

# Reed Biomass as a Source of Sustainable Energy

## ReedBASE

### Ukraine, Moldova, Romania



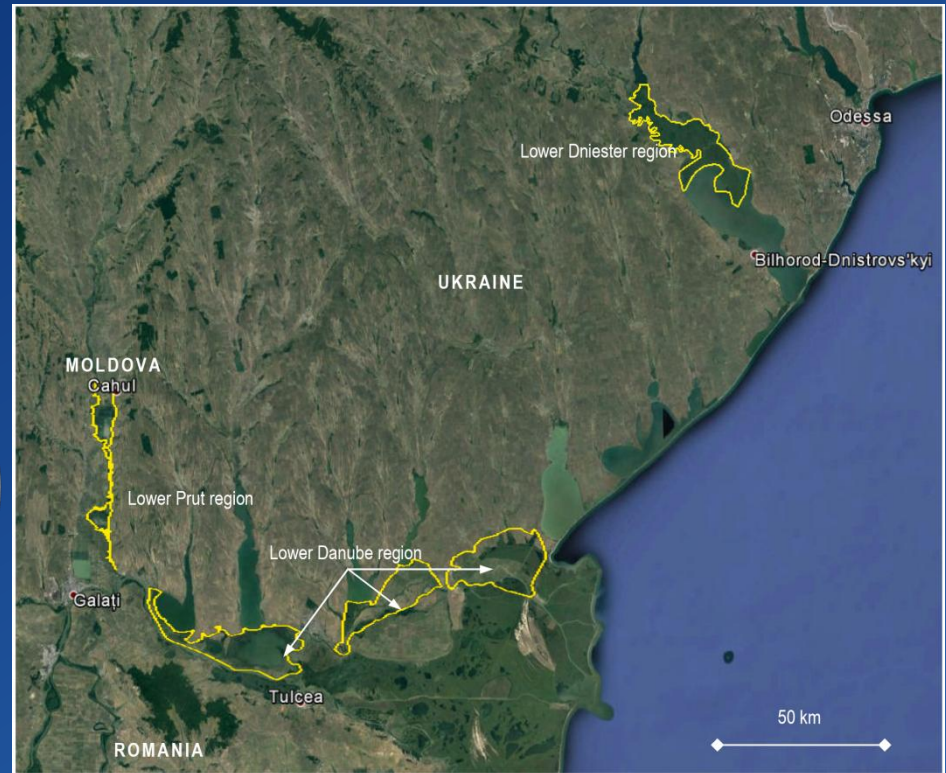
# Project Area in Ukraine, Moldova & Romania



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A region with many  
wetlands of global  
biodiversity importance





# Hydrological Alteration of Wetlands



Border embankment



Sluices



Irrigation canal systems



Polders

# Nutrient Enrichment of Wetlands



Village effluent



Fish farming



Livestock production



Arable crops



# Rank, Homogenous Reedbeds



Thousands of hectares  
of dense tall reedbeds  
with little wildlife value

# Burning Reedbeds a Widespread Problem





# ReedBASE Project 2016 - 2017

## ❖ OBJECTIVE

to establish an “innovation cluster” of “Triple Helix” institutions (government, business, and researchers) in order to identify priority research areas, development projects and commercial investments for improving traditional utilisation as well as renewable energy production from reed biomass



# ReedBASE Project 2016 - 2017

## ❖ PARTNERS

- Michael Succow Foundation, Germany
- Agricola NGO, Ukraine
- Institute of Market Problems and Economic-Ecological Research (NAS), Ukraine
- Agency of European Innovation, Ukraine
- Cross-Border Cooperation and European Integration Agency, Moldova
- WWF Danube Carpathian Programme, Romania

# ReedBASE Project 2016 - 2017

## ❖ FUNDING

German Federal Environment Ministry: Advisory Assistance Programme (AAP) supervised by the Federal Agency for Nature Conservation (BfN) and the German Environment Agency (UBA)

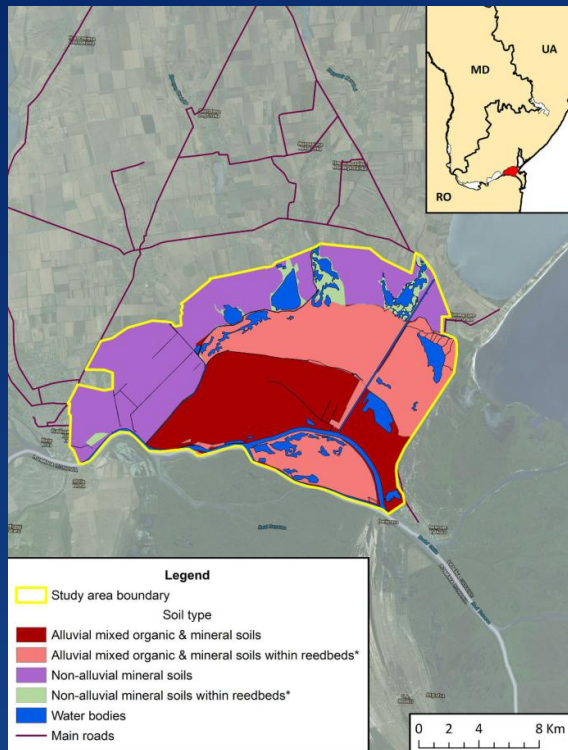


# ReedBASE Project 2016 - 2017

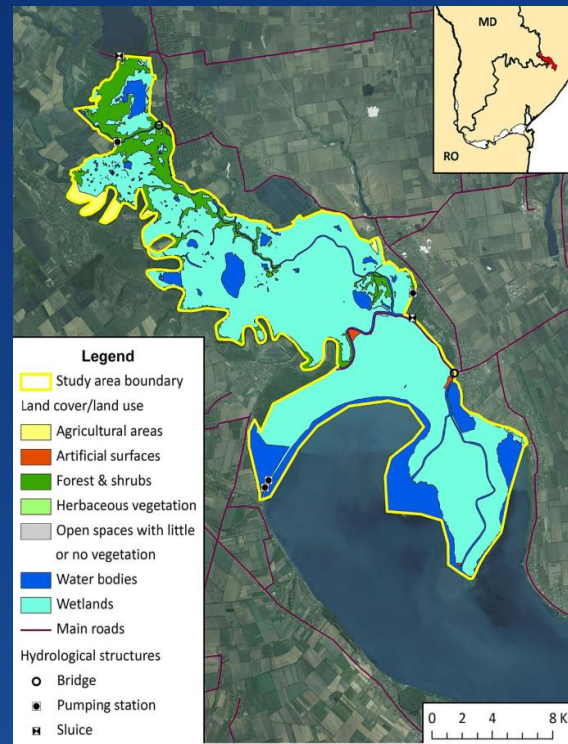
## ❖ TASKS

1. Desk study on the former and current status of wetlands in the project area, identifying strengths and weaknesses in existing reed harvesting, biomass processing and combustion technologies
2. Data base of stakeholders and decision makers which are or should be involved in sustainable reed bed utilisation in the project area
3. Feasibility of setting up a ReedBASE cluster

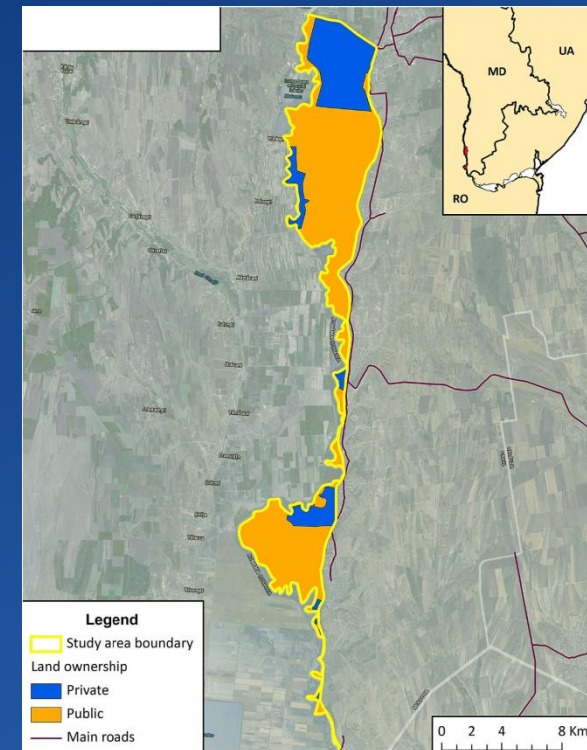
# Desk Study • Mapping



Soils



Land Cover



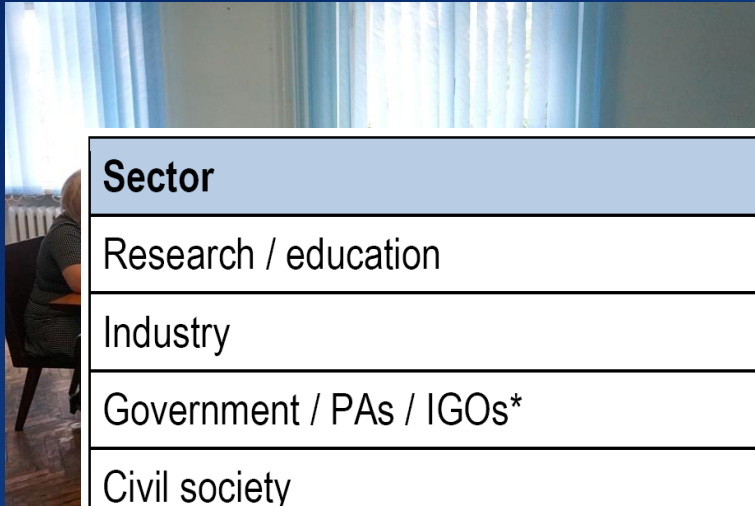
Ownership



# Desk Study • Statistical Overview

- ❖ Total project area: 117,920 ha
- ❖ Wetland habitats:
  - pure reedbeds - 35,760 ha (30%)
  - reed mixed with meadow, trees or shrubs - 9,974 ha (8%)
  - open water - 23,139 ha (20%)
- ❖ Alluvial peaty soils: 19,700 ha (16%)
- ❖ Protected areas: 22,580 ha (19%)
- ❖ Biomass potential: ca. 100,000 tons/yr

# Desk Study • Stakeholder Analysis



Sector	No. in UA	No. in MD	Total
Research / education	19	5	24
Industry	19	17	36
Government / PAs / IGOs*	32	7	39
Civil society	12	7	19
Total	82	36	118





# Desk Study • Current Reed Utilisation





# Desk Study • Current Reed Utilisation





# Desk Study • Willow Cultivation



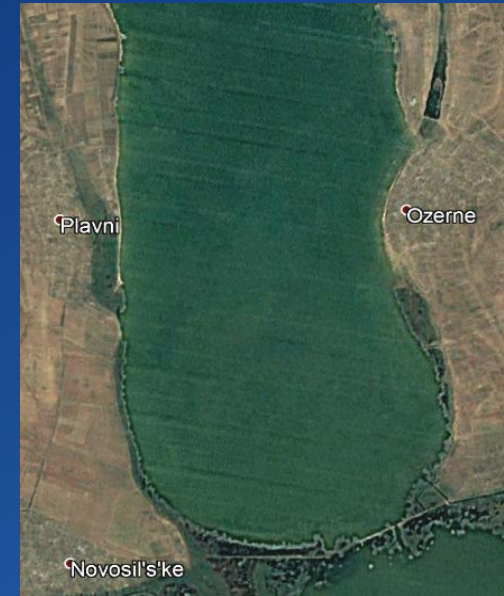
# Assessment • ReedBASE Triple Helix Cluster

- ❖ To be established at end of October 2017, under a Memorandum of Understanding led by IMPEER
- ❖ Initially covers Ukraine and Moldova, but rapid expansion to other reed-rich European countries expected
- ❖ Policy, research and investment agenda developed
- ❖ Potential innovation projects proposed
- ❖ Liaison with KIC InnoEnergy and Climate to be set up



# ReedBASE Policy Issues

- ❖ Enforcement of water protection zone legislation
- ❖ Designating reed, reedmace, willow as recognised biomass crops
- ❖ Incentive schemes for research and business creation
- ❖ Certification of product quality
- ❖ Delivering necessary infrastructures



# ReedBASE Research Issues

- ❖ Long-term monitoring of harvesting impact on habitats and biodiversity
- ❖ Assessment of carbon stocks in wetland biomass and organic soils
- ❖ Wetland management especially for carbon sequestration
- ❖ Paludiculture opportunities on peat soils
- ❖ Designing optimal biomass harvesting regimes
- ❖ Innovative construction materials from wetland biomass
- ❖ Economics of wetland biomass utilisation



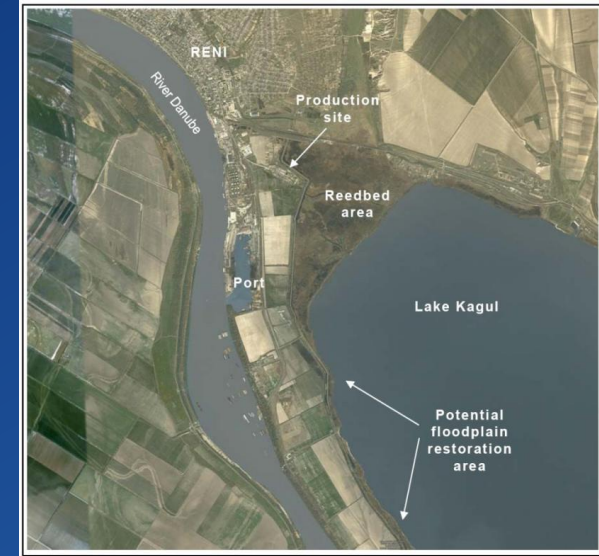
# ReedBASE Investment Issues

- ❖ Development and sale/lease of biomass harvesting equipment
- ❖ Development and sale/lease of biomass processing equipment
- ❖ Development and sale/lease of end-use equipment (boilers and CHP units)
- ❖ Repair and servicing of biomass-related equipment
- ❖ Sale of products, including exports



# ReedBASE Potential Innovation Projects

- ❖ Rewetting unused drained floodplain areas
- ❖ Reversion of rice paddy to floodplain
- ❖ Use of waste reed for renewable energy/heat production
- ❖ Willow cultivation and uses
- ❖ Research on peat formation, fire impact and carbon sequestration
- ❖ R & D on biomass harvesting, processing and marketing





# Many Thanks!

