

Agroecological Action Plan

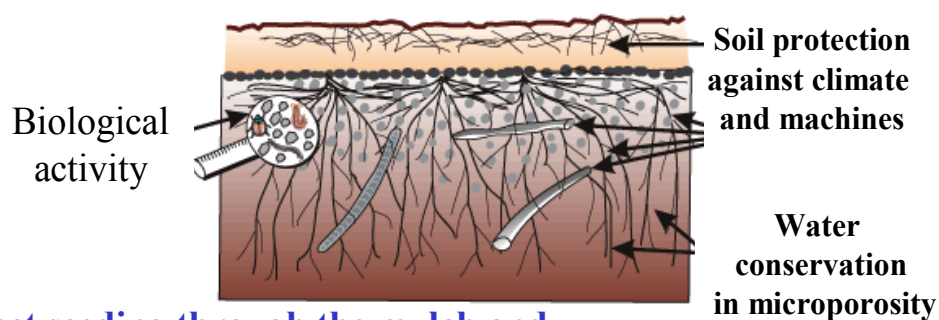
On

Direct seeding Mulch based Cropping systems

DMC

1/ No removing the soil

2/ Permanent vegetal cover



3/ Direct seeding through the mulch and

4/ Rotation succession of diversified crops



How to do in order to produce more high quality products while protecting soil surface and potentiality with a permanent cover crop

**An international agronomic network devoted to DMC creation
monitored by Cirad and national partners**



Research has been initiated in tropical brasilian zone by Dr L. Séguéy in the eighties...

DMC is suitable for equatorial agrobusiness (below, in area near Amazonia)...



... with positive results on sustainable soybean production in Mato Grosso , Brazil ...

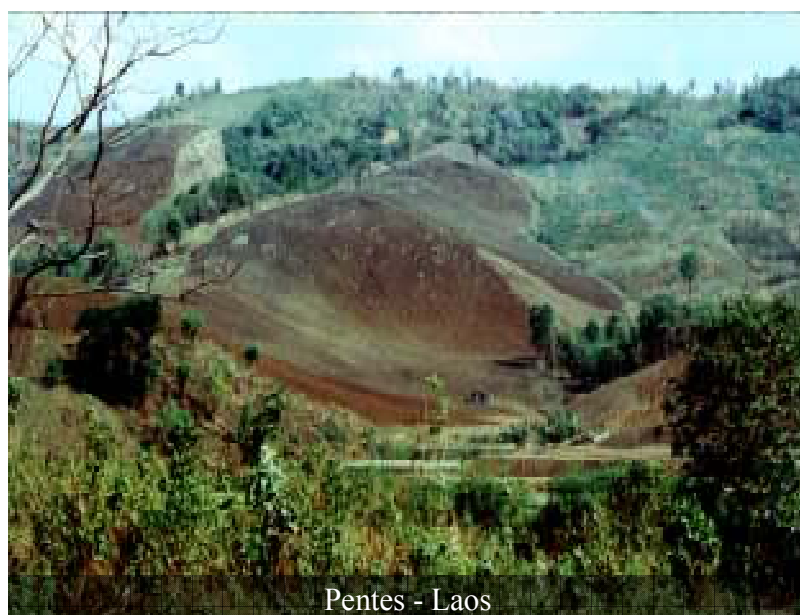


... and has been extended to small farmers in Malagasy in the nineties with positive impact on beans and corn rice productivity when cultivated under DMC.



First agroecological DMC project in south-east Asia was in north of Vietnam in 1999. For small farmers, DMC systems were allowing growing upland rice and fodders even on sloppy fields. A significant effect of DMC system on run off, erosion control and yield was put in evidence.

Cho Don SAM Project. (VAAS – Cirad)



In Laos the project was initiated in 2001 in the Sayaboury Province. Main objective was to propose DMC viable alternatives to the soil destruction process caused by ploughing machines and mono cropping (corn, cotton...). In 2004, the national program PRONAE was officially created by the government of Laos with the implementation of new projects in other provinces.

To increase viability of DMC innovation, adapted machinery is a priority for small farmers. It means that mechanization is an important issue for technological research with the necessity of sharing knowledge and know-how (first direct seeding DMC equipments in Laos were so coming from southern Brasil ...)



DMC Activities in Cambodia started in 2003 in the Province of Kampong Cham

4. First results on Red Oxisol

Tradition reaches the deadlocks of plow-based systems

| | | |
|-------------------------------------|-----------------------------|---|
| <p>Plowed sesame before harvest</p> | <p>Crusting and erosion</p> | <p><i>Cyperus sp.</i></p> |
| <p><i>Imperata cylindrica</i></p> | <p>Cassava monoculture</p> | <p>End of the huge production potential</p> |

Above : damaged soils due to unadapted soil ploughing with invasion of vegetal pests

DMC researches are resulting in soil fertility recovery under the cultivation of cover crops followed by main crops (Campong Cham Province. Cambodia).

4. First results on Red Oxysol

building of the first DMC proposals . . . photos

Ex. :system with short term bio pump before the main crop

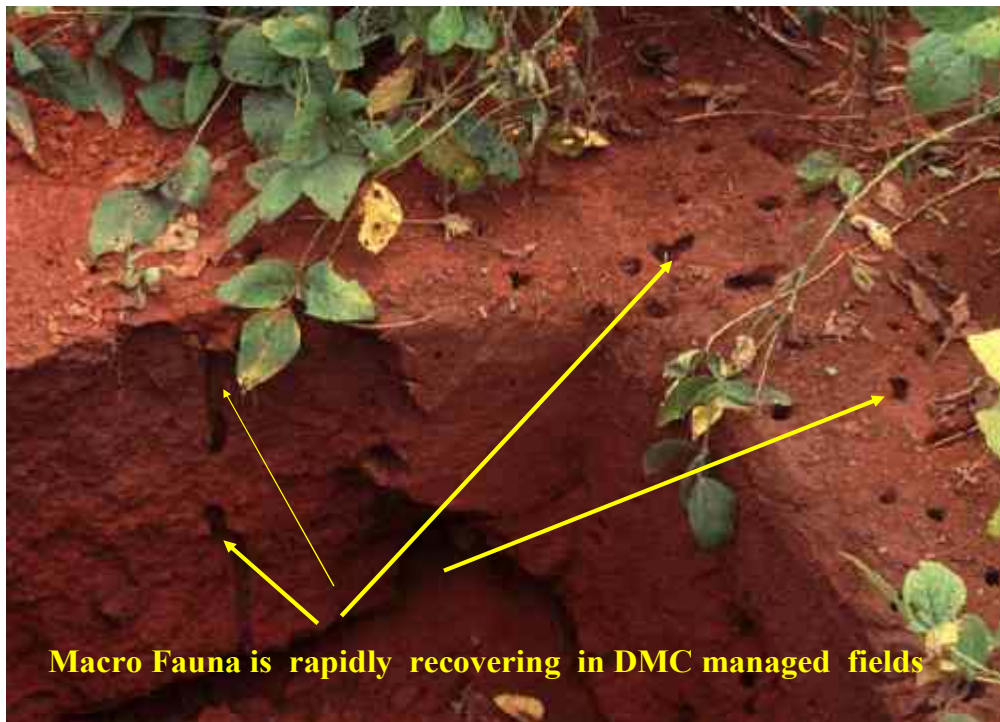


In the on coming years, adaptation of DMC technology to Rice cultivation in Cambodia is expected to a strong positive impact.

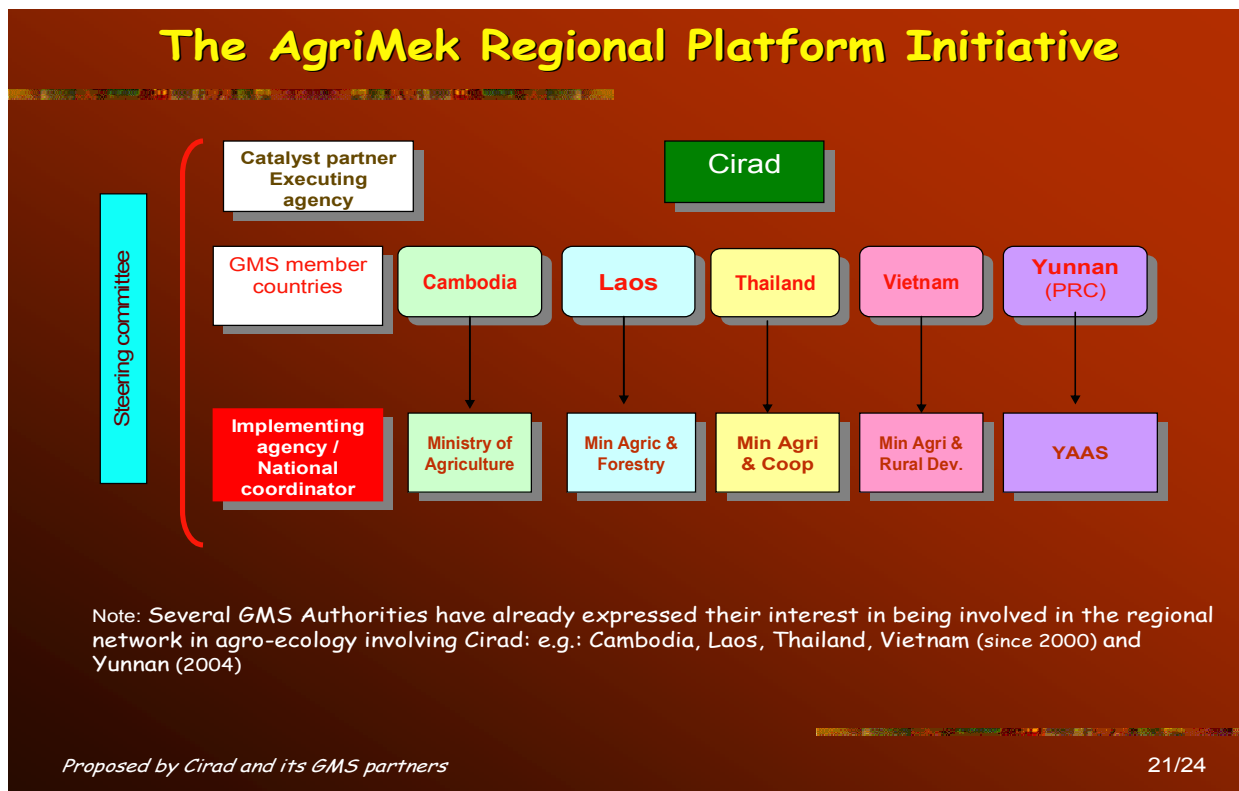
5. First results on rainfed lowland rice



Soil biological activity, as the development of macrofauna and microfauna biodiversity under the DMC technology is studied at the Campus of Sakhon Nakon in north Thailand (Kasetsart University).



Linking and bridging these R&D activities becomes a true GMS challenge



Addendum.

An GMS Agroecology oriented CD-Rom is also provided with this document. Readers will find diaporama on approach, methods and main results all over the world. Posters and articles focusing on agroecological results in the concerned countries are also available.

For more detailed informations, the CIRAD agroecological web site is easy to access :

<http://agroecologie.cirad.fr>

http://www.cirad.fr/ur/couverts_permanents

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***Ready for sharing knowledge and know how on the agroecological challenge
throughout the Greater Mekong sub region GMS***

