Dr. Sanjay
Assistant Professor, Department
of Agricultural Economics, CCS
HAU, Hisar, Haryana, India

Dr. RS Pannu
Professor (Retd.), Department of
Agricultural Economics CCS
HAU, Hisar, Haryana, India

Dr. VP Mehta
Professor (Retd), Department of
Agricultural Economics, CCS
HAU, Hisar, Haryana, India

Dr. Dalip Bishnoi
Assistant Scientist, Department
of Agricultural Economics, CCS
HAU, Hisar, Haryana, India

Dr. OP Sheoran
Professor and Head, Department
of Maths and Statistics, CCS
HAU, Hisar, Haryana, India

Analyzing the distribution disparity of agricultural credit in Haryana: A decade study

Dr. Sanjay, Dr. RS Pannu, Dr. VP Mehta, Dr. Dalip Bishnoi and Dr. OP Sheoran

Abstract
This research examines the demand-supply gap of short-term agricultural credit (STAC) in Haryana, India, over the period of 2009 to 2018. The study reveals a substantial increase in STAC demand, attributed to the expansion of cultivation areas and rising agricultural costs. However, an uneven distribution of credit allocation is observed among districts, with certain regions experiencing credit oversupply, while others face deficits. Specifically, districts like Yamunanagar and Kaithal demonstrate the highest oversupply, with an excess of Rs. 14,114.3 Crores and Rs. 998.1 Crores, respectively. On the other hand, Sonipat, Mahendragarh, and Mewat face the most significant deficits, with Rs. 595.2 Crores, Rs. 457 Crores, and Rs. 421.6 Crores, respectively. To address this imbalance, the study advocates for a need-based credit allocation strategy, aiming to promote equitable agricultural development and financial inclusivity across Haryana. Understanding these patterns is crucial for formulating targeted policies to support sustainable agricultural growth and uplift rural communities.

Keywords: Credit gap, demand of credit, supply of credit, agricultural credit

Introduction

India came into being with the world's second largest population i.e. 360 Millions growing at 1.69 per cent (Population Census, 1951) and largely rural in nature (82.6 %), with a subsistence nature of farming, and lack of food security. These circumstances led to the idea and onset of the "Green Revolution" which helped the country attain self-sufficiency. It implicitly mandated the augmented requirements of credit from banks largely controlled by corporate houses (Aggarwal, 2019) [1]. It led to Nationalization of Banks (1969 & 1980), genesis of Regional Rural Banks (1975), formation of NABARD (1982), financial sector reforms (1991), special Agricultural Credit Plan (1994-95), implementation of Kisan Credit Cards (1998-99), and doubling Agricultural Credit Plan within three years (2004).

Credit to agriculture has amplified from 813 crores in 1970-71 to Rs. 15.8 Lakh crores in 2021-22 (Ministry of Finance, 2023) [8]. As per the past researches, Agricultural credit has a direct relationship with income level, farm productivity and agriculture development (Godara *et al*. 2014) [4]. The increase in short-term institutional credit by one resulted in higher use of inputs by Rs 0.37 (Sidhu *et al.* 2006) [6]. Credit in agriculture influences production growth through two main channels. First, increase in formal credit result in greater availability of working capital and more investment in fixed capital. Second, credit also enables consumption smoothing for cultivators (Misra *et al*. 2016) [9].

Haryana is an agriculturally advanced state with an average landholding of 1.58 ha in comparison to the national average of 1.08 ha, cropping intensity of 182 per cent and 93 per cent of the net area sown is under irrigated settings (GoH 2023) [5]. Despite, increasing allocations to agricultural credit the country (Rs. 15 Lakh Crores, 2021-22.) 52 per cent of agricultural households in India are under debt and 42.3 per cent in the case of Haryana (GoI 2019) [6]. Therefore, there is a need to critically analyze the demand supply situation of the budgetary credit support to the farming sector.

Corresponding Author:
Dr. Sanjay
Assistant Professor, Department
of Agricultural Economics, CCS
HAU, Hisar, Haryana, India

Method

The present study was based on secondary data from 2009-10 to 2018-19. The secondary data regarding the short-term agricultural credit supplied in the state by various banks, scale of finance and area covered under different crops was collected from different published and unpublished sources both online and offline i.e. Haryana statistical abstract (2010 to 2019), Economic Survey of Haryana (various issues), HARCO Bank, Chandigarh, Office of State Level Bankers Committee, Chandigarh, website of Department of Horticulture, Haryana.

Estimation of Demand and Supply gap of credit

For the estimation of demand-supply gap of agricultural credit firstly, the demand for agriculture credit was estimated. It was however only assessed for short-term credit. As the STAC is meant for the cultivation of crops, its demand was estimated using scale of finance the basis of which is the cost of cultivation of crops (NABARD, 2020) [10]. The scale of finance is given out every year for 27 crops/crop groups for each of the districts separately. Now, for estimating the total demand for short-term agricultural credit, it was assumed that all the farmers of the state are dependent on bank credit for covering the cost of cultivation of crops.

The final estimate for the demand for short-term agricultural credit for a particular district was made by using the following method.

$$Di = \sum (A_{ij} \times S_{ij})$$

Where,

G_i	=	Credit gap for i^{th} year
D_i	=	Demand of STAC in i^{th} year
S_i	=	STAC supplied in i^{th} year
A_{ij}	=	Area under crop for i^{th} year and j^{th} crop
S_{ij}	=	Scale of finance fixed for i^{th} year and j^{th} crop
i	=	Year (2008, 2009, 2010….. 2018)
j	=	Crop (1,2,3……n)

To mention, the area of all the field crops, vegetable crops, spice crops, and flower crops was only used for estimating demand for STAC as the scale of finance is given out for these crop groups only. After the estimation of demand of short-term credit, the demand-supply gap was calculated for each of the districts for the period 2009 to 2018 using the following formula.

$$G_i = D_i - S_i$$

Where,

G_i	=	Credit gap for i^{th} year
D_i	=	Demand of STAC in i^{th} year
S_i	=	STAC supplied in i^{th} year
i	=	Year (2008, 2009, 2010….. to 2018)

Results and Discussion

Demand for ST agricultural credit

The estimation of district-wise annual demand for short-term agricultural credit (STAC) for the period 2009 to 2018 presented in Table 1 shows increasing requirements due to increased area under cultivation and cost of cultivation in nominal terms. Except for Faridabad and Gurgaon districts, in all the other districts and in the state itself the demand for STAC grew by a CAGR of approximately 10 per cent. The highest total requirement for STAC was seen in Sirsa (Rs. 447 3.6 Crores), Bhiwani (Rs. 377.6 Crores) and Hisar district. (Rs.3706.5 Crores). Conversely, the lowest requirement for STAC was seen in Panchkula (Rs. 336.3 Crores), Faridabad (Rs. 344.8 Crores) and Gurgaon (Rs. 684.6 Crores). If seen according to zones, the proportional demand of STAC was way higher in Hisar (37.1 % i.e. Rs. 15757.1 Cr) and Karnal (36.9 % i.e. Rs. 15677.3 Cr) then Jhajjar (26 % i.e. Rs. 11030.5 Cr) zone. In Haryana state as a whole the demand for agriculture grew by 10.5 per cent which rose from Rs. 17956 Crores in 2009 to Rs. 42464.9 Crores in 2018.

Table 1: District-wise annual demand of STAC (2009-18) (Rs. Crore)

Zone	District	2009	2012	2015	2018	CAGR (%)
Hisar		6637.9	9542.3	13291.6	15757.1	10.4
		(37)	(38.6)	(39.1)	(37.1)	
	Sirsa	1942.7	2656.4	3718.4	4473.6	10.5
	Fatehabad	1268.9	1781.5	2485.1	2891.1	10.3
	Hisar	1376.2	2183.2	3008.8	3706.5	10.3
	Jind	1384.8	1974.9	2770.6	3194.1	10.4
	Rohtak	665.3	946.2	1308.8	1491.9	10.3
	Faridabad	473.7	241.5	268.9	344.8	7.8
	Palwal	447.5	611	903.9	1233.1	12.3
Karnal		6730.3	9450.5	12365.8	15677.3	9.9
		(37.5)	(38.2)	(36.4)	(36.9)	
	Panchkula	132.6	196.2	262.5	336.3	11.1
	Ambala	729	1024.3	1334.2	1664.6	9.7
	Yamunanagar	795.1	1232.1	1537.2	1888.2	9.7
	Kurukshetra	959.3	1313.7	1730.1	2076.8	9.3
	Kaithal	1199.8	1646.2	2176.7	2839	10
	Karnal	1328.5	1829.6	2406.8	3046.5	9.8
	Panipat	642	864.4	993.5	1517.4	10.2
	Sonipat	944	1344.1	1924.9	2308.5	10.4
Jhajjar		4587.8	5737.7	8336.6	11030.5	11.4
		(25.6)	(23.2)	(24.5)	(26)	
	Bhiwani	1347.7	1832.6	2709.3	3777.6	12.2
	Mahendragarh	508.5	731.6	1003.6	1350.4	10.9
	Rewari	411	527.9	811.9	955.5	10.7
	Jhajjar	637.8	787.5	1182.8	1508.9	11

Gurgaon	360	431.1	588.4	684.6	7.8
Mewat	401.7	574.6	867.9	1175.8	13.7
Total	17956.0	24730.5	33993.9	42464.9	10.5

Note: figures in parenthesis represent percentage of total of the state

The crop group-wise STAC requirement in Haryana shows the dominance of field crops as the major portion goes to them. Their assessed requirements increased from Rs. 16985.6 Crore in 2009 to Rs. 39530.9 Crore in 2018. Whereas, for vegetable and spice crops, the STAC demand was assessed to have increased from Rs. 954.1 Crores in 2009 to Rs. 2901.1 Crores in 2018. Lastly, the STAC requirement for flower crops had doubled but was still meager as it increased from Rs. 16.1 Crores in 2009 to only Rs. 32.8 Crores in 2018.
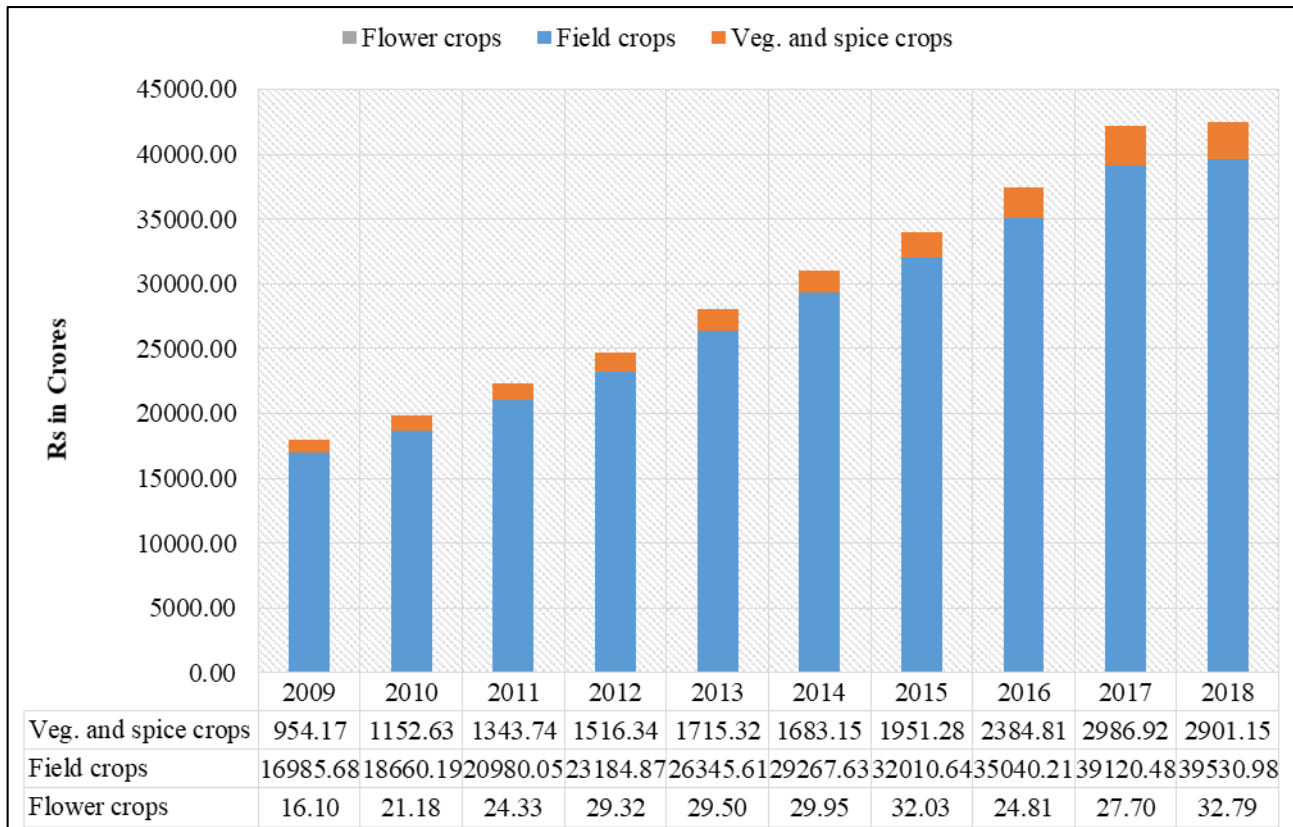

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Veg. and spice crops	954.17	1152.63	1343.74	1516.34	1715.32	1683.15	1951.28	2384.81	2986.92	2901.15
Field crops	16985.68	18660.19	20980.05	23184.87	26345.61	29267.63	32010.64	35040.21	39120.48	39530.98
Flower crops	16.10	21.18	24.33	29.32	29.50	29.95	32.03	24.81	27.70	32.79

Fig 1: Crop group wise STAC requirement in Haryana (2009-18)

Supply of STAC

The total supply of STAC calculated by summing up the credit advanced by commercial banks, regional rural banks and cooperative banks. The district-wise supply of STAC (Table 2). Can be seen rising throughout the state during the study period. The maximum growth was seen in Mahendragarh (13.4 % cagr) where the quantum had nearly tripled whereas the supply grew least in Palwal but with a healthy 10.5 per cent CAGR

In terms of value the highest amount of credit went to Sirsa (Rs. 4284.9 Crores) followed by Hisar (Rs. 3996.1 Crores) and Kaithal (Rs. 3837.1 Crores). Conversely, the lowest supply was made in Faridabad (Rs. 292.7 Crores), Gurgaon (Rs. 704.9 Crores) and Mewat (Rs. 754.2 Crores).

Table 2: District-wise supply of STAC in Haryana (2009-18) (Rs. Cr)

Zone	District	2009	2012	2015	2018	CAGR (%)
Hisar		6727.0	10135.1	14450.3	16729.3	11.8
		(37.2)	(37.8)	(37.5)	(37)	
	Sirsa	1993.5	2861.4	4074.7	4284.9	10.6
	Fatehabad	1543	2214.7	3045	3752.8	11.0
	Hisar	1328.2	2211.5	3149.1	3996.1	11.9
	Jind	1389.6	2169	3088.8	3585	12.7
	Rohtak	448.8	644.2	917.3	1193.1	11.9
	Faridabad	123.6	177.3	271	292.7	11.9
	Palwal	515.3	739.6	1053.2	1084.5	10.5
Karnal		7737.9	11293.2	16369.2	18569.1	11.5
		(42.8)	(42.1)	(42.5)	(41.1)	
	Panchkula	245.7	383.6	546.2	648.6	12.9
	Ambala	739.1	1060.9	1510.7	1721.3	11.1
	Yamunanagar	1438	2110.4	3207.8	3302.5	11.5
	Kurukshetra	1276.9	1832.8	2610	2835.6	10.8
	Kaithal	1516.7	2177	3100.1	3837.1	11.6

	Karnal	1274.2	1828.9	2689.3	3315.6	12.0
	Panipat	483.5	764.2	1088.2	1195.1	12.1
	Sonipat	763.8	1135.4	1616.9	1713.3	11.2
Jhajjar		3611.3	5374.8	7712.5	9929.9	12.2
		(20.0)	(20.1)	(20.0)	(22.0)	
	Bhiwani	1206.6	1889.2	2653.3	3735.8	13.5
	Mahendragarh	321.2	461	733.6	893.4	13.4
	Rewari	472.7	678.5	1092.7	1110.5	12.3
	Jhajjar	518.6	771	1097.9	1271.4	11.9
	Gurgaon	220	323.1	460.1	704.9	13.2
	Mewat	257.4	369.5	526.1	754.2	12.5
	Total	17691.5	26876.9	38273.2	45228.3	11.9

Note: figures in parenthesis represent percentage of total.

The zonal distribution of total supply puts Karnal, Hisar and Jhajjar in descending order where in 2018 Rs. 16729.3 Cr (41.1 %), Rs. 18569.1 Cr (37.0 %), Rs. 9929.9 Cr (22.0 %) went to the respective zones. However, it is interesting to see that the CAGR of 5 districts in Karnal, and 2 districts in Hisar zone and none in Jhajjar zone was less than the state CAGR of 11.9 per cent during the study period.

Demand supply gap of STAC

It was seen from the results that the quantum of agricultural credit has increased manifold through all the districts in Haryana. During the previous decade also Kumar et al. (2010) [7] shared similar results. After the assessment of district-wise gap of STAC in Haryana (Table 3) it was observed that out of the 21 districts, 11 districts were over supplied with STAC while the remaining 10 districts faced a deficit. The highest over supply was seen in Yamunanagar (-Rs. 14114.3 Crores)

district followed by Kaithal (-Rs. 998.1 Crores) and Fatehabad (-Rs. 861.7 Crores). Whereas, the deficit was highest in Sonipat (Rs. 595.2 Crores) followed by Mahendragarh (Rs. 457 Crores) and Mewat (Rs. 421.6 Crores). Among the three sampled districts, Hisar and Karnal had an oversupply of -Rs. 289.7 Crores and -Rs. 269.1 whereas Jhajjar faced a deficit of Rs. 237.4 Crores. Sidhu et al. (2008) [14] and Baba et al. (2014) [3] also reported the oversupply and skewed supply of credit in Punjab in the year 2005-06 and Jammu & Kashmir, respectively. However, Rani et al. (2016) [12] reported high positive credit gap for paddy farmers in Tamil Nadu.

Moreover, as it has been seen that there is a variation in demand supply condition across districts in Haryana, Sidhu et al. (2008) [14] also found it important to first estimate the demand for agricultural credit in each region/state depending upon cropping pattern, current input and capital requirements.

Table 3: District-wise gap of STAC in Haryana (2009-18) (Rs. Cr)

Zone	District	2009		2012		2015		2018	
		Value	%	Value	%	Value	%	Value	%
Hisar		89.1	1.3	592.8	6.2	1158.7	8.7	972.1	6.2
	Sirsa	-50.8	2.6	-205.1	7.7	-356.3	9.6	188.7	4.2
	Fatehabad	-274	21.6	-433.2	24.3	-560	22.5	-861.7	29.8
	Hisar	48	3.5	-28.2	1.3	-140.3	4.7	-289.7	7.8
	Jind	-4.8	0.3	-194.1	9.8	-318.2	11.5	-390.8	12.2
	Rohtak	216.5	32.5	302.1	31.9	391.5	29.9	298.8	2
	Faridabad	350.1	73.9	64.2	26.6	-2.2	0.8	52.1	15.1
	Palwal	-67.8	15.2	-128.6	21	-149.3	16.5	148.6	12.1
Karnal		1007.6	15	1842.7	19.5	4003.4	32.4	2891.8	18.4
	Panchkula	-113.2	85.4	-187.4	95.5	-283.7	18.1	-312.2	92.8
	Ambala	-10.1	1.4	-36.6	3.6	-176.5	13.2	-56.7	3.4
	Yamunanagar	-642.9	8.9	-878.3	71.3	-1670.6	18.7	-1414.3	74.9
	Kurukshetra	-317.6	33.1	-519.2	39.5	-879.9	5.9	-758.8	36.5
	Kaithal	-316.9	26.4	-530.9	32.3	-923.4	42.4	-998.1	35.2
	Karnal	54.4	4.1	0.8	0	-282.5	11.7	-269.1	8.8
	Panipat	158.6	24.7	100.2	11.6	-94.8	9.5	322.3	21.2
	Sonipat	180.2	19.1	208.7	15.5	308	16	595.2	25.8
Jhajjar		-976.5	21.3	-363	6.3	-624	7.5	-1100.6	1
	Bhiwani	141.2	1.5	-56.6	3.1	56	2.1	41.9	1.1
	Mahendragarh	187.3	36.8	270.7	37	269.9	26.9	457	33.8
	Rewari	-61.7	15	-150.5	28.5	-280.8	34.6	-155	16.2
	Jhajjar	119.2	18.7	16.5	2.1	84.9	7.2	237.4	15.7
	Gurgaon	140	38.9	108	25.1	128.3	21.8	-20.4	3
	Mewat	144.3	35.9	205.1	35.7	341.8	39.4	421.6	35.9
	Haryana	-120.2	0.7	-2072.5	8.4	-4538.1	13.3	-2763.3	6.5

Summary and Conclusion

The results of the current study accomplish that there was a constantly growing but skewed distribution of STAC in Haryana. The districts like Kaithal, Kurukshetra, Fatehabad etc. had oversupply of STAC throughout the study period. Similarly, districts Mahendargarh, Mewat, Jhajjar, Gurgaon

etc. have been continuously under STAC crunch throughout the study period. The compound annual growth rate for most of the districts was similar which means that the banks have been following same regional distribution for the last 10 years. In line with the suggestions of Sidhu et al. (2008) [14]

instead of keeping the supply uniform over the years, regional distributing should be need based.

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