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RETHINKING SUBSTITUTION ATTRIBUTE: A NEW MODEL OF AGRICULTURAL MACHINERY SERVICES IN SOUTHERN CHINA

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The substitution attribute of labor is regarded as a key implication of agricultural mechanization development. Based on fieldwork in County X, located in Southern China. The paper examines a novel agricultural machinery services(AMS) model in China's sugarcane industry: stepwise machinery harvesting(SMH). County X is China's largest county in terms of sugarcane cultivation area. The author conducted process-tracking over one year, including three in-depth field investigations, and performed deep interviews with 120 individuals. The SMH represents a pragmatic choice by local governments implementing the policy of "sugarcane leaf burning ban", aiming to advance mechanization while protecting the ecological environment. Unlike practices centered on combine harvesters, this model exhibits distinct differences in operational methods, functional roles, and task types. These characteristics indicate that the SMH poses a significant challenge to the traditional AMS

system. This challenge manifests in the evolving dynamics of interaction between human, machinery and crop within operational workflows, and the resulting divergent logic governing productive forces and relations of production. Consequently, the study argues that agricultural mechanization doesn't follow a predetermined trajectory. Further exploration of its "substitution attribute" is warranted: while absolute substitution of labor occurs under grain-dominated crop structures, relative substitution emerges in non-grain-dominated crop structures. Analyzing these differential substitution attributes requires examining the dynamic interplay between productive forces and relations of production within AMS workflows. Based on this, the study further reveals that within the AMS market, capital's internal and external squeezes of smallholder farming occurs on two dimensions: firstly, the SMH model is exerting internal pressure on family farming; secondly, AMS operators are continuously expanding their reach to smallholders. However, the transition towards agricultural mechanization remains fraught with uncertainty. Sugar companies hold a dominant position in the circulation stage of agricultural products, thereby effectively controlling agricultural operators and the AMS market.

Palavras-chave: substitution attribute; agricultural machinery services(ams); stepwise machinery harvesting(smh); capital; smallholders.