Food and Agriculture Organization of the United Nations

Learning event:

"Challenges and Solutions for Responsible Peatlands Management"

Biomass from reeds for energy production - in Belarus

Andreas Haberl

Michael Succow Foundation, Greifswald – Germany

Webinar organized by MICCA Programme, FAO - 1st of October 2014

Wetland-Energy Project

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Государственное производственное объединение по топливу и газификации

ОАО «Торфобрикетный завод «Лидский»

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Энергия болот

Wetland Energy

- ⇒ Since almost 2 years on the ground
- ⇒ Project implementation time till end of 2015

Implementation of new concepts for wet peatland management for the sustainable production of biomass-based energy

External Actions of the European Union - DCI-ENV/2010/220-473

Belarus

Belarus situated in the East of Europe between Poland, the Baltic states, Russia and the Ukraine

Peatlands in Belarus

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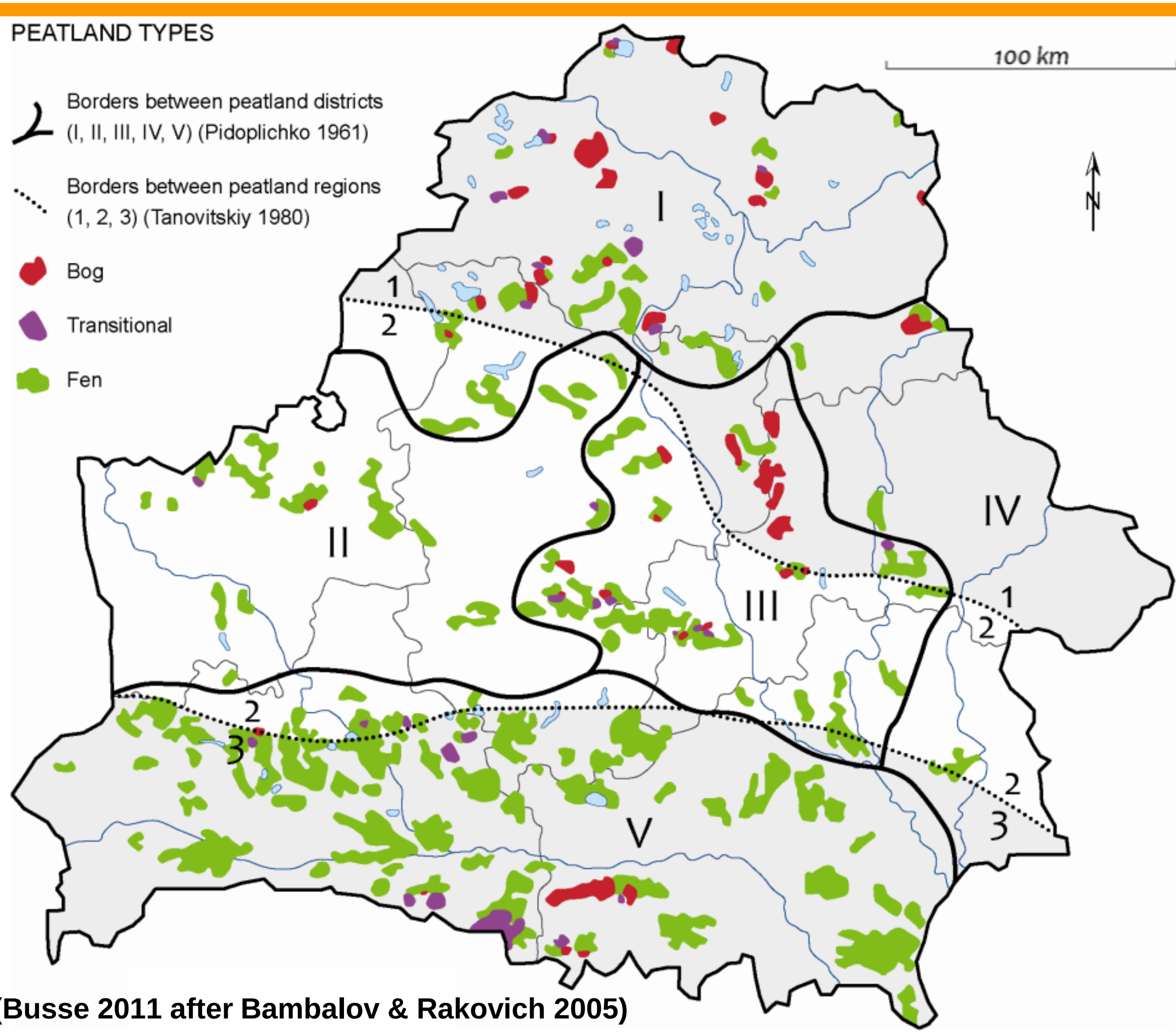
Peatlands covered once
~3 mil. ha of Belarus, (~15%)

Drained peatlands in total
~1.5 mil. ha:
- Agriculture (72%)
- Forestry (36%)
- Peat extraction (2%)

Belarus is Nr. 8
of the worlds top emitters of GHG from drained peatlands (annually **41 Mil.t CO_2 eq.**)

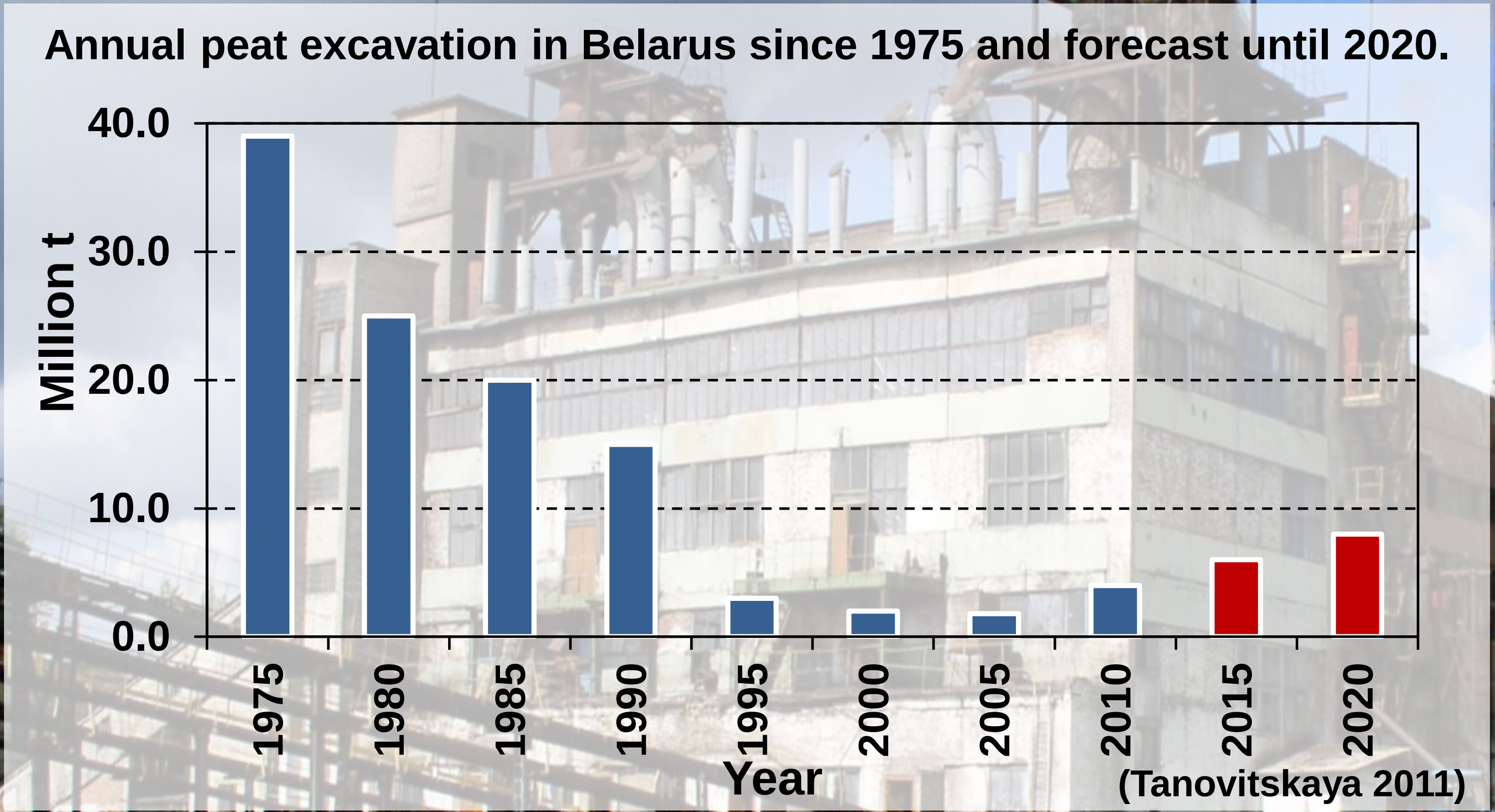
Since ~15 years high willingness of the country administration to co-operate in international climate projects



(Busse 2011 after Bambalov & Rakovich 2005)

European Commission
EuropeAid Development and Cooperation

Peat extraction for energy fuel briquettes in Belarus



Still 25 peat factories produce peat briquettes on ~36.800 ha of the former ~150.000 ha drained for peat extraction
=> 122.200 Hectares have been abandoned

The conventional approach „Peatlands for Energy“ leads to:

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Drainage and extraction

Finite fossil energy resource

⇒ Habitat destruction

⇒ Fire hazards

⇒ High emissions of GHGs

⇒ Dependency on a finite resource

⇒ …

What do we do?...

The Wetland-Energy Paludiculture approach

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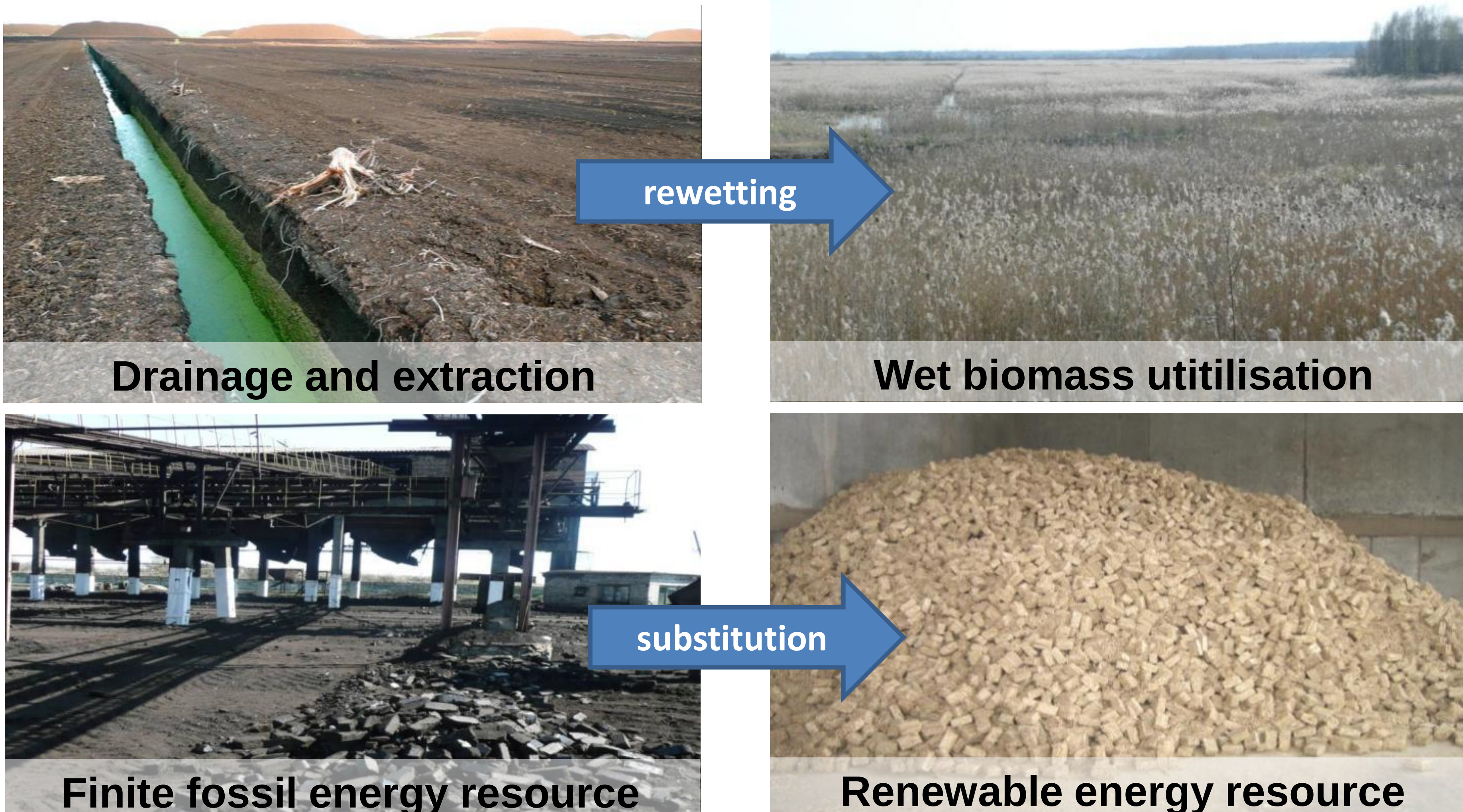

The Wetland-Energy Paludiculture approach

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…focus on the set up of a production line that supports:

- ⇒ Restoration of peatlands
- ⇒ Reduction of GHG emissions
- ⇒ Substitution of fossil fuels with renewables
- ⇒ Generation of income and energy in remote areas
- ⇒ …


Wet biomass utitilisation


Renewable energy resource

Project sites

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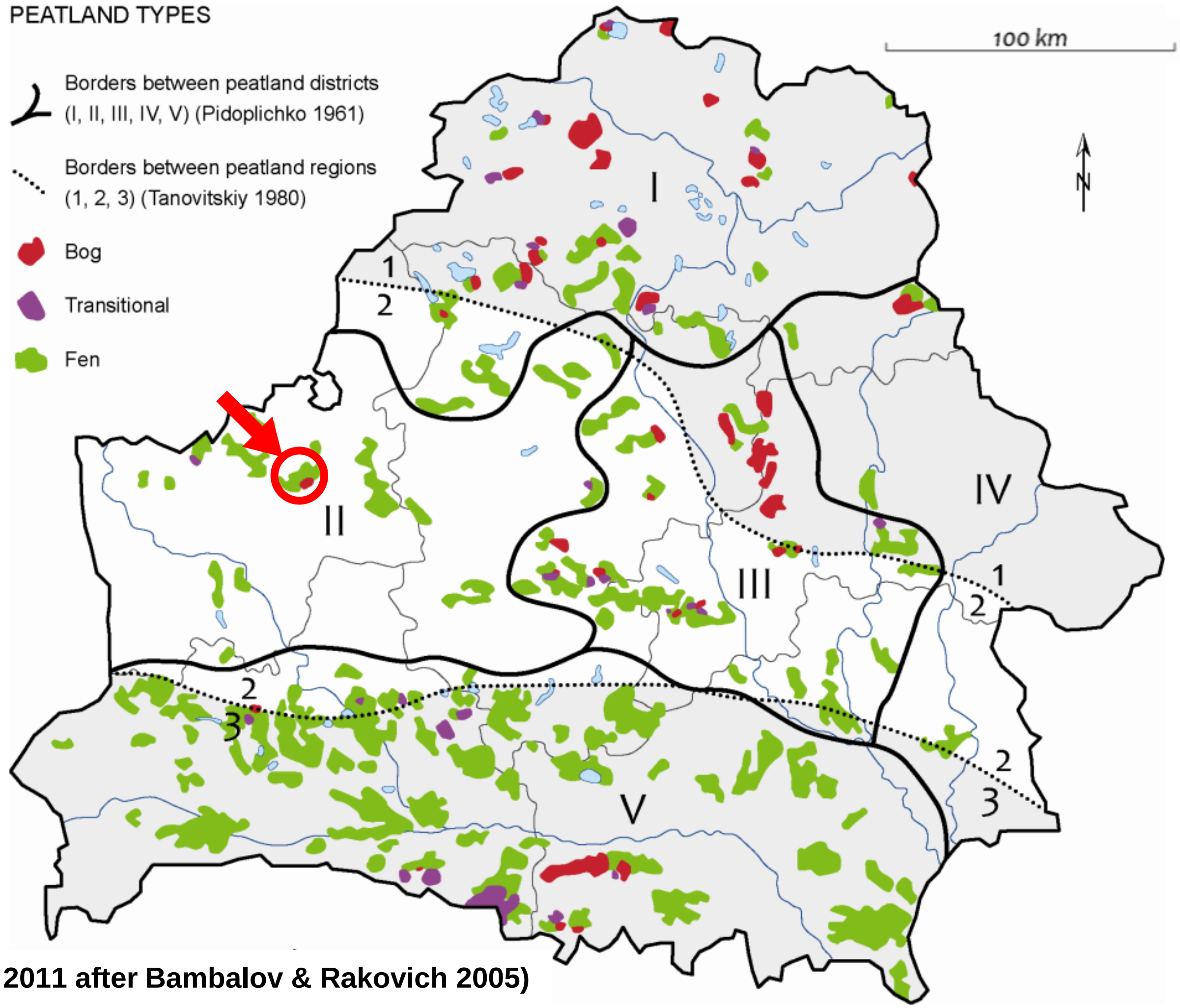
1. **Dokudovskoe peatland**
   Lida district – Lida peat briquetting factory



(Busse 2011 after Bambalov & Rakovich 2005)

Cooperation with Lida peat briquetting factory

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- ⇒ Progressive and cooperative director (Investments in sustainable energy fuel production)
- ⇒ Rewetting of depleted peat excavation sites
- ⇒ Pilot set up of a utilisation chain from harvest of biomass to marketing of fuel products
- ⇒ Live cycle analysis (LCA)

Rewetting of excavation sites

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Almost depleted peat excavation sites - peat depth 50-20 cm are suitable for rewetting and reedbed establishment

Rewetting of excavation sites

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⇒ Site selection ~300 ha

⇒ Plan and implement rewetting

⇒ Plan reed bed establishment

Harvest sites – Large rewetted reeds

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Start of biomass harvest in October 2014, on abandoned and vegetated wet excavation sites

Harvest on wet and soft peatland soils

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Adapted conventional technology

BELARUS

Development and optimisation of new technology

Блюминг

Investment in new production lines

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Optimisation and production of biomass fuel pellets and briquettes

LPF has already experience with mixed briquettes with straw / wood and peat

Mini peat briquetting line at LPF will start processing biomass briqettes in autumn 2014

Project sites

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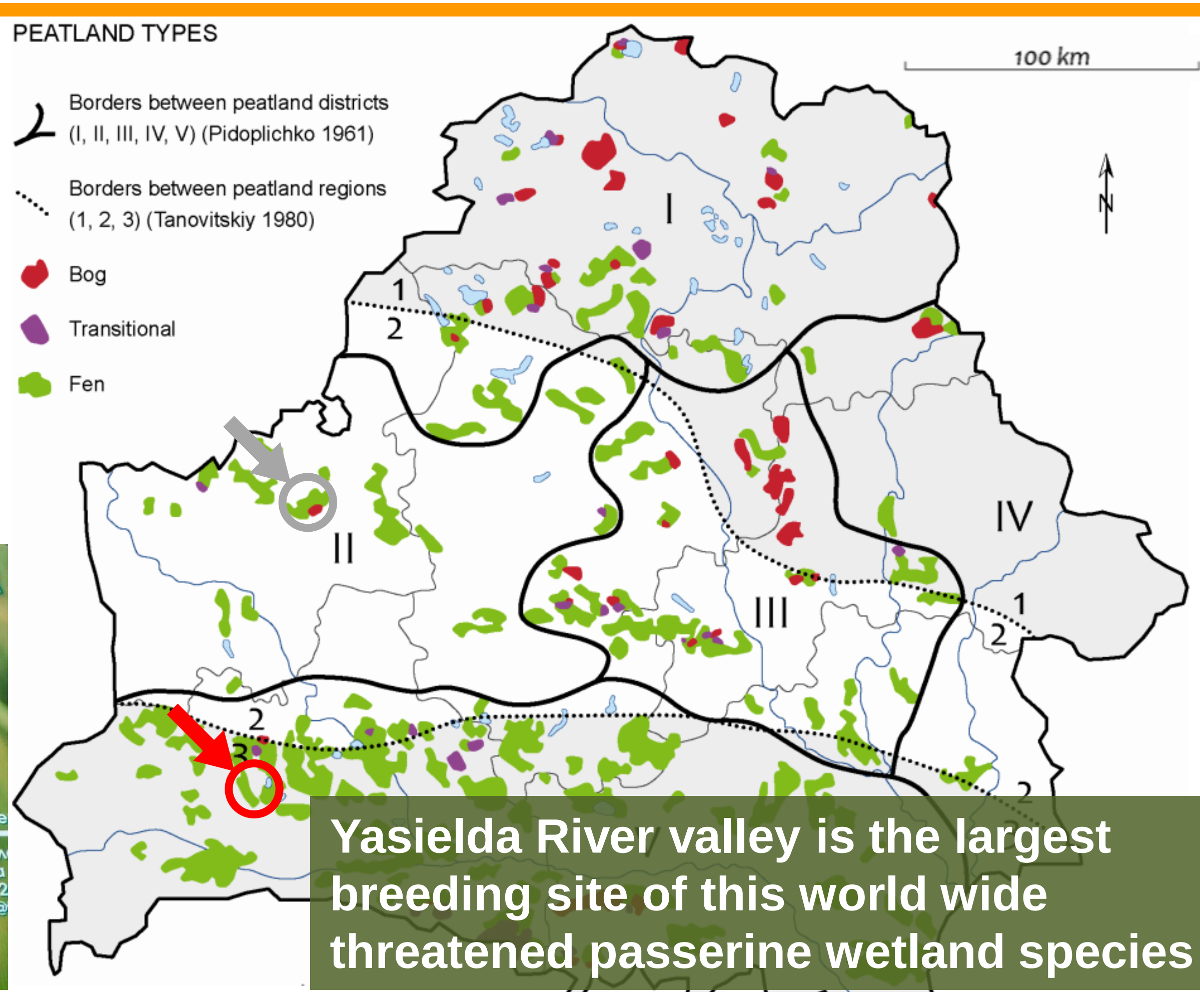
1. **Dokudovskoe peatland** Lida district – Lida peat briquetting factory

2. **Sporova Yasjelda River valley -** Berioza district - Sporovsky Zakaznik

Aquatic warbler



Yasielda River valley is the largest breeding site of this world wide threatened passerine wetland species

(Busse 2011 after Bambalov & Rakovich 2005)

Cooperation with Sporovsky Zakaznik

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⇒ For habitat management regular mowing with special equipment is applied

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⇒ Monitoring of Harvest process (time and costs)

⇒ Monitoring of vegetation changes after repeated mowing (productivity and species composition)

Conclusions

The production of biomass fuels in Paludicultures on rewetted peatlands in Belarus:

- **Is in its pilot phase**
- **Finds auspicious preconditions (willing authorities and entrepreneurs)**
- **Synergies with management plans of peatland conservation areas**
- **Can contribute to GHG emissions reduction from drained peatlands**
- **Will come up with guidelines for upscaling to other Regions**

Thanks for your attention!