Agricultural diversification with vegetable cultivation

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Considering the nation's food security, the primary focus of farmers and agricultural researchers has been on creating high-yield rice and wheat varieties. Innovative hybrid seeds were created, resulting in unprecedented enhancements in agricultural productivity, with rice-wheat emerging as the primary crop rotation in the region. It is now essential to shift some area towards vegetables and fruits. The Indian Council of Medical Research advises a daily consumption of 400 grams of vegetables per individual, comprising 100 grams of green leafy vegetables, 50 grams of root and tuber vegetables, and 250 grams of other vegetables. India is the second largest producer of vegetables in the world after China. Around 215.7 million tonnes of vegetables were produced in India during the year 2024-25. India also exports vegetables to other countries. During the year 2024-25, India exported around 2.7 million tonnes of fresh and processed vegetables to around 166 countries with a value of around Rs 14124 crore. Due to good export of vegetables, there are prospects of good profit from their cultivation in future. During the year 2024-25, vegetables were cultivated in India on an area of 11.8 million hectares from which 217.8 million tonnes of vegetables were produced. Nearly 70 percent of the total area under vegetables is only in Uttar Pradesh (17.3%), West Bengal (13.6%), Madhya Pradesh (10.6%), Maharashtra (8.0%), Gujarat (7.6%), Bihar (7.6%) and Odisha (4.9%) states.

The income of most of the farmers is also limited to rabi-kharif crop harvest, but the household expenses continue throughout the year. Farmers are sometimes forced to sell their produce at a lesser price in the rush to manage money. If the farm household income in the is constant, then the farmer can sell his produce whenever he wants, wherever he wants, at a good price. Cultivation of vegetables can play an important role in this because vegetables start giving income within a short period of time. Potato, peas, cabbage, chillies, onion, tomato, garlic, cabbage, brinjal, melon and root vegetables are mainly grown vegetables. There are many other vegetables like okra, bitter gourd, capsicum, etc., whose cultivation can earn good income. Most of the vegetables are grown near the cities because the market is near and the vegetables can be sold quickly and there is no risk of spoilage. The biggest cost in growing vegetables is labor. Workers related to agricultural work near the cities are rarely found and even if they are found, their daily wages are very expensive. Because of this, the farmers of the areas far away from the cities have also come into a competitive situation. Due to the improvement in roads, means of transport and communication facilities, there is no difficulty in selling even at long distances. Vegetables also provide employment as it needs more labour. Vegetables also have shorter crop cycles, allowing farmers to grow multiple crops a year to earn a steady income. Vegetable farming is labor intensive which also increases employment opportunities in rural areas. Every farmer must prepare a kitchen garden to get fresh and nutritious vegetables for their family needs.

Use hybrid seeds with uniform size, superior quality, disease resistance and high yield to get good income from vegetables. The customer also buys it happily at a good price and comfortably. Divide your land in such a way that the produce is ready to sell each week to ensure a constant, steady supply to buyers. Sell directly to local vegetable vendors, nearby restaurants, or customers to reduce middlemen in the market and increase profits. The post harvest handling of vegetables is very important. According to a study conducted by the Ministry of Food Processing, Government of India, 4.87 to 11.61 percent of vegetables are lost after harvesting due to lack of processing facilities in India. Only 4.5 percent

of fruits and 3 percent of vegetables are processed in the country. This is quite low compared to other countries, for example in Brazil, USA and Malaysia 30, 70 and 82 percent of fruits/vegetables are processed respectively. There is a need to set up processing and storing units for fruits/vegetables in the days of abundance so that this product can be sold at a good price throughout the year. Farmers can get training and knowledge of vegetable farming from their respective state agriculture universities, *Krishi Vigyan Kendras* or the State Department of Horticulture.

Table 1: State-wise area and production of vegetables in India, 2024-25

State	Area (000 ha)	Production (000 MT)
Uttar Pradesh	1490.83 (12.64)	37768.87 (17.34)
West Bengal	1597.96 (13.55)	29716.36 (13.64)
Madhya Pradesh	1260.37 (10.69)	23170.85 (10.64)
Maharashtra	1261.01 (10.70)	17328.83 (7.96)
Gujarat	824.17 (6.99)	16546.48 (7.60)
Bihar	905.27 (7.68)	16545.44 (7.60)
Odisha	773.28 (6.56)	10763.98 (4.94)
Tamil Nadu	362.43 (3.07)	9432.35 (4.33)
Andhra Pradesh	225.38 (1.91)	7567.19 (3.47)
Karnataka	430.32 (3.65)	7477.70 (3.43)
Punjab	350.57 (2.97)	7245.74 (3.33)
Chhattisgarh	508.25 (4.31)	6991.76 (3.21)
Haryana	329.79 (2.80)	5357.62 (2.46)
Assam	309.57(2.63)	3867.54 (1.78)
Jharkhand	275.60 (2.34)	3823.22 (1.76)
Others	885.83 (7.51)	14192.86 (6.52)
Total	**11790.64 (100.00)**	**217796.79 (100.00)**

Figures in the parentheses are percentages to their respective totals

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