BIOPROS

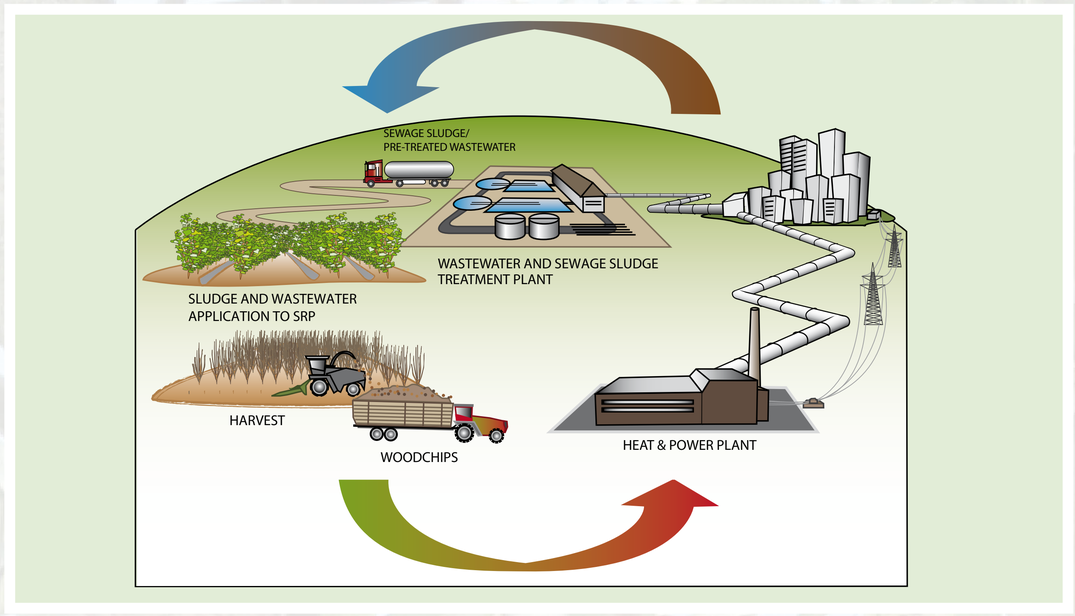
"Short Rotation Plantations – Opportunities for Efficient Biomass Production with the Safe Application of Pre-treated Wastewater and Sewage Sludge"

Collective Research Project supported by the European Union under the 6th Framework Programme

www.biopros.info

THE BIOPROS PROJECT

BIOPROS is an EU-funded FP6-Collective Research project made up of a consortium of 25 partners from 12 different countries. The aim of the project is to carry out specific research activities on the economic, technical and environmental feasibility of reusing pre-treated municipal wastewater and sewage sludge for renewable biomass production in Short Rotation Plantations under different regional conditions across Europe. The gained knowledge will be further used to carry out focused training activities for farmers, authorities and practitioners in the participating countries to ensure environmental and hygienic safety in wastewater/sewage sludge application as well as high efficient biomass production.



SHORT ROTATION PLANTATION

Short Rotation Plantations (SRPs) are land-use systems combining agricultural and forestry practices (Agroforestry). Fast growing tree species such as willow and poplar are managed in short coppicing cycles (1-5 years). These non-food/non-fodder crops have a high demand for nutrients and water, which may alternatively be met by reusing pre-treated wastewater and sewage sludge enabling a sustainable nutrient recycling. The woody biomass produced can be used as a renewable and clean fuel for heat and power generation or for further processing into liquid biofuels.

BENEFITS FOR FARMERS

- New source of income from energy crops
- New source of income from wastewater/sludge recycling
- Alternative fertilization and irrigation method at low cost
- Increased income from improved biomass yields due to irrigation and fertilization
- Increase in soil organic matter content and soil fertility

BENEFITS FOR LOCAL COMMUNITIES AND SOCIETY

- Opportunities to reduce costs for conventional wastewater treatment (investment, operation, disposal)
- Supporting compliance with environmental legislation if treatment standards are currently not met
- Opportunities to produce renewable biomass for local heat and power generation
- Supporting local economy by establishing local biomass supply chains
- Recycling of local water and nutrient sources
- Reduction of energy consumption requirements for the production of artificial fertilizer
- Supporting sustainable rural development by reducing dependency upon fossil fuels

ENVIRONMENTAL AND HYGIENIC SAFETY

To ensure environmental and hygienic safety guidelines for the safe and efficient application of wastewater and sewage sludge have been developed within the BIOPROS project. The appropriate pre-treatment of wastewater and sewage sludge prior to its reuse is required to reduce the amount of pathogens and chemical pollutants present. BIOPROS project results suggest that a higher level of nutrients and pollutants can be applied to SRPs compared to conventional agricultural crops as used non-food/non-fodder SRP species show high uptake rates for water, nutrients and heavy metals (e.g. Cadmium), and therefore the level of groundwater leaching and soil accumulation for pollutants is low. Moreover, due to the use of SRP biomass for energy purposes the risk for pollutants entering the food chain is low.

CONSORTIUM

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Czech Biomass Association (CZ Biom)
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