

**Conservation Agriculture Promoted in the Maghreb Countries:
Third Technical Planning and Coordination and Steering Committee
Marrakech, Morocco, 7-10 October 2014**

The ongoing project in Algeria, Morocco and Tunisia titled "**Adapting conservation agriculture for rapid adoption by smallholder farmers in North Africa**" (CANA Project) held its third Regional Coordination and Planning as well as its Steering Committee meetings in Marrakech, Morocco, during 7-10 October 2014; the previous annual meetings having taken place in September 2013 and September 2012, respectively in Algiers, Algeria and in Hammamet, Tunisia.

Following the format of earlier similar meetings, the Marrakech meetings were broken down into two parts. The first one lasted three days and was devoted to the Regional Coordination and Planning Meetings (RCPM) to present and discuss the project activity progress and findings. The second one, the Steering Committee Meetings (SCM), lasted just one day and was devoted to discussing the main achievements of the project and adopting the plan of work for the third and last year of the project as well as discussing budget matters.

The meetings were opened by Dr. Sedra, Director of Regional research Center INRA Marrakech who welcomed participants to Marrakech and highlighted the importance and relevance of the project and its findings for the Moroccan economy in view of the stress it puts on mobilizing and preserving scarce natural resources (soil and water); concerns that are shared by all Maghreb countries but primarily Algeria and Tunisia which are partners in this research project.

Participation in these meetings included, apart from research team members from the three platforms operating in Algeria, Morocco, and Tunisia, scholars and experts from ACIAR, Australia, and ICARDA as well as extended participation from different parts of the Moroccan public administration but also farm organizations and representatives of the civil society.

In keeping with its general structure of activities, the presentations and subsequent discussions started with objective **one** of the project dealing with the "**Identification of constraints to adoption of CA practices by smallholder farmers and ways of enhancing adoption, most importantly the identification and testing of socioeconomic options**" then its objective **two** consisting of "**identifying and testing improvements in seeding machinery, and in weed and biomass management of CA systems**" and its objective **three** aiming at "**enhancing the capacity of NARES staff and other stakeholders to practice and promote CA knowhow**".

Presentations and discussions covered all planned twenty five activities and sub-activities into which all the three main project objectives were subdivided. The program also included an initiation on similarity studies planned to take place across the region on the basis of the project results.

In terms of main findings, recognition is to be made of the significant overall success of the project achieved in all three countries as all major activities planned by the project were implemented and advanced. Major emphasis was also placed on the role of leading farmers in project implementation. During the first year the project priorities were to work on gaining farmers' confidence and then helping them organize themselves to eventually resolve some of the difficulties that arose by themselves. During the second year the project embarked on expanding the working platform to an additional set of farmers where the group that collaborated with the project during the first year played an important role in passing the CA knowledge across to the new set of farmers.

As regards the direct drilling equipment, significant progress was accomplished during the first two years of project activities whereby all three platforms identified alternatives to the large disc seeder equipment commonly imported from Brazil, the US or southern Europe which involve major investment costs for farmers. The country teams in collaboration with Australian expertise and local industry partners have developed and/or adapted a range of lower-cost direct drill options and established initial agreements for the commercial manufacturing of some of those drill options. A number of low-cost commercial drills were also identified on the international market with a small number acquired by the project for benchmarking purposes.

All three teams carried out their respective baseline surveys to characterize the research and demonstration platforms mostly during the first year of project activities. These surveys were completed and fine-tuned during the second year. In parallel, farm budget calculations were performed to appraise the gross margin differential between conservation agriculture and conventional cropping systems. Preliminary results suggest that while it is too soon to draw firm conclusions, gross margin differentials appear to be in favor of CA systems. They do however vary from farm to farm and depend heavily on the climatic conditions of the year. This is consistent with international findings that conclude that a minimum of five to six years of accumulated CA.

Constraints to CA adoption, other than from the cost of drilling equipment, included the availability of equipment to spray crop protection chemicals and the availability of quality forage crop seeds for livestock feed.

In a system that has traditionally included weedy fallows that are exploited for animal fodder production, the change to CA represented a challenge. This arose from limited weed control where only a single pre-seeding glyphosate spray was often used, associated with farmers' perceptions of a loss when weeds were not available for grazing. This type of systems change can be complex and will require further research and extension efforts if farmers are to recognize that these issues can be managed. A further complication for the adoption of CA was the limited availability of adequate forage seeds which limits the supply of quality feed within the practiced crop rotations.

Agronomic results were also very climate dependent as yields varied not only with annual rainfall, they also depended on its distribution during the year and also on the intensity of the rain in some locations. In spite of this variability, crop sequencing and weed management have made significant progress across the three platforms.

In terms of feed supply, the demonstration of forage mixtures barley/oat/triticale with feed legumes, vetch or peas) gave encouraging results reaching 8t/ha. This has been a major success of the project as it opens the possibility of doing away with the so-called "weedy fallow" that farmers typically consider cheap animal feed. The project has shown that more and better fodder can be made available by adopting cereal/legume mixes which can also contribute to controlling weed populations over time. However alley cropping did not seem to meet with farmer preferences due to difficulties of establishing perennials in these farming systems, an aspect that requires better targeting of farms and more research in the years ahead.

In terms of stakeholder involvement in the activities of the project one can fairly say that the project has drawn the participation of significantly large numbers of diversified and interested audiences going from farmers to university scientists and students to extension agents to policy makers to service and input providers. Registered numbers show that anywhere between 1500 and 2000 stakeholders took part in the project activities directly over the last two years (workshop and training programs, field days, farmer field schools, etc.). If one adds the indirect impacts through leaflets and brochures (more than 2000 per country) probably anywhere between 3000 and 4000 stakeholders altogether got to know about the project and what conservation agriculture is about. In addition, the organisation of some of the project events drew the attention of the media as TV programs and radio broadcasts took place in all three countries.

One of the ultimate objectives of the project is to expand the CA resource conservation spirit beyond the three identified platforms and reach farmers and farming activities in comparable zones and conditions through similarity analysis. The methodology for doing so was presented by an ICARDA expert. Work is due to continue through interaction between ICARDA and the national research teams.

Perhaps the major accomplishments of the CANA project are in two areas. One is the constitution of a regional network of scientists and NGOs in the Maghreb countries, and more importantly the introduction of a working research methodology and ethics in terms of multi-country and multi-institutional teamwork on CA, especially during a period of time characterized by political instability and social unrests. The other area of important accomplishment is the big investment the project made in capacity building through the various training opportunities organized both in the region and in Australia. This investment involved researchers from different institutions but also farmers, extension specialists and policy makers, etc. This endeavor is aimed at improving the capacity of the North African partners to continue research, development and extension (RDE) activities for the development and adoption of viable CA packages in the region.