

42-10 Conservation Agriculture In Southeast Asia.

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In South East Asia, soaring demands for agricultural productions lead to increasing pressures on natural resources; soil degradation (erosion, organic matter mineralization, salinisation ...), water pollution, forests clearings ... call for rapid and deep changes of farming practises.

Since early 2000's, CIRAD and its regional partners have been working on the development of Direct seeding Mulch based Cropping systems (DMC, i.e. no tillage on permanent soil cover with maximized biomass inputs) adapted to small holders. In Laos and Cambodia, these Research and Development (R & D) programmes have allowed the progressive setting of cropping systems fitting major agro-ecosystems of the regions. First and most advanced works focused on rain-fed upland agriculture with maize, cassava, soybean and (upland) rice as principal crops; more recently, complementary approaches put the emphasis on rain-fed lowland rice on “upper terraces” (strict rain-fed) and on “hydromorphic plains” (deepwater rice, reached by flood up to 0,70 m high).

Through examples of contrasted DMC development, the presentation illustrates how the methodology “Creation-Diffusion-Training” allows designing stable and productive technologies by addressing simultaneously fields' bio-physic parameters and farms' socio-economic environment. This design phase of the systems progresses mainly by qualitative assessment of the “practicability”, “stability” and “acceptability” of the assembled DMC; it relies on a continuum of applied experimentations in close interaction with significant and representative on-farm pilot extension networks to prepare the definition of scaling-up programmes.