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RESEARCH ARTICLE
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IN REGULATED MARKETS ROLE OF INFORMATION SYSTEM IN MAHENDERGARH DISTRICT OF HARYANA

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ABSTRACT
Mustard is a good crop to grow in Haryana's Mahendergarh district, especially in the Mahendergarh and Kanina blocks, where mustard and rapeseed crops produce the most. The market analysis also included Mahendergarh, Narnaul, Ateli, Kanina and Nangal Choudhary marketplaces. Finally, 75 farmers were selected at random from these two blocks, as were 50 traders from Mahendergarh district's five controlled marketplaces. Research in the Mahendergarh area showed that farmers were only slightly aware of prices and landings (II-Rank) compared to those who used MIS and those who didn't. The level of price knowledge among farmers in reference and other markets was the highest, ranking first and second, respectively. Information about the market in Mahendergarh area could be gotten from contacts in other markets and from other sellers. The daily prices were written down by hand and put on the bulletin board so that farmers could make it easier when they went to the market. Others, like friends, reporters, family members, and more, spread the word. In Mahendergarh district, around 77.34% of farmers reported a lack of essential market information. Farmers also have trouble with non-availability of required information issues (64%).

Key words: Marketing information system, regulated market, trader, Mahender-garh

INTRODUCTION
Marketing is the process of creating, distributing, pushing, and selling things, services, and ideas in order to build a good relationship with people in a continuous setting. In order to make good marketing choices, marketing managers need to know what to sell, when to sell it, and how to sell it. They also need specific knowledge. Information is getting more useful because it is one of the most important factors in how competitive modern markets are. Marketing managers choose what products or services to sell, how to promote them, where to put them on the market, and how much to charge for them (McLeod and Schell, 2001).
Managers use a group of tools and sources called "market intelligence outfit" to keep up with the daily changes in the marketing world (Kotler and Armstrong, 2010). Agricultural markets often go wrong because people can't get the information they need or because farmers and buyers don't have the same amount of information (Poulton et al. 2006).

Oil seeds have long been an important commodity in India's agricultural economy. The United States, China, and Brazil have bigger economies than India's when it comes to vegetable oil. Oilseeds have gained popularity in India due to its adaptability to a variety of agro-climatic situations. Mustard-rapeseed crops are among the earliest cultivated plants in human history. It is a group of oilseed crops that play an imp role in the Indian national economy, ranking second only to groundnut and considered a cash crop. Mustard (Brassica juncea L.) is the premier oilseed brassica, accounting for 85-90% of the total area under cultivation of all these crops.

Mustard-rapeseed crops are among the earliest cultivated plants in terms of social evolution. Mustard-rapeseed is planted on 493 thousand hectares, producing 706 thousand tons with a productivity of 1432 kg/ha in 2014-2015. In recent years, it has grown in popularity due to its information, high yields, and resilience to biotic and abiotic challenges, allowing for more adaptation. Rajasthan has the largest area under this crop, followed by Uttar Pradesh, Haryana, Gujarat, Madhya Pradesh, Punjab, Assam, and West Bengal. Haryana is the country's second most important state, producing 11.50 lakh tonnes in 2021. The exact goals of this study are the ones below:

1. To study the existing market information system for mustard crop of Mahendergarh district in Haryana.
2. To study the pattern and extent of dissemination and utilisation of existing information by stockholders.
3. To identify the constraints in the existing information system and suggest alternatives.

REVIEW OF LITERATURE

Hatai et al. (2015) found that to increase agricultural growth in rural regions, agricultural marketing information is a crucial input. The Mylliem Block is in the East Khasi Hills and is home to the Mawiong Regulated Market. The Selsella Block is in the West Garo Hills and is home to the Garobadha Regulated Market. These two markets were looked at by researchers. They wanted to find out how the traders knew about, got, and used agricultural marketing information (AMI), as well as its pros, cons, and expectations.A total of 40 sellers from the two controlled market areas were picked at random and on purpose for the study. They made up the sample size.The study's results showed that the amount of price knowledge in local markets was ranked I (first), then arrivals in local markets, prices, and arrivals in reference markets, all in a row. trades always got information about the market from other trades (75% of the time) and contacts in other markets (90% of the time). The newspaper said that the traders knew the third most about AMI sources. It was clear that traders used information from the farming market to figure out the best price (I Rank), how much to buy (II Rank), and how much to store (III Rank). Changing the time of sale was shown to benefit traders the most (90%), followed by the form of storage (85%).

Approximately 75% of dealers said that the necessary kind of AMI was not available.According to traders' expectations on AMI, dealers in the study area prioritized quality-wise pricing (75%) over future price forecasts (87.5%) and prices in other adjacent markets (95%). For producers, traders, and consumers to get the most out of their sales and purchases, a steady and trustworthy flow of data must be guaranteed. Information transmission methods should be prioritized in order to ensure that end users in Meghalaya's hilly areas receive market information on time.

According to Mohammad and Huylenbroeck (2007), although the amount of food grains purchased rose significantly, it was not able to supply food grains for public distribution. The contribution from imports was far more than that from domestic purchases. The food grain imported by the government was wheat. Over the course of the decade, the import contribution to food grain distribution significantly declined, indicating that rising local production had reduced the reliance on imports for public food distribution. While the percentage of non-monetary distribution rose, the percentage of monetary distribution fell. The distribution mechanism for food grains is currently moving toward non-monetary distribution. Wheat accounted for a significant portion of the relative distribution share of the total availability, indicating the significance of wheat in the management of the food system as a whole. Market data is also essential to the management of the food system.

METHODOLOGY

The current study used first-hand information gathered through in-person questions following a structured interview guide that had already been tried and made just for the purpose. Mahendergarh district was chosen specifically for its high mustard production. Two blocks (Mahendergarh and Kanina) in the Mahendergarh district were chosen because they had the most land. Five regulated markets (Ateli, Mahendergarh, Kanina, nangal choudhary and Narnaul) in the Mahendergarh district were chosen based on the highest number of mustard arrivals. Five villages, Satnali, Khudana,Gahara Dhanuda, and Partel (both MIS adopters and non-adopters), were chosen at random from the two blocks. The interview method was created with the goal of gathering comprehensive and consistent information using a well-structured schedule.

Random selection was used to choose 75 farmers and 50 sellers from towns and markets to take part in the study. The goal was to look into where knowledge about farming markets comes from and how it is used. A table analysis using simple averages, percentages, and other numbers was used to find out what kind of market information system farms and sellers use, how big it is, where it comes from, and how they use it. Three points were given for "always," two points for "sometime," one point for "rarely," one point for "yes," and zero points for "no" in the farmers' and sellers' answers.

RESULTS AND DISCUSSION

Table 1 shows the sample farmers' awareness of various components of market information. Farmers

Table 1: Varying farmers' knowledge of mustard market information in Haryana's Mahendergarh area, divided into those who use MIS and those who don't. (n=75)

Sr. No.	Type of market information	Degree of Awareness							
		Always		Sometime		Rarely		Total Score	Rank
		Score	Percentage	Score	Percentage	score	Percentage		
1	Arrivals in reference/other market (Narnaul, Ateli and Nangal Chowdhary)	120	(57.34)	54	(36.00)	5	(6.67)	188	II
2	Arrivals in main market (Mahendergarh and Kanina)	123	(54.67)	58	(38.67)	5	(6.67)	186	III
3	Prices in reference/other market (Narnaul , Ateli and Nangal Chowdhary)	96	(42.67)	76	(50.67)	18	(24.00)	190	I
4	Prices in main market (Mahendergarh and Kanina)	114	(50.67)	58	(38.67)	8	(10.67)	180	IV
5	Area under crops	96	(42.67)	50	(33.34)	18	(24.00)	164	V
6	Quality/ Grade required	0	0.0	0	0.0	0	0.0	0.0	VI
Non-adopters									
1	Arrivals in reference/other market (Narnaul , Ateli and Nangal Chowdhary)	84	(46.67)	56	(46.67)	7	(11.67)	147	IV
2	Arrivals in main market (Mahendergarh and Kanina)	87	(48.34)	66	(55.00)	0	(0.0)	153	III
3	Prices in reference/other market (Narnaul , Ateli and Nangal Chowdhary)	93	(51.67)	62	(51.67)	0	(0.0)	155	II
4	Prices in main market (Mahendergarh and Kanina)	102	(56.67)	56	(46.67)	0	(0.0)	158	I
5	Area under crops	75	(41.67)	48	(40.67)	14	(23.34)	137	V
6	Quality/ Grade required	0	0.0	0	0.0	0	0.0	0.0	VI

Table 2: Traders' level of knowledge about information that is required by the market in Mahendergarh and each district of Haryana (n=50)

Mahendergarh district									
Sr. No.	Type of market information	Degree of Awareness						Total Score	Rank
		Always		Sometime		Rarely			
		Score	Percentage	Score	Percentage	Score	Percentage		
1	Arrivals in reference/other market (Narnaul , Ateli and Nangal Choudhary)	111	74.0	20	20.0	3	6.0	134	II
2	Arrivals in main market (Mahendergarh and Kanina)	108	72.0	16	16.0	3	6.0	127	III
3	Prices in reference/other market (Narnaul , Ateli and Nangal Choudhary)	117	78.0	14	14.0	4	8.0	135	I
4	Prices in main market (Mahendergarh and Kanina)	90	60.0	34	34.0	3	6.0	127	III

Table 3: Haryana's Mahendergarh area has a market information system that farmers can use at the village level. (n=75)

Mahendergarh district									
Sr. No.	Sources	Degree of Awareness						Total score	Rank
		Always		Sometime		Rarely			
		Score	Percentage	Score	Percentage	Score	Percentage		
1	Newspaper	105	46.67	62	41.34	9	12.0	176	II
2	Television	93	41.34	54	36.0	17	22.67	164	IV
3	Radio	75	33.34	60	40.0	20	20.67	155	V
4	Gram Panchayat	21	9.34	14	9.34	61	81.34	96	XI
5	Neighbors	108	48.0	64	42.67	7	9.34	179	I
6	Relatives	102	45.34	54	36.0	14	18.67	170	III
7	Cooperative credit society	81	36.0	48	32.0	24	32.0	153	VI
8	SHGS	63	28.0	48	32.0	30	40.0	141	VII
9	KVKs	54	24.0	46	30.67	34	45.34	134	VIII
10	Magazine	48	21.34	42	28.0	38	50.67	128	IX
11	Internet	45	20.0	38	25.34	41	54.67	124	X

In Mahendergarh district markets have I-Rank awareness of prices in other markets and II-Rank Awareness of arrivals in other markets, according to MIS adopters. The main market had III-rank arrivals and IV-rank in pricing. It's interesting that mustard farmers in the Mahendergarh district knew how much land they needed, how much they could grow, and how good the foods they grew were.

Table 4: Farmers in the Mahendergarh area of Haryana can get information about the market at the market level. (n=75)

Sr. No.	Source of market information	Mahender gar h	
		No.	Percentage
1	Commission Agents	61	81.34
2	Announcement by APMC	53	70.67
3	Display boards/Ticker Boards	43	57.34
4	Input dealer	43	57.34

Table 5: Market information systems that are regulated for traders in Haryana's Mahendergarh district (n=50)

Sr. No.	Types of utilizations	Mahender gar h district							
		Degree of usage							
		Always		Sometime		Rarely		Total Score	Rank
		Score	Percentage	Score	Percentage	Score	Percentage		
1	**Purchase decisions**								
	Deciding the price to be quoted	102	68.0	16	16.0	0	0.0	118	I
	Deciding the quantity to be purchased	93	62.0	20	20.0	2	4.0	115	II
2	**Storage decisions**								
	Deciding the necessity of storage	42	28.0	34	34.0	12	24.0	88	VII
	When to store	63	42.0	30	30.0	7	14.0	100	VI
	Quantity to store	66	44.0	38	38.0	3	6.0	107	IV
3	**Selling decisions**								
	Quantity to be sold	72	54.0	28	28.0	0	0.0	100	III
	Deciding where to sell	63	42.0	30	30.0	7	14.0	100	VI
	Deciding whom to sell	33	22.0	30	30.0	17	34.0	80	VIII
	Deciding when to sell	81	54.0	28	28.0	0	0.0	109	III
4	**Post purchase handling decisions**								
	Necessity of processing	0	0.0	0	0.0	41	82.0	41	X
	Deciding handling of the commodity	0	0.0	0	0.0	41	82.0	41	X
	Drying	30	20.0	0	0.0	38	76.0	68	IX
	Grading	0	0.0	0	0.0	0	0.0	0	XII

Mahendergarh district farmers who didn't adopt the system knew very little about landings and prices in the reference market (l-rank in the main market and II-rank in the other market). On the other hand, they knew a lot about

Table 6: Information about the market being shared in Haryana's Mahendergarh district shops (n=5)

Sr. No.	Mode of dissemination	Mahender gar h district	
		No.	Percentage
1	Notices board/Ticker board	5	(100.0)
2	Announcement	5	(100.0)
3	Fax	5	(100.0)
4	Telephone	5	(100.0)
5	Internet	5	(100.0)
6	AIR	5	(100.0)
7	Television	5	(100.0)
8	Posts	5	(100.0)
9	Newspaper	5	(100.0)

Table 7: Supplying market data to various organisations in Haryana's Mahendergarh district market

(n=5)

Sr. No.	Mode of dissemination	Mahender gar h district	
		No.	Percentage
1	State Agricultural Marketing Board	5	(100.0)
2	Department of Agriculture	5	(100.0)
3	District Statistical Offices	5	(100.0)
4	Research Station	5	(100.0)
5	Newspapers	5	(100.0)
6	Gram Panchayat	3	(60.0)

People came into the main market in III-Rank, and people came into other markets in IV-Rank. But the same trend was seen among farmers in the Mahendergarh district. These farmers knew about things like the area sown under crop (V-Rank) and the quality or grade of the output. Hatai and Panda (2015) also found similar things. Table 2 shows that, on average, the traders in the group knew a lot about the market. Awareness of prices in other markets (I-Rank) came first in the Mahendergarh area, then arrivals in other markets (rank II), arrivals in the main market, and prices in the main market (Ill-Rank). More than 70% of sellers were always up to date on new entries and prices. Traders, not farmers, knew where the farms were in the Mahendergarh district and what grade of food they were selling. Market information systems for farming goods were known to traders in the crop-growing area.

Hatai and Panda (2015) also found similar things. Table 3 shows that friends and media (I-Rank and II-Rank) are the main ways that farmers in Mahendergarh district learn about the market. In the towns of Mahendergarh district, the main ways people found out about the market were through family and TV (III-Rank and IV-Rank). In towns in Mahendergarh district, neighbours were the best way to learn about the market. Institutional groups like Gramme Panchayats, Cooperative Credit Societies, and Self Help Groups (SHGs) gave information about the job market. Krishna Vigyan Kendras (KVKs), on the other hand, were in the market. It is at the village level that farmers get information. In the towns of Mahendergarh district, commission brokers were the most sought-after source of market information (81.34%) during the market, as shown in Table 4. Another study by Amrutha et al. (2015) came to the same conclusions.

Table 5 shows that for traders with I and II-Ranks, contacts in other markets and other merchants were the main ways they learnt about new arrivals and prices in the market. More than 75% of sellers in the Mahendergarh district markets regularly got market information from other traders and friends in other markets. For information about the market, people in Mahendergarh district used newspapers (III-Rank), APMC boards (IV-Rank), reports (V-Rank), and magazines. Traders did not get information about the market from government papers, the internet, TV, or the market intelligence group. The results that Amrutha et al. (2015) reported were similar. The market used a variety of methods to disseminate market information in all five markets in **Table 8.**

Table 8: Farmers in Haryana's Mahendergarh area use market knowledge to what extent? (n=75)

Sr. No.	Nature/Types of decision	Arrival and Price in main market	
		No.	Percentage
1	**Production decisions**		
I	Crops to be sown	56	(74.67)
II	Area to be sown	25	(33.34)
2	**Selling decisions**		
I	When to sell	56	(74.67)
II	Where to sell	51	(68.0)
iii	Whom to sell	49	(65.34)
Iv	Quantity to sell	44	(58.67)
3	**Post-harvest handling decisions**		
I	Drying	59	(78.67)
II	Bagging	41	(54.67)
iii	Transportation	45	(60.0)

The district of Mahendergarh. Notice boards, statements in market yards, fax machines, phones, AIR, TV, and newspapers were used to spread market information (Table 6). The District Information Officer, AIR, newspaper and District Statistical Officer all received market information on **Table 9**.

Table 9: Nature and extent of utilization of market information by traders of each selected district of Haryana (n=50)

Mahender gar h district									
Sr. No.	**Types of utilizations**	**Degree of usage**							
		Always		**Sometime**		**Rarely**		**Total Score**	**Rank**
		Score	**Percentage**	**Score**	**Percentage**	**Score**	**Percentage**		
1	**Purchase decisions**								
	Deciding the price to be quoted	102	68.0	16	16.0	0	0.0	118	I
	Deciding the quantity to be purchased	93	62.0	20	20.0	2	4.0	115	II
2	**Storage decisions**								
	Deciding the necessity of storage	42	28.0	34	34.0	12	24.0	88	VII
	When to store	63	42.0	30	30.0	7	14.0	100	VI
	Quantity to store	66	44.0	38	38.0	3	6.0	107	IV
3	**Selling decisions**								
	Quantity to be sold	72	54.0	28	28.0	0	0.0	100	III
	Deciding where to sell	63	42.0	30	30.0	7	14.0	100	VI
	Deciding whom to sell	33	22.0	30	30.0	17	34.0	80	VIII

	Deciding when to sell	81	54.0	28	28.0	0	0.0	109	III
4	**Post purchase handling decisions**								
	Necessity of processing	0	0.0	0	0.0	41	82.0	41	X
	Deciding handling of the commodity	0	0.0	0	0.0	41	82.0	41	X
	Drying	30	20.0	0	0.0	38	76.0	68	IX
	Grading	0	0.0	0	0.0	0	0.0	0	XII
	Transportation	0	0.0	82	82.0	21	42.0	103	V

Table 10: Farmers in the Mahendergarh area of Haryana got benefits from market information

(n=75)

Sr. No.	Mode of dissemination	Mahender gar h	
		No.	Percentage
Obtained higher price			
1	By changing place of sale	41	54.67
2	Changing time of sale	33	44.0
3	Drying of produce	45	60.0
4	By storage	29	38.67
5	By change of mode of transportation	29	38.67
6	By better mode of packaging	29	38.67

a daily basis. It was sent to (HSAMB) three times a year, once a week, and once a month. Similarly, Zilla Panchayat, Agriculture Research Stations, and the Deputy Commissioner received market information in the form of yearly reports once a year (Table 7). Amrutha and Hugar (2007) observed similar findings. Table 8 shows the extent to which Mahendergarh district farmers use market information to make decisions. It is apparent that market information on arrivals is being used to make decisions about many areas of farming. However, around 74.67% used the knowledge to decide which crops to sow. The majority of Mahendergarh district farmers used drying as a post-harvest practice (78.67%).

Another example of a majority choice to sell (74.67%) was made by farmers in the Mahendergarh district. In Mahendergarh district, 68.0 percent of farmers used market arrival information to decide where to sell. The majority of Mahendergarh district farmers (78.6%) used drying as a post-harvest practice. Hatai and Panda (2015) observed similar findings.

Table 9 shows how sellers use information about the farming market to choose the price to offer and the amount to buy. They then use that information to decide how much to sell and how long to store it. Traders in Mahendergarh district clearly used information from the farm market to figure out the price to quote (I-Rank), the amount to buy (II-Rank), and the amount to sell and when to sell it (III-Rank). Traders in Mahendergarh district used market data to figure out where to sell, when to sell (V-Rank), and how much to sell (VI). Hatai and Panda (2015) also found similar things.

Table 11: Traders in Haryana's Mahendergarg area benefited from knowledge about the agricultural market

(n=50)

Sr. No.	Types of benefits from market information system	Mahender gar h	
		No.	Percentage
Obtained Higher Price			
1	Changing place of sale	29	58.0
2	Changing time of sale	33	66.0
3	Changing post-harvest handling	13	26.0
4	Drying of produce	23	46.0
5	Mode of packing	15	30.0
6	Mode of storage	27	54.0
7	Changing quantity of sale	19	38.0
8	Changing buyer	11	22.0

Table 10 shows the benefits that Mahendergarh district farmers believe they received from using market knowledge. It indicated that farmers profited and received greater prices by using the market intelligence system. In the instance of Mahendergarh district farmers, market information was utilized to decide whether to dry produce (60.0%), alter the place of sale (54.67%), modify the time of sale (44.0%), or store it (38.67%). Hatai and Panda reported a similar observation in 2015.

Table 11 demonstrates the benefits that Mahendergarh district traders believe they obtained from using market knowledge. It indicated that dealers benefited and received greater prices by using the market information system. In the Mahendergarh market district, traders benefitted the most from changing the time of sale (66.0%), the place of sale (58.0%), the manner of storage (54.0%), and the drying of produce (46.0%). Hatai and Panda (2015) observed similar findings.

Table 12 shows the constraints perceived by farmers based on existing market knowledge. Approximately 77.34% of farmers in Mahendergarh district reported that market information was not available in the needed format. Farmers also reported difficulty with accessibility (60.0%), followed by high transportation costs (68.0%), non-availability of required information on price/prices in other markets/production aspects (49.34%), better marketing and warehousing facilities aspects (33.34%), and non-availability of time aspects (44.0%) in Mahendergarh. Sankar and Singh (2014) observed similar findings.

Table 13 shows the restrictions that buyers have seen. About 72% of farmers in Mahendergarh district said they couldn't get market information in the manner they needed. Traders also had trouble because important information about prices and supply in other markets wasn't available 64.0% of the time, it wasn't available 56.0% of the time, it wasn't easy to access 36.0% of the time, and the network system wasn't working well 40.0% of the time.

Table 12: Limitations that farmers see in the current agriculture marketing data of the Mahendergagh areas of Haryana.

(n=75)

Sr. No.	Constraints	Mahender gar h	
		No.	Percentage
1.	Accessibility	45	(60.00)
2.	Costly	13	(17.34)
3.	Non- availability in time	33	(44.00)
4.	Non-availability of required information on price/ price in other markets/ arrival/ area/ production	37	(49.34)
5.	Non-availability of information in required form	58	(77.34)
6.	Face to high transportation costs	51	(68.00)
7.	Better marketing and warehousing facilities	25	(33.34)

Table 13: Haryana's different areas' agriculture marketing information and how sellers see the restrictions that come with it

(n=50)

Sr. No.	Constraints	Mahender gar h	
		No.	Percentage
1.	Information available but not accessible	18	(36.00)
2.	Costly	8	(16.00)
3.	Non- availability in time	28	(56.00)
4.	Non-availability of required information on price/price in other markets/ arrival/ area/ production	32	(64.00)
5.	Non-availability of information in required form	36	(72.00)
6.	Inadequate Network for Information flow	20	(40.00)
7.	Lack of information is a barrier production and traders	18	(36.00)
8.	Lack of Proper dissemination of Market Intelligence through communication	14	(28.00)

In Mahendergarh, the biggest problem with production is a lack of knowledge (36.0%), and the second biggest problem is that market data isn't being shared properly through communication (28.0%). Similar results were seen by Sankar and Singh (2014).

CONCLUSION

Researchers in Haryana's Mahendergarh area looked into how to improve the agricultural selling information system and found that farmers knew a lot less about different parts of market information

than traders did. None of the farmers in the chosen area knew where the crops came from, how they were grown, how good they were, or how to scientifically process them after they were picked. Unlike farmers, sellers in Mahendergarh district markets knew about these problems as well as the details of their products. At the village level, farmers mostly got market information from neighbours and newspapers. Though, at the market level, the most-requested sources were commission agents.

Some farmers in the Mahendergarh area get their market knowledge from papers and the internet. Other than that, some farmers depended on market announcements and signs. People who worked in certain area markets got most of their market information from contacts in other markets and from other sellers. Traditional advertising, display boards, TV, and newspapers were used by Mahendergarh district markets to get the word out about their sales. The knowledge about the market was not as useful for farmers as it was for sellers. More money was made by traders than by farmers in the markets of Mahendergarh district.

People who work on farms think that the biggest problem is that they can't get real-time price information. While the sellers said they were having trouble getting the information in the right manner. The shops in the Mahendergarh area did not have enough workers. Farmers and other interested parties should be able to quickly and easily access accurate, up-to-date information through the MIS. This will assist them in selecting the appropriate crops and markets, as well as the appropriate times and methods for harvesting. It will also assist them in determining the best times, places, and methods for selling agriculture goods in the study area.

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