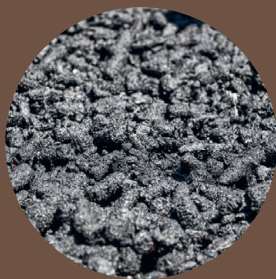


USING RESIDUES FOR EFFECTIVE FERTILIZATION



Fragile soils suffer from deforestation and overuse. Replenishment with nutrients needs concepts for lasting impact.



Pyrolysis devices produce biochar from agricultural residues. Biochar holds nutrients through rainy seasons.



High-quality organic fertilizer results from (vermi-)compost, biogas digestates and biochar co-composting.



Smallholders test biochar-based fertilizer and benefit from substantially improved soil structure and fertility.

Find more information on
www.eth-soil.com



Project partners develop Recipes for organic fertilizer production and application to degraded soils in Oromia and Sidama



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BIO-POWER FOR HEALTHY SOILS

Nutrient recycling and
biochar-based fertilizers are
strengthening food security



ETH-SOIL

AGRICULTURAL TRANSFORMATION

The ETH-Soil project aims at securing the sustainable food supply of smallholder farmers in rural regions of Ethiopia. The transformation builds on new technologies and processes for the evidence-based amelioration of degraded or highly acidic soils. Biochar produced by pyrolysis of nutrient-poor agricultural residues is combined with compost or digestates from biogas plants to create a biochar-based fertilizer (BBF). Engineering, chemical and agricultural competencies of project partners are combined to test and upscale convincing BBF production methods and application recipes. The carbon- and nutrient-rich fertilizer increases soil health and the fertility of smallholder plots. As biochar application also leads to concomitant carbon sequestration, farmers' efforts contribute to climate change mitigation and resilience.

One world, no hunger

For decades, the German government has been supporting Ethiopian efforts to build technological capabilities, infrastructures and economic opportunities. With ETH-Soil, DBFZ, the German institute for biomass research, now contributes its expertise to identify, process and outline value-generation pathways for underused organic residues.

Wherever possible, optimised fertilizer production is combined with low emission energy generation. Capacity building is covering farmers as well as stakeholders in the private sector, government, education and research. Policy-formulation, implementation and the evolution of new markets require reliable BBF quality management.

Coalition for change

Government-driven efforts have generated a profound knowledge base on Ethiopian soils and crops. With ETH-Soil, the Ministry of Agriculture and regional governments' agencies work towards evidence-based BBF formulations in central and southern Ethiopia. Farmers, university researchers and international experts participate in result evaluation and knowledge sharing while Ethiopian and German engineers test pyrolysis devices and build craft competences in the private sector. Specialized modules at Jimma University introduce students to bioenergy challenges and opportunities. With feasibility studies, demonstration plants and all drivers of change, the ETH-Soil project builds momentum for a lasting transformation.



PROJECT PILOT ZONES

ETH-Soil implements its approach for soil amelioration in selected Districts across pilot zones in Oromia and Sidama. These districts were selected by regional Bureaus of Agriculture and also reflect an effort to create synergies with complementary interventions in the framework of German Development Cooperation (ISFM+, ProSoil). The pilot zones are characterised by different altitudes, soil types, related environmental conditions and farming patterns to ensure a wide applicability of developed approaches. Recipes for biochar-based fertilizer formulation and application with positive evidence will be included in regular agricultural extension.

