

Economic potential of pea farming in Himachal Pradesh

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Pea farming in Himachal Pradesh has a significant economic potential due to the state's favourable climatic conditions with substantial potential for enhancing farmer incomes and addressing food security. Hilly regions of Himachal Pradesh gain a competitive advantage by growing off-season peas, which allows farmers to capture premium prices in the market. This off-season production boosts profitability for hilly region farmers and adds economic value by meeting demand when supplies from lower hills areas are limited. The article focuses on sowing and harvesting time of pea cultivation, cost of production, and price behaviour of pea across different zones. Moreover, training programmes for farmers on modern farming techniques, climate-smart practices, and business management should be organized to help them increase production and profitability.

Keywords: Harvesting, Pea, Prices, Profitability, Sowing

Himachal Pradesh being a hilly state, more than 90% of the population lives in villages and agriculture is the primary income source of the people in the state. A significant transformation in the state's agricultural landscape has been the shift from cereal-based subsistence farming to vegetable-dominated commercial agriculture, particularly in temperate agro-climatic zones. Pea is a significant vegetable crop and an excellent foreign exchange earner among fruits and vegetables. China is the world's largest producer of peas, producing 11.56 million tonnes in 2022 followed by India (6.18 million tonnes), the United States (0.31 million tonnes), France (0.23 million tonnes), and Egypt (0.15 million tonnes). In India, during 2022-23, the area dedicated to pea cultivation was 0.64 million hectares. It is cultivated in Himachal Pradesh, Madhya Pradesh, Rajasthan, Maharashtra, Punjab, Haryana, Karnataka and Bihar in India. Himachal Pradesh is the 5th largest producer of pea

and accounts for 5.79% of the total production of the country. The state economy is mainly agriculture-based, as about 69% of the workers depend on agriculture. Green peas straw is good source of nutritional fodder for livestock. Pea cultivation is prevalent in regions like Shimla, Chamba, Kullu, Mandi, Kinnaur and Lahaul-spiti districts, benefiting from the state's favourable climate and suitable agro-climatic conditions in the state. Pea has a good scope for commercialization of the agriculture sector for enhancing income and generating additional gainful employment opportunities. Pea seed production is almost negligible in the high hill dry temperate region and farmers entirely depend on outside seed supply. Peas are considered as a high-value crop in the state, fetching relatively better prices compared to other agricultural commodities. The cultivation of peas not only provides a valuable source of income for the farmers but also helps in addressing food security challenges. Himachal

Pradesh can produce peas in the off-season (April to June) when demand is high, and prices in markets like Delhi and Chandigarh rise due to scarcity.

Fluctuation in prices of agricultural commodities is a common phenomenon due to seasonality of the crops and heavy dependence on climatic conditions resulting large variation in output. Wide variation in the production of the crops subsequently leads to larger variation in the market arrivals. It is argued that fluctuations in market arrivals are also responsible for short term price fluctuation arising out of imbalances in demand and supply of agricultural commodities. Market arrivals and market prices, are subjected to wide fluctuation. To reduce the extent of variability in market arrivals and prices, establishing of storage facilities, dissemination of market information, pledge loan to check distress sale and continual guard on market arrivals and price are necessary to protect the interest of

both the producers and consumers. Besides, being the perishable in nature, productivity and production level of pea crop largely depend on different climatic conditions.

Sowing and harvesting time of pea in different agro-climatic zones

The timing for sowing and harvesting peas in Himachal Pradesh varies significantly across different agro-climatic zones.

Sub-montane and low hills subtropical zone (Zone-I): In low hills zone, peas are sown in the month of October-November which ensures that the peas can be harvested by January-February, when the temperatures are still favourable.

Table 1. Sowing time of major vegetable crops in different agro-climatic zones of Himachal Pradesh

Particular	Sowing/ Harvesting time	Month
Zone-I (Low hills)	Sowing time	Oct-Nov
	Harvesting time	Jan-Feb
Zone-II (Mid hills)	Sowing time	Oct-Nov
	Harvesting time	Jan-Feb
Zone-III (High hills)	Sowing time	April- May
	Harvesting time	Sept-Oct

Mid-Hills Sub-Humid Zone (Zone-II): As in low hills zone, in the Mid Hills zone, allow peas to be sown in October-November and harvested in January-February. The sub-humid climate supports the growth of peas during this period.

Mid-Hills Wet Temperate Zone and High Hills Dry Temperate Zone (Zone III & IV): In this zone, the production season is of 6-8



Kinnaur District



Lahaul & Spiti District

Table 2. Economic comparison of pea farming across different agro-climatic zones in Himachal Pradesh

Particular	Lower hills (Zone-I)	Mid-hills (Zone-II)	High hills (Zone-III & IV)
Cost of production (Per ha)	Moderate	Moderate to High	High
Yield (q/ha)	75-80 q	80-85 q	80-90 q
Market access	Good	Moderate	Poor
Input costs	Moderate	High	Very high
Market prices	Moderate	High	Very high (off-season)
Storage/Processing	Good	Limited	Very limited

months due to low temperature and snowfall. Peas are sown in the month of April-May and harvested in September-October, depending on the sowing period, to avoid damage from the harsh winter conditions.

In high hills, cost of production was higher due to limited mechanization, difficult terrain, and reliance on manual labour. Inputs like seeds and fertilizers are more expensive due to transportation costs (Table 2). Farmers in lower and

mid-hill regions benefit from better infrastructure, higher yields, and easier market access, while those in high-altitude areas face higher production costs but benefit from premium market prices due to off-season production and high-quality produce. Hilly region has the unique advantage of climate for producing off-season vegetables, which fetch a good price in the market and improve livelihood of local people.

Peas have a short growing cycle (90-120 days), allowing farmers to grow other crops in the same season, thereby maximizing land-use efficiency and enhancing overall farm profitability. The perishable nature of peas makes their supply relatively inelastic. Pea farming has provided an additional income stream, reducing their dependence on a single crop and increasing overall resilience. Pea farming is generally profitable, especially when farmers use efficient farming techniques, access markets during the off-season, and take advantage of government support. The average price behaviour of peas in Himachal Pradesh shows distinct seasonal patterns with higher prices during August to October months, particularly in districts like Hamirpur and Kangra. In Kinnaur as well as Lahaul & Spiti districts, due to the lack of market facilities for peas and other vegetables, the produce is often sold in other states, such as Punjab, Haryana, and New Delhi. Also farmers in Lahaul-Spiti

and Kinnaur traditionally grew other crops like barley and buckwheat. The absence of significant market facilities in Kinnaur as well as Lahaul & Spiti suggests a need for infrastructure development to better integrate these regions into the state's agricultural markets. Additionally, the significant price fluctuations indicate potential opportunities for storage and preservation facilities to stabilize prices and benefit both farmers and consumers.

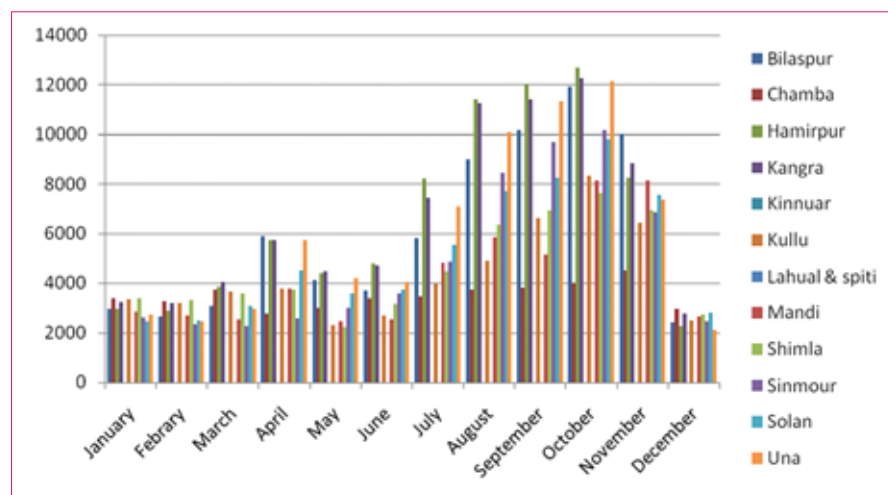
Advantages of pea farming

- The harvesting timing of the peas in hilly regions (Lahaul-Spiti and Kinnaur regions) are different from other regions of Himachal Pradesh and they allows farmers to supply peas when they are off-season in other parts of India, giving them a competitive edge and premium prices. These regions farmers can sold pea crop at premium prices in the Azadpur Mandi, which is Asia's largest wholesale market for fruits and vegetables, Chandigarh and Punjab market.
- The rise of digital marketing platforms and Farmer-Producer Organizations (FPOs) is helping farmers to reduce dependency on middlemen, allowing them to market their peas directly to buyers, whether through online platforms or local markets, leading to better returns.
- Peas have a wide range of uses

in fresh, frozen, and processed forms, including pea flour and pea protein, which are gaining popularity with the rise of plant-based diets. The rise in demand for plant-based proteins, especially from health-conscious consumers and the food processing industry opens up new marketing opportunities for pea farmers. This diversification helps to reduce market risks and boosts profitability.

SUMMARY

Pea farming profitability varies across different zones in Himachal Pradesh. Lower and mid-hill areas benefit from easier market access, better infrastructure, and moderate production costs, while high-hill areas face higher costs and limited market access but achieve higher returns during the off-season. The short growing cycle of peas allows for crop diversification, improving income stability and farm efficiency. However, price fluctuations and inadequate market infrastructure in remote areas like Kinnaur, Lahaul-Spiti and Chamba highlight the need for improved storage and processing facilities. Major agricultural *mandis* in the Himachal Pradesh, such as Mandi, Chamba Kullu, Kinnaur and Lahaul Spiti and Shimla, are key hubs for distributing peas to other regions. These *mandis* can offer competitive prices, especially for off-season produce. Additionally, digital platforms and Farmer-Producer Organizations (FPOs) can empower farmers to reduce reliance on middlemen, enabling direct market access for better profitability. Government should take initiatives such as minimum support prices and insurance schemes for off-season vegetables and fruits to reduce income instability and enhance rural income and productivity. Adoption of suitable variety along with improved agronomic practices can increase productivity and better economic returns.



Average monthly prices of pea in different district of Himachal Pradesh during 2023-24
Source: Agmarknet.in

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