**West Africa Community of Practice**

**Soil Health: AEI Burkina, 2012-2017**

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

A socio-economic evaluation of the project's impact (including gender disaggregated discussion groups and 127 household surveys) compared trained with non trained farmers in the 4 project areas and confirmed significant benefits for trained farmers including: recovery of uncultivable land; yield increases over 100%; reduced striga infestation; improved diets; increased number of meals in the lean season; improved social cohesion. The survey indicates the program achieves a high degree of equity; poorest households also adopt most AEI innovations, except micro-dosing, although not at the same scale or speed.

**Farmers adapt options to their contexts**

The adoption rates of improved seeds, contour bunds, FMNR, rotation and micro-dose chemical fertilizer all range between 83 and 60%. Adoption of zai, compost, intercropping, and grass strips are between 46 and 38%. Intercropping is at 21%. Most AEI fields are between 0.25 and 0.50 ha. The size of treated fields grows over time.

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

(2016) 6,832 farmers (40% women) from 80 villages received training sessions on AEI experimentation protocols. Demonstration plots & farmer field schools (FFS) were established in 40 villages to support the rapid dissemination of preferred technologies.

**Contextualize and refine crop and landscape management options**

Agroecological soil fertility management strategies were tested by 120 farmers, including Sorghum or millet in improved zai holes (manually dug) or, with application of organic matter and micro-dosing of fertilizer and in half-moons water catchments, with application of organic matter and microdosing of fertilizer. Associations and rotations with cowpea produced the highest yields, but farmer organizations appreciated the ability of zai and half-moons to maintain sorghum in good health in drought conditions.

**The need**

The agro-climatic buffer zone of Burkina Faso is considered to be a high-risk environment where food insecurity and the degradation of natural resources mutually affect one another.

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

The combination of testing with socio-economic data led to option by context recommendations such as:

- If farmers do not have easy access to water, composting large biomass quantities is impossible;
- If farmers do not have access to labor, the labor-intensive AEI options (e.g. zai, stone bonds) are more difficult to implement, especially on large fields
- Women farmers opt to adopt technologies requiring lower labor input (zai, improved seeds, compost).
- Lack of land tenure security, and limited access to capital also inhibited women from adopting longer term AE innovations such as FMNR, micro-dosing.

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

**Highlight social & technical inquiry**

**Integrate social & technical inquiry**

**What is the main focus of the AEI Burkina project?**

The AEI Burkina project focuses on improving soil health and understanding various agro-ecological and socio-economic contexts. It aims to generate farm typologies to better understand these contexts and to develop and adapt options that suit different socio-economic environments, particularly focusing on equity and marginalized farmers. The project also highlights the importance of integrating social and technical inquiry to enhance research quality and frame outcomes through the lens of options by context analysis.

**What are the key findings of the socio-economic evaluation?**

The socio-economic evaluation confirmed significant benefits for trained farmers, including recovery of uncultivable land, yield increases over 100%, reduced striga infestation, improved diets, increased number of meals in the lean season, and improved social cohesion. The authors note that the program achieves a high degree of equity, with poorest households also adopting most AEI innovations, except micro-dosing, although not at the same scale or speed.

**How many farmers received training in AEI experimentation protocols?**

(2016) 6,832 farmers (40% women) received training in AEI experimentation protocols as part of the project.

**What crop management strategies were tested by the farmers?**

Agroecological soil fertility management strategies were tested by farmers, including improved zai holes (manually dug) or, with application of organic matter and micro-dosing of fertilizer, and in half-moons water catchments, with application of organic matter and microdosing of fertilizer. Associations and rotations with cowpea produced the highest yields, but farmers appreciated the ability of zai and half-moons to maintain sorghum in good health in drought conditions.

**What kind of training did farmers receive?**

Farmers received training on the basics of soil fertility principles, diagnostics, and related crop management, with 6,832 farmers (40% women) from 80 villages participating in training sessions on AEI experimentation protocols. Demonstration plots and farmer field schools (FFS) were established in 40 villages to support the rapid dissemination of preferred technologies.

**How is equity addressed in the project?**

The project aims to achieve a high degree of equity, with poorest households adopting most AEI innovations, except micro-dosing, although not at the same scale or speed. It focuses on marginalized farmers and integrates monitoring and evaluation (M&E) practices.

**What are some of the challenges faced by women farmers?**

Women farmers face challenges such as lack of land tenure security and limited access to capital, which inhibit their adoption of longer-term AE innovations like FMNR and micro-dosing. The project acknowledges these challenges and aims to develop strategies that are more labor-efficient and require less capital.

**What is the significance of the agro-climatic buffer zone of Burkina Faso?**

The agro-climatic buffer zone of Burkina Faso is considered to be a high-risk environment where food insecurity and the degradation of natural resources mutually affect one another. This makes it a critical area for testing innovative soil management strategies and understanding how different contexts impact farming practices.

**What are some of the benefits observed from the AEI Burkina project?**

Benefits observed from the project include recovery of uncultivable land, yield increases over 100%, reduced striga infestation, improved diets, increased number of meals in the lean season, and improved social cohesion. The project also confirms the program achieves a high degree of equity, with poorest households adopting most AEI innovations, except micro-dosing, although not at the same scale or speed.

**What is the role of AEI in the project?**

AEI stands for Agro-Ecological Intensification. It is a farming system that aims to improve the productivity and sustainability of agriculture by integrating ecological and management practices that mimic natural systems. The AEI Burkina project uses AEI principles to develop and adapt farming practices that are appropriate for the agro-climatic conditions of Burkina Faso.