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Harvesting and managing reed for sustainable bio-energy production in Ukraine

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The concept of reed harvest for energy pellets

Reed (*Phragmites australis*) is a naturally occurring wetland plant which can be used for thatching, paper pulp production and for energy production. Worldwide an estimated 10 million ha is available with a productivity 3 to 30 million tons DM/ha. In Ukraine, the area is estimated at more than 300.000 ha. This largely untapped biomass resource can yield relatively high quality biomass without competing for land for food or fibre production, thus avoiding Indirect Land Use Change and the associated GHG emissions. At the same time it is difficult to efficiently harvest biomass in wetland areas without damaging the valuable ecology.

In our project area in the Poltava region of Ukraine, the management and production system for reed pellets will have to be set up in such a way that both economic and sustainability demands (NTA-8080) are met.

Reed is currently only used for fishing and hunting and small parts are harvested for thatching. Reed areas are important for biodiversity and provide important environmental services. The areas are owned by local communities and serve for fishing and hunting. Currently they are usually burnt in winter or spring, however. Use of this biomass source for fuel will significantly benefit rural communities, provided an economically sound and sustainable harvesting system is developed.



Many reed fields in Ukraine are burnt in winter



Harvesting reed for thatching purposes:

This method may not be economically viable for reed

Critical issues

Harvest window: The harvest window can be uncertain. Harvest is done in winter on ice requiring minimum thickness, whereas snow cover may hinder harvest operations. This may affect the commercial viability of reed harvesting.

Ecology: Harvest will take place in winter when ecological damage is limited. Particularly vulnerable areas and 10 to 20% of reed coverage will be left untouched. In addition, a sustainable harvest rotation scheme is applied.

Green House Gas balance: is likely to be positive as no emissions associated with reed production are considered; only harvesting and processing emissions are taken into account.

Biomass quality: Moisture content should be 15% while ash content and ash quality should be better than straw and worse than wood.

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