

AGRICULTURAL TECHNOLOGIES AND ENVIRONMENTAL EXPLOITATION IN A RICE TERRACE AREA OF AILAO MOUNTAINS, YUNNAN, CHINA

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Abstract

Ethnic groups such as the Hani and Yi have created an impressive landscape of terraced paddy fields along the slope of the Ailao Mountains during the past several hundred years. Their intensive terraced rice cultivation stands in striking contrast to shifting cultivation, which is the predominant mode of agriculture in tropical mountain areas. However, no detailed survey has yet been conducted on rice terrace agriculture in the Ailao Mountains. This study aims to describe agricultural technologies, especially those related to water control and farming practices, in order to clarify how rice terrace agriculture has been developed and sustained for many years in this mountain environment.

Water control is important not only for the irrigation of rice but also for maintaining the physical structure of rice terrace in close linkage with various farming practices. The main purpose of water control, however, differs between the dry season and wet season. In the dry season, the major concern is to keep the terraced fields inundated in order to prevent water leakage and the collapse of terraces, in addition to storing enough water for land preparation and transplanting of rice seedlings during the period of water shortage (March to May). Irrigation and farming practices in the dry season are essential factors for sustainable rice terrace agriculture in the Ailao Mountains. The long-distance channel irrigation systems maintained by social groups have secured a water supply during the dry season. In the wet season, on the other hand, protection of terraced fields from excess water is the major concern.

It is concluded that rice terrace agriculture in the Ailao Mountains has been sustained by various kinds of technological devices related, in particular, to water control, which can be considered as a form of technological adaptation to an environment characterized by a monsoon climate and the prevalence of clay soil.