

SLP Seed Grants

Aflacontrol for better lives in Africa

Aflatoxin contamination in food and feed crops poses a serious health and economic problem in developing countries. Ingesting high Aflatoxin concentrations in cereals can be fatal, while chronic exposures may result in cancer, liver disease, abortion, immune suppression, interference in micronutrient metabolism and retarded growth. Over 4.5 billion people living in developing countries may be chronically exposed to Aflatoxin through their diets.

Funded by the Gates Foundation, the project *Exploring the scope of cost-effective Aflatoxin risk reduction strategies in maize and groundnut value chains so as to improve market access of the poor in Africa* is designed to increase knowledge of available methods and technologies for reducing Aflatoxin contamination. The project will assess the effectiveness, costs and benefits of these technologies as well as identifying constraints to their adoption and incentives to promote their use along the food and feed value chains. This project should provide the basic research needed to implement a larger project that would result in the adoption of cost-effective control strategies.



Maize seed contaminated with Aflatoxin, Kenya

Maize residue uses and markets

The project: *Transregional analysis of maize residue use and markets: Implications for the participation of small-scale poor crop–livestock producers and maize improvement programmes* aims to improve understanding of the extent and dynamics of maize residue use and markets. Looking at contrasting settings, the project aims to inform maize improvement research in developing countries and thereby optimise the benefits for rural livelihoods, poverty alleviation and environmental sustainability.

Researchers conducted scoping studies in India and Mexico, which included consultation with local stakeholders and village surveys. These studies then fed into two research proposals: a) South Asia Case Study, which assesses linkages between crop residues, livelihoods and environmental benefits in smallholder cereal–livestock systems in South Asia, complementing three African case studies to allow for trans-regional analysis; and b) Cereal Systems Initiative for South Asia, which addresses cereal productivity enhancement in South Asia, incorporating feed considerations in technology dissemination and development.

SLP Project Portfolio

Improving smallholder access to feed and fodder

In many regions of the developing world, feed and fodder markets have been emerging spontaneously in response to growing demand from smallholder livestock keepers, whose own on-farm feed resources are insufficient to support intensification. This project seeks to understand the dynamics of these markets and identify opportunities to improve their efficiency and benefits to the poor by characterization through case studies in East Africa (Ethiopia and Tanzania) and South Asia (Bangladesh and India).

The case studies served as the basis for a workshop and synthesis report. Key priorities emerging include: i) improving ability to quantify and project fodder supply and demand spatially and land-use trade-offs with other crops and resource use; ii) understanding fodder market demand and its implications for improving uptake of fodder technologies on-farm; iii) identifying technological and institutional strategies for upgrading of fodder value chains; iv) capturing more value by understanding the relationship between price and fodder quality; and v) formulating strategies to cope with climate-related disruptions to feed availability.

The case studies and synthesis report have provided insights for identifying relevant issues that need to be addressed through development and research, and are therefore influencing the ongoing formulation of funding proposals to donors. Particular attention is being given to developing proposals in which researchers serve as knowledge partners to development agencies implementing large-scale interventions to 'grow' the smallholder feed sector by promoting a combination of on-farm and market-level feed strategies. Adopting an integrated agricultural research for development (IAR4D) approach – action research embedded within major development projects – will permit scaling up of research on feed and fodder market development to levels of significant impact. This strategy will depend on identifying appropriate development partners with experience in this area.

Conservation agriculture in Mexico

In the maize-based cropping systems of the Mexican highlands, heavy tillage, removal of crop residues and lack of crop rotations have led to soil erosion and degradation of soil structure. As a consequence, the soil no longer absorbs rainwater efficiently. The profitability of these systems is very low, and farming families often have to depend on relatives working away and government support systems to make ends meet.

Agronomists at the International Center for the Improvement of Maize and Wheat (CIMMYT) and the national research institute have been investigating the potential of conservation agriculture, reporting that zero-till systems with residue retention and crop rotation can increase maize yields by 25–30% and reduce production costs by 20–25% when compared with conventional practices. However, maize stover is also in demand as fodder for livestock.

The study *Conservation agriculture and livestock interactions in the highlands of Mexico* compares the effects of different management technologies and crop rotations on crop and livestock productivity with particular emphasis on on-farm experiments, training extension workers, market scoping and value chain analyses.



Selling of roadside grass and maize stover at Kwasadala market in Tanzania. The buyers and the sellers are mostly women (Photo: N.F. Massawe)

Seed Grants are funded with programme-attributed funds. Their purpose is to support researchers and their partners during the crucial initial planning and consultation phases needed to develop larger project proposals. Allocated on a competitive basis, once the proposals are finalized, the consortia are supported to obtain project restricted funding.

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