

Decomposition of growth model to identify different factors contributing to increased vegetable output in India

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Abstract

During 1990s, both area and production of vegetables registered highest growth rate of 4.28% and 5.46% respectively. There was a stagnant growth in productivity of vegetables, but area expansion took place due to shifting of farmers from growing traditional low value crops to high value crops like vegetables influencing the growth of production over the later years. The study used secondary data from 1991-92 to 2011-12 breaking it into two periods (period I from 1991-92 to 2000-01 and period II from 2001-02 to 2011-12). The results showed that the effect of diversification was found to be the largest contributor to the growth in vegetable output. But the rate of contribution declined from 86.5 % during Period I to 42.6% in Period II. During period II, the changes in area under vegetable cultivation and real prices of vegetables had a positive and increased extent of contribution on the growth.

Keywords: Diversification, Growth rate, Sources of growth, Vegetable production

Introduction

Horticulture sector in India gained importance in 1990's. During late 1940's, India imported large amount of food grains from other countries. During 1960's as a result of green revolution, India became self-sufficient in producing food grains and started to export the excess produced. Horticulture development had not been a priority until recent years in India. During the period 1948-80, the main focus of the country was on cereals (Dastagiri *et al* 2013). During 1990s, horticulture sector gained momentum. Increasing health consciousness, increase in per-capita income and living standards of the people increased demand for high value nutritional food like fruits, vegetables, meat, dairy in place of traditional cereal and pulse diet. This created a huge demand for horticulture sector especially fruits and vegetables in the country.

Vegetables being important constituent of human diet are rich in vitamins, minerals, fibres and anti-oxidants. They constitute around 60% of the horticulture production. They provide early economic returns to the farmers and can be best fitted in any small farm production systems. Around 90% of vegetable growers belonged to landless, marginal and small farmers (Khan *et al* 2009). In addition, ecology and economics supported the transition from cereals to vegetables. On an average, a farmer needs 1 cubic meter of water to produce 330 g of grains. The same quantity of water is sufficient to grow 18 kg of vegetables. Due to increase in demand for nutritious food like fruits and vegetables, farmers started to shift their traditional cereal based cropping systems to high value crops like fruits and vegetables which fetch them higher and early economic returns. The reason for decline in area under food grains were high value crops mainly fruits and vegetables (Sharma and Jain 2011 and Kannan and Sunderam 2011).

India is the second largest producer of vegetables in the world after China. India ranks first in the production of okra in the world and second in the production of potato, onion, cauliflower, brinjal and cabbage. India contributed around 14% to vegetable production and around 15% of world area under vegetable cultivation during 2011-12 (NHB 2012). In India, vegetables are grown in 8.9 million ha (39% of horticulture area) producing 156.3 million t (61% of horticulture production) with a productivity of 17.4 t/ha during 2011-12. The average productivity of vegetables in India is less than the world's average productivity (19.6 t/ha). This shows the potential gap in the productivity that need to be harnessed by increasing the yield of many vegetable crops (Table 1).

India is bestowed with varied agro-climatic conditions which allow it to grow different types of vegetables (arid, temperate and tropical). Global diversity in vegetable crops is estimated at about 400 species with around 80 species of major vegetables reported to have originated in India (Sangeetha, 2013). Major vegetables grown in India are potato (27% of total vegetable production in