

**Economic Prospects For Fonio
Development in West Africa**

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Research Question #1 for Agriculture in Africa

- ❖ What can we grow in a place like this?
- ❖ How can women farmers make a secure low risk living that leads them out of poverty in a place like this?
 - Project: Improve yields of **fonio**



What is Fonio?

- ❖ Fonio, *Digitaria exilis* is closely related to *Panicum*, *Sorghum* and several other grains in the Poaceae Family
 - It is also a relative of crab grass.
- ❖ Grown in West Africa as a food crop
- ❖ Produces a small seed that can be cooked like couscous and is delicious and nutritious



Why Fonio? The Good

- Drought resistant
- Grows best in poor unfertilized soils
- Produces early in the harvest season and so it is the first to break the “hungry season”
- Nutritious: High in protein, but gluten-free
- Primarily a women’s crop, so benefits accrue to women
- Grown by the poor, but appreciated by the rich
 - Can replace imported rice and wheat in the West African diet



Problems with Fonio

- Yields are low 250 lbs - 500 lbs per acre
 - For comparison corn yields are
 - ~1,500 lbs/acre in Mali
 - ~8,000 lbs/acre in WI
- Up to 1/3 the harvest is lost to early seed shattering
 - Seeds are very small
- Processing is very labor intensive



Why Research Fonio?

- ❖ It is an orphan/neglected crop, no commercial firms have done or will do fonio research
 - But small amounts of research can yield big benefits
- ❖ As one of the few crops in the world grown by the poor but appreciated by the rich it has a ready market.
 - Served at the baptisms of the rich and famous



Typical fonio farmers in Mali



What will we do?

- ❖ Collect and analyze fonio varieties to understand the genetics of early seed shattering
- ❖ Breed new/better fonio varieties with less early seed shattering
- ❖ It will be a collaboration between
 - the Program on Agricultural Technology Studies' social science and African expertise
 - Sara Patterson's lab specialized in the genetics of seed shattering
 - Malian researchers (plant breeders) at the Institut d'Economie Rurale in Mali

