

ADOPTION OF CONSERVATION AGRICULTURE IN LAOS

A case study in the Mekong Corridor

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CONTEXT

Over the past twenty years, livelihoods have undergone drastic changes and agriculture has become increasingly linked to the demand of the Thai market. At the same time, agricultural systems have shifted from traditional shifting cultivation systems based on fallowing, slash-and-burn and crop rotations to more intensive systems based heavy mechanized tillage, pesticides, hybrid seeds and maize mono cropping. The current process of agricultural intensification and expansion has very negative social and ecological impacts, including increased soil erosion and exhaustion, chemical pollution of the environment.

In the light of this and since 2006, the Rural Development Project in the 4 Southern Districts of Xayaburi Province (PASS-PCADR) with the support of the National Agro-Ecology Programme (PRONAE) of Laos has started the dissemination of seeding Mulch-based Cropping (DMC) systems on a larger scale.

OBJECTIVES AND METHODS

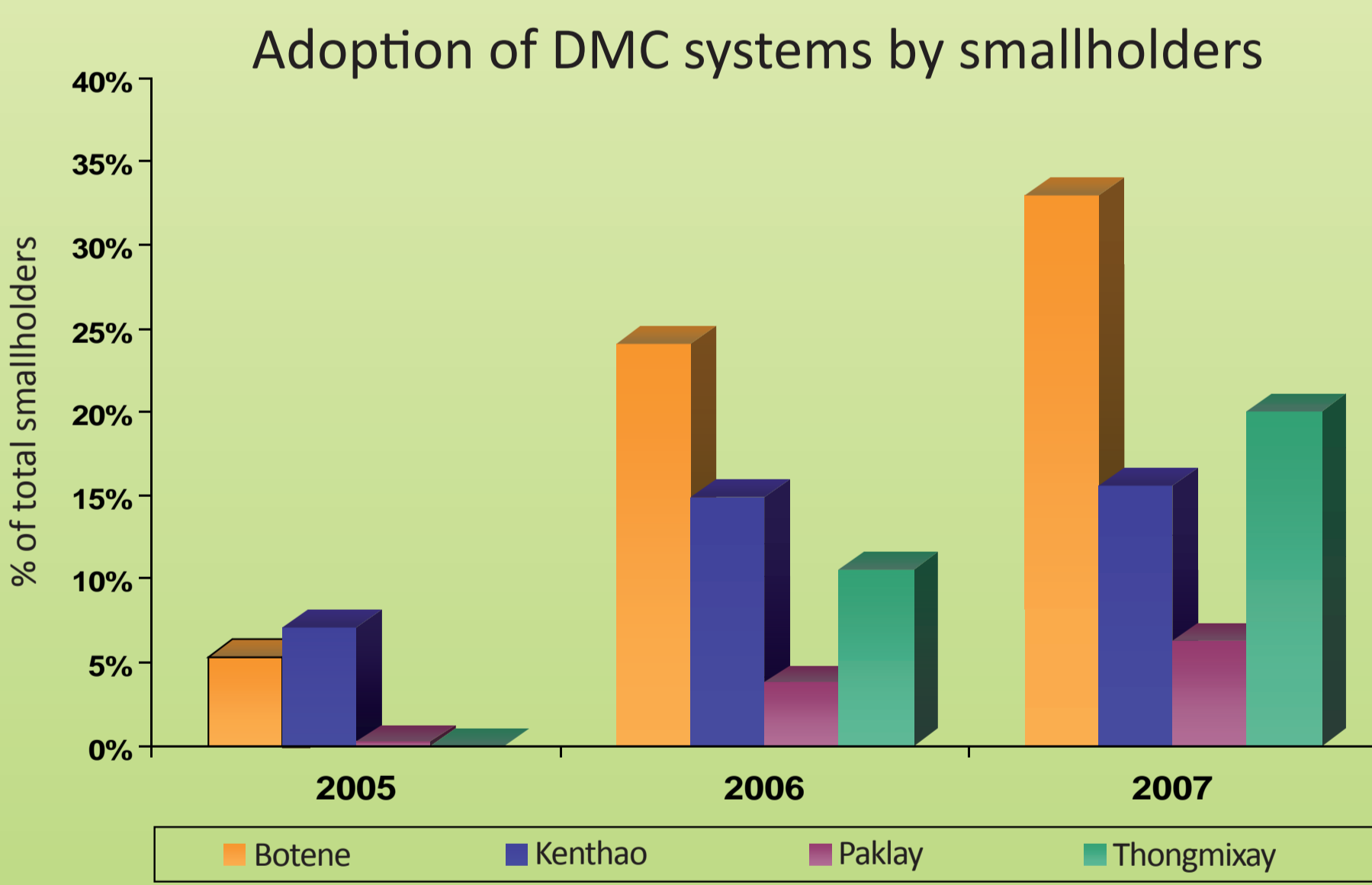
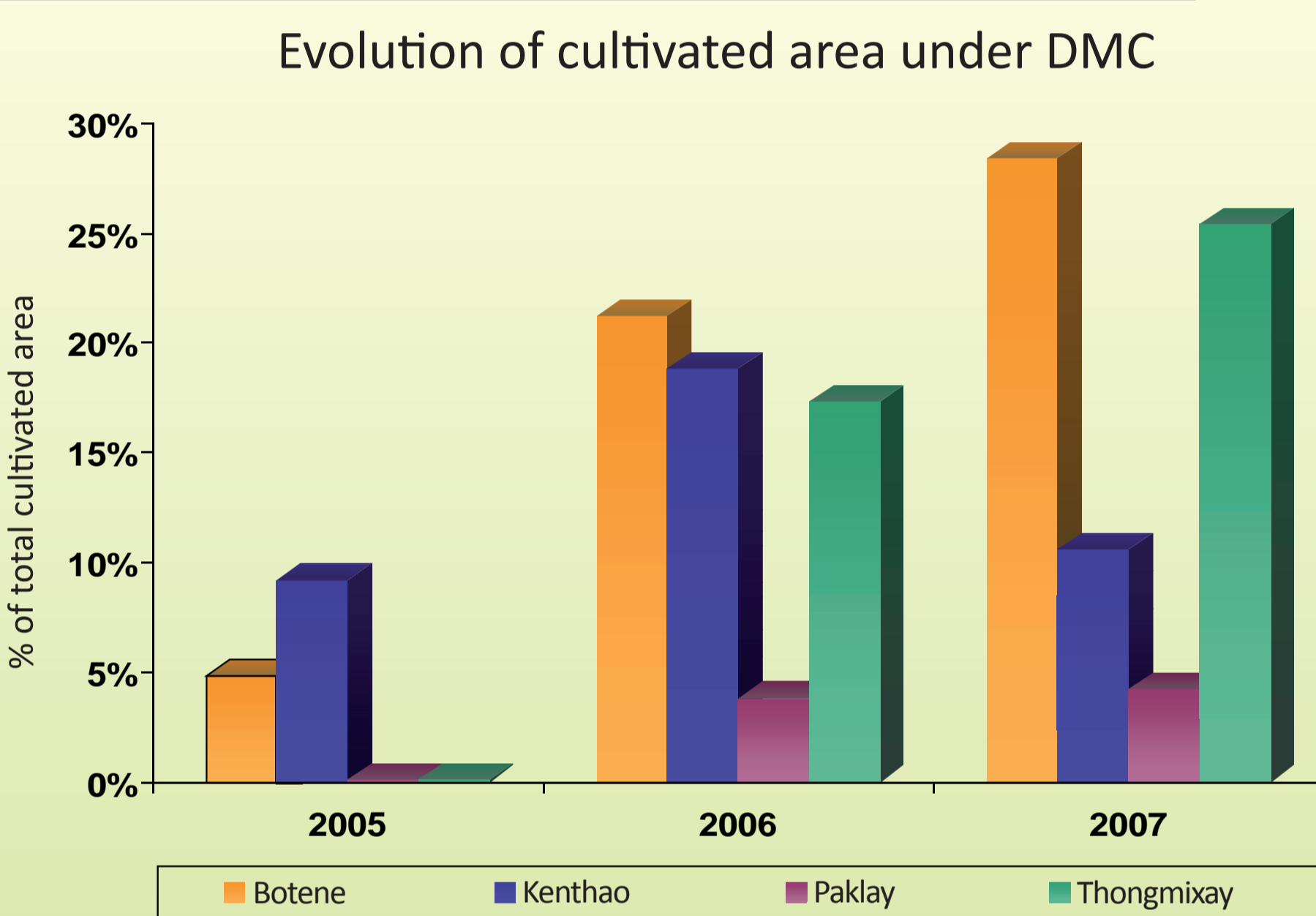
Between 2005 and 2008, extensive surveys were carried out in order to: (1) assess the socioeconomic outcomes of the DMC systems at the household level, (2) estimate the level of dissemination of the DMC systems at the community level, and (3) determine the factors conditioning smallholders' adoption or rejection of the DMC systems. Surveys were carried out by the PRONAE in 4 villages (462 smallholders) and the PASS-PCADR in 21 villages (2160 smallholders).



RESULTS AND DISCUSSIONS

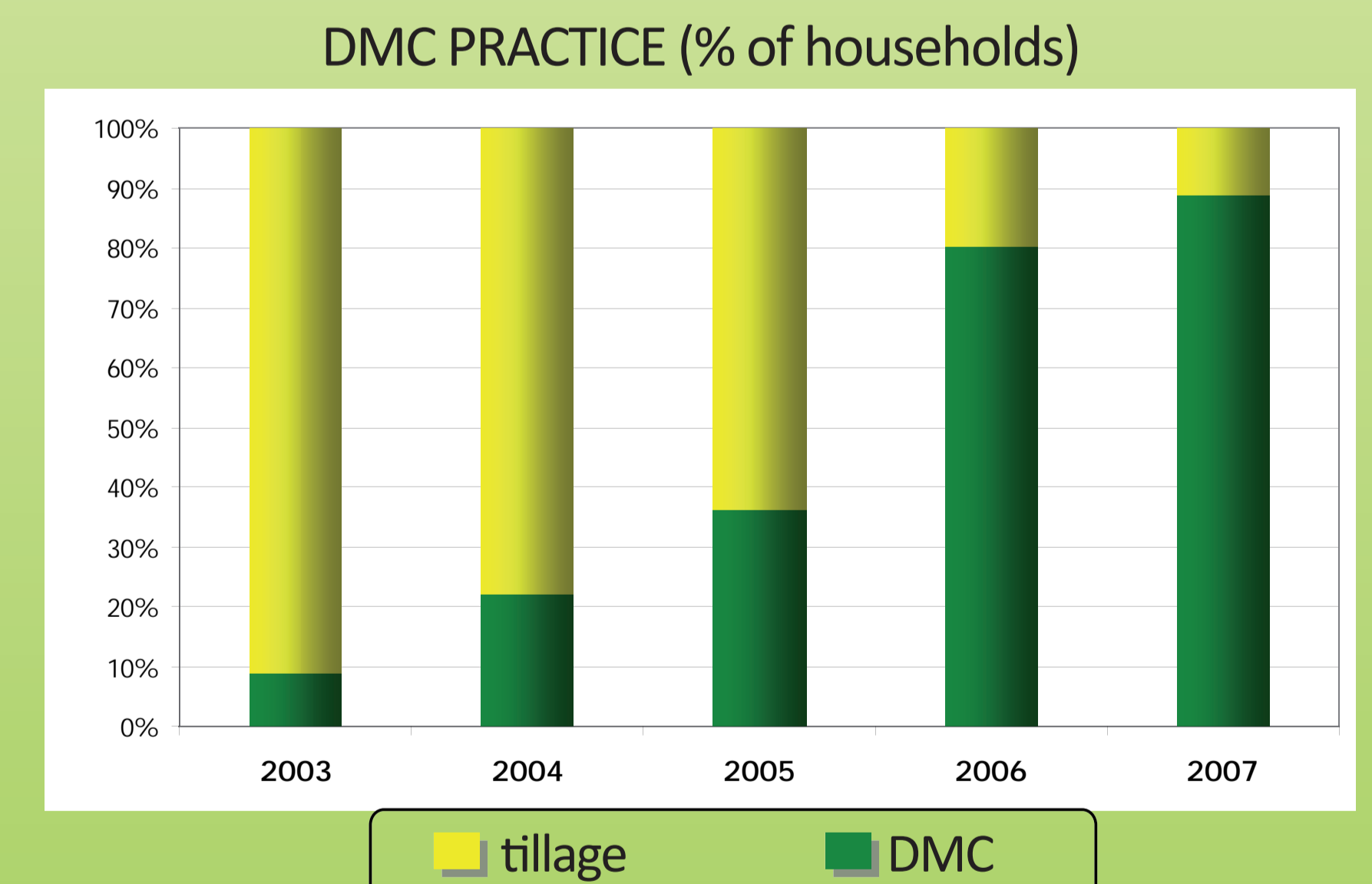
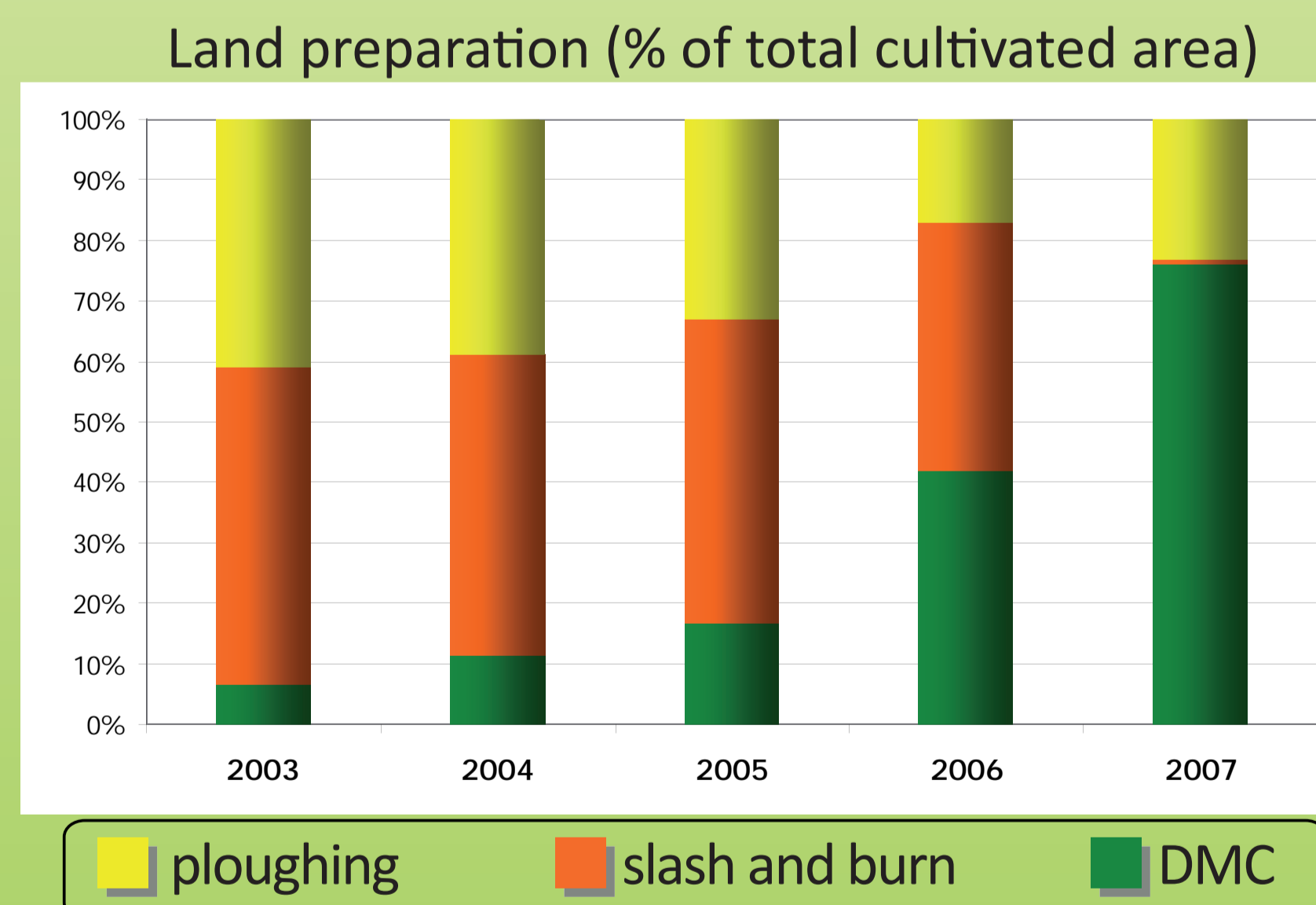
The results of these surveys show that there are currently more than 1,200 smallholders using DMC systems on a total of about 1,500 ha of cultivated land. Overall, the rates and levels of DMC systems' adoption by smallholders appear more important in areas where the environment is the most degraded and/or particularly fragile (case of Nongphakbong village, Botene district). In contrast, in less environmentally-degraded and less fragile areas, the level of DMC systems' adoption is still rather limited. With more productive soils, mechanized mono-cropping can still provide high profits and, as such, retain the interest of a majority of farmers (case of Bouamlao village, Paklay district).

Currently, the main technical and socioeconomic constraints for a wide dissemination of DMC systems appear to be: 1) the credit and collection systems that have developed in southern Xayaboury province which continue to favour conventional, mechanized agriculture and prevent farmers from adopting technical alternatives, 2) lack of access to appropriate agricultural equipment, and 3) poor communal land management (i.e. wildfires and grazing in dry season) which leads to the destruction of both crop residues and cover crops used in DMC systems.

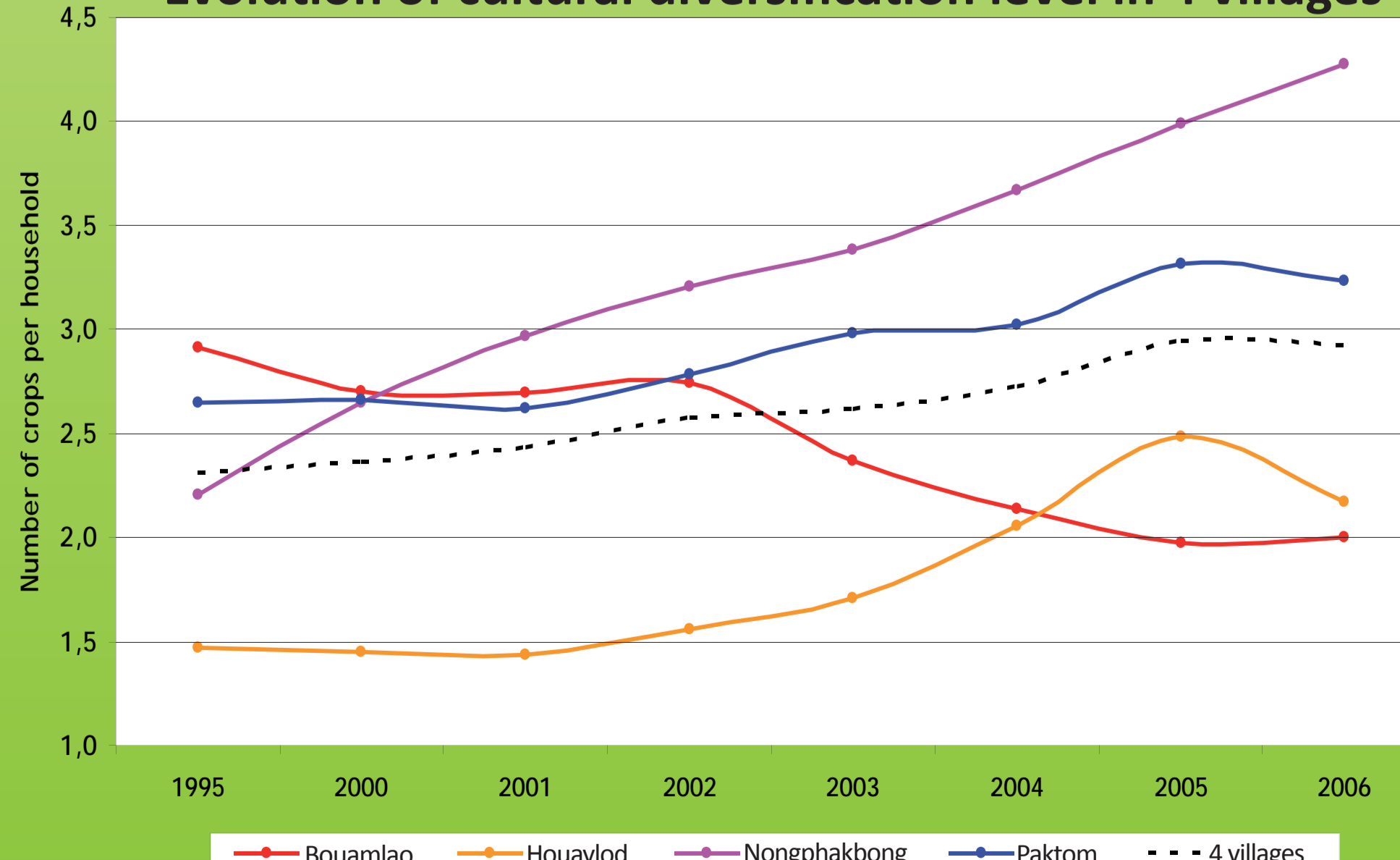


With significant levels of crop diversification and engagement in off-farm or non-farm activities, livelihoods in general appear more diversified in the degraded and fragile areas. These trends can be considered as 'risk avoidance' strategies. By adopting DMC systems, smallholders attempt to avoid the environmental and economic risks associated with less sustainable systems based on heavy mechanization and maize mono-cropping. In turn, by diversifying their livelihoods, smallholders attempt to limit their vulnerability to the potential failure of a single economic activity.

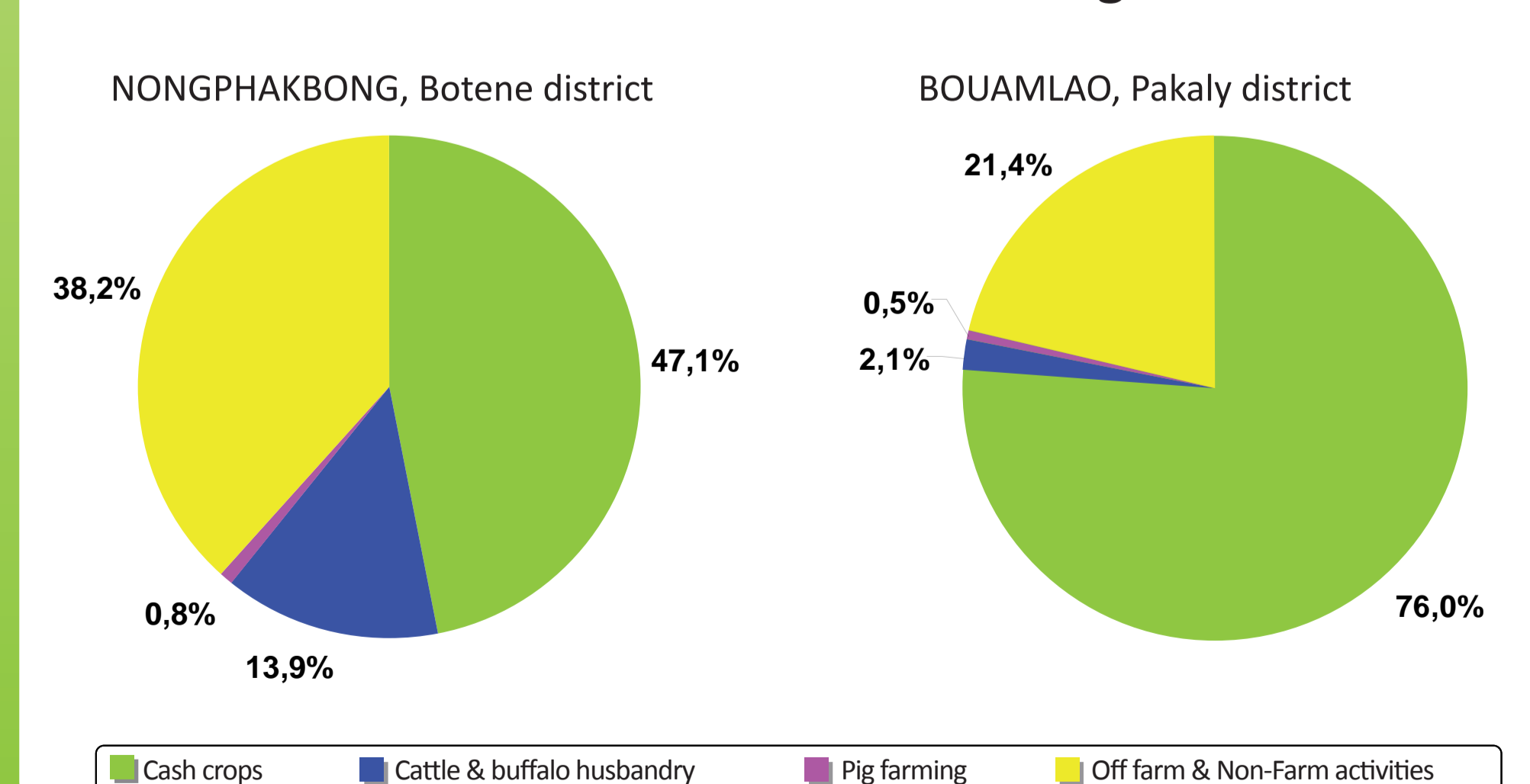
NONGPHAKBONG, Botene district



Evolution of cultural diversification level in 4 villages



Income distribution in 2 villages



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