

## **Adoption and Sustainability of New Technologies: A Case Study of Integrated Coffee-Goat Farming in Bali**

新技術の採用とその持続可能性：バリにおけるコーヒー・畜産複合農家の事例

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### **【Aim】**

In Indonesia, integrated farming technologies are essential. In 2005–09, the Primatani program, which aimed to help farmers use new technologies in integrated coffee–goat farming, was conducted in Busungbiu Subdistrict, Buleleng, Bali. This study aims to evaluate the introduction of these new technologies for use by farmers.

### **【Method】**

This study was based on the case study of some villages in Busungbiu Subdistrict, Bali, where the Primatani program was conducted.

### **【Results】**

From the evaluation, it was found that the new technologies introduced had had a positive impact on improving integrated coffee–goat farming. They could improve the productivity and income of targeted farmers. Nonetheless, only a small number of them retained the technologies after the program ended.

Based on analyses involving production function and farmers' decisions, several critical constraints were pinpointed, which had led to the farmers' lack of technology retention: (1) a lack of incentive to increase labor inputs, (2) the low effectiveness of homemade production inputs (i.e., fertilizer and feed), and (3) the shortage of materials needed to producing qualified homemade products. Furthermore, (4) the labor-input constraint could hamper farmers' larger-scale goat-farming, in terms of their ability to produce homemade products through the use of the new technologies. (5) Whenever goats were self-owned, farmers were more likely to keep the new technologies; they, however, faced capital constraints in procuring goats. (6) Among farmers, neither longer farming experience nor a higher formal education affected their technology retention. Instead, (7) the farmers had a greater need for improvements to their accessibility to qualified input materials for processing homemade fertilizer and feed, and to capital for procuring goats, since both kinds of accessibility were substantially limited.