



**GFAR**

---

GLOBAL FORUM ON AGRICULTURAL RESEARCH  
FORUM MONDIAL DE LA RECHERCHE AGRICOLE  
FORO GLOBAL DE INVESTIGACION AGROPECUARIA

*Document GFAR-AGM-02-12*

**DMC AND THE LAUNCHING OF THE MONTPELLIER  
FACILITATION UNIT**

A photograph of two people, a woman and a man, standing in a field of tall, purple-flowered plants. The woman is on the left, wearing a dark shirt and jeans, and the man is on the right, wearing a light-colored shirt and a hat. They appear to be examining the plants. The background shows a dense forest of green trees under a bright sky.

# The DMC (Direct Sowing, Mulch-based and Conservation agriculture) Global Program

*Fatima Ribeiro, DMC Facilitator*

# The GP – DMC Action Plan

- **Learning activities from local initiatives**
- **Synthesis activities across case studies**
- **Feedback/advocacy activities**
- **Information sharing activities (Website)**

# Learning Activities From Local Initiatives

- Inventory of existing initiatives
- Collection of documents
- Case studies
- Workshop (Africa) 2003

# The Research Question

*Why in some cases do farmers adopt DMC and in other cases they don't?*

# Hypotheses:

*DMC will turn into innovation if:*

- It meets farmers needs (as perceived by them)
- It has positive impacts on environment and if farmers see those impacts as important
- It fits into the Agrarian System
- It fits into their Farming Systems
- It is in line with farmers' strategies

# Hypotheses:

*DMC will turn into innovation if:*

- If there is an adequate knowledge system to provide farmers with information on which to base a decision
- There is an adequate network of inputs supply and provision of services
- There are champions to facilitate suitable research and adaptation and encourage information sharing

# The Case Studies

- A framework already developed
- Contacts with stakeholders and identification of institutions and people able to carry out the case studies
- Transversal questions and specific questions



# Current Status of the Case Studies

<b>Country</b>	<b>Stakeholders involved</b>	<b>Status</b>
Tanzania	SARI, ACT, FAO, GTZ	Launched
Ghana	GTZ, ICRA	Confirmed for January 2003
Paraguay	GTZ, FAO	In negotiation for the first half 2003
Bolivia	CIMMYT	Idem
Madagascar	CIRAD, ICRA	Idem
South Africa	GTZ, ACT	Idem
Kenya/Zambia/Ethiopia/Uganda	ACT, RELMA/SIDA, Swedish University of Agriculture	Idem
Pakistan, India, Nepal	RWC	Second half of 2003
Brazil		Idem

# Other activities

- Development of the DMC Website

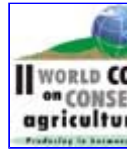
<http://agroecologie.cirad.fr/dmc/index.php>

- Participation of GP-DMC in the II World Congress on Conservation Agriculture in August 2003 (Brazil)



# DIRECT-SEEDING, MULCH-BASED AND CONSERVATION AGRICULTURE

GLOSSARY | INTRODUCTION | PROGRAM | FORM | MINUTES



>Access to descrip



> Proj description: maj

## MENU

Introduction : **Introduction of the dmc initiative**

Program DMC : **Background, objectives and activities**

Inventory : **Inventory of research and development of DMC systems**



DMC systems are comprised of the use of cover crops / crop residues and crop rotations...



... and plowing is replaced by cover crops / crop residues management

Crops are sown and develop onto a mulch.



DMC typical parcels

Contact: Fatima Ribeiro - DMC Global Program Facilitator T&F: 0467615643 Fax : 0467617160 mail : <mailto:ribeiro@cirad.fr> subject=DMC facilitator

Cirad/ca/gec Avenue Agropolis TA 74/09 - 34398 Montpellier Cedex 5



## Answers obtained for the form DMC

Select a project : [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#)



Impact de l'association Maïs-Brachiaria (gauche) sur l'infestation par le Striga. Mambang-Maroua, août 2001



Bœufs mangeant du Brachiaria. Mambang-Maroua, août 2001



Coton sur paillage de sorgho, état de la parcelle après désherbage localisé au paraquat. Mafa Kilda-Garoua Ouest, début août 2001



Impact du paillage sur l'alimentation hydrique, le contrôle de l'érosion et de la battance.

### Systèmes de culture sur couverture végétale en zone cotonnière

**Objectives :** Créer et débiter la diffusion de systèmes de culture sur couverture végétale adaptés aux exploitations et aux conditions du Nord Cameroun.

**Country / Region / Province / District / Community :** Provinces du Nord et de l'extrême Nord du Cameroun

**Coordinates :**

**Soil types :** sols ferrugineux tropicaux

**Climate :** Soudano-sahélien de 800 à 1200 mm de pluie

**Vegetation :** Savane herbacée à savane arborée

**Agrarian system :** Très divers, de culture en terrasse à défriche brûlis

**Year of beginning and duration :** 2001, 3 ans

**Funding :** FFEM AFD Cirad MAE

**Description of institutions involved and their role :** Cirad : appui technique SODECOTON (Société de développement du coton) sera chargé de la diffusion des propositions techniques Recherche en station à l'IRAD (Institut Camerounais de Recherche Agronomique)

**Strategy and methodology of the project :** Mise au point d'innovations techniques avec les paysans puis formation du personnel d'encadrement de la SODECOTON. En parallèle, recherche plus scientifique en station

**Research approaches :** - Site "semis contrôlé" matrice de systèmes - expérimentation en milieu paysan - expérimentation en station

**Target groups (farming systems) of the project :** Tous les paysans cultivateurs de coton et d'autres du Nord et de l'extrême nord du Cameroun

**Main constraints to be addressed by DMC systems :** - maintien de la matière organique des sols - limitation de l'érosion - alimentation du bétail - meilleure productivité de la main d'oeuvre et des terres

**DMC systems being promoted in the area (cover crops, equipment, weed management methods) :** année 1 : association céréale + brachiaria pour produire de la biomasse année 2 : coton sur couverture morte de paille de céréales et brachiaria

**Biophysical and economical performance of the technologies developed :** - meilleure rétention de l'eau en début et fin de cycle - lutte contre les adventices - économie de main d'oeuvre par la suppression du labour et diminution des sarclages

**Adaptation and adoption by farmers (farmers' modification of the practices promoted; % of farmers) :** ras pour l'instant

**Factors governing adoption of the technologies developed :**

**Constraints for adoption :** élevage divagant, difficultés à conserver la biomasse sur les parcelles

**Main gaps and needs (not necessarily research, they can be related to lack of experience / skills / abilities / services about specific issues. :**

**Name :** Krishna Naudin



Position in the project : Responsable de la composante SCV du projet ESA

Institution : Cirad - SODECOTON

Address : Projet ESA S/C SODECOTON BP 302 Garoua Cameroun

E-mail : [mailto:%20naudin@cirad.fr](mailto:naudin@cirad.fr)

Téléphone : 00 237 981 37 35

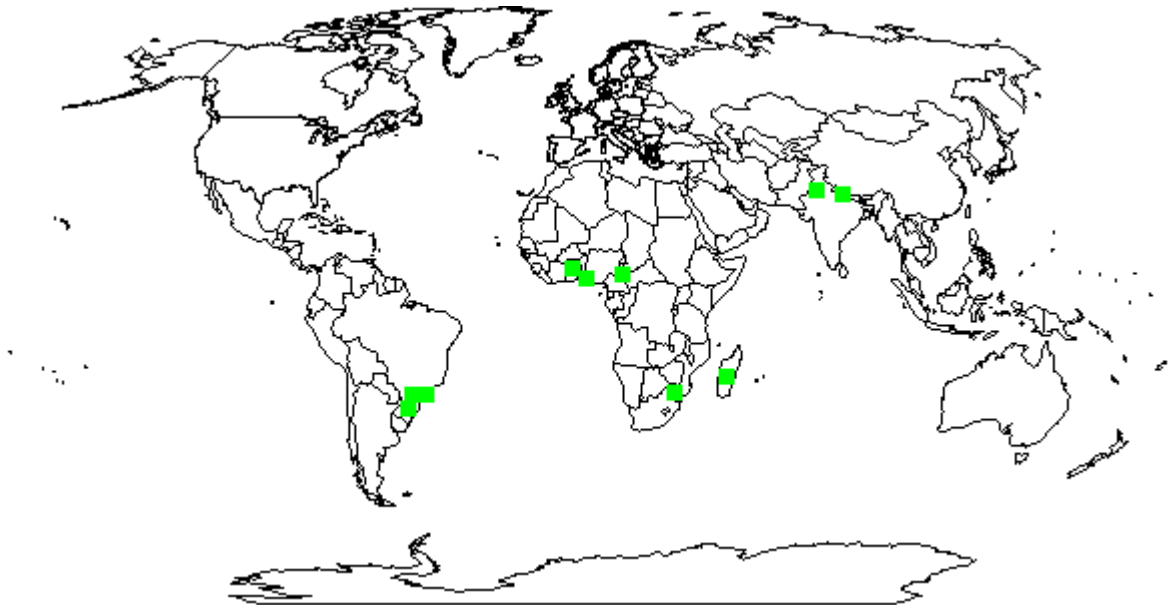
Fax :

Systemes de culture sur couverture végétale  
DPGT - Garoua - Cameroun  
Saison 2001/2002



Report d'activité  
Jan 2001 - Evrier 2002

Kishna Naudin  
Avril 2002

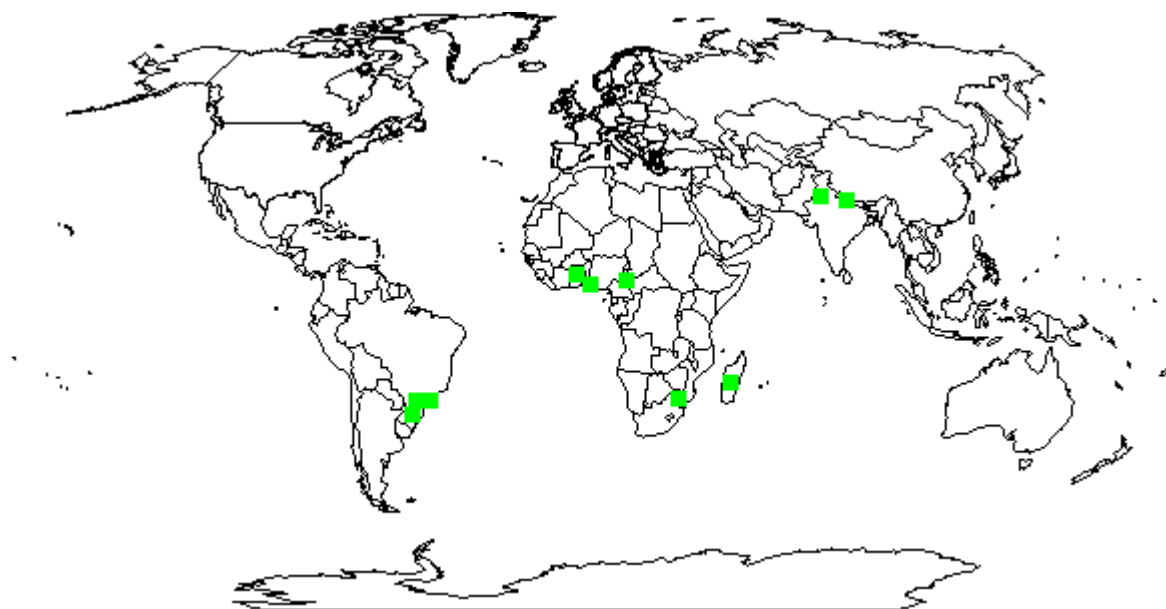




## Answers obtained for the form DMC

---

Select a project : [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#)





## Answers obtained for the form DMC

Select a project : [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#)



Soybeans under no-tillage without herbicides at Mr. Ailson's farm



Maize under no-tillage without herbicides at Mr. Ailson's farm



Meeting for discussing the results of the trials



The farmer Ailson describes how he carried out his trial

### Development of No-Tillage systems without herbicides for family farms at Central-Southern Parana, Brazil

**Objectives :** To develop No-Tillage systems without the use of herbicides

**Country / Region / Province / District / Community :** Brazil/Southern Region/State of Parana/ Irati and Bituruna municipalities/ Communities of Iratinzinho and Arroio Grande

**Coordinates :** Second Plateau of Parana, between 25o00- 26o05' S and 49o30'-51o30'

**Soil types :** In general, soils present very poor chemical and physical characteristics. They are originated from sandstone and limestone, with low phosphorus, calcium and magnesium availability and a high aluminum content. Annual crops are cultivated in the slopes (Lithosols and Cambisols) where soils are very shallow, thus very prone to erosion.

**Climate :** According to Koeppen, climate is classified as Cfb - subtropical humid mesothermic, with cool temperatures in the summer, without a defined dry season, and with severe frosts. The average temperature of the coolest month is less than 18oC and less than 22oC in the hottest month. Annual precipitation ranges from 1300 to 1800 mm and is relatively well distributed along the year. However, there are risks of short dry periods in November and December.

**Vegetation :** Subtropical forest of *Araucaria angustifolia*.

**Agrarian system :** The first immigrations occurred in 1890-1910, when Polish and Ukrainian (the majority), Italians and Germans arrived in the region. The influence of these immigrants, specially Polish, was decisive in defining the farming systems in the region. Land ownership is individual, and most of farmers have access to land. There is no communal grazing. Common beans, maize, tobacco, onions and dairy are the main economic activities. Animal traction is important for agricultural operations and transport. Farming systems are market and subsistence-oriented. There are many farmers' organisations in the region.

**Year of beginning and duration :** The project started in 2000.

**Funding :** State Government, Programa Nacional de Fortalecimento da Agricultura Familiar (PRONAF)/Ministry of Agriculture

**Description of institutions involved and their role :** 1. IAPAR - The Agronomic Institute of the State of Paraná is a research institute under the State Government. With a matrix-like structure, the Institute is organized into Technical Departments, 14 Research Component Programmes and the Farming Systems Research Programme (FSR), who is participating in the project. The FSR Programme promotes internal links among research programmes as well as external links among the Institute and farmers, extension and other development actors, through the identification of research priorities and the establishment of collaborative research activities at a community level. 2. Farmer-participatory research groups coordinated by the Forum of Unions of Small Farmers of the Central-Southern Region. The Forum brings together unions of rural workers, farmers' organisations, cooperatives, youth, women and religious groups. The research groups conduct agricultural research activities (farmer-managed trials) on the following subjects: genetic resources, agroforestry and agroecological soil management (including research on no-tillage). Research activities carried out by these groups possess different purposes: learning, testing of new technological options, stimulating the observational capacity and explaining the phenomena and communication. Concepts are studied and discussed through learning processes, which are checked and complemented through experimentation (experiential learning). 3. ASPTA - Assesoria e Serviços a Projetos em Agricultura Alternativa is a Non-Governmental Organisation with a strong orientation to experimentation as a tool for development. Its role is to support farmers' organisations in the development of agroecological options through the use of participatory methods as well as to facilitate autonomous socio-cultural and political-organisational processes oriented towards



IAPAR technician Roger Milléo presents the economic results of Mr. Ailson trial

sustainable development. IAPAR provides the researchers and field technicians, and helps farmers in some analysis, such as economical analysis. The communities organize themselves with the support of the farmers-promoters, provides areas and labor for the experiments and some of the inputs. ASPTA provides technical support, seeds and support for the organisation of the groups. During the cropping season, meetings are held in the communities, in order to discuss the results. Farmers present their experience and IAPAR presents the results of the researcher-managed trials.

**Strategy and methodology of the project :** The project is based on the recognition of the role of innovative farmers as important as the knowledge produced by research: The experience of project staff made possible the identification of some potential technical options to be tested, as well as some knowledge gaps which must be addressed. Nevertheless, the experience of innovative farmers and the organization of farmers-participatory research groups is of utmost importance to provide to the project the elements to be tested as well as an environment in which the collaborative work among farmers, research and extension takes place. The project is being conducted under the structure of the farmer-participatory research groups former established and is taking advantage of their exchanging mechanisms. The research priority "No tillage without herbicides" was identified by the farmers themselves, without any intervention of the researchers. Afterwards, the researchers and farmers discussed possible options and identified the experiments to be carried out.



Common beans under no-tillage without herbicides at Mr. Angelo Suk Graciano's farm

**Research approaches :** Different levels of analysis and intervention (farming system level, cropping system level and component level) and different types of experimentation (researcher-managed trials at station level or at farm level and farmer-managed trials, depending on the research question. The following experiments have been carried out: 1. Definition of planting dates of cover crops for seed production 2. Use of lime and rock phosphate associated to the use of cover crops 3. No-tillage systems including the used of winter and summer cover crops

**Target groups (farming systems) of the project :**

**Main constraints to be addressed by DMC systems : Farmers**

**DMC systems being promoted in the area (cover crops, equipment, weed management methods) :**

**Biophysical and economical performance of the technologies developed :**

**Adaptation and adoption by farmers (farmers' modification of the practices promoted; % of farmers) :**

**Factors governing adoption of the technologies developed :**

**Constraints for adoption :**

**Main gaps and needs (not necessarily research, they can be related to lack of experience / skills / abilities / services about specific issues. :**



Common beans under minimum tillage without herbicides at Mr. Tadeu Biguna's farm

**Name :** 1.Dirk Claudio Ahrens (IAPAR) 2.Bernardo Vergopolan (Forum) 3.Jose Maria Tardin (ASPTA)

**Position in the project :** Coordinators

**Institution :** 1.IAPAR- Instituto Agronomico do Parana 2. Forum das Organizações de Trabalhadores Rurais do Centro-Sul do Parana 3. ASPTA - Assessoria a Projetos em Agricultura Alternativa

**Address :** 1. Caixa Postal 129 84001-970 Ponta Grossa, PR, Brasil



Farmers promoter Mr. Bernardo Vergopolan opens a field day for exchanging results of trials

**E-mail :** <mailto:dirk.dahrens@pr.gov.br> [bernardo@forum.org.br](mailto:bernardo@forum.org.br) [asptapr@net-uniao.com.br](mailto:asptapr@net-uniao.com.br)

**Téléphone :** 55 42 2292829

**Fax :** 55 42 2292829





IAPAR's technician Edson Marcio de Siqueira explains to farmers how to operate the animal-drawn no-tillage planter

