

The Diagnosis

Widespread and continuing degradation of soils on small holder farms.

-Traditional soil management systems based on shifting agriculture no longer viable due to land pressure.

-Fertilizer often not available, can not be purchased by farmers or considered too risky.

-Public R+D systems focus on inappropriate broad-scale recommendations for fertilizer use, or on narrow components of soil fertility management. Limited attention to social constraints and environmental externalities.

-NGO sector often promoting poorly adapted packages based on ideology rather than understanding.

-Many principles of integrated soil fertility management well understood but knowledge gaps exist on merging them with local knowledge and generating practical interventions in diverse social, economic and ecological contexts.

Principles

Agroecological approach to soil health that builds sustainable fertility and minimizes harmful impacts

Collaboration and coordination with other research initiatives; communication with variety of actors

Multi-disciplinary approach that recognizes heterogeneity with nested scales including plots (nutrient balances), farms (nutrient flows, gender), landscapes & communities (ag systems, socio-economic factors) and national-regional policies

Address socioeconomic and agroecological trade-offs that limit use of known soil management options

Response/ Local Adaptation

Contextualize and refine crop and landscape management options including inputs, rotations, terracing, trees etc.

Generate farm typologies to better understand various agro-ecological and socio-economic contexts. And this is a response

Emphasis on quick and simple indicators of soil quality that combine local and global knowledge

Game and models to enhance farmer, researcher and policy-makers decision making

Farmer and technician training on basics of soil fertility principles, diagnostics and related crop management

Contextualized Outcomes that provide evidence for potential at scale

Farmers adapt options to their contexts for better soil fertility and generate further monitoring data to inform future adaptations

Institutions promote long term incentives to achieving and maintaining soil health