds, etc. Fish passes, reconstruction of culverts, reconstruction of riverbed in streams incorporated in drainage system and performed other mitigation measures
V093 Slocene	A1, C5	Diffuse pollution (represents the catchment area of high share of agricultural land (68.9%))	Sustainable and environmentally friendly drainage system elements Green infrastructure elements in agriculture lands established
V046 Ēda	A1, C5	Diffuse pollution and hydromorphological alterations (flood risks), point source pollution from waste water.	Green infrastructure elements in agriculture lands established

DEMO WATER OBEJECT AT RISK	ACTIONS RELATED	POLLUTION COUSES	RESTORATION/IMPROVEMENT ACTIVITIES PLANNED
D408 Mergupe	A5, C9, C3	Hydromorphological alterations. It belongs to priority fish waters (salmonid).	Fish passes, reconstruction of culverts, reconstruction of riverbed in streams incorporated in drainage system and performed other mitigation measures (addition of boulders, stones or gravel, addition/removal of large wooden debris, removal of silt, vegetation or other objects etc.) in natural rivers.
V060 Zaņa	A5, C9, C3	Point source pollution from waste water and hydromorphological alterations. Downstream territories of Zaņa River belongs to Natura 2000 site "Zaņas lejtece"	Reconstructed of small waste water treatment plant, additional section for reduction of phosporus and nitrogen, treatment of bio ponds Developed supplementary green infrastructure for WWT treatment and awareness raising (green garden, ponds, etc. Fish passes, reconstruction of culverts, reconstruction of riverbed in streams incorporated in drainage system and performed other mitigation measures
E039 Saukas lake	A4; C8	Point source pollution from waste water, diffuse pollution and historical pollution and additionally, historical morphological modification (lowered water level).	Installed of phosphorus filters on the inflowing watercourses or other management measures will be considered (e.g. removal of the dense emerged vegetation and dense layer of reed detritus; construction of the wetlands for the accumulation of the nutrients or biomanipulation of the lake food webs; etc.)

DEMO WATER OBEJECT AT RISK	ACTIONS RELATED	POLLUTION COUSES	RESTORATION/IMPROVEMENT ACTIVITIES PLANNED
(WB CDE) West Coast of the Gulf of Riga CDE	A3, C7	Seasonal impacts from point source pollution from waste water; Pollution from decentralized waste water treatment systems	Technological improvement of small waste water treatment plant (hydro isolated for accumulating sewage waters, technology process for reuse of waste waters and regulated pass to WWT plant)
E085SP Lake Lubans	C12	Hydromorphological alterations (flood risk); it is a part of the Natura 2000 area and nature reserve “Lubāna mitrājs”.	Assessment and demarcation studies Survey among local stakeholders Comprehensive recommendations as a road map to facilitate the improvement of the status of water bodies at risk Developed lake sustainable development plan
E002 Lake Papes	C12	Point source pollution from waste water and historical pollution. Lake belongs to priority fish waters (cyprinid). Lake papes is a part of the Natura 2000 area and nature park “Pape”	Assessment and demarcation studies Survey among local stakeholders Comprehensive recommendations as a road map to facilitate the improvement of the status of water bodies at risk Developed lake sustainable development plan

MEASURES TO REDUCE POLLUTION FROM AGRICULTURE

2 m vegetation buffer zone on the banks of rivers and lakes and, as well as along drainage ditches.

A buffer zone of at least 2 meters that is free from any agricultural activity reduces nitrogen (N) runoff by 30% and phosphorus (P) runoff by 20%.

MEASURES TO REDUCE POLLUTION FROM AGRICULTURE

Maintenance of "winter green areas" or "stubble fields" (winter vegetation consists of perennial grasses, perennial vegetables, winter crops or crop stubble, or succession plants for winter).

Providing a vegetation cover in the winter season ensures protection of the soil surface against degradation by retaining organic matter in the soils and reducing runoff of nitrogen (N) and phosphorus (P) to surface waters.

MEASURES TO REDUCE POLLUTION FROM AGRICULTURE

Environmentally friendly reconstruction and renovation of agricultural drainage systems with environmentally friendly elements of drainage systems are included.

- Elements of environmentally friendly land reclamation are described in Cabinet of Ministers Regulation No. 600 «Procedures for the award of national and European Union aid through open project competition for measure «Investment in tangible assets. Annex 12».
- Inclusion of environmentally friendly elements in drainage systems reduces the runoff of nitrogen (N) and phosphorus (P) in surface waters.

ENVIRONMENTALLY FRIENDLY MELIORATION SYSTEMS

- **Sedimentation ponds**
- As the water stays in the sedimentation basin for a longer period of time, natural self-cleaning processes take place and much of the nitrogen and phosphorus compounds are used to increase the biomass of aquatic plants, thereby reducing the amount of nutrients dissolved in agricultural runoff.

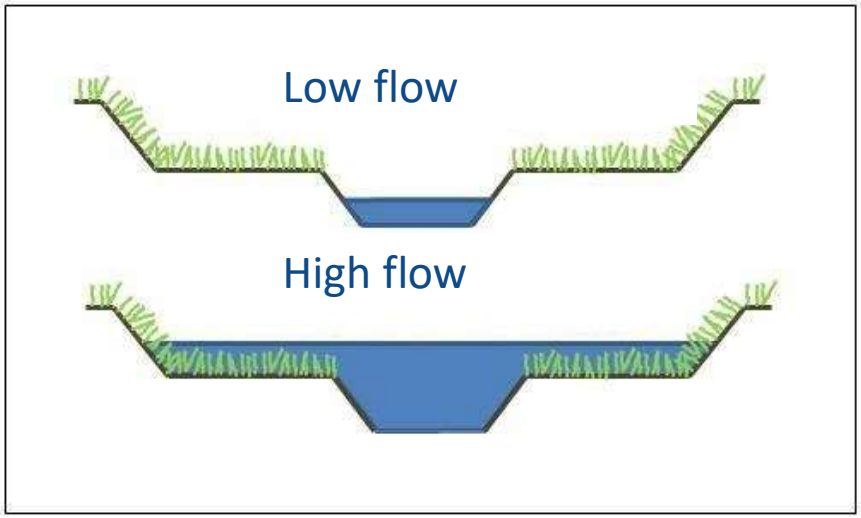
http://old.ldf.lv/upload_file/29862/FSh_LV_Snowbal_pv_s.pdf

ENVIRONMENTALLY FRIENDLY MELIORATION

- **Two-stage drainage ditches**
- Cross-sectional profile of a composite two-stage drainage ditch with artificial flood plains.

Benefits:

- Reduction of nutrient leaching from the slopes when flow rates are high;
- Reduction of sediment and plant nutrient concentrations in water.



ENVIRONMENTALLY FRIENDLY MELIORATION SYSTEMS

- **Stones in drainage ditches**

When designing or reconstructing drainage ditches, their longitudinal slope and transverse profile, large rocks are left in the ditch bed to form rocky rapids.

As water flows through rocks, it filtrates and nitrogen (N) and phosphorus (P) runoff is reduced.

ENVIRONMENTALLY FRIENDLY MELIORATION SYSTEMS

- **Meandering**

Creating curvature of the drainage ditch bed by restoring curves of creating new curves.

http://www.jelgavasnovads.lv/images/userfiles/Projekti/Projektu%20seminaru%20datnes/Nutrinflow_melioracija/Videi%20draudz%C4%ABgi%20melior%C4%81cijas%20sist%C4%93mu%20elementi.pdf

ENVIRONMENTALLY FRIENDLY MELIORATION SYSTEMS

Controlled drainage

- Double-sided control structures in drainage ducts and drainage outlets, so soil water level can be artificially set between the surface of the soil and the bottom of the drain.
- Benefits:

Reduction of nutrient leaching from agricultural land;

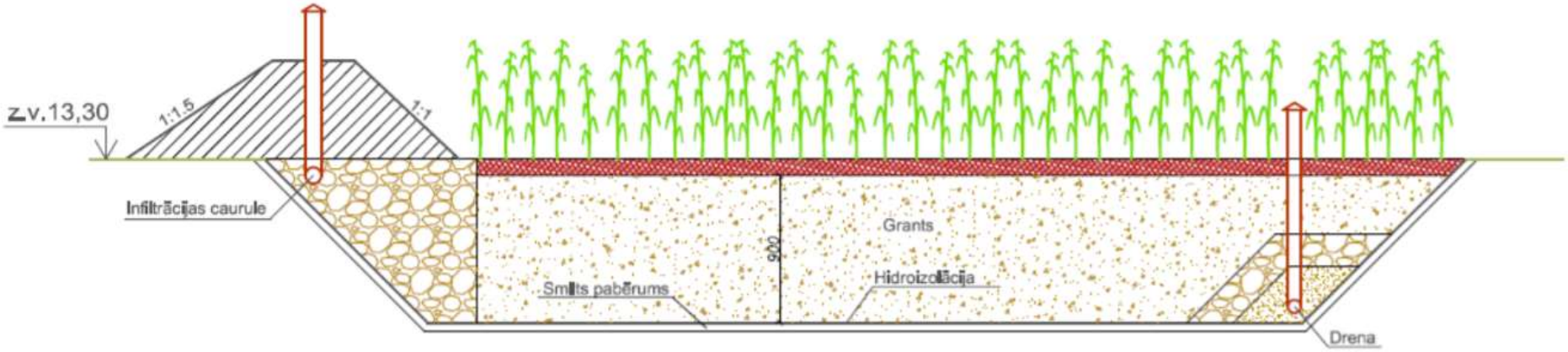
Possibilty to regulate water level for crop needs, in summer drought the water is available.

ENVIRONMENTALLY FRIENDLY MELIORATION SYSTEMS

Artificial wetlands

- Artificial wetlands for capturing nutrient pollution by surface or underground flow.
- Natural plant filters (common reed, etc.) are used to filter nutrients from water. As it flows through, plants absorb nitrogen (N) and phosphorus (P) compounds, reducing their concentration.

Artificial wetland with underground flow



THANK YOU!