



Soil fertility management

Tools to improve farm soil fertility management – anywhere



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"In Ethiopia we are faced with an enormous amount of information on our soils, climate, crops, and farm practices. We have excellent conditions for plant growth and yet we suffer from a serious lack of food. Why can we not mobilize the information that is available in such a way that we can farm better and feed ourselves?"

Dr. Eyasu Elias, project manager of the CASCAPE project

The CASCAPE project aims to significantly improve the productivity on over 600.000 farms in Ethiopia in the coming years. The project is not only using tools developed over the last decades, but also new tools are developed. The project helps decision makers to establish which fertilizers to use on which crops and on which soils.

Visualization for policy makers

The project also helps to visualize the potential of highly performing farming practices, showing policy makers where specific cropping practices can be successful. For instance, the recommendation maps support local policy makers in their decisions on which crops to promote in which regions, and which investments can enhance the performance of these crops.

Tools for different target groups

For the fertilizer industry and large scale farms we developed the Soil Fertility Tool (SFT). This tool gives precise fertilizer recommendations using a wide set of background data on climate, soils, altitude, temperature and using crop models to establish precise recommendations. It answers the question: How much fertilizer of which type do I need to put on this field to get a yield of 8 MT of wheat. Another model is QUEFTS, that can be used to predict returns on fertilizer inputs. It can be calibrated for different crops. The results help researchers to make good recommendations to agriculture extension services. MONQIT is a monitoring tool that looks at the results of farming practices on nutrient balances and profitability. It shows trends in nutrient depletion (or accumulation) and will thus guide decision makers with the fine tuning of farming practices (especially soil fertility management).

Recommendation mapping

Recommendation mapping allows for very localized recommendations, thus increasing the chance of success. Our maps show which areas are suitable for a certain 'best practice', taking into account the specific biophysical and socio-economic variables that determine the performance of the practice.

Benefits

- Decisions based on existing knowledge
- Select right crops
- Optimize soil fertility management
- Optimize other investment decisions

Technology takeaways

- Look for smart investments
- Better observe results and trends
- Plan for scaling

Results

- Fertilizer industry can make crop and soil specific recommendations for any region
- Research supports farmers and extension services alike
- Policy makers decide what practices to promote where.

Research Program Sustainable Land Use

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