4.1 Summary of Sorghum and Millet Production in Mali

Sorghum, pearl millet, rice, maize, cotton, peanut, and cowpea are the major crops produced in Mali. Sorghum and pearl millet are the most important cereal crops in terms of area planted, production, and per capita consumption. For example, harvested area for pearl millet in 1996/97 was 935 thousand hectares, or about 36% of total harvested agricultural area. Sorghum occupied about 21%, and cotton, a major cash crop for export, accounted for about 16% of total area harvested.

Cereal yields in Mali and neighboring countries, Burkina Faso and Senegal, have been stagnating over the last 30 years (Sanders, Shapiro and Ramaswamy). A number of reasons exist for this phenomenon, including agronomic practices that do not maintain soil fertility and cereal breeding programs that have not accounted for the micro variability observed across the region. Demand for food was forecast to increase between 1988 and 2000 by 4% to 4.2% in Mali, 3.6% to 4.1% in Burkina Faso, and 2.7% to 4.4% in Senegal. To meet this demand and retain national sufficiency, producers would need to increase cropped acreage and/or yields.

There is a well documented positive contribution of new technology, especially germplasm, to the goal of enhancing food security. Improved crop varieties and production practices have the potential to meet some of the increased demand for food. The impact of adopting new sorghum technologies in Mali was examined as a case study for developing the spatial analysis tools, biophysical models, and national and farm-level economic analyses. Both environmental and welfare impacts were evaluated.

The available crop production and budget data indicated that sorghum and pearl millet production occurs primarily in the Kayes, Koulikoro, Sikasso, Segou, and Mopti regions. The Kayes, Koulikoro, and Sikasso regions are major sorghum production areas, while the Mopti and Segou regions followed by the Koulikoro and Sikasso regions are principal producers of pearl millet. Cotton production is concentrated primarily in the Sikasso Region with somewhat less production in the Koulikoro and Segou regions.

4.2 Sorghum Production Systems Evaluated

The sorghum varieties investigated in this assessment were a suite of local varieties and improved varieties from the IER/INTSORMIL CRSP. Additionally, two new varieties, N’Tenimissa and the Seguetana Cinzana, were evaluated. The N’Tenimissa variety is a high-yielding, white-seeded, tan-plant, guinea-type variety tolerant of sorghum head bugs. It is ideal for processing into white flour mixes and value-added products sold in urban areas, including breads, biscuits, confectioneries, sorghum crunch, and composite flours. INTSORMIL and IER researchers in Mali have been encouraged by results of consumer tests by of value-added products developed from this variety. In addition, the variety performed well in evaluations at on-farm sites in Mali by World Vision International and on test plots at the Cinzana Station in 1996, 1997, and 1998. N’Tenimissa was included in the West and Central Africa Sorghum Research Network (WCASRN) trials across West Africa in 1996, 1997, and 1998. In the sorghum variety trials for 1996 and 1997, N’Tenimissa had adjusted yields in Mali that were 25% to 33% higher than the local varieties in the improved and traditional cropping systems, respectively. The 1996-97 yields for N’Tenimissa and the local check varieties are presented in Table 4.2.1, along with the numerical and percentage yield differences for the various cropping systems.