

FINANCIAL FEASIBILITY AND OPTIMAL MANAGEMENT OF INTENSIVE COW-CALF COOPERATIVES AS AN OPTION TO RESOLVE GRAZING CONFLICT IN BALURAN NATIONAL PARK

ABSTRACT

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Livestock grazing is a major driver of human-wildlife conflict in conservation areas. Currently, there are an estimated 3000 heads of cattle illegally grazing within Baluran National Park (BNP) in East Java. Recent research has indicated the potential of livestock system intensification to reduce land-use and conflict with conservation priorities. The research goal was to investigate the financial feasibility of starting intensive cow-calf cooperatives by smallholders in the BNP area. Data was collected in the villages of Karang Teko and Merak using Farm surveys in a Criterion sampling design. The aim was to collect data from 50 respondents in each locality. The weight of the cattle owned by the respondents was estimated and multiplied by live value (Rp. 46.000/kg) as a proxy for available investment capital. Optimal herd management plans were generated using whole farm Linear Programming. Financial feasibility was assessed using Discounted cash-flow analysis and debt-servicing capabilities. Next to this, a sensitivity analysis was conducted on the price of concentrate feed. Investment lifetime was set at 15 years and four alternative varieties of cattle were considered: Bali, Peranakan Ongole, Limousin and Simmental. Results show that investing in all varieties represents a positive investment opportunity, but with Bali cattle obtaining the highest NPV (\$53.769), IRR (14,25%) and B/C ratio (1,13). Farmer income can be increased by 163% through a combination with additional Off-farm labor. However, debt-servicing capabilities of cow-calf cooperative activities showed that the loan principal can only be repaid in the 10th year instead of the maximum eight years set by the governments cow-calf credit scheme. The investment can be made feasible under current credit conditions for Bali, Simmental and Limousin cattle, if farmers can produce concentrate feed for a production cost of < Rp. 1.500 per kg. Alternatively the investment can be feasible for Bali cattle if the grace period of the credit scheme is extended from 24 to 48 or 60 months, or the repayment period from 6 to 13 years, with interest fixed at 5% and a 24 month grace period.

Keywords: Cash-flow analysis; Human-wildlife conflict; Linear programming; Livestock grazing