

# Evaluation of self help group

Life



Abstract The increased dependence of modern agriculture on fossil fuel-based energy, while reducing drudgery, simultaneously increases the risk of the farmer to fluctuations in fuel prices. Labour costs have also risen sharply in recent times forcing farmers to go in for mechanization. The increased frequency of extreme weather events like droughts, floods, heat-waves and cold-spells being witnessed and attributed to climate change, are also causing frequent losses to farmers.

Any strategy in agriculture, therefore, should address these key challenges of land degradation, water availability, energy requirement and labour costs. Conservation agriculture addresses all these key challenges. Zero tillage (ZT) or no-tillage one of the vital approaches of conservation agriculture is now being practiced on almost 100 million ha area worldwide with the major countries being USA, Brazil, Argentina, Canada and Australia. However, the adoption of the technology in Asian countries has been low.

The modern concept of ZT tends to imply seeding a crop mechanically in undisturbed soil-covered plant residues. By adopting the zero-tillage system, some of the countries have reportedly got substantial benefits in terms of grain production, revenue generation and environmental protection. Less tillage of the soil reduces labour, fuel, irrigation and machinery costs. In India, efforts to adapt and promote resource conservation technologies have been underway for nearly a decade but it is only in the past 4 to 5 years that the technologies are finding rapid acceptance by the farmers.

In India spread of technologies is taking place in the irrigated regions in the Indo-Gangetic plains where rice-wheat cropping system dominates. ZT

systems have not been tried or promoted in other major agro-eco regions like rainfed semi-arid tropics, the arid regions or the mountain agro-ecosystems. As sustainable agriculture becomes more popular, monetary grants and awards are becoming readily available to farmers who practice conservation tillage.

Some large energy corporations which are among the greatest generators of fossil-fuel-related pollution are willing to purchase carbon credits to encourage farmers to engage in conservation tillage. The farmers' land essentially becomes a carbon sink for the power generators' emissions. This helps the farmer in several ways, and it helps the energy companies meet demands for reduction of pollution. Thus becoming a source of conserving energy in agriculture as it is certain that the way we approach energy, the way we produce, extract and consume it, will determine the future shape of life on earth.

There is need of policy initiatives to be adopted to felicitate adaptation to climate change in India like promotion of incentives for good agriculture practices like zero tillage, residue management, cover crops etc that promotes carbon sequestration and reduce emission of GHGs and providing subsidies for these practices in potential regions. Therefore, socially applicable schemes and policies on conservation agriculture is needed to promote a balanced trade-off ensuring functional resilience of the ecosystem.