Soil health: Legume Best Bets 2009-2017

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

Declining soil health due to continual maize production has led to low farm productivity (400-100 kg/ha). Individual land holdings are small and in many areas only one crop can be grown per year, which leads to lack of dietary diversity. The incidence of stunting in children under five years of age averages 46%.

Farmer training on basics of soil fertility principles

2009-2012: Innovative extension includes:
- Nutrition education through recipe days
- On-farm adaptation of legume varieties
- Residue management practices
- Farmer-to-farmer visits.

Multi-dimensional outcomes

Farmers adapt options of their contexts

(2011) 80% of participating farmers said they are interested in expanding double-up legume production because it is labor saving and contributes to diet diversification.

Keep focus on marginalized farmers

Promoting equity through investments that favor the disadvantaged and vulnerable

2012-2015 focus on households of expanding project to households affected by HIV-AIDS, collaborating with Ekwendeni hospital Soils, Food and Healthy Communities initiative (SFHC)

Recognize heterogeneity

2014: Further research shows significant variation in performance of double up technology, ranging from 3 T of yield increment to none and even negative values. It is known that soils with critically low levels of organic matter are non-responsive.

Farmer managed seed production and dissemination

(2012) 100 farmers in each of 2 sites participated in seed multiplication of pigeon pea and soyva via a "seed pay-back" system organised by the project and village extension officers. Over 200 participating farmers grew enough to "pay back/ pass along" pigeon pea, soyva and groundnut seed to an additional 200+ new farmers.

Institutions promote soil health

The doubled-up legume technology involving groundnut and pigeonpea is being promoted by the Ministry of Agriculture Irrigation and Water Development.

Generate farm typologies to better understand various agro-ecological and socio-economic contexts

The Multi-Environment Trials have always been done with lead farmers who have around 20 farmer followers, who take part in the trials (mother) and test technologies on their own farms (baby). Starting in 2015, a FRN approach is being explored. A PhD student has shown that Poor and Very Poor farmers participate more in a Farmer Field school format, followed by FRNs for Poor, which is also a good option for Better-Off farmers and the least successful at including the Very-Poor.