

**Section from: REPORT ON A VISIT TO INDIA AND BANGLADESH REGARDING SRI  
PROGRESS: February 17-26, 2005 – Norman Uphoff, CIIFAD**

**A System of Sugar Cane Intensification?** In [Dr. A.] Satyanarayana's office [at the Acharya N. Ranga Rao Agricultural University, ANGRAU], while he attended to some business matters (he also serves as the university's comptroller), I met with several staff and visitors [Feb. 18].

Among them was **Dr. Shashi Bhushan**, senior scientist for crop protection, and coordinator of ANGRAU's District Agricultural Advisory and Transfer of Technology Centre serving Medak district. He told me about an adaptation of SRI concepts to growing sugar cane. This started with **Prabhakar Reddy**, one of the first and best SRI farmers in the district, who also grows sugar cane, although it also appears that a number of other versions have sprung up.

Usually, sugar cane sets, each about 8-10 inches long, are planted in rows 3 feet apart, every few inches. With this alternative system (SSCI?), they are planted in rows 5-6 feet apart, with 1-foot spacing between plants. This reduces the plant population drastically. Instead of 4 tons of sets per acre, only 600 kg/acre are planted, a reduction of 85% (similar to the seed reduction with SRI), saving farmers \$80/acre (\$200/ha) while also lowering costs of production.

With the new system, sets are not planted directly into the soil, as usually done, with high mortality (failure to sprout and root). Instead, Reddy uses very short segments of cane as sets, each having just one bud. These sections of cane, 23 inches long, are put into plastic bags with compost and organic soil for 45 days before transplanting.

By the time the sets are transplanted, they have vigorous rooting and tillering, so there is no mortality and quick, vigorous growth. Previously just a few such sets had been raised in nurseries, to replace sets that had died. With the new system, all sets are carefully reared. Because so many fewer sets per hectare are used with SSCI – only 15% as many as usual, farmers can afford to treat each set with care and attention. This results in with much higher yield, as seen below.

With SSCI as with SRI, the soil has been enriched with compost or other organic matter. The field is mulched with 'trash' after planting to suppress weeds and conserve moisture. ANGRAU had already shown that sugar cane yield could be increased by about 10 tons/acre just by putting on mulch between rows.

An added benefit of SSCI is that its wide spacing allows farmers to plant a vegetable or pulse intercrop, which adds to the net profit from the field. The 45-day delay in transplanting, rather than planting sets directly, means that Reddy is saving the cost of three irrigations and one herbicide application to control weeds.

Mulch suppresses weeds, so the use of herbicides is reduced overall, and thanks to the mulch, the number of irrigations after transplanting can be cut by half. These are major reductions in inputs.

Production, on the other hand, is raised by two to three times, a huge increase. We need to get more documentation on this system so that it can be properly reported in the literature.

Prabhakar Reddy, the farmer who originated many of these practices based on his SRI experience, has served as Zilla Parishad chairman for the local government and is a contact farmer for several ANGRAU faculty. His energies have gone into improving agriculture and his community rather than accumulating land.

Satyanarayana told me that in the southern district of Chittoor, another farmer has developed a different version of 'SSI' using SRI principles. He has not changed the planting density as much as Prabhakar Reddy has done, but he gives more attention to the planting material, removing buds from the sets and nurturing their growth. In both adaptations, tillering is profuse.