

Research Article

Open Access

Profitability and Constraints of French Bean Production in Kalikot District of Nepal

Sudarsan Panta ✉, Satish Pandey, Prakash Dhungana, Lalit Pokhrel, Shishir Pant, Sita Regmi

Agriculture and Forestry University, Faculty of Agriculture, Rampur, Chitwan, 44209, Nepal

✉ Corresponding author: pantasudarshan979@gmail.com

International Journal of Horticulture, 2026, Vol.16, No.2 doi: [10.5376/ijh.2026.16.0006](https://doi.org/10.5376/ijh.2026.16.0006)

Received: 15 Dec., 2025

Accepted: 10 Feb., 2026

Published: 23 Mar., 2026

Copyright © 2026 Panta et al., This is an open access article published under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Preferred citation for this article:

Panta S., Pandey S., Dhungana P., Pokhrel L., Pant S., and Regmi S., 2026, Profitability and constraints of French bean production in Kalikot District of Nepal, International Journal of Horticulture, 16(2): 68-76 (doi: [10.5376/ijh.2026.16.0006](https://doi.org/10.5376/ijh.2026.16.0006))

Abstract French bean cultivation is an important agricultural enterprise in the high hills of Nepal; however, farmers face substantial production and marketing constraints. A study was conducted in the Kalikot district to assess the profitability and key constraints of French bean production. Data were collected through household surveys from 100 bean-growing households selected through proportionate stratified random sampling across different local levels in the Kalikot district. The results revealed an average productivity of 76.10 kg per ropani, with 59.5% of the total production marketed and the remainder used for household consumption and seed purposes. The average cost of production was NRs 11,350 per ropani, while gross returns amounted to NRs 15,372, yielding a gross margin of NRs 4,062 and a benefit cost ratio of 1.35, indicating that French bean cultivation is economically profitable. The independent sample t-test results showed significantly higher productivity among trained, literate farmers, and farmers who were members of cooperatives. Multiple regression analysis ($R^2 = 0.7588$, $p < 0.001$) identified cultivated area, irrigated land, annual income, and training as significant determinants of total bean production. Major constraints in production include high disease and pest incidence (0.856), particularly anthracnose (0.880) and aphids (0.853), while the key marketing challenge was unorganized marketing systems (0.748). The study concludes that targeted interventions in training, disease and pest management, and market organization can substantially enhance the productivity, profitability, and sustainability of French bean production in Kalikot, Nepal.

Keywords French bean (*Phaseolus vulgaris* L.); Benefit cost ratio; High hills; Production economics; Smallholder farming

1 Introduction

Agriculture is the backbone of the Nepalese economy, employing approximately 60% of the population and contributing nearly 23.8% of the Gross Domestic Product (GDP). Most people depend on agriculture for their livelihoods, particularly in rural areas (MOALD, 2024). Nepal is gradually shifting from subsistence farming to commercial agriculture to reduce poverty, enhance food security, and promote economic growth (Bist et al., 2025). Pulses play a vital role as an important source of nutrition and as a cash crop that plays a significant role in enhancing household income in rural areas of Nepal (Ghimire et al., 2022). Pulses, such as lentils, beans, peas, and other grain legumes, are of major importance for both human nutrition and sustainable farming, as they form a key component of the Nepalese diet by providing essential proteins and micronutrients and contributing to soil health through their capacity for biological nitrogen fixation (Dhakal, 2020; Basnet et al., 2022).

French bean (*Phaseolus vulgaris* L.), also known as common bean, is an herbaceous annual plant in the Fabaceae family. It exhibits bush (20-60 cm tall) or pole (2-3 m vines) growth habits, with trifoliate leaves (6-15 cm long leaflets) and white-to-purple flowers producing flat pods with 5-12 seeds. Roots are taproot systems with nodules for nitrogen fixation. Stems are herbaceous and angular; pods are straight or sickle-shaped, 8-20 cm long, containing kidney-shaped seeds (1-2 cm) (Bharti et al., 2023; Sinkovič et al., 2024).

French beans (*Phaseolus vulgaris* L.) are an important legume crop in Nepal, particularly in the Karnali region, where they provide a crucial source of income and nutrition for local farmers (Luitel et al., 2019; Mira, 2021). It is extensively cultivated from the Terai to the high hills, occupying approximately 10,529 hectares with a total production of 15,550 metric tonnes and an average productivity of 1,477 kg/ha. Among the commonly grown genotypes, PB0001, KBL-5, and KBL-8 exhibit a bush growth habit, whereas PB0002, PB0048, and other KBL