



## **Sustainable land-use by regional energy and material flow management using “Terra-Preta-Technology” on military conversion areas and low-yield-locations (LaTerra)**

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The interdisciplinary and transdisciplinary joint research project seeks innovative system solutions for resource efficiency, climate protection and area revaluation by means of an integrative approach. The project's fundament is set by implementing the zero-emission-strategy, launching a regional resource efficient material flow management as well as utilising “Terra-Preta-Technology” as an innovative system component.

As the centrepiece of optimised regional biogenic material flows Terra Preta Substrate (TPS) contains biochar shall be utilised exemplarily in model regions.

In regional project 1 (state of Brandenburg, county Teltow-Fläming) TPS shall be used on military conversion areas, which are contaminated with polycyclic aromatic hydrocarbons and mineral oil hydrocarbons. It will be examined, whether the use of TPS causes accelerated pollutant reduction and whether this area is available for renewable raw material production.

In regional project 2 (Western Lusatia, county Oberspreewald-Lusatia) reclamation and renaturation of post-mining-landscapes is first priority. In this case, the project seeks for an upgrade of devastated soils for plant production as well as for restoration of soil functions and setup of organic soil substances.

In regional project 3 (state of North Rhine-Westphalia, city of Schmallenberg) reforestation of large scale windbreakage areas shall be supported by using TPS. Soil stabilisation, increased growth and survival of young trees and decreased nutrient losses are desired achievements.

The crop production effectiveness and environmental compatibility of TPS will be determined by tests in laboratories, by lysimeter and open land taking into account chemical and physical as well as biological parameters. Currently diverse chemical, physical and biological examinations are performed. First results will be presented. The focus will be set on the use of TPS on military conversion areas to reduce specific organic contaminations.