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# An economic analysis of production and marketing of major spices in Kanker district of Chhattisgarh on sample household

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**Abstract**
Spices are most profitable venture at all farming activities as it provide ample employment opportunities and slope to raise income of the farming community. In India the climatic conditions are favourable for a large number of spices crops. Consequently the horticulture sector has grown significantly over the years and India has maintained its leadership in many spices. The average family size was 3.77 and average literacy percentage was 80.59 per cent in the study area. The average cropping intensity observed in the study area was 202.19 per cent. The average size of holding of spices growers was 1.94 hectares. It varied from 0.89 hectare on marginal farms to 4.60 hectares on large farms. The cultivated area was observed to be 0.89 hectares, 1.70 hectares, 2.92 hectares and 4.60 hectares at marginal, small, medium and large farms, respectively.

## Introduction
Spices are most profitable venture at all farming activities as it provide ample employment opportunities and slope to raise income of the farming community They blend food to extract the nutrients and bind them in a palatable form. India is considered as kingdom of spices. India contributes 75% of global spice production. There are 107 spices with 20 countries being involved in the production and Export (India 50 spices).India"s diverse climate ensures availability of all varieties of spices. Major spices grown in India are pepper, ginger, chillies, turmeric, garlic, cardamom, coriander, cumin, fennel, fenugreek, Ajwan, dill (celery), cinemon, nutmeg, clove, tamarind, saffron (Table 1.1). India ranks first in cumin, ginger, Chilli pepper and turmeric production and second in pepper and cardamom production in the world after Vietnam and Guatemala. Spices are capable of giving very high yields and very high economic returns to the growers.
When used in larger quantity, spices can also contribute a substantial amount of minerals, including iron, magnesium, calcium, and many others, to the diet. Most herbs and spices have substantial antioxidant activity, owing primarily to phenolic compounds, especially flavonoids, which influence nutrition through many pathways including affecting the absorption of other nutrients.
Marketing is also equally important as production for any agricultural product. Due to high perishability and seasonality, efficiency of marketing operation is crucial in determining the profit of the producer on the one hand and level of satisfaction of a consumer on the other. It is essential to be very careful about the market of spices produce in which the negligency may cause not only wastage of resources but also dissatisfaction to the producer and consumer.

## Materials and Method
### Compound growth rate
To compute the growth rate of area, production and productivity of major spices of Kanker district, the following mathematical model was used:-

$Y = aB^t$

$\log Y = \log a + t \log B$

Where
$Y$ = Area/ production /productivity $a$ = Constant
$B$ = Regression coefficient $t$ = time in year
Compound growth rate (%) = (Antilog B-1)100

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**General characteristics of sample house holds**
The general characteristics of the sample households are presented in table 1. It can be seen from the table that the average family size was 3.77. It varied from 3.92 in marginal farms to 2.9 among large farms. The literacy percent was 79 which were good as most of the family members educated above primary.

**Land distribution and cropping pattern**
**Land use pattern**
Land use pattern at sampled farm is presented in table 1 and. The average size of holding was 1 ha amongst the respondents. It varied from 0.89 ha on marginal farms to 4.92 ha on large farms. The cultivation area was observed to be0.89 hectares, 1.70 hectares 2.92 hectares and 4.60 hectares at marginal, small, medium and large farms respectively. It is clear from the table that no land was leased out by the marginal but small, medium, and large farms leased out the land.

**Table 1:** General characteristics of sample households

| S. No. | Particular | Marginal | Small | Medium | Large | Overall |
|---|---|---|---|---|---|---|
| 1. | Total no of sample house hold | 71 | 36 | 23 | 20 | 150 |
| 2. | Average Family Size | 3.92 | 4.11 | 3.57 | 2.9 | 3.77 |
| 3. | Literacy | | | | | |
| | a. Illiterate | 60 | 31 | 12 | 9 | 112 |
| | b. Primary | 69 | 43 | 18 | 17 | 147 |
| | | (24.82) | (29.05) | (21.95) | (29.31) | (25.97) |
| | c. Middle | 74 | 39 | 36 | 18 | 167 |
| | | (26.61) | (26.35) | (43.90) | (31.03) | (29.50) |
| | d. Higher Secondary | 56 | 26 | 9 | 6 | 97 |
| | | (20.14) | (17.56) | (10.97) | (10.34) | (17.13) |
| | e. Graduate And | 19 | 9 | 7 | 8 | 43 |
| | Above | (6.83) | (6.08) | (8.53) | (13.79) | (7.59) |
| | Total | 278 | 148 | 82 | 58 | 566 |
| | | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |
| 4. | Age Group | | | | | |
| | a. Up To 15 | 36 | 29 | 12 | 8 | 85 |
| | | (10.09) | (19.59) | (14.63) | (13.79) | (12.98) |
| | b. >15-60 | 226 | 110 | 63 | 45 | 444 |
| | | (82.56) | (74.32) | (76.82) | (77.58) | (78.71) |
| | c. >60 | 16 | 9 | 7 | 5 | 37 |
| | | (7.33) | (6.08) | (8.53) | (8.62) | (9.91) |
| | Total | 278 | 148 | 82 | 58 | 566 |
| | | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |

**Note:** Figures in parentheses indicate percentage to total

**Table 2:** Land use pattern of sampled house hold

(ha./farm)

| S. No. | Particular | | Farm Size | | | Average |
|---|---|---|---|---|---|---|
| | Marginal | | Small | Medium | Large | |
| (1) | Owned land | 0.89 | 1.70 | 3.02 | 4.92 | 1.94 |
| | | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |
| (3) | Leased out | 0.00 | 0.00 | 0.10 | 0.32 | 0.05 |
| | | (0.00) | (0.00) | (3.31) | (6.50) | (2.97) |
| (a) | Total cultivated | 0.89 | 1.70 | 2.92 | 4.60 | 1.89 |
| | land | (100.00) | (100.00) | (96.68) | (93.49) | (97.02) |

**Note:** Figures in parentheses indicate percentage to total

**Sources-wise irrigated area at sampled farm**
The category wise irrigatted area at the sample farms are shown in table 3 most of the area under irrigation is covered by tube well followed by the canal, well and tank.

**Table 3:** Sources-wise irrigated area at sample farms

| | | | | | Well | |
|---|---|---|---|---|---|---|
| 1. | Marginal | 0.89 | 0.04 | 0.06 | 0.73 | 0.06 |
| | | (100.00) | (4.49) | (6.74) | (82.00) | (6.74) |
| 2. | Small | 1.33 | 0.12 | 0.11 | 0.85 | 0.22 |
| | | (100.00) | (9.02) | (8.27) | (63.90) | (16.54) |
| 3. | Medium | 1.96 | 0.00 | 0.06 | 1.14 | 0.34 |
| | | (100.00) | (0.00) | (3.06) | (58.16) | (17.34) |
| 4. | Large | 2.05 | 0.50 | 0.70 | 1.30 | 0.00 |
| | | (100.00) | (24.39) | (34.14) | (63.41) | (0.00) |
| 5. | Over all | 1.31 | 0.11 | 0.16 | 0.90 | 0.14 |
| | | (100.00) | (8.40) | (12.21) | (68.70) | (10.69) |

## Cropping Pattern

The Table 4 reveals the cropping pattern in the sampled households. It can be seen that in Kharif paddy on an average occupied the largest area (74.90 percent) fallowed by coriender (7.96 percent), Chilli (7.96 percent). In rabi season maize (48.65 percent), followed by paddy (20.43 percent), coriender (11.55 percent), Chilli (9.94 percent) were the major spices. Chilli crop on an average occupied maximum area (26.95 percent) followed by coriender (24.21 percent), and cucurbits (22.26 percent) in summer. The cropping intensity was observed to be 202.19 percent and it shows a increasing trend with the rise in farm size.

**Table 4:** Cropping Pattern of Sample Households

| | Crops | Marginal | Small | Medium | large | (ha./farm) Overall%- |
|---|---|---|---|---|---|---|
| | **A. Kharif** | | | | | |
| 1. | Paddy | 0.76 | 1.21 | 2.05 | 3.50 | 1.43 |
| | | (85.39) | (71.17) | (70.20) | (76.08) | (75.70) |
| 2. | Chilli | 0.06 | 0.20 | 0.26 | 0.30 | 0.15 |
| | | (.6.74) | (11.76) | (8.90) | (6.52) | (8.26) |
| 3. | Turmeric | 0.05 | 0.08 | 0.11 | 0.19 | 0.08 |
| | | (5.60) | (4.70) | (3.76) | (4.12) | (4.50) |
| 4. | Coriender | 0.02 | 0.12 | 0.30 | 0.36 | 0.13 |
| | | (2.24) | (7.05) | (10.27) | (7.82) | (6.99) |
| 5. | Other | 0.00 | 0.09 | 0.20 | 0.25 | 0.08 |
| | | (0.00) | (5.29) | (6.84) | (5.43) | (4.52) |
| | Total Kharif (A) | 0.89 | 1.70 | 2.92 | 4.60 | 1.89 |
| | | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |
| | | (50.56) | (49.70) | (47.43) | (45.86) | (54.00) |
| | **B. Rabi** | | | | | |
| 1. | Maize | 0.23 | 0.50 | .0.88 | 2.01 | 0.63 |
| | | (39.65) | (42.37) | (38.42) | (59.29) | (46.42) |
| 2. | Paddy | 0.11 | 0.23 | 0.68 | 0.50 | 0.27 |
| | | (18.96) | (19.49) | (29.69) | (14.74) | (20.44) |
| 3. | Chilli | 0.10 | 0.19 | 0.20 | 0.25 | 0.15 |
| | | (17.24) | (16.10) | (8.73) | (7.37) | (11.53) |
| 4. | Coriender | 0.05 | 0.14 | 0.32 | 0.35 | 0.15 |
| | | (8.62) | (11.86) | (13.97) | (10.32) | (11.53) |
| 5. | Other | 0.09 | 0.12 | 0.21 | 0.28 | 0.14 |
| | | (15.51) | (10.16) | (9.17) | (8.25) | (10.35) |
| | Total Rabi (B) | 0.58 | 1.18 | 2.29 | 3.39 | 1.36 |
| | | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |
| | | (32.95) | (34.50) | (38.48) | (33.79) | (38.85) |
| | **C. Summer** | | | | | |
| 1. | Chilli | 0.05 | 0.18 | 0.20 | 0.80 | 0.20 |
| | | (17.24) | (33.33) | (27.02) | (39.21) | (31.30) |
| 2. | Coriander | 0.08 | 0.14 | 0.18 | 0.35 | 0.14 |
| | | (27.58) | (25.92) | (24.32) | (17.19) | (22.34) |
| 3. | Cucurbits Crops | 0.09 | 0.12 | 0.16 | 0.48 | 0.15 |
| | | (31.03) | (22.22) | (21.62) | (23.52) | (24.51) |
| 4. | Other Crops | 0.07 | 0.10 | 0.20 | 0.34 | 0.13 |
| | | (24.13) | (18.51) | (27.02) | (20.09) | (20.40) |
| | Total Summer (C) | 0.29 | 0.54 | 0.74 | 2.04 | 0.65 |
| | | (100) | (100) | (100) | (100) | (100) |
| | | (16.47) | (13.15) | (12.43) | (20.33) | (18.57) |
| | Total Cropped area | 1.76 | 3.42 | 5.95 | 10.03 | 3.50 |
| | (ha) | (100.00) | (100.00) | (100.00) | (100.00) | (100.00) |
| | Particular | Marginal | Small | Medium | large | Overall% |
| | Net cropped area | 0.89 | 1.70 | 2.92 | 4.60 | 1.89 |
| | Copping intensity | 197.75 | 201.17 | 203.76 | 218.04 | 202.19 |

**Note:** Figures in parentheses indicate percentage to total kharif, rabi, summer and cropped area

## References

1. Anonymous, 2015. Directorate of Horticulture Raipur, Chhattisgarh
2. Anonymous. Indian Horticulture database, Ministry of Agriculture, Government of India 85, International Area, sector – 18, Gurgaon – 122 015, 2015. Website: www.nbb.gov.in.
3. Agrawal NL, Singh N. Cumin Seed Marketing in Rajasthan. Agricultural- Marketing. 2003; 46(1):36-42.
4. Agrawal KP, Prasad ASR, Anand JS. Agricultural Marketing in India: Performance of Cumin Marketing in Rajasthan. Agricultural-Marketing. 1997; 10(3):12-15.
5. Aitawade MS, Bhor SE, Pokharkar VG, Kasar DV. Marketing of Rabi Onion in Pune District of Maharashtra State. Agricultural Marketing. 2006; 42(2):32-35.
6. Alagappen V, Manoharan M. Production of Pepper in India, A Global Perspective. Spice India. (January). 2001; 1:4-5.
7. Babu GSK, Naidu H, Prasad YE. Price spread and marketing of green Chillies-A case study in Andhra

Pradesh. Agricultural Marketing. 2003; 46(1):21- 23.

8. George AR. Spice Industry: A Domestic and Global Overview. Spice India. 1994; 8(1):33-35.

9. Ghuumatkar AG, Satpute TG, Khadase SZ. An Economic Analysis of Garlic Marketing in Pune District of Maharashtra State. Agriculture Marketing. 2006; 12(2):1-4.

10. Goudra VG, Havaldar VN, Megri SN, Hosamani SB, Banakar B. Groth rate scenario of chilli in North Karnataka, Karnataka journal of Agricultural science. 2011; 24(3):412.

11. Krishnadas M. Production and export performance of major Indian spices – an economic analaysis, M.Sc.(Agri) Thesis submitted to University of Agricultural Sciences, Dharwad, 2010.