

FARMING-SYSTEM SPECIFIC EXTENSION CONTENT FOR ENHANCING CLIMATE CHANGE ADAPTATION AND RESILIENT FOOD SYSTEMS IN SORGHUM-BASED DRYLAND FARMING SYSTEMS OF TANZANIA AND BURKINA FASO

PESTS AND DISEASES MANAGEMENT

1.1 CLIMATE CHANGE ADAPTATION AND RESILIENT FOOD SYSTEMS ISSUE

In SAT where productivity is low due to poor rainfall and poor distribution, stabilizing yield through pest and disease management is essential.

1.2 ESSENTIAL TECHNICAL INFORMATION

Sorghum and pearl millet are important traditional food security crops in drylands, and insect pests and disease are some of the main constraints to small-holder production in Africa. In both countries, farmer knowledge of the key pests and diseases and damage caused are partial.

1.3 HOW TO IMPLEMENT PEST AND DISEASE MANAGEMENT

Cereal pests

Major pests are borer, shoot fly and sorghum midge. While chemical control is possible, however they are costly and are not affordable. Two methods are commonly used to manage pests are varietal resistance/tolerance and low-cost cultural practices. In both Burkina Faso and Tanzania, varieties tolerant to insect pests are available. Cultural practices which help to avoid damage from these pests, include early planting, intercropping with legumes, crop rotation and stover management. Cut sorghum/pearl millet stover immediately after harvest and spread or place in trash lines and this will reduce live borer numbers and reduce carry-over of stem borers by up to 90%.

Burkina Faso, sorghum and pearl millet are subject to attack by numerous diseases. The most damaging diseases on sorghum are anthracnose and grain mold caused by a complex of fungi, while on pearl millet, downy mildew is the most important. The most common diseases in sorghum-based systems of Tanzania are covered kernel smut, Ergot, Anthracnose and Rust. Control measures include practicing crop rotation with leguminous crops to break the disease lifecycle, field sanitation where crop residues should be collected and burned before the onset of the rains to remove the primary source of the disease and use of resistant or tolerant varieties.