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## Knowledge Transfer Systems in China: An Example of Vegetable Intercropping Systems in Hebei Province

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### Abstract

The North China Plain being East Asia's largest alluvial plain is of high importance to food security in China, accounting to one fifth of China's total food production. Highly intensive agricultural practices during the last decades let to a dramatic degradation of arable land, severely endangering sustainability. In recent years a steady shift from cereal production systems into vegetable production systems can be observed. As most vegetables have much higher water and nutrient requirements environmental degradation caused by vegetable production is many times over that of cereal production systems.

Intercropping, the simultaneous cultivation of two or more crops on the same field is widely practised in Hebei province. Intercropping can use environmental resources more efficiently, weed and pest pressure are lowered and the risk of crop failure is reduced. Intercropping can lead to higher yields and at the same time environmental degradation can be minimised by controlling erosion and leaching of nutrients. A qualitative inquiry in Hebei province was conducted, interviewing researchers, administrators, consultants and farmers on occurrence, methods, chances and constraints of vegetable intercropping. Semi-structured in depth interviews were used to examine where the ideas for the systems are generated, and how the dissemination is taking place. More than 60 hours of recorded interviews and numerous written down interview reports had been analysed.

In most cases the intercropping systems are developed by the farmers themselves, or their ancestors, and later are adapted by farmers inside the village and in neighbouring villages. Some systems, which proved to be successful are also picked up by the local and regional state extension service and are disseminated among farmers. Transfer of the systems to other extension stations inside and outside the province was also reported. Due to its interesting features, agricultural researchers also recognise certain intercropping systems practised by farmers. However, after being examined by researchers, improved systems are not redistributed to extensionists and farmers. Extensionists claim that “researchers don't know about farmers' problems” and that “they keep the results in their labs”. On the contrary researchers state that most extension technicians lack of agricultural knowledge and “should be re-educated”.

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