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Green Revolution: A Way Towards Agricultural Diversification (A Case Study of Hisar District, Haryana)

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Abstract

This paper is an attempt to find out the extent of adoption of diverse agricultural activities as a result of Green Revolution in an agriculturally developed district of Hisar in Haryana. It has been captured through the field work conducted in randomly selected 23 villages. A well-structured pre-tested schedule was used to collect the information. Green Revolution played a catalytic role in increasing production. The increased production has significantly contributed in boosting of commercialization and diversification of agricultural activities. More and more people in the villages are now attracted towards diverse agricultural occupations because of their remunerative nature. Distance from urban centers is no more bar for adoption of these diverse agricultural activities.

Key-words: *Green Revolution, Catalytic, Commercialization, Diversification, Remunerative.*

Introduction

Prior to state formation (1966), agriculture was practiced by peasants on subsistence level as the seed varieties were of low yield and agricultural operations were traditional and manual (Thukral, 2011). State policies were also not in place to support and assist the farming i.e. marketing, minimum support price, procurement of produce and agricultural infrastructure (power, pucca canal irrigation, pucca road transport facility and agricultural tools) (Sharma, 2011). With increasing population, declining land-man ratio, small and fragmented holdings and highly unequal land distribution, traditional agriculture could not provide livelihood security. Beginning with green revolution during late sixties several technological, institutional and policy initiatives were taken up to transform agriculture. As a result, agriculture started showing significant diversification with the spread of green revolution technology (Mirthyunjaya, 2010).

The study on agricultural diversification has been carried out by various scholars. Mellor (1997) finds that "practically all developing countries can achieve 4 to 6 per cent growth rates in agriculture because of major potentials in the production of high-value agricultural commodities". Studies by Jha (1996) and Saleth (1997) visualized agricultural diversification towards high income enterprises as a growth strategy. The extent of diversification experienced in various states has been studied by Chand and Chauhan (2002) and accordingly, the extent of diversification was quite high in Haryana. Rapidly increasing population coupled with heavy investment in agricultural

infrastructure by the newly created state and technological improvement created an environment to boost the productivity in Haryana. This happened or found expression in the form of Green Revolution. Agriculture became organized and commercialized. Increased income due to commercialization of agriculture has shifted consumer's demand towards higher valued foods such as horticultural and livestock products (Mkhize and d'Souza, 2012). Agricultural diversification towards these high value commodities could generate income, employment opportunities, empower women farmers and conserve natural resources thereby contributing in agricultural growth (Sharma, A. and Kumar, D. 2008).

Thus, initiation of Green Revolution led to surplus production which further led to the prosperity of people in the study area (Hisar District being the part of prime Green Revolution states) which, in turn, led to their increased demand for diversified agricultural products. Shift towards growing of horticulture crops, dairy-farming, poultry-farming and fish-farming etc. happened looking at the prospects of their increased consumption in urban centres and thereby making huge benefits. This paper is an attempt to know the extent of these different diversified agricultural activities in the district.

Objective

This paper purports to explore the extent of adoption of diverse agricultural activities as a result of Green Revolution in an agriculturally developed district of Hisar (Haryana).

Study Area

Hisar is situated between 28˚53'45" to 29˚49'15"N latitudes and 75˚13'15" to 76˚18'15" E longitudes. Its climate can be classified as semi-arid and hot. There is no natural drainage in the district but the area is drained by network of Bhakra and Western Yamuna Canal Systems. Hisar is predominantly an agricultural district. Location of Haryana Agriculture University and Government Livestock Farm (largest in Asia and second largest in world) at Hisar brought a most spectacular transformation in the agricultural economy of the district. At present, the district is self-sufficient in food grains and ranks among first four districts in production of cotton, oil-seeds and gram in the state. It is known all over the world for its quality livestock.

Data base and Methodology

The present paper is based on the primary data which has been captured through the fieldwork conducted in randomly selected 23 villages. The sample was stratified on the basis of relief, population size, and distance from Hisar city and road accessibility. After that a sample from each stratum was drawn using a random table. A well-structured pre-tested schedule was used to collect the information. The schedule was related to village level information regarding adoption of diverse agricultural activities.

The list of selected villages, where fieldwork was conducted, along with their Hadbast number is as follows: Kherampur (21), Siswal (174), Chickanwas (144), Kirmara(57), Mater Sham (170), Balsmand (22), Dhiranwas (53), Daha (10), Dabra (164), Satrod Khurd (155), Khokha (28),

Kumbha Khera (75), Barwala (Rural) (128), Rakhi Khas (76), Majod (111), Depal (118), Kheri Gangan (123), Bhatol Jatan (10), Bass Akbarpur (96), Madanheri (58), Chuli Kalan (7), Daulatpur (124) and Bithmara (85) (Map 1).

Results and Discussion

Diversification of agricultural activities in the district is clear from the table given below.

Green Revolution led to White Revolution. Dairying Activity started in the villages due to availability of green fodder in the villages and to meet the increased demand of milk in the urban centres. Milk supply zone of Hisar city extended in different directions approximately to one hundred villages. In the north it extends upto Sarsod village along NH 65; in the north-east up to Khokha and Kharkhari villages; in the east upto Ramayan village along NH 10; in the south-east up to Dhamian village along district major road to Tosham; in the south up to the border of the district i.e. Saharwa village along Tosham road and Chaudhriwas village along NH 65. In the south-west, milk supply zone extends up to Balsmand village along Balsmand road; in the west up to Siswal village and in north-west up to Landhri Sukh Lambran village along NH 10. Surrounding villages of Hisar city like Dabra, Mirka, Kaimri, Dahima, Bhagana, Mangali Akalan, Mangali Brahmnan, Mangali Surtia, Mangali Jhara, Harikot, Bhojraj, Gujar, Ladwa, Aryanagar, Dhansu, Talwandi Rana, Mirzapur, Neoli Kalan, Dewe, Muklan, Gangwa, Dhiranwas, Hisar (rural), Mayyer, Satrod Kalan, Satrod Khas, Satrod Khurd, Ludas, Mater Sham, Durjanpur and Thaska constitute a significant milk supply zone for the city.

Vegetables used to be grown by Sainis residing in a separate mohalla in the city to fulfill the requirements of the city. With the passage of time, to supplement the ever increasing demand of vegetables in the city, the surrounding villages started growing vegetables on a large scale. After formation of Haryana, metalled link roads gave a boost to their supply. Haryana Agricultural University at Hisar promoted the villagers to grow vegetables and fruits. Farmers preferred to grow all types of vegetables i.e. leaf, stem and root. However, tomatoes, potatoes, onions, cauliflower, chillies, ladyfinger, locky, raddish, turnip, carrot, chappal kadoo, petha, and leafy vegetables like palak were the popular ones. Recently, progressive farmers have also started growing beans, cabbage and mushroom having seen the increasing consumption of these vegetables in hotels and restaurants of the city in Chinese recipes. Vegetable supply zone of the city extends along Hisar-Delhi road (NH10) in the east up to Mayyer village and in the west up to Siswal village which is famous for mushroom cultivation; in the south-west upto Dhiranwas village along Balsmand road; in the north along NH 65 i.e. Hisar-Chandigarh road up to village Gaibipur; in the south up to village Saharwa and Chaudhriwas along NH 65. These belts can rightly be identified as 'vegetable belts' of the district.

Fruit cultivation was also started in the district and fruit supply zone for Hisar city have some wider extent. Along NH 65 in the north, it extends upto Daulatpur village which is famous for peach cultivation and

in the south up to Chaudhriwas and Saharwa villages which are famous for strawberry cultivation. In the east along NH 10 upto Bhagana (grapes) and Mayyer (guava, ber and jamun) villages; on Balsmand road up to Balsmand (grapes) and in the west and north-west up to Siswal and Adampur villages, there is citrus fruit belt (especially kinu and malta). Daroli, Siswal, Ladwi, Jakhod Khera, Kabrel, Bagla and Salemgarh villages are significant in this context. Rajli, Bhagana, Dhiranwas and Balsmand villages are famous for grapes cultivation in the district.

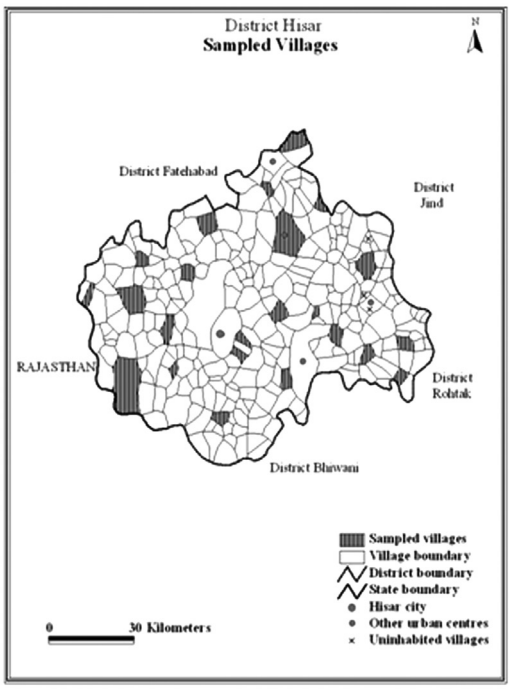
Recently, poultry products, flowers, bee-products (honey), fish products and bricks have also found a lucrative market in Hisar city. Villages located on Hansi-Barwala road and in Narnaund block have gone in for poultry products on a big scale. Daulatpur, Dabra and Narnaund villages are famous for hatchery. The ever increasing demand of eggs and chicken in the city has promoted the growth of poultry-farming in these villages. Similarly, the demand of flowers in the city has led to the flower cultivation in the surrounding villages such as Satrod Khurd, Satrod Kalan, Satrod Khas, Dabra, Hisar (rural), Kaimri, Dewe and Muklan. Various flowers like Marigold, Gladiolus and Rose are mostly grown in these villages. These flowers are supplied to the flower shops in the city market. Flowers are also grown in Hansi (rural), which are supplied to Hansi town. Bee-keeping has also been adopted as a profession in the district, which is significantly done in the villages along Hisar-Chandigarh road and Hansi-Barwala road. Daulatpur is the most important village in this context. Their products are supplied to Hisar, Delhi, Himachal Pradesh and Uttar Pradesh. Fish culture has also been promoted in the district in ponds. Fish products are supplied to Hisar cantonment and Delhi. Dabra and Daulatpur villages are famous for fish hatcheries. Products from these hatcheries are supplied to even other states. Diversification of agricultural activities has been to such an extent that even distance from city has not remained a bar in most of the cases (Table 2 and Maps 2; 3; 4; 5; 6 & 7).

Table 2 : District Hisar: Diversification of agricultural activities

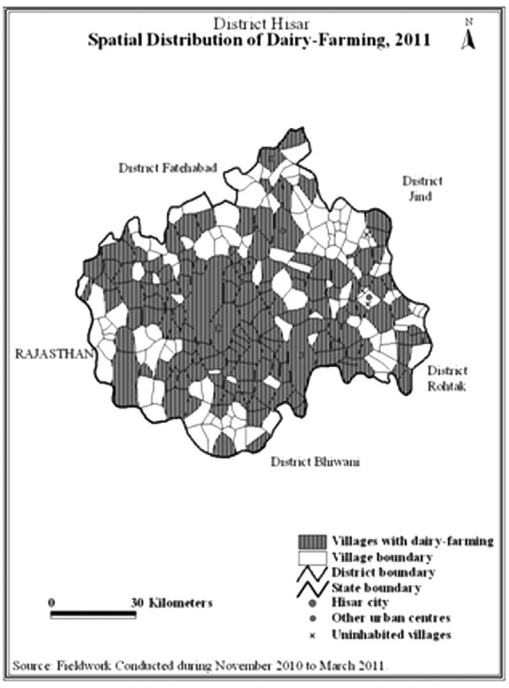
Distance in kms.	Floriculture	Horticulture	Dairy-farming	Poultry farming	Bee-keeping	Fishing
0-10	✓	✓	✓	✓	✓	✓
11-20	✓ (to some extent)	✓	✓	✓	✓	✓
21-30	-	✓	✓	✓	✓	✓
31-40	-`	✓	✓	✓	✓	✓
More than 40	-	✓ (to some extent)	✓	✓	✓	✓

Source: Field Survey Conducted during November 2010 to March 2011.

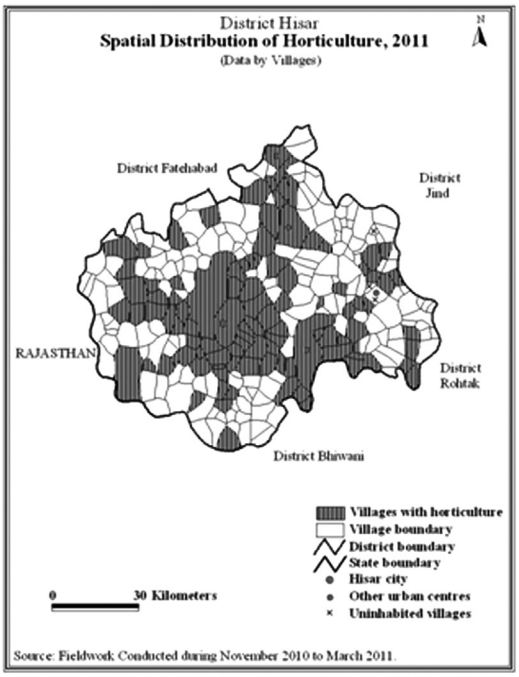
Although distance does not matter much in practising various diversified activities because of availability of modern modes of transportation, yet the form of practice gets changed in dairy-farming. Up to 20 kilometers from Hisar city, there is a zone of vendors; after that up to 40 kms. (approximately), milk collection and chilling centres are established in most of the villages, from where milk is supplied even up to Delhi. Even farther i.e. beyond 40 km. (approximately), private organized firms like Vita, Lakshya, Reliance and Nestle come into operation. Thus, it can be stated that increasing urban population and rising standards of living has promoted the dairy farming activity in the surrounding villages on professional and scientific lines. Apart from these activities, a number of brick kilns have also come up in many villages along various roads like Hisar-Tosham road, Hisar-Mangali road, Hisar-Adampur road up to village Bagla and along NH 10 from Hisar to Agroha to supply the bricks in the city (Map 8).



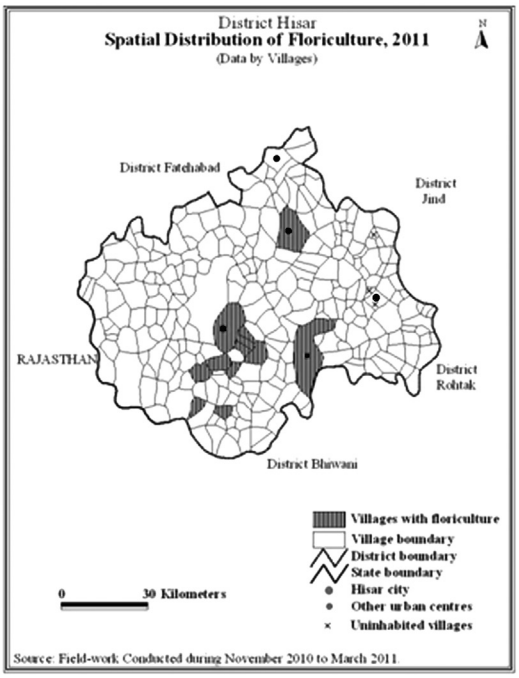
Map 1



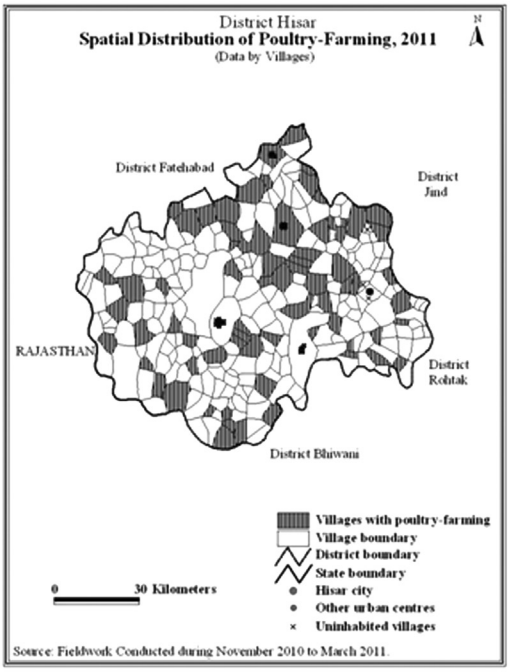
Map 2



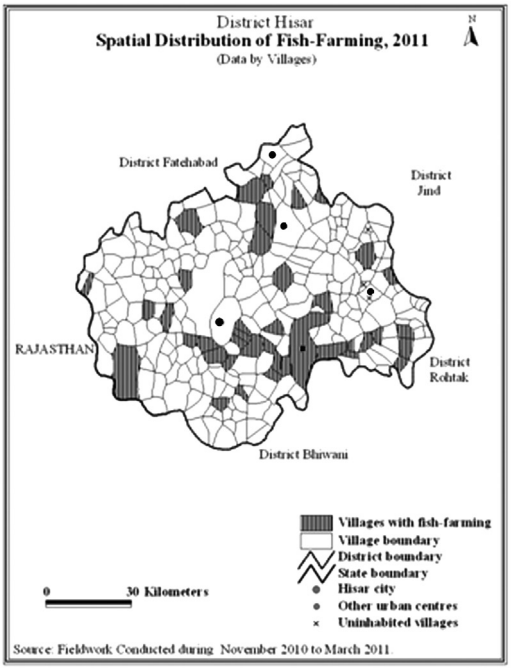
Map 3



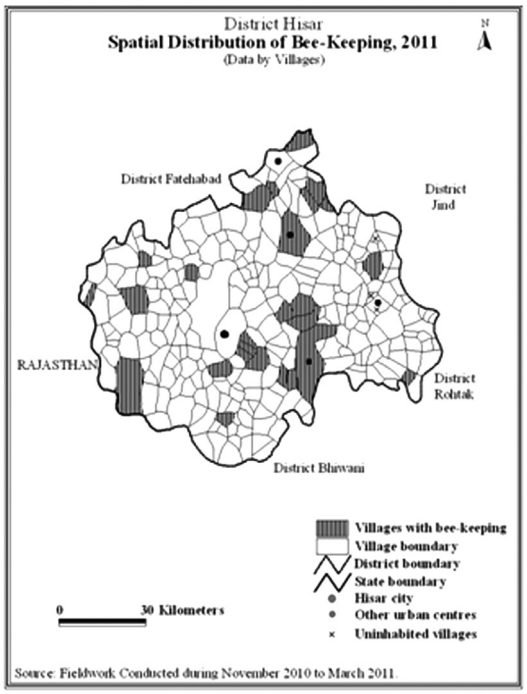
Map 4



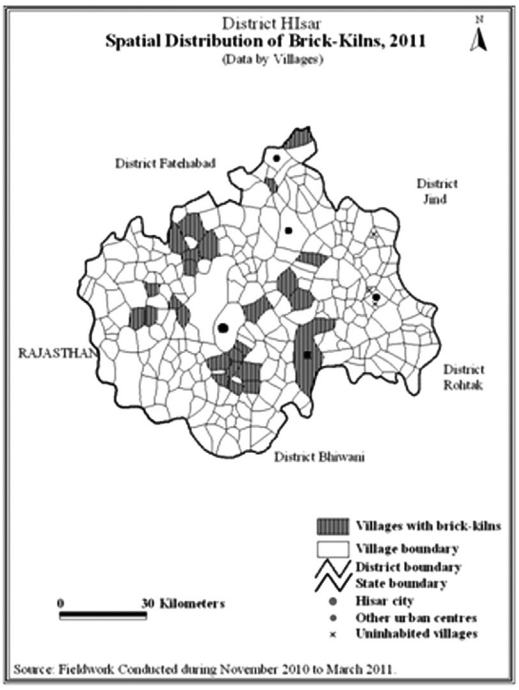
Map 5



Map 6



Map 7



Map 8

Conclusion

In sum, people in the district have started adopting diverse agricultural activities after initiation of Green Revolution so as to increase their income and to meet the ever increasing demand of these products in the urban centres. Villagers have resorted to Dairy-Farming, floriculture, horticulture, poultry-farming, fish-culture and bee-keeping etc. occupations. Brick-kilns have also come into existence in the district. Distance from the urban centres is no more bar for adopting these activities because of technological development and availability of modern modes of transportation. These occupations have extended even upto the border of the district; though, the form of practice changes in some cases like dairy farming. Thus, agricultural diversification towards high value commodities, doing value-addition through their processing and creating appropriate markets for them can be used as effective measures to alleviate rural poverty, generate rural employment and conserve natural resource in the district.

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