



Direct Sowing, Mulch-based and Conservation agriculture

Research and development programs to develop and promote DMC (Direct Sowing, Mulch-based and Conservation agriculture) technologies exist in more than 40 countries, and some of these programs are several decades old. Yet despite all of the efforts that have been made to promote the technology, extensive adoption by small-scale farmers is still limited because of a large number of interacting technical, economic and institutional constraints can block the development and diffusion process. Improved understanding of the factors that determine successful adoption of DMC systems by small-scale farmers could have a major impact on poverty, as has been shown in the regions where it has been adopted.

The DMC is a Global Partnership Program under GFAR. It aims to strengthen the capacity of key stakeholders to develop suitable DMC systems and to accelerate their wide adoption. The GP-DMC features a process of learning and synthesis. By analyzing and comparing experiences from decentralized initiatives, by synthesizing lessons learned, and by identifying and filling gaps, DMC practices can be harnessed by a wide range of stakeholders

This initiative has been formally launched in January 2000 at a stakeholder meeting attended by representatives of National Agricultural Research Institutes, NGOs, International Agricultural Research Centers, regional networks and other institutions. Since March 2002, the Program has been implemented by a facilitator from IAPAR – the Agricultural Research Institute of the State of Parana, hosted by CIRAD. So far, the main activities are the development of a DMC Website and the implementation of case studies.

The first case study was carried out in **Bolivia**, in collaboration with ANAPO (the National Association of Oil-Seed Producers) at Santa Cruz de la Sierra. The first experiences with the No-tillage system started in 1986 as a result of farmers' innovation. From 1994, ANAPO and CIMMYT launched research and development activities aiming at increasing the profitability of wheat-soybean systems, through technologies such as No-tillage. This system has been increasingly adopted, and estimates show that almost half of the agricultural area in Santa Cruz de la Sierra. However, the adoption has occurred only among the medium and large-scale farmers, and the current efforts of ANAPO aim to foster the adoption by small-scale farmers.

The second case study that is being carried out is in **Tanzania**. This is being done under collaboration between FAO and DMC, under IFAD funding. This study was proposed by FAO as an assessment of labour saving technology / practices with focus on women farmers and vulnerable groups. Specifically, the study has the following objectives: 1) to verify that reduced tillage practices / conservation agriculture do save significant amounts of labour; 2) verify that vulnerable groups capable of adopting and practicing CA without taking too many risks with regards to their own food security and the stability of their livelihoods and 3) identify and overcome stumbling blocks which hinder the adoption of labour saving practices such as DMC. The study will be completed by late May.

The third case study is being carried out in **Ghana**, under a collaboration between the Sedentary Farming Systems Project, ICRA (The International Centre for Research oriented to development in Agriculture - Wageningen) and DMC. Farmers in the region practise zero-tillage using hand tools traditionally, but mainly in combination with burning. Now some are adopting the no-burn slash and mulch and use of herbicides and direct planting. Some of them have also started to rotate with mucuna as improved fallow. However, there is an urgent need to increase labour productivity. This could be done by introducing mechanised options for conservation farming. Tractor services for land preparation are prominent in the Savannah areas, but only in connection with disc ploughs. This practice has started to infiltrate also into the transitional zone of Ghana. Therefore, it is very important to stop this trend and to develop and offer mechanised services for conservation farming. Under this context, the study aims to find out whether mechanised options of conservation farming could be introduced considering social, ecological, technical and economical aspects; and to organise this in a way that access by small scale farmers to such services would be ensured.